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<120> Antibodies and antigen-binding fragments that specifically bind to microtubule-associated protein tau

<130> 0238 WO 00 ORD

<160> 535

<170> PatentIn version 3.5

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Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
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Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
    50                  55                  60


Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
65                  70                  75                  80


Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
                85                  90                  95


Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
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Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
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Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
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Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
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Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
                165                 170                 175

Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
            180                 185                 190

Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
        195                 200                 205

Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
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Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
225                 230                 235                 240

Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
                245                 250                 255

Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
            260                 265                 270

Gly Lys Val Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser Asn Val Gln
        275                 280                 285

Ser Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly
    290                 295                 300

Ser Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser
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Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln
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Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser
            340                 345                 350

Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn
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Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala
    370                 375                 380

Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser
385                 390                 395                 400

Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser
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Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
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Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
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Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
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Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
                85                  90                  95

Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
            100                 105                 110

Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
        115                 120                 125

Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
    130                 135                 140

Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
145                 150                 155                 160

Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
                165                 170                 175

Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
            180                 185                 190

Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
        195                 200                 205

Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
    210                 215                 220

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
225                 230                 235                 240

Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
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                245                 250                 255

Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
            260                 265                 270

Gly Lys Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr
        275                 280                 285

Ser Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly
    290                 295                 300

Gln Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln
305                 310                 315                 320

Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly
                325                 330                 335

Asn Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys
            340                 345                 350

Ala Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val
        355                 360                 365

Ser Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly
    370                 375                 380

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Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
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            20                  25                  30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
        35                  40                  45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
    50                  55                  60

Asp Ala Lys Ser Thr Pro Thr Ala Glu Ala Glu Glu Ala Gly Ile Gly
65                  70                  75                  80

Asp Thr Pro Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala
                85                  90                  95

Arg Met Val Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys
            100                 105                 110

Ala Lys Gly Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala
        115                 120                 125

Ala Pro Pro Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala
    130                 135                 140

Lys Thr Pro Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro
145                 150                 155                 160

Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr
                165                 170                 175

Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg
            180                 185                 190

Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser
        195                 200                 205
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Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu
    210                 215                 220

Lys Asn Val Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln
225                 230                 235                 240

Pro Gly Gly Gly Lys Val Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser
                245                 250                 255

Asn Val Gln Ser Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro
            260                 265                 270

Gly Gly Gly Ser Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys
        275                 280                 285

Val Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly
    290                 295                 300

Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg
305                 310                 315                 320

Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly
                325                 330                 335

Gly Gly Asn Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn
            340                 345                 350

Ala Lys Ala Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro
        355                 360                 365

Val Val Ser Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser
    370                 375                 380

Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala
385                 390                 395                 400
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Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
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Met His Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser
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Pro Leu Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu
50 55 60

Thr Ser Asp Ala Lys Ser Thr Pro Thr Ala Glu Ala Glu Glu Ala Gly
65 70 75 80

Ile Gly Asp Thr Pro Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr
85 90 95

Gln Ala Arg Met Val Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp
100 105 110

Lys Lys Ala Lys Gly Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg
115 120 125

Gly Ala Ala Pro Pro Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile
130 135 140

Pro Ala Lys Thr Pro Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu
145 150 155 160

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Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro
                165                 170                 175

Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro
            180                 185                 190

Thr Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser
        195                 200                 205

Pro Ser Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro
    210                 215                 220

Asp Leu Lys Asn Val Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys
225                 230                 235                 240

His Gln Pro Gly Gly Gly Lys Val Gln Ile Val Tyr Lys Pro Val Asp
                245                 250                 255

Leu Ser Lys Val Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile His His
            260                 265                 270

Lys Pro Gly Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu Asp Phe
        275                 280                 285

Lys Asp Arg Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His
    290                 295                 300

Val Pro Gly Gly Gly Asn Lys Lys Ile Glu Thr His Lys Leu Thr Phe
305                 310                 315                 320

Arg Glu Asn Ala Lys Ala Lys Thr Asp His Gly Ala Glu Ile Val Tyr
                325                 330                 335

Lys Ser Pro Val Val Ser Gly Asp Thr Ser Pro Arg His Leu Ser Asn
            340                 345                 350

Val Ser Ser Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln Leu Ala
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        355                 360                 365

Thr Leu Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
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Ala Gly Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr
            20                  25                  30


Met His Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Ala Glu
        35                  40                  45


Glu Ala Gly Ile Gly Asp Thr Pro Ser Leu Glu Asp Glu Ala Ala Gly
    50                  55                  60


His Val Thr Gln Ala Arg Met Val Ser Lys Ser Lys Asp Gly Thr Gly
65                  70                  75                  80


Ser Asp Asp Lys Lys Ala Lys Gly Ala Asp Gly Lys Thr Lys Ile Ala
                85                  90                  95


Thr Pro Arg Gly Ala Ala Pro Pro Gly Gln Lys Gly Gln Ala Asn Ala
            100                 105                 110


Thr Arg Ile Pro Ala Lys Thr Pro Pro Ala Pro Lys Thr Pro Pro Ser
        115                 120                 125


Ser Gly Glu Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro
    130                 135                 140
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Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro
145                 150                 155                 160

Thr Pro Pro Thr Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro
                165                 170                 175

Pro Lys Ser Pro Ser Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val
            180                 185                 190

Pro Met Pro Asp Leu Lys Asn Val Lys Ser Lys Ile Gly Ser Thr Glu
        195                 200                 205

Asn Leu Lys His Gln Pro Gly Gly Gly Lys Val Gln Ile Ile Asn Lys
    210                 215                 220

Lys Leu Asp Leu Ser Asn Val Gln Ser Lys Cys Gly Ser Lys Asp Asn
225                 230                 235                 240

Ile Lys His Val Pro Gly Gly Gly Ser Val Gln Ile Val Tyr Lys Pro
                245                 250                 255

Val Asp Leu Ser Lys Val Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile
            260                 265                 270

His His Lys Pro Gly Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu
        275                 280                 285

Asp Phe Lys Asp Arg Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile
    290                 295                 300

Thr His Val Pro Gly Gly Gly Asn Lys Lys Ile Glu Thr His Lys Leu
305                 310                 315                 320

Thr Phe Arg Glu Asn Ala Lys Ala Lys Thr Asp His Gly Ala Glu Ile
                325                 330                 335

Val Tyr Lys Ser Pro Val Val Ser Gly Asp Thr Ser Pro Arg His Leu
            340                 345                 350
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Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln
        355                 360                 365


Leu Ala Thr Leu Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly
    370                 375                 380


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Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
            20                  25                  30


Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Ala Glu Glu Ala
        35                  40                  45


Gly Ile Gly Asp Thr Pro Ser Leu Glu Asp Glu Ala Ala Gly His Val
    50                  55                  60


Thr Gln Ala Arg Met Val Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp
65                  70                  75                  80


Asp Lys Lys Ala Lys Gly Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro
                85                  90                  95


Arg Gly Ala Ala Pro Pro Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg
            100                 105                 110


Ile Pro Ala Lys Thr Pro Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly
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        115                 120                 125

Glu Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser
    130                 135                 140

Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro
145                 150                 155                 160

Pro Thr Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys
                165                 170                 175

Ser Pro Ser Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val Pro Met
            180                 185                 190

Pro Asp Leu Lys Asn Val Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu
        195                 200                 205

Lys His Gln Pro Gly Gly Gly Lys Val Gln Ile Val Tyr Lys Pro Val
    210                 215                 220

Asp Leu Ser Lys Val Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile His
225                 230                 235                 240

His Lys Pro Gly Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu Asp
                245                 250                 255

Phe Lys Asp Arg Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr
            260                 265                 270

His Val Pro Gly Gly Gly Asn Lys Lys Ile Glu Thr His Lys Leu Thr
        275                 280                 285

Phe Arg Glu Asn Ala Lys Ala Lys Thr Asp His Gly Ala Glu Ile Val
    290                 295                 300

Tyr Lys Ser Pro Val Val Ser Gly Asp Thr Ser Pro Arg His Leu Ser
305                 310                 315                 320
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<212> DNA
<213> synthetic

<400> 73
ccggtctaga gttttccatg gcgcagtctg ccctgactca gcc 43

<210> 74
<211> 45
<212> DNA
<213> synthetic

<400> 74
ccggtctaga gttttccatg gcgtcttctg agctgactca ggacc 45

<210> 75
<211> 46
<212> DNA
<213> synthetic

<400> 75
ccggtctaga gttttccatg gcgtcctatg agctgactca gccacc 46

<210> 76
<211> 27
<212> DNA
<213> synthetic

<220>
<221> y
<222> (13)..(13)

<223> c or t

<400> 76
ctcagaggag ggygggaaca gagtgac 27

<210> 77
<211> 1766
<212> DNA
<213> synthetic

<400> 77
aaacgtaagt gcactttgcg gccgctagga agaaactcaa aacatcaaga ttttaaatac 60

gcttcttggt ctccttgcta taattatctg ggataagcat gctgttttct gtctgtccct 120

aacatgccct gtgattatcc gcaaacaaca cacccaaggg cagaactttg ttacttaaac 180

accatcctgt ttgcttcttt cctcaggaac tgtggctgca ccatctgtct tcatcttccc 240

gccatctgat gagcagttga aatctggaac tgcctctgtt gtgtgcctgc tgaataactt 300

ctatcccaga gaggccaaag tacagtggaa ggtggataac gccctccaat cgggtaactc 360

ccaggagagt gtcacagagc aggacagcaa ggacagcacc tacagcctca gcagcaccct 420

gacgctgagc aaagcagact acgagaaaca caaagtctac gcctgcgaag tcacccatca 480

gggcctgagc tcgcccgtca caaagagctt caacagggga gagtgttagt taacggatcg 540

atccgagctc ggtaccaagc ttaagtttaa accgctgatc agcctcgact gtgccttcta 600

gttgccagcc atctgttgtt tgcccctccc ccgtgccttc cttgaccctg gaaggtgcca 660

ctcccactgt cctttcctaa taaaatgagg aaattgcatc gcattgtctg agtaggtgtc 720

attctattct ggggggtggg gtggggcagg acagcaaggg ggaggattgg gaagacaata 780

gcaggcatgc tggggatgcg gtaatctgct tagggttagg cgttttgcgc tgcttcgcta 840

ggtggtcaat attggccatt agccatatta ttcattggtt atatagcata aatcaatatt 900

ggctattggc cattgcatac gttgtatcca tatcataata tgtacattta tattggctca 960

tgtccaacat taccgccatg ttgacattga ttattgacta gttattaata gtaatcaatt 1020

acggggtcat tagttcatag cccatatatg gagttccgcg ttacataact tacggtaaat 1080

ggcccgcctg gctgaccgcc caacgacccc cgcccattga cgtcaataat gacgtatgtt 1140

cccatagtaa cgccaatagg gactttccat tgacgtcaat gggtggagta tttacggtaa 1200

actgcccact tggcagtaca tcaagtgtat catatgccaa gtacgccccc tattgacgtc 1260

aatgacggta aatggcccgc ctggcattat gcccagtaca tgaccttatg ggactttcct 1320

acttggcagt acatctacgt attagtcatc gctattacca tggtgatgcg gttttggcag 1380

tacatcaatg ggcgtggata gcggtttgac tcacggggat ttccaagtct ccaccccatt 1440

gacgtcaatg ggagtttgtt ttggcaccaa aatcaacggg actttccaaa atgtcgtaac 1500

aactccgccc cattgacgca aatgggcggt aggcgtgtac ggtgggaggt ctatataagc 1560

agagctcgtt tagtgaaccg tcagatcgcc tggagacgcc atccacgctg ttttgacctc 1620

catagaagac accgggaccg atccagcctc cgcggccggg aacggtgcat tggaagcttg 1680

gtaccgagct cggatccgcc accatggcct gccccggatt tctgtgggcc ctggtcatca 1740

gcacctgtct ggaattcagc atggcc 1766

<210> 78
<211> 23
<212> DNA
<213> synthetic

<400> 78
ggccatgctg aattccagac agg 23

<210> 79
<211> 29
<212> DNA
<213> synthetic

<400> 79
aaacgtaagt gcactttgcg gccgctagg 29

<210> 80
<211> 25
<212> DNA
<213> synthetic

<400> 80
actctgttcc crccctcctc tgagg 25

<210> 81
<211> 23
<212> DNA
<213> synthetic

<400> 81
ccggtctaga gttttccatg gcg 23

<210> 82
<211> 19
<212> DNA
<213> synthetic

<400> 82
tcgggcctcg agactcacc 19

<210> 83
<211> 330
<212> PRT
<213> Homo sapiens

<400> 83

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

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

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

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

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys

```
            100                 105                 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
225                 230                 235                 240

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
```

```
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320


Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330


<210>  84
<211>  107
<212>  PRT
<213>  Homo sapiens

<400>  84

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


Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
            20                  25                  30


Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
        35                  40                  45


Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
    50                  55                  60


Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
65                  70                  75                  80


Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
                85                  90                  95


Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100                 105


<210>  85
<211>  18
<212>  DNA
<213>  synthetic

<400>  85
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catgtcaccg gggtgtgg 18

<210> 86
<211> 21
<212> DNA
<213> synthetic

<400> 86
tcacagggga tgttagggac a 21

<210> 87
<211> 117
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 87

Gln 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

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

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

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

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

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

Leu Val Thr Val Ser
        115

<210> 88
<211> 108
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 88

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

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

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

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

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

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro
                85   90   95

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

<210> 89
<211> 354
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 89
caggtccagc tggtggagtc cgggggaggc ttagttcagc ctgggggtc cctgagactc 60

tcctgtgcag cgtctggatt caccttcagc agctactgga tgcactgggt ccgccaagct 120

ccagggaagg ggctggtgtg ggtctcccgt attaatagtg atgggagtga cacaaactac 180

gcggactccg tgaagggccg attcaccttc tccagagaca acgccaagaa cacattgtat 240

ctgcagatga ccagtctgcg agccgaggac acggctatat attactgtac aaggggcgc 300

agttatggtt tctttgacta ctggggccag ggagccctgg tcaccgtctc ctca 354

<210> 90
<211> 324
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 90
gacatcgtga tgacccagtc tccagacacc ctgtctttgt ctccagggga gagagccacc 60

ctctcctgca gggccagtca gattattagc agcaactact tagcctggta ccaacaacaa 120

cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac aggcatccca 180

gacaggttca gtggcagtgg gtctgcgaca gacttcactc tcaccatcag cagactggag 240

cctgaagatt ttgcagtgta ttactgtcag cagtatggta cctcacctcg gacgttcggc 300

caggggacca agctggagat caaa 324

<210> 91
<211> 124
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 91

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

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

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

Ala Val Ile Trp Phe Asp Gly Asn 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 Val Tyr
65                  70                  75                  80

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

Ala Arg Asp Trp Trp Glu Ala Gly Cys Arg Pro Cys Tyr Phe Phe Asp
            100                 105                 110

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


<210>  92
<211>  113
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  92

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

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

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

Pro Pro Lys Val Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
50 55 60

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

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Pro Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
100 105 110

Lys

<210> 93
<211> 372
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 93
caggtgcagc tggtggagtc gaggggaggc gtggtccagc ctgggacgtc cctgagactc 60

tcctgtaaag cgtctggatt caccttcagc acttatggca tgcactgggt ccgccaggct 120

ccaggcaagg cgctggagtg ggtggcagtt atatggtttg atggaaataa caaatattat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacggtgtat 240

ctgcaaatga acagcctgag aggcgaggac acggctgttt attactgtgc gagagattgg 300

tgggaagccg ggtgccggcc ctgttatttc tttgactact ggggccaggg aagcctggtc 360

accgtctcct ca 372

<210> 94
<211> 339
<212> DNA
<213> artificial

<220>

<223> Combination of PCR-generated and human sequence

<400> 94
gaaacgacac tcacgcagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcca gagtgtttta tacagctcca acaataagaa ctacttagct 120

tggtaccagc agaaaccagg acagcctcct aaggtgctca tttactgggc ttctacccgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg ggaccgattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtcct 300

ccgctcactt tcggcggagg gaccaagctg gagatcaaa 339

<210> 95
<211> 127
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 95

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

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

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

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

Arg Gly Arg Phe Thr Ile Ser Arg Asp Ser Ala Glu Asn Ser Leu Asn
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 Ala His Tyr Tyr Asp Arg Asn Arg Asn Asn Tyr Tyr Tyr
            100                 105                 110


Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120                 125


<210>  96
<211>  107
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  96

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


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


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


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


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


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


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


<210>  97
<211>  381
<212>  DNA
<213>  artificial
```

<220>
<223> Combination of PCR-generated and human sequence

<400> 97
gaggtgcagc tggtgcagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt gactattgga tgagctgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtggccaac ataaatcaag atggaagtgc tgcatactat 180

gtggactctg tgaggggccg attcaccatc tccagagaca gcgccgagaa ctcactgaat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaaagatgca 300

cattactacg atcgtaatcg taataattat tactactact ttgacttctg gggccaggga 360

accctggtca ccgtctcctc a 381

<210> 98
<211> 321
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 98
gaaatagtga tgacgcagtc tccggccacc ctgtctgtgt ctccagggga aagagccacc 60

ctctcctgca gggccagtca gagtgttggc gccaacttag cctggtacca gcagaaacct 120

gggcaggctc ccaggctcct catctattct gcatccacca gggccactgg tgtcccagcc 180

aggttcagtg gcagtgggtc tgggacagag ttcactctca ccatcagcag cctgcagtct 240

gaagattttg cagtttatta ctgtcagcag tataataact ggcctcggac gttcggccaa 300

gggaccaagg tggaaatcaa a 321

<210> 99
<211> 127
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 99

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

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

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

Trp Ile Gly Arg Met Ser Ser Ser Gly Ser Thr Asn Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Met Ser Glu Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

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

Cys Ala Arg Glu Ser Gly Ser Ser Trp Gln Asn His Tyr Tyr Tyr Tyr
100 105 110

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

<210> 100
<211> 113
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 100

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

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

```
Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Ser Gly Gln
        35                  40                  45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

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

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95

Tyr Tyr Ser Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile
            100                 105                 110

Lys
```

<210> 101
<211> 381
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 101

```
caggtgcagc tgttggagtc gggcccagga ctggtgaacc cttcacagac cctgtccctc       60

acctgcactg tctctggtgg ctccatcagc agtggtaatt actactggag ctggatccgg      120

cagcccgccg ggaagggact ggagtggatt gggcgtatgt ctagtagtgg gagcaccaac      180

tacaacccct ccctcaagag tcgagtcacc atgtcagaag acacgtccaa gaaccagttc      240

tccctgaagt tgagctctgt gaccgccgca gacacggccg tgtattactg tgccagagaa      300

tcgggtagca gctggcaaaa tcactactac tactacggta tggacgtctg gggccaaggg      360

accacggtca ccgtctcctc a                                                381
```

<210> 102
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 102
gaaattgtgt tgacacagtc tccagactcc ctggctgtgt ctctgggcga gagggccaac 60

attaattgca agtccagcca gagtgtttta tacagctcca acaataagaa ctacttagct 120

tggtaccagc agaaatcagg acagcctcct aagctgctca tttactgggc atctacccgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtact 300

cctctcactt tcggcggagg gaccaaagtg gatatcaaa 339

<210> 103
<211> 123
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 103

Gln 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 Asn Tyr
20 25 30

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

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

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

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


Lys Glu Ser Gly Arg Trp Gly Gly Gly Thr Leu Tyr Gly Ala His Tyr
            100                 105                 110


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


<210>  104
<211>  113
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  104

Asp Ile Gln 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 Leu Leu Tyr Asn
            20                  25                  30


Ser Asn Asn Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln
        35                  40                  45


Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60


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


Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95


Tyr Tyr Ser Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
            100                 105                 110
```

Lys

<210> 105
<211> 369
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 105
caggtacagc tggtggagtc tgggggaggc ttggtacagc ctgggggGTC cctgagactc 60

tcctgtgcag cctctggatt cacctttagg aactatgcca tgagttgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtctcaggc attagtagtg acggtaatac attctacgca 180

gactccgtga agggccggtt caccgtctcc agagacaatt ccaagaacac gttgtatctg 240

caagtgaaca gtctgagagc cgacgacacg gccgtatatt actgtgcgaa agagagtggc 300

cgttggggtg gtggaacctt atacggggcg cactactggg gccagggaac cccggtcacc 360

gtctcctca 369

<210> 106
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 106
gacatccaga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcca gagtttgtta tacaactcca ataataagaa ctacttaact 120

tggtaccagc aaaaaccagg acagcctcct aagttgctca tttactgggc atctacccgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtagt 300

cctctcactt tcggcggagg gaccaaggtg gagatcaaa 339

<210> 107
<211> 121
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 107

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

Pro Val Lys Val Ser Cys Glu Thr Ser Gly Tyr Arg Phe Ser Asp Tyr
20 25 30

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Met Ser Met Asn Thr Ala Tyr
65 70 75 80

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

Val Arg Gly His Cys Asp Gly Thr Thr Cys Ser Arg Ala Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 108
<211> 112
<212> PRT
<213> artificial

<220>

<223> Combination of PCR-generated and human sequence

<400> 108

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Arg
            20   25   30

Ser Gly His Lys Tyr Leu His Trp Tyr Leu Gln Arg Pro Gly Gln Ser
        35   40   45

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

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

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

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

<210> 109
<211> 363
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 109
caggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctggggcccc agtgaaggtc   60

tcctgcgaga cttctggata caggttcagc gactacaatg tacactgggt gcgacaggcc   120

cctggacaag ggcctgagtg gataggacgg atcagcccta acagcggtgg cacaaagtat   180

gcacagaagt ttcaaggcag ggtcaccatg accagggaca tgtccatgaa cacagcctac   240

atggagctga gcgggctgag atctgacgac acggccgtgt attattgtgt aagaggacat   300

tgtgatggta ccacttgctc tcgtgcctac tggggccagg gaaccctggt caccgtctcc 360

tca 363

<210> 110
<211> 336
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 110
gatgttgtga tgacgcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60

atctcctgca ggtctagtca gagcctcctg catagaagtg gacacaagta tttgcattgg 120

tacctgcaga ggccagggca gtctccacag gtcctgatct atttgggttc taatcgggcc 180

tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240

agcagagtgg aggctgagga tgttgggctt tattactgca tgcaaactct acaaaccccc 300

tggacattcg gccaagggac caaggtggaa atcaaa 336

<210> 111
<211> 120
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 111

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 Thr Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

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

```
Gly Trp Val Asn Pro Arg Ser Gly Gly Thr Ser Tyr Pro Pro Lys Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Asn Thr Ala Tyr
65                  70                  75                  80

Met Asp Leu Thr Trp Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Val Gly Arg Ile Pro Asp Val Thr Ala Phe Asp Ile Trp Gly Gln
            100                 105                 110

Gly Thr Pro Val Thr Val Ser Ser
        115                 120
```

<210> 112
<211> 113
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 112

```
Asp Ile Gln 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 Glu Ser Leu Leu Tyr Asp
            20                  25                  30

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

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Glu Thr Asp Phe Thr Leu Thr
65                  70                  75                  80
```

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

Tyr Phe Ser Thr Pro Trp Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
100 105 110

Lys

<210> 113
<211> 360
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 113
caggtccagc ttgtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc 60

tcctgtacgg cctctggata cactttcacc ggctattatt tacactgggt gcgacaggcc 120

cctggacaag gacttgagtg gatggggtgg gtcaacccta ggagtggtgg cacaagctat 180

ccaccgaagt ttcagggcag ggtcaccatg accagggaca cgtccatcaa cacagcctac 240

atggacctga cctggctgac atctgacgac acggccgtct attattgtgc ggtcggaaga 300

atacctgatg taactgcttt cgatatctgg ggccagggga caccggtcac cgtctcctca 360

<210> 114
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 114
gacatccaga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcga gagtctttta tacgactcca acaataagaa ctacttagct 120

tggtaccagc agaaaccagg acagcctcct aagttgctca tttattgggc atctacccgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg agacagattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttatcact gtcaacaata tttcagtact 300

ccttggacgt tcggccaggg gaccaagctg gagatcaaa 339

<210> 115
<211> 122
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 115

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

Ser Leu Lys Ile Ser Cys Lys Thr Ser Gly Tyr Ile Phe Ser Asp Tyr
20 25 30

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

Gly Ile Ile Tyr Ser Gly Asp Ser Asp Thr Arg Tyr His Pro Ser Val
50 55 60

Gln Gly His Val Thr Met Ser Thr Asp Ser Ser Leu Thr Thr Ala Tyr
65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Gly Ile Tyr Tyr Cys
85 90 95

Ala Arg Leu Asp Ala Arg Val Asp Ala Gly Trp Gln Leu Asp Ser Trp
100 105 110

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

<210> 116
<211> 113

<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 116

Asp Ile Gln Leu 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 Phe Ser Arg
            20   25   30

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

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

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

Ile Asp Asn Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys Gln His
                85   90   95

Tyr Phe Asn Thr Pro His Asn Phe Gly Gln Gly Thr Lys Leu Glu Ile
            100   105   110

Lys

<210> 117
<211> 366
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 117
caggttcagc tggtggagtc tggaccggag atgagaaagc ccggggagtc tctgaaaatt   60

tcctgcaaga cttctggcta catatttagc gactactgga ctgcctgggt gcgccagctg 120

cccgggaagg gccttcagtg gatgggaatc atctattctg gtgactctga taccagatat 180

catccgtccg tccaaggcca cgtcaccatg tcaaccgaca gttccctcac caccgcctac 240

ctgcagtgga gcagcctgaa ggcctcggac accggcatat attactgtgc gcgccttgat 300

gcaagagttg atgctggatg gcaattagat tcgtggggcc aggggaccct ggtcaccgtc 360

tcttca 366

<210> 118
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 118
gacatccagt tgacccagtc tccagattcc ctggctgtgt ctctgggcga gcgggccacc 60

atcaactgca agtccagcca gagtgttttc tccagggaca acaataaaaa ctacctagct 120

tggtaccagc acaaatcagg gcagcctcct aagttgctct ttttctgggc gtccagtcgt 180

gaatctgggg tctcagaccg attcagcggc agcgggtctg ggacagattt cactctcacc 240

atcgacaacc tgcaggctga agatgtggca ctttattact gtcaacatta ttttaatact 300

ccccacaatt ttggccaggg gaccaagctg gagatcaaa 339

<210> 119
<211> 121
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 119

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

```
Ser Leu Lys Ile Ser Cys Glu Ala Ser Gly Tyr Ser Phe Thr Asn Tyr
            20                  25                  30


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


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


Gln Gly Gln Val Thr Ile Thr Ala Asp Arg Ser Ile Thr Thr Ala Tyr
65                  70                  75                  80


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


Ala Arg Val Gly Arg Pro Ser Lys Gly Gly Trp Phe Asp Pro Trp Gly
            100                 105                 110


Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  120
<211>  113
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  120

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


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


Ser Asn Glu Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
        35                  40                  45
```

Pro Pro Lys Leu Leu Ile Ser Trp Ala Ser Thr Pro Glu Ser Gly Val
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser 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 Asn Ser Pro Tyr Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile
100 105 110

Lys

<210> 121
<211> 363
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 121
caggtgcagc tacagcagtc aggagcagaa gtgaaaaagc ccggggagtc tctgaagatc 60

tcctgtgagg cctctggata cagcttcacc aattactgga tcggctgggt gcgccagatg 120

cccggtaaag gcctggagtg gatgggaatc atctatcctg gtgactctga caccagatac 180

agtccgccct tccaaggcca ggtcaccatc acagccgaca ggtccatcac caccgcctac 240

ttggagtgga gcagtctgaa ggcctcggac accgccatgt attactgtgc aagagttggg 300

agaccttcta aaggaggctg gttcgacccc tggggccagg gaaccctggt caccgtctct 360

tca 363

<210> 122
<211> 339
<212> DNA
<213> artificial

<220>

<223> Combination of PCR-generated and human sequence

<400> 122
gacatccaga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgtg agtccagcca gactctttta tacagttcca acgaaaagaa ctacctagct 120

tggtaccagc agaaaccagg acagcctcct aagttgctca tttcctgggc ttctaccccg 180

gaatccgggg tccctgaccg attcagtggc agtgggtctg ggacaagttt cactctcacc 240

atcagcagcc tgcaggctga ggatgtggca gtttattact gtcagcaata ttataacagt 300

ccatacactt ttggccaagg gacacgactg gagattaaa 339

<210> 123
<211> 126
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 123

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

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

Tyr Met Ser Trp Ile Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Leu
        35 40 45

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

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

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

```
Ala Arg Val Gln Thr Thr Met Ile Glu Gly Lys Thr Lys Leu Asn Tyr
            100                 105                 110


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


<210>  124
<211>  113
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  124

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


Glu Arg Val Thr Ile Thr Cys Glu Ser Ser His Ser Leu Leu Tyr Arg
            20                  25                  30


Ser Asn Asn Arg Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Arg Gln
        35                  40                  45


Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60


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


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


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


Lys
```

<210> 125
<211> 378
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 125
gaggtgcagc tgttggagtc tgggggaggc ttggtcaagc ctggagggtc cctgagactc 60

tcctgtgtcg cctctggaat caccttcagt gactcctaca tgagctggat ccgccagact 120

ccagggaagg ggctagagtg gctttcatac attagtcgta gtagttctca cacaaattac 180

gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ttcactatat 240

ctccaaatga atagcctgag aggcgaggac acggctgtgt attactgtgc gagagtccag 300

acaactatga tagaagggaa aacgaaactt aactactttg actactgggg ccagggaacc 360

caggtcaccg tctcctca 378

<210> 126
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 126
gacatccaga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggtcacc 60

atcacctgcg agtccagcca cagtctttta tacaggtcca acaataggaa ctacttagct 120

tggtaccagc aaaaaccaag acagcctcct aagttgctca tttactgggc atctacccgg 180

gagtccgggg tcccagaccg attcagcggc agcgggtctg agacagattt cactctcacc 240

atcagcagcc tgcgggctga agatgtggcg gtatattact gtcaacaatt ttatactact 300

ccttacactt ttggccaagg gaccaaggtg gagatcaaa 339

<210> 127
<211> 126
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 127

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

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

Tyr Met Ser Trp Ile Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Leu
        35   40   45

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

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

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

Ala Arg Val Gln Thr Thr Met Ile Glu Gly Lys Thr Lys Leu Asn Tyr
            100   105   110

Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120   125

<210> 128
<211> 113
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 128

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

```
Glu Arg Val Thr Ile Ser Cys Glu Ser Ser His Ser Leu Leu Tyr Arg
            20                  25                  30

Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Arg Gln
        35                  40                  45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

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

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

Phe Tyr Thr Thr Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
            100                 105                 110

Lys
```

<210> 129
<211> 378
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 129
gaggtgcagc tggtgcagtc tgggggaggc ttggtcaagc ctggagggtc cctgagactc 60

tcctgtgtcg cctctggaat caccttcagt gactcctaca tgagctggat ccgccagact 120

ccagggaagg ggctagagtg gctttcatac attagtcgta gtagttctca cacaaattac 180

gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ttcactatat 240

ctccaaatga atagcctgag aggcgaggac acggctgtgt attactgtgc gagagtccag 300

acaactatga tagaagggaa aacgaaactt aactactttg actactgggg ccagggaacc 360

ctggtcaccg tctcctca 378

<210> 130
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 130
gccatccagt tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggtcacc 60

atcagctgcg agtccagcca cagtctttta tacaggtcca acaataagaa ctacttagct 120

tggtaccagc agaaaccaag acagcctcct aagttgctca tttactgggc atctacccgg 180

gagtccgggg tcccagaccg attcagcggc agcgggtctg agacagattt cactctcacc 240

atcagcagcc tgcgggctga agatgtggca gtgtattact gtcaacaatt ttatactact 300

ccttacactt ttggccaggg gaccaagctg gagatcaaa 339

<210> 131
<211> 122
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 131

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

Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Thr Lys Ala Trp Met
20 25 30

Ser Trp Val Arg Gln Thr Pro Gly Arg Gly Leu Glu Trp Leu Gly Arg
35 40 45

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

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


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


Thr Thr Leu Ile His Cys Asp Leu Ser Ala Cys Leu Pro His Phe Trp
            100                 105                 110


Gly Arg Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  132
<211>  113
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  132

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


Glu Arg Val Thr Ile Ser Cys Glu Ser Ser His Ser Leu Leu Tyr Arg
            20                  25                  30


Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Arg Gln
        35                  40                  45


Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60


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


Ile Ser Ser Leu Arg Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95
```

Phe Tyr Thr Thr Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
100 105 110

Lys

<210> 133
<211> 378
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 133
gaggtgcagc tggtgcagtc tgggggaggc ttggtcaagc ctggagggtc cctgagactc 60

tcctgtgtcg cctctggaat caccttcagt gactcctaca tgagctggat ccgccagact 120

ccagggaagg ggctagagtg gctttcatac attagtcgta gtagttctca cacaaattac 180

gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ttcactatat 240

ctccaaatga atagcctgag aggcgaggac acggctgtgt attactgtgc gagagtccag 300

acaactatga tagaagggaa aacgaaactt aactactttg actactgggg ccagggaacc 360

ctggtcaccg tctcctca 378

<210> 134
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 134
gaaattgtgt tgacgcagtc tccagactcc ctggctgtgt ctctgggcga gagggtcacc 60

atcagctgcg agtccagcca cagtctttta tacaggtcca acaataagaa ctacttagct 120

tggtaccagc agaaaccaag acagcctcct aagttgctca tttactgggc atctacccgg 180

gagtccgggg tcccagaccg attcagcggc agcgggtctg agacagattt cactctcacc 240

atcagcagcc tgcgggctga agatgtggca gtgtattact gtcaacaatt ttatactact 300

ccttacactt ttggccaggg gaccaagctg gagatcaaa 339

<210> 135
<211> 124
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 135

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

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Ser Asn Tyr
20 25 30

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

Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Thr Tyr Ser Pro Ser Phe
50 55 60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Val Ser Thr Thr Tyr
65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Ser Ala Met Tyr Tyr Cys
85 90 95

Ala Arg Leu Pro Arg Thr Asp Gly Asp Asn Ser Ile Gly Tyr Phe Glu
100 105 110

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

<210> 136
<211> 113

<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 136

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

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

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

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50   55   60

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

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85   90   95

Tyr Tyr Ser Thr Pro Phe Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile
            100   105   110

Lys

<210> 137
<211> 372
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 137
caggtgcagc tggtgcagtc tggaggagag gtgaaaaagc cgggggagtc tctgaagatc   60

tcctgtaagg gttctgggta ctcctttagt aactactgga tcgcctgggt gcgccagatg 120

cccgggaaag gcctggagtg catgggaatc atctatcctg gtgactctga taccacatac 180

agcccgtcct tccaaggcca ggtcaccatt tctgccgaca agtccgtcag taccacctac 240

ctacaatgga gcagcctgaa ggcctcggac agcgccatgt attattgtgc gaggctaccc 300

cgtacagatg gcgacaattc catcggctac tttgaatatt ggggccaggg aaccatggtc 360

accgtctctt ca 372

<210> 138
<211> 345
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 138
gaaattgtgt tgacacagtc tccagcctcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcca gagtgtttta tacagctcca acagtgagaa ctacttagct 120

tggtatcagc agaaaccagg acagcctccc aagttgctca tttactgggc gtctacccgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtact 300

ccattcactt tcggccaagg gacacgactg gagattaaac gtaag 345

<210> 139
<211> 118
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 139

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

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

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

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

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

Val Pro Ala Pro Arg Leu Gly Gly Ser Tyr Thr Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Leu Val Thr Val Ser
        115


<210>  140
<211>  108
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  140

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

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser
            20                  25                  30

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

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

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

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro
                85                  90                  95

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

<210> 141
<211> 357
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 141
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt agttatagca tgaactgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtttcatac attagtagta gtactactac catatactac 180

gcagactctg tgaagggccg attcaccatc tccagggaca atgtcaagaa ctctctgtat 240

ctgcaaatgc acagcctgag agccgaggac acggctgtgt attactgtgt cccggccccc 300

cggttgggtg ggagctacac ttactggggc cagggaaccc tggtcaccgt ctcctca 357

<210> 142
<211> 324
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 142
gacatccaga tgacccagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60

ctctcctgca gggccagtca gagtgttagc agcagctact tagcctggta ccagcagaaa 120

cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatccca 180

gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240

cctgaagatt ttgcagtgta ttactgtcag cagtatggca cctcaccgct cactttcggc 300

ggagggacca aggtggaaat caaa 324

<210> 143
<211> 119
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 143

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

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

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

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

His Val Arg Gly Arg Phe Thr Ile Ala Arg Asp Asp Ser Asn Arg Thr
65 70 75 80

Leu Tyr Leu Gln Met Ser Asn Leu Lys Ile Asp Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Thr Thr Gly Leu Gly Gly Gly Thr Tyr Gly Trp Gly Arg Gly
100 105 110

Thr Arg Val Thr Val Ser Ser
115

<210> 144
<211> 108
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 144

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Ala Gly Leu Arg Asn Asn
20 25 30

Asp Gly Asp Ile Leu Leu Ser Trp Phe His Gln Arg Pro Gly Gln Ser
35 40 45

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

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

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

Pro Tyr Trp Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 145
<211> 357
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 145
gaggtgcagc tggtggagtc tgggggagac ttggtaaagc ctgggggtc ccttagactc 60

tcctgtgcag cctctggatt cgttttcact gacgcctgga tgagctgggt ccgccagagt 120

cccgggaagg ggccggagtg gcttggccgt atcaaaagta aaaatgtcgg tgagacaaca 180

gactacgctg aacacgtgag aggcagattt accatcgcaa gagatgattc caaccgcact 240

ctatatctac aaatgagcaa cctgaaaatc gacgacacag ccgtctatta ttgtaccact 300

ggactgggag gagggaccta cggatggggc cggggaaccc gggtcaccgt ctcttca 357

<210> 146
<211> 324
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 146
gaaattgtgt tgacacagtc tccactctcc ctgcccgcca cccttggaca gccggcctcc 60

atctcctgca ggtcgagtgc aggcctccga aacaacgatg gtgacatcct cttgagttgg 120

tttcatcagc ggccaggcca gtctccgagg cgcctatttt atagagtttc taggcgtgac 180

tctggagtcc cagacagatt caacggcagt gggtcagcca ctgatttcac actgagaatc 240

aattctgtgg aggctgaaga tgttggcatt tactactgca tgcgaggacc atattggggc 300

caagggacac gactggagat taaa 324

<210> 147
<211> 119
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 147

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

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

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


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


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


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


Ala Lys Pro Arg Ile Gly Ala Arg Val Phe Asp Val Trp Gly Gln Gly
            100                 105                 110


Thr Met Val Thr Val Ser Ser
        115


<210>  148
<211>  113
<212>  PRT
<213>  artificial

<220>
<223>  Combination of PCR-generated and human sequence

<400>  148

Asp Ile Gln Leu 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 Thr Leu Leu Tyr Lys
            20                  25                  30


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


Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60
```

```
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65                  70                  75                  80


Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95


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


Lys
```

<210> 149
<211> 357
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 149
caggtacagc tggtggagtc tgggggaggc ttggtacagc ctggagagtc cctgagactc 60

tcctgtgtag cctctggatt caacttcagt atttatgaga tgaattgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtttcatac attaccaatc gaggtagtac catatactac 180

gcagactctg tgaagggccg attcaccatc tccagggaca acgcccagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaagac acggctgttt attactgtgc gaaaccccgt 300

ataggagctc gtgtatttga tgtctggggc caagggacaa tggtcaccgt ctcctca 357

<210> 150
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 150
gacatccagt tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcca gactctttta tacaagtcca acaatgagaa ctacttagct 120

tggtaccagc agaaaccagg acagcctcca aagctgctca tttactgggc atctactcgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240

atcagcagcc tgcaggctga ggatgtggca gtttactact gtcagcaata ttttactact 300

gcgctcactt tcggcggagg gaccaaggtg gagatcaaa 339

<210> 151
<211> 121
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 151

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

Ser Leu Lys Ile Ser Cys Glu Ala Ser Gly Tyr Met Phe Leu Asp His
20 25 30

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

Gly Ile Ile Phe Pro Glu Asp Ser Asp Thr Arg Tyr Ser Gly Ser Phe
50 55 60

Glu Gly Gln Val Thr Ile Ser Ala Asp Arg Ser Val Asn Thr Val Tyr
65 70 75 80

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

Ala Arg Val Ser Val Val Arg Lys Gly Gly Trp Phe Asp Pro Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 152
<211> 113
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 152

Ala Ile Gln Leu 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 Leu Leu Tyr Thr
            20   25   30

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

Thr Pro Lys Leu Leu Ile Ile Trp Ala Ser Thr Arg Glu Ser Gly Val
    50   55   60

Pro Asp Arg Phe Thr 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 Asn Ser Pro Tyr Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile
            100   105   110

Lys

<210> 153
<211> 363
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 153
caggtgcagc tggtgcagtc tggagcagtg gtgaaaaagc ccggggagtc tctgaagatc 60

tcctgtgagg cttctggata catgttcctc gatcactgga tcggctgggt gcgccagatg 120

cccgggaaag gcctggagtg gatgggaatc atctttcctg aggactctga taccagatat 180

agtgggtcct tcgaaggcca ggtcaccatc tcagccgaca ggtccgtcaa caccgtctac 240

ctggagtgga gcagcctgaa ggcctcggac accgccatgt attattgtgc gagagtctca 300

gtagttcgta aaggggggctg gttcgaccca tggggccagg gaaccacggt caccgtctcc 360

tca 363

<210> 154
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<220>
<221> misc_feature
<222> (5)..(6)
<223> n is a, c, g, or t

<400> 154
gaaanncaac tgacgcagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcca gagtctttta tacacctcca acaataagaa ctacttagct 120

tggtaccagc agaaaccagg acagactcct aaactgctca ttatctgggc ctctacccga 180

gaatccgggg tccctgaccg attcactggc agcgggtctg ggacagattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttataatagt 300

ccgtacactt ttggccaagg gacacgactg gagattaaa 339

<210> 155
<211> 121

<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 155

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

Ser Leu Lys Ile Ser Cys Glu Ala Ser Gly Tyr Ile Phe Ala Asp His
            20   25   30

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

Gly Ile Ile Phe Pro Gly Asp Ser Asp Ile Arg Tyr Ser Pro Ser Phe
    50   55   60

Glu Gly Gln Val Thr Ile Ser Val Asp Arg Ser Val Ser Thr Ala Phe
65   70   75   80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Phe Cys
                85   90   95

Ala Arg Val Ala Val Val Arg Lys Gly Gly Trp Phe Asp Ser Trp Gly
            100   105   110

Gln Gly Thr Arg Val Thr Val Ser Ser
        115   120

<210> 156
<211> 113
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 156

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

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

Ala Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Arg Gln Lys Pro Arg Gln
        35                  40                  45

Thr Pro Glu Leu Leu Ile Thr 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 Thr Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95

Tyr Tyr Asn Ser Pro Tyr Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile
            100                 105                 110

Lys
```

<210> 157
<211> 363
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 157

```
caggtacagc tggtggagtc tggagcagaa ctgaaaaagc ccggggagtc tctgaagatc       60

tcctgtgagg catctggata catctttgcc gatcactgga tcggctgggt gcgccagatg      120

cccgggaaag gcctggagtg gatgggaatc atctttcctg gtgactctga tatcagatat      180

agtccgtcct tcgaaggcca ggtcaccatc tcagtcgaca ggtccgtcag taccgccttc      240

ctgcagtgga gcagcctgaa ggcctcggac accgccatgt atttttgtgc gagagtcgca      300
```

gtagtgcgta aaggggggctg gttcgactcc tggggccagg gaacccgggt caccgtctcc 360

tca 363

<210> 158
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 158
gaaattgtga tgacccagtc tccagagtcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccaccca gagtctttta tggagcgcca acaacaagaa ctacttagct 120

tggtaccggc agaaaccacg acagactcct gaactgctca ttacgtgggc ttccacccgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240

atcaccagcc tgcaggctga agatgtggca gtttattatt gtcaacaata ttataatagt 300

ccgtacactt ttggccaagg gacacgactg gagattaaa 339

<210> 159
<211> 126
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 159

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

Ser Leu Lys Ile Ser Cys Leu Ala Ser Gly Tyr Asp Phe Ala Ser Tyr
20 25 30

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

```
Gly Ile Ile Tyr Pro Asp Asp Ser Asp Thr Arg Tyr Asn Ala Ser Leu
    50                  55                  60

Glu Gly Arg Val Thr Met Ser Val Asp Thr Ser Thr Asn Thr Ala Tyr
65                  70                  75                  80

Leu Gln Trp Thr Ser Leu Lys Val Ser Asp Thr Gly Met Tyr Tyr Cys
                85                  90                  95

Ala Arg Arg Asp Arg Asn Cys Ser Gly Thr Thr Cys Tyr Pro Arg Trp
            100                 105                 110

Phe Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120                 125
```

<210> 160
<211> 113
<212> PRT
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 160

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

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

Gly Asn Ser Lys Asp Phe Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
        35                  40                  45

Pro Pro Arg Leu Leu Val Tyr Trp Ala Ser Thr Arg Asp Ser Gly Val
    50                  55                  60

Pro Glu Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65                  70                  75                  80
```

Ile Ser Arg Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys His Gln
85 90 95

Tyr His Ser Thr Pro Leu Ser Phe Gly Gly Gly Thr Lys Val Glu Ile
100 105 110

Lys

<210> 161
<211> 378
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 161
caggtgcagc tggtgcagtc tggggcagag gtgaaaaagc cgtgggagtc tctgaagatc 60

tcctgtttgg cttctggata cgactttgcc tcctactgga tcggctgggt gcgccagatg 120

cccgggaaag gcctggagtg ggtggggatc atctatcctg atgactctga taccagatac 180

aatgcgtcac tagaaggccg ggtcaccatg tcagtcgaca cgtccaccaa taccgcctac 240

ctgcagtgga ccagcctgaa ggtctcggac accggcatgt attactgtgc gagacgggat 300

cgcaattgta gtgggactac gtgttatccg aggtggttcg actcctgggg ccagggaacc 360

ctggtcaccg tctcttca 378

<210> 162
<211> 339
<212> DNA
<213> artificial

<220>
<223> Combination of PCR-generated and human sequence

<400> 162
gaaattgtgc tgactcagtc tccagacttc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcca gagtcttttc tacagcggca acagtaagga cttcttagct 120

tggtaccagc agaaaccagg acagcctcct cgcttgctcg tttactgggc atctacccgg 180

gattccgggg tccctgagcg attcagtggc agcgggtctg ggacagattt tactctcacc 240

atcagccgcc tgcaggctga agatgtggct ctttattact gtcaccaata tcatagtact 300

cctctctctt tcggcggagg gaccaaggtg gaaatcaaa 339

<210> 163
<211> 5
<212> PRT
<213> Homo sapiens

<400> 163

Ser Tyr Trp Met His
1 5

<210> 164
<211> 17
<212> PRT
<213> Homo sapiens

<400> 164

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

Gly

<210> 165
<211> 9
<212> PRT
<213> Homo sapiens

<400> 165

Gly Arg Ser Tyr Gly Phe Phe Asp Tyr
1 5

<210> 166
<211> 12
<212> PRT
<213> Homo sapiens

<400> 166

Arg Ala Ser Gln Ile Ile Ser Ser Asn Tyr Leu Ala
1 5 10

<210> 167
<211> 7
<212> PRT
<213> Homo sapiens

<400> 167

Gly Ala Ser Ser Arg Ala Thr
1 5

<210> 168
<211> 9
<212> PRT
<213> Homo sapiens

<400> 168

Gln Gln Tyr Gly Thr Ser Pro Arg Thr
1 5

<210> 169
<211> 5
<212> PRT
<213> Homo sapiens

<400> 169

Thr Tyr Gly Met His
1 5

<210> 170
<211> 17
<212> PRT
<213> Homo sapiens

<400> 170

Val Ile Trp Phe Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 171
<211> 15
<212> PRT
<213> Homo sapiens

<400> 171

Asp Trp Trp Glu Ala Gly Cys Arg Pro Cys Tyr Phe Phe Asp Tyr
1 5 10 15

<210> 172
<211> 17
<212> PRT
<213> Homo sapiens

<400> 172

Lys Ser Ser Gln Ser Val Leu Tyr Ser Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 173
<211> 7
<212> PRT
<213> Homo sapiens

<400> 173

Trp Ala Ser Thr Arg Glu Ser
1 5

<210> 174
<211> 9
<212> PRT
<213> Homo sapiens

<400> 174

Gln Gln Tyr Tyr Ser Pro Pro Leu Thr
1 5

<210> 175
<211> 5
<212> PRT
<213> Homo sapiens

<400> 175

Asp Tyr Trp Met Ser
1   5

<210> 176
<211> 17
<212> PRT
<213> Homo sapiens

<400> 176

Asn Ile Asn Gln Asp Gly Ser Ala Ala Tyr Tyr Val Asp Ser Val Arg
1   5   10   15

Gly

<210> 177
<211> 18
<212> PRT
<213> Homo sapiens

<400> 177

Asp Ala His Tyr Tyr Asp Arg Asn Arg Asn Asn Tyr Tyr Tyr Tyr Phe
1   5   10   15

Asp Phe

<210> 178
<211> 11
<212> PRT
<213> Homo sapiens

<400> 178

Arg Ala Ser Gln Ser Val Gly Ala Asn Leu Ala
1 5 10

<210> 179
<211> 7
<212> PRT
<213> Homo sapiens

<400> 179

Ser Ala Ser Thr Arg Ala Thr
1 5

<210> 180
<211> 9
<212> PRT
<213> Homo sapiens

<400> 180

Gln Gln Tyr Asn Asn Trp Pro Arg Thr
1 5

<210> 181
<211> 7
<212> PRT
<213> Homo sapiens

<400> 181

Ser Gly Asn Tyr Tyr Trp Ser
1 5

<210> 182
<211> 16
<212> PRT
<213> Homo sapiens

<400> 182

Arg Met Ser Ser Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 183
<211> 17

<212> PRT
<213> Homo sapiens

<400> 183

Glu Ser Gly Ser Ser Trp Gln Asn His Tyr Tyr Tyr Tyr Gly Met Asp
1   5   10   15

Val

<210> 184
<211> 9
<212> PRT
<213> Homo sapiens

<400> 184

Gln Gln Tyr Tyr Ser Thr Pro Leu Thr
1   5

<210> 185
<211> 5
<212> PRT
<213> Homo sapiens

<400> 185

Asn Tyr Ala Met Ser
1   5

<210> 186
<211> 16
<212> PRT
<213> Homo sapiens

<400> 186

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

<210> 187
<211> 15
<212> PRT
<213> Homo sapiens

<400> 187

Glu Ser Gly Arg Trp Gly Gly Gly Thr Leu Tyr Gly Ala His Tyr
1 5 10 15

<210> 188
<211> 17
<212> PRT
<213> Homo sapiens

<400> 188

Lys Ser Ser Gln Ser Leu Leu Tyr Asn Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Thr

<210> 189
<211> 9
<212> PRT
<213> Homo sapiens

<400> 189

Gln Gln Tyr Tyr Ser Ser Pro Leu Thr
1 5

<210> 190
<211> 5
<212> PRT
<213> Homo sapiens

<400> 190

Asp Tyr Asn Val His
1 5

<210> 191
<211> 17
<212> PRT
<213> Homo sapiens

<400> 191

Arg Ile Ser Pro Asn Ser Gly Gly Thr Lys Tyr Ala Gln Lys Phe Gln
1   5   10   15

Gly

<210> 192
<211> 12
<212> PRT
<213> Homo sapiens

<400> 192

Gly His Cys Asp Gly Thr Thr Cys Ser Arg Ala Tyr
1   5   10

<210> 193
<211> 16
<212> PRT
<213> Homo sapiens

<400> 193

Arg Ser Ser Gln Ser Leu Leu His Arg Ser Gly His Lys Tyr Leu His
1   5   10   15

<210> 194
<211> 7
<212> PRT
<213> Homo sapiens

<400> 194

Leu Gly Ser Asn Arg Ala Ser
1   5

<210> 195
<211> 9
<212> PRT
<213> Homo sapiens

<400> 195

Met Gln Thr Leu Gln Thr Pro Trp Thr

1 5

<210> 196
<211> 5
<212> PRT
<213> Homo sapiens

<400> 196

Gly Tyr Tyr Leu His
1 5

<210> 197
<211> 17
<212> PRT
<213> Homo sapiens

<400> 197

Trp Val Asn Pro Arg Ser Gly Gly Thr Ser Tyr Pro Pro Lys Phe Gln
1 5 10 15

Gly

<210> 198
<211> 11
<212> PRT
<213> Homo sapiens

<400> 198

Gly Arg Ile Pro Asp Val Thr Ala Phe Asp Ile
1 5 10

<210> 199
<211> 17
<212> PRT
<213> Homo sapiens

<400> 199

Lys Ser Ser Glu Ser Leu Leu Tyr Asp Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 200
<211> 9
<212> PRT
<213> Homo sapiens

<400> 200

Gln Gln Tyr Phe Ser Thr Pro Trp Thr
1   5

<210> 201
<211> 5
<212> PRT
<213> Homo sapiens

<400> 201

Asp Tyr Trp Thr Ala
1   5

<210> 202
<211> 17
<212> PRT
<213> Homo sapiens

<400> 202

Ile Ile Tyr Ser Gly Asp Ser Asp Thr Arg Tyr His Pro Ser Val Gln
1   5   10   15

Gly

<210> 203
<211> 13
<212> PRT
<213> Homo sapiens

<400> 203

Leu Asp Ala Arg Val Asp Ala Gly Trp Gln Leu Asp Ser

1 5 10

<210> 204
<211> 17
<212> PRT
<213> Homo sapiens

<400> 204

Lys Ser Ser Gln Ser Val Phe Ser Arg Asp Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 205
<211> 7
<212> PRT
<213> Homo sapiens

<400> 205

Trp Ala Ser Ser Arg Glu Ser
1 5

<210> 206
<211> 9
<212> PRT
<213> Homo sapiens

<400> 206

Gln His Tyr Phe Asn Thr Pro His Asn
1 5

<210> 207
<211> 5
<212> PRT
<213> Homo sapiens

<400> 207

Asn Tyr Trp Ile Gly
1 5

<210> 208
<211> 17
<212> PRT
<213> Homo sapiens

<400> 208

Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser Pro Pro Phe Gln
1   5   10   15

Gly

<210> 209
<211> 12
<212> PRT
<213> Homo sapiens

<400> 209

Val Gly Arg Pro Ser Lys Gly Gly Trp Phe Asp Pro
1   5   10

<210> 210
<211> 17
<212> PRT
<213> Homo sapiens

<400> 210

Glu Ser Ser Gln Thr Leu Leu Tyr Ser Ser Asn Glu Lys Asn Tyr Leu
1   5   10   15

Ala

<210> 211
<211> 7
<212> PRT
<213> Homo sapiens

<400> 211

Trp Ala Ser Thr Pro Glu Ser

1 5

<210> 212
<211> 9
<212> PRT
<213> Homo sapiens

<400> 212

Gln Gln Tyr Tyr Asn Ser Pro Tyr Thr
1 5

<210> 213
<211> 5
<212> PRT
<213> Homo sapiens

<400> 213

Asp Ser Tyr Met Ser
1 5

<210> 214
<211> 17
<212> PRT
<213> Homo sapiens

<400> 214

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

Gly

<210> 215
<211> 17
<212> PRT
<213> Homo sapiens

<400> 215

Val Gln Thr Thr Met Ile Glu Gly Lys Thr Lys Leu Asn Tyr Phe Asp
1 5 10 15

Tyr

<210> 216
<211> 17
<212> PRT
<213> Homo sapiens

<400> 216

Glu Ser Ser His Ser Leu Leu Tyr Arg Ser Asn Asn Arg Asn Tyr Leu
1   5   10   15

Ala

<210> 217
<211> 9
<212> PRT
<213> Homo sapiens

<400> 217

Gln Gln Phe Tyr Thr Thr Pro Tyr Thr
1   5

<210> 218
<211> 17
<212> PRT
<213> Homo sapiens

<400> 218

Glu Ser Ser His Ser Leu Leu Tyr Arg Ser Asn Asn Lys Asn Tyr Leu
1   5   10   15

Ala

<210> 219
<211> 5
<212> PRT
<213> Homo sapiens

<400> 219

Lys Ala Trp Met Ser
1   5

<210> 220
<211> 19
<212> PRT
<213> Homo sapiens

<400> 220

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

Val Arg Gly

<210> 221
<211> 13
<212> PRT
<213> Homo sapiens

<400> 221

Leu Ile His Cys Asp Leu Ser Ala Cys Leu Pro His Phe
1   5   10

<210> 222
<211> 5
<212> PRT
<213> Homo sapiens

<400> 222

Asn Tyr Trp Ile Ala
1   5

<210> 223
<211> 17
<212> PRT
<213> Homo sapiens

<400> 223

Ile Ile Tyr Pro Gly Asp Ser Asp Thr Thr Tyr Ser Pro Ser Phe Gln
1   5   10   15

Gly

<210> 224
<211> 15
<212> PRT
<213> Homo sapiens

<400> 224

Leu Pro Arg Thr Asp Gly Asp Asn Ser Ile Gly Tyr Phe Glu Tyr
1   5   10   15

<210> 225
<211> 17
<212> PRT
<213> Homo sapiens

<400> 225

Lys Ser Ser Gln Ser Val Leu Tyr Ser Ser Asn Ser Glu Asn Tyr Leu
1   5   10   15

Ala

<210> 226
<211> 9
<212> PRT
<213> Homo sapiens

<400> 226

Gln Gln Tyr Tyr Ser Thr Pro Phe Thr
1   5

<210> 227
<211> 5
<212> PRT
<213> Homo sapiens

<400> 227

Ser Tyr Ser Met Asn
1   5

<210> 228
<211> 17
<212> PRT
<213> Homo sapiens

<400> 228

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

Gly

<210> 229
<211> 12
<212> PRT
<213> Homo sapiens

<400> 229

Val Pro Ala Pro Arg Leu Gly Gly Ser Tyr Thr Tyr
1   5   10

<210> 230
<211> 12
<212> PRT
<213> Homo sapiens

<400> 230

Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala
1   5   10

<210> 231
<211> 9
<212> PRT
<213> Homo sapiens

<400> 231

Gln Gln Tyr Gly Thr Ser Pro Leu Thr
1   5

<210> 232
<211> 5
<212> PRT
<213> Homo sapiens

<400> 232

Asp Ala Trp Met Ser
1   5

<210> 233
<211> 19
<212> PRT
<213> homo sapiens

<400> 233

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

Val Arg Gly

<210> 234
<211> 8
<212> PRT
<213> homo sapiens

<400> 234

Gly Leu Gly Gly Gly Thr Tyr Gly
1   5

<210> 235
<211> 16
<212> PRT
<213> Homo sapiens

<400> 235

Arg Ser Ser Ala Gly Leu Arg Asn Asn Asp Gly Asp Ile Leu Leu Ser

1 5 10 15

<210> 236
<211> 7
<212> PRT
<213> homo sapiens

<400> 236

Arg Val Ser Arg Arg Asp Ser
1 5

<210> 237
<211> 5
<212> PRT
<213> homo sapiens

<400> 237

Met Arg Gly Pro Tyr
1 5

<210> 238
<211> 5
<212> PRT
<213> Homo sapiens

<400> 238

Ile Tyr Glu Met Asn
1 5

<210> 239
<211> 17
<212> PRT
<213> Homo sapiens

<400> 239

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

Gly

<210> 240
<211> 10
<212> PRT
<213> Homo sapiens

<400> 240

Pro Arg Ile Gly Ala Arg Val Phe Asp Val
1   5   10

<210> 241
<211> 17
<212> PRT
<213> Homo sapiens

<400> 241

Lys Ser Ser Gln Thr Leu Leu Tyr Lys Ser Asn Asn Glu Asn Tyr Leu
1   5   10   15

Ala

<210> 242
<211> 9
<212> PRT
<213> Homo sapiens

<400> 242

Gln Gln Tyr Phe Thr Thr Ala Leu Thr
1   5

<210> 243
<211> 5
<212> PRT
<213> Homo sapiens

<400> 243

Asp His Trp Ile Gly
1   5

<210> 244

<211> 17
<212> PRT
<213> Homo sapiens

<400> 244

Ile Ile Phe Pro Glu Asp Ser Asp Thr Arg Tyr Ser Gly Ser Phe Glu
1 5 10 15

Gly

<210> 245
<211> 12
<212> PRT
<213> Homo sapiens

<400> 245

Val Ser Val Val Arg Lys Gly Gly Trp Phe Asp Pro
1 5 10

<210> 246
<211> 17
<212> PRT
<213> Homo sapiens

<400> 246

Lys Ser Ser Gln Ser Leu Leu Tyr Thr Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 247
<211> 17
<212> PRT
<213> Homo sapiens

<400> 247

Ile Ile Phe Pro Gly Asp Ser Asp Ile Arg Tyr Ser Pro Ser Phe Glu
1 5 10 15

Gly

<210> 248
<211> 12
<212> PRT
<213> Homo sapiens

<400> 248

Val Ala Val Val Arg Lys Gly Gly Trp Phe Asp Ser
1   5   10

<210> 249
<211> 17
<212> PRT
<213> Homo sapiens

<400> 249

Lys Ser Thr Gln Ser Leu Leu Trp Ser Ala Asn Asn Lys Asn Tyr Leu
1   5   10   15

Ala

<210> 250
<211> 5
<212> PRT
<213> Homo sapiens

<400> 250

Ser Tyr Trp Ile Gly
1   5

<210> 251
<211> 17
<212> PRT
<213> Homo sapiens

<400> 251

Ile Ile Tyr Pro Asp Asp Ser Asp Thr Arg Tyr Asn Ala Ser Leu Glu

1 5 10 15

Gly

<210> 252
<211> 17
<212> PRT
<213> Homo sapiens

<400> 252

Arg Asp Arg Asn Cys Ser Gly Thr Thr Cys Tyr Pro Arg Trp Phe Asp
1 5 10 15

Ser

<210> 253
<211> 17
<212> PRT
<213> Homo sapiens

<400> 253

Lys Ser Ser Gln Ser Leu Phe Tyr Ser Gly Asn Ser Lys Asp Phe Leu
1 5 10 15

Ala

<210> 254
<211> 7
<212> PRT
<213> Homo sapiens

<400> 254

Trp Ala Ser Thr Arg Asp Ser
1 5

<210> 255
<211> 9

<212> PRT
<213> Homo sapiens

<400> 255

His Gln Tyr His Ser Thr Pro Leu Ser
1   5

<210> 256
<211> 296
<212> DNA
<213> Homo sapiens

<400> 256
gaggtgcagc tggtggagtc cgggggaggc ttagttcagc ctgggggtc cctgagactc   60

tcctgtgcag cctctggatt caccttcagt agctactgga tgcactgggt ccgccaagct   120

ccagggaagg ggctggtgtg ggtctcacgt attaatagtg atgggagtag cacaagctac   180

gcggactccg tgaagggccg attcaccatc tccagagaca acgccaagaa cacgctgtat   240

ctgcaaatga acagtctgag agccgaggac acggctgtgt attactgtgc aagaga   296

<210> 257
<211> 107
<212> PRT
<213> Homo sapiens

<400> 257

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

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

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

Lys Gly Arg Phe Thr Phe Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr

65 70 75 80

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

Thr Arg Gly Arg Ser Tyr Gly Phe Phe Asp Tyr
100 105

<210> 258
<211> 288
<212> DNA
<213> Homo sapiens

<400> 258
gaaattgtgt tgacgcagtc tccagccacc ctgtctttgt ctccagggga aagagccacc 60

ctctcctgca gggccagtca gagtgttagc agcagctact tagcctggta ccagcagaaa 120

cctggccagg ctcccaggct cctcatctat gatgcatcca gcagggccac tggcatccca 180

gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240

cctgaagatt ttgcagtcta ttactgtcag cagcgtagca actggcat 288

<210> 259
<211> 98
<212> PRT
<213> Homo sapiens

<400> 259

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

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

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

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

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


Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro
                85                  90                  95


Arg Thr



<210>  260
<211>  296
<212>  DNA
<213>  Homo sapiens

<400>  260
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc       60

tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct      120

ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat      180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat      240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagaga          296


<210>  261
<211>  113
<212>  PRT
<213>  Homo sapiens

<400>  261

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


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


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


Ala Val Ile Trp Phe Asp Gly Asn 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 Val Tyr
65 70 75 80

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

Ala Arg Asp Trp Trp Glu Ala Gly Cys Arg Pro Cys Tyr Phe Phe Asp
100 105 110

Tyr

<210> 262
<211> 305
<212> DNA
<213> Homo sapiens

<400> 262
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60

atcaactgca agtccagcca gagtgtttta tacagctcca acaataagaa ctacttagct 120

tggtaccagc agaaaccagg acagcctcct aagctgctca tttactgggc atctacccgg 180

gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtact 300

cctcc 305

<210> 263
<211> 103
<212> PRT
<213> Homo sapiens

<400> 263

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

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser

```
            20                  25                  30

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

Pro Pro Lys Val Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

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

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95

Tyr Tyr Ser Pro Pro Leu Thr
            100
```

<210> 264
<211> 296
<212> DNA
<213> Homo sapiens

<400> 264

```
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc       60

tcctgtgcag cctctggatt caccttcagt agctatgcta tgcactgggt ccgccaggct      120

ccagggaagg gactggaata tgtttcagct attagtagta atgggggtag cacatattat      180

gcaaactctg tgaagggcag attcaccatc tccagagaca attccaagaa cacgctgtat      240

cttcaaatgg gcagcctgag agctgaggac atggctgtgt attactgtgc gagaga          296
```

<210> 265
<211> 116
<212> PRT
<213> Homo sapiens

<400> 265

```
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 Asp Tyr
            20                  25                  30

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

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

Arg Gly Arg Phe Thr Ile Ser Arg Asp Ser Ala Glu Asn Ser Leu Asn
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 Ala His Tyr Tyr Asp Arg Asn Arg Asn Asn Tyr Tyr Tyr
            100                 105                 110

Tyr Phe Asp Phe
        115
```

<210> 266
<211> 287
<212> DNA
<213> Homo sapiens

<400> 266
gaaatagtga tgacgcagtc tccagccacc ctgtctgtgt ctccagggga aagagccacc 60

ctctcctgca gggccagtca gagtgttagc agcaacttag cctggtacca gcagaaacct 120

ggccaggctc ccaggctcct catctatggt gcatccacca gggccactgg tatcccagcc 180

aggttcagtg gcagtgggtc tgggacagag ttcactctca ccatcagcag cctgcagtct 240

gaagattttg cagtttatta ctgtcagcag tataataact ggcctcc 287

<210> 267
<211> 97
<212> PRT
<213> Homo sapiens

<400> 267

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


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


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


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


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


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


Thr
```

<210> 268
<211> 291
<212> DNA
<213> Homo sapiens

<400> 268

```
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc       60

acctgcactg tctctggtgg ctccatcagc agtggtggtt actactggag ctggatccgc      120

cagcacccag ggaagggcct ggagtggatt gggtacatct attacagtgg gagcacctac      180

tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc      240

tccctgaagc tgagctctgt gaccgcggac gcggccgtgt attactgtgc g                291
```

<210> 269
<211> 116

<212> PRT
<213> Homo sapiens

<400> 269

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

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

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

Trp Ile Gly Arg Met Ser Ser Ser Gly Ser Thr Asn Tyr Asn Pro Ser
    50   55   60

Leu Lys Ser Arg Val Thr Met Ser Glu Asp Thr Ser Lys Asn Gln Phe
65   70   75   80

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

Cys Ala Arg Glu Ser Gly Ser Ser Trp Gln Asn His Tyr Tyr Tyr Tyr
            100   105   110

Gly Met Asp Val
        115

<210> 270
<211> 103
<212> PRT
<213> Homo sapiens

<400> 270

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

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

```
Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Ser Gly Gln
        35                  40                  45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

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

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95

Tyr Tyr Ser Thr Pro Leu Thr
            100
```

<210> 271
<211> 296
<212> DNA
<213> Homo sapiens

<400> 271

```
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc       60

tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct      120

ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactac      180

gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat      240

ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaga          296
```

<210> 272
<211> 112
<212> PRT
<213> Homo sapiens

<400> 272

```
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 Asn Tyr
            20                  25                  30

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

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

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

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

Lys Glu Ser Gly Arg Trp Gly Gly Gly Thr Leu Tyr Gly Ala His Tyr
            100                 105                 110
```

<210> 273
<211> 103
<212> PRT
<213> Homo sapiens

<400> 273

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

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

Ser Asn Asn Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln
        35                  40                  45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65                  70                  75                  80
```

```
Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95


Tyr Tyr Ser Ser Pro Leu Thr
            100


<210>  274
<211>  296
<212>  DNA
<213>  Homo sapiens

<400>  274
caggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc       60

tcctgcaagg cttctggata caccttcacc ggctactata tgcactgggt gcgacaggcc      120

cctggacaag ggcttgagtg gatgggatgg atcaacccta acagtggtgg cacaaactat      180

gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac      240

atggagctga gcaggctgag atctgacgac acggccgtgt attactgtgc gagaga          296


<210>  275
<211>  110
<212>  PRT
<213>  Homo sapiens

<400>  275

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


Pro Val Lys Val Ser Cys Glu Thr Ser Gly Tyr Arg Phe Ser Asp Tyr
            20                  25                  30


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


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


Gln Gly Arg Val Thr Met Thr Arg Asp Met Ser Met Asn Thr Ala Tyr
```

65 70 75 80

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

Val Arg Gly His Cys Asp Gly Thr Thr Cys Ser Arg Ala Tyr
100 105 110

<210> 276
<211> 302
<212> DNA
<213> Homo sapiens

<400> 276
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60

atctcctgca ggtctagtca gagcctcctg catagtaatg gatacaacta tttggattgg 120

tacctgcaga agccagggca gtctccacag ctcctgatct atttgggttc taatcgggcc 180

tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240

agcagagtgg aggctgagga tgttggggtt tattactgca tgcaagctct acaaactcct 300

cc 302

<210> 277
<211> 102
<212> PRT
<213> Homo sapiens

<400> 277

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Arg
20 25 30

Ser Gly His Lys Tyr Leu His Trp Tyr Leu Gln Arg Pro Gly Gln Ser
35 40 45

Pro Gln Val Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro

```
    50                  55                  60

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

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

Leu Gln Thr Pro Trp Thr
            100
```

<210> 278
<211> 296
<212> DNA
<213> Homo sapiens

<400> 278

```
caggtccagc ttgtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtt       60

tcctgcaagg cttctggata caccttcact agctatgcta tgcattgggt gcgccaggcc      120

cccggacaaa ggcttgagtg gatgggatgg atcaacgctg gcaatggtaa cacaaaatat      180

tcacagaagt tccagggcag agtcaccatt accagggaca catccgcgag cacagcctac      240

atggagctga gcagcctgag atctgaagac acggctgtgt attactgtgc gagaga          296
```

<210> 279
<211> 109
<212> PRT
<213> Homo sapiens

<400> 279

```
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 Thr Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
            20                  25                  30

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

```
Gly Trp Val Asn Pro Arg Ser Gly Gly Thr Ser Tyr Pro Pro Lys Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Asn Thr Ala Tyr
65                  70                  75                  80

Met Asp Leu Thr Trp Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Val Gly Arg Ile Pro Asp Val Thr Ala Phe Asp Ile
            100                 105
```

<210> 280
<211> 103
<212> PRT
<213> Homo sapiens

<400> 280

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

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

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

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

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

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

Tyr Phe Ser Thr Pro Trp Thr
            100
```

<210> 281
<211> 296
<212> DNA
<213> Homo sapiens

<400> 281
gaggtgcagc tggtgcagtc tggagcagag gtgaaaaagc ccggggagtc tctgaagatc 60

tcctgtaagg gttctggata cagctttacc agctactgga tcggctgggt gcgccagatg 120

cccgggaaag gcctggagtg gatggggatc atctatcctg gtgactctga taccagatac 180

agcccgtcct tccaaggcca ggtcaccatc tcagccgaca agtccatcag caccgcctac 240

ctgcagtgga gcagcctgaa ggcctcggac accgccatgt attactgtgc gagaca 296

<210> 282
<211> 111
<212> PRT
<213> Homo sapiens

<400> 282

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

Ser Leu Lys Ile Ser Cys Lys Thr Ser Gly Tyr Ile Phe Ser Asp Tyr
20 25 30

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

Gly Ile Ile Tyr Ser Gly Asp Ser Asp Thr Arg Tyr His Pro Ser Val
50 55 60

Gln Gly His Val Thr Met Ser Thr Asp Ser Ser Leu Thr Thr Ala Tyr
65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Gly Ile Tyr Tyr Cys
85 90 95

```
Ala Arg Leu Asp Ala Arg Val Asp Ala Gly Trp Gln Leu Asp Ser
            100                 105                 110


<210>  283
<211>  103
<212>  PRT
<213>  Homo sapiens

<400>  283

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


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


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


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


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


Ile Asp Asn Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys Gln His
                85                  90                  95


Tyr Phe Asn Thr Pro His Asn
            100


<210>  284
<211>  110
<212>  PRT
<213>  Homo sapiens

<400>  284

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

```
Ser Leu Lys Ile Ser Cys Glu Ala Ser Gly Tyr Ser Phe Thr Asn Tyr
            20                  25                  30

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

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

Gln Gly Gln Val Thr Ile Thr Ala Asp Arg Ser Ile Thr Thr Ala Tyr
65                  70                  75                  80

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

Ala Arg Val Gly Arg Pro Ser Lys Gly Gly Trp Phe Asp Pro
            100                 105                 110
```

<210> 285
<211> 103
<212> PRT
<213> Homo sapiens

<400> 285

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

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

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

Pro Pro Lys Leu Leu Ile Ser Trp Ala Ser Thr Pro Glu Ser Gly Val
    50                  55                  60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser 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 Asn Ser Pro Tyr Thr
100

<210> 286
<211> 296
<212> DNA
<213> Homo sapiens

<400> 286
caggtgcagc tggtggagtc tgggggaggc ttggtcaagc ctggagggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt gactactaca tgagctggat ccgccaggct 120

ccagggaagg ggctggagtg ggtttcatac attagtagta gtagtagtta cacaaactac 180

gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagaga 296

<210> 287
<211> 115
<212> PRT
<213> Homo sapiens

<400> 287

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

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

Tyr Met Ser Trp Ile Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr

65 70 75 80

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

Ala Arg Val Gln Thr Thr Met Ile Glu Gly Lys Thr Lys Leu Asn Tyr
100 105 110

Phe Asp Tyr
115

<210> 288
<211> 103
<212> PRT
<213> Homo sapiens

<400> 288

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

Glu Arg Val Thr Ile Thr Cys Glu Ser Ser His Ser Leu Leu Tyr Arg
20 25 30

Ser Asn Asn Arg Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Arg Gln
35 40 45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
50 55 60

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

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

Phe Tyr Thr Thr Pro Tyr Thr
100

<210> 289
<211> 115
<212> PRT
<213> Homo sapiens

<400> 289

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

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

Tyr Met Ser Trp Ile Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Leu
        35   40   45

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

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

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

Ala Arg Val Gln Thr Thr Met Ile Glu Gly Lys Thr Lys Leu Asn Tyr
            100   105   110

Phe Asp Tyr
        115

<210> 290
<211> 103
<212> PRT
<213> Homo sapiens

<400> 290

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

Glu Arg Val Thr Ile Ser Cys Glu Ser Ser His Ser Leu Leu Tyr Arg
            20   25   30

Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Arg Gln
        35   40   45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50   55   60

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

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

Phe Tyr Thr Thr Pro Tyr Thr
            100

<210> 291
<211> 302
<212> DNA
<213> Homo sapiens

<400> 291
gaggtgcagc tggtggagtc tgggggaggc ttggtaaagc ctgggggtc ccttagactc 60

tcctgtgcag cctctggatt cactttcagt aacgcctgga tgagctgggt ccgccaggct 120

ccagggaagg ggctggagtg ggttggccgt attaaaagca aaactgatgg tgggacaaca 180

gactacgctg cacccgtgaa aggcagattc accatctcaa gagatgattc aaaaaacacg 240

ctgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccaca 300

ga   302

<210> 292
<211> 111
<212> PRT
<213> Homo sapiens

<400> 292

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


Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Thr Lys Ala Trp Met
            20                  25                  30


Ser Trp Val Arg Gln Thr Pro Gly Arg Gly Leu Glu Trp Leu Gly Arg
        35                  40                  45


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


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


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


Thr Thr Leu Ile His Cys Asp Leu Ser Ala Cys Leu Pro His Phe
            100                 105                 110


<210>  293
<211>  103
<212>  PRT
<213>  Homo sapiens

<400>  293

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


Glu Arg Val Thr Ile Ser Cys Glu Ser Ser His Ser Leu Leu Tyr Arg
            20                  25                  30


Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Arg Gln
        35                  40                  45


Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60
```

```
Pro Asp Arg Phe Ser Gly Ser Gly Ser Glu Thr Asp Phe Thr Leu Thr
65                  70                  75                  80


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


Phe Tyr Thr Thr Pro Tyr Thr
            100


<210>  294
<211>  294
<212>  DNA
<213>  Homo sapiens

<400>  294
gaggtgcagc tggtgcagtc tggagcagag gtgaaaaagc cgggggagtc tctgaagatc       60

tcctgtaagg gttctggata cagctttacc agctactgga tcggctgggt gcgccagatg      120

cccgggaaag gcctggagtg gatggggatc atctatcctg gtgactctga taccagatac      180

agcccgtcct tccaaggcca ggtcaccatc tcagccgaca agtccatcag caccgcctac      240

ctgcagtgga gcagcctgaa ggcctcggac accgccatgt attactgtgc gaga            294


<210>  295
<211>  113
<212>  PRT
<213>  Homo sapiens

<400>  295

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


Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Ser Asn Tyr
            20                  25                  30


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


Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Thr Tyr Ser Pro Ser Phe
```

```
    50                  55                  60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Val Ser Thr Thr Tyr
65                  70                  75                  80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Ser Ala Met Tyr Tyr Cys
                85                  90                  95

Ala Arg Leu Pro Arg Thr Asp Gly Asp Asn Ser Ile Gly Tyr Phe Glu
            100                 105                 110

Tyr
```

<210> 296
<211> 103
<212> PRT
<213> Homo sapiens

<400> 296

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

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

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

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

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

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95
```

Tyr Tyr Ser Thr Pro Phe Thr
100

<210> 297
<211> 296
<212> DNA
<213> Homo sapiens

<400> 297
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt agctatagca tgaactgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtttcatac attagtagta gtagtagtac catatactac 180

gcagactctg tgaagggccg attcaccatc tccagagaca atgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagaga 296

<210> 298
<211> 108
<212> PRT
<213> Homo sapiens

<400> 298

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

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

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

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

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

```
Val Pro Ala Pro Arg Leu Gly Gly Ser Tyr Thr Tyr
            100                 105


<210>  299
<211>  290
<212>  DNA
<213>  Homo sapiens

<400>  299
gaaattgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc       60

ctctcctgca gggccagtca gagtgttagc agcagctact tagcctggta ccagcagaaa      120

cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatccca      180

gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag      240

cctgaagatt ttgcagtgta ttactgtcag cagtatggta gctcacctcc                 290


<210>  300
<211>  98
<212>  PRT
<213>  Homo sapiens

<400>  300

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


Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser
            20                  25                  30


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


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


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

```
Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro
                85                  90                  95


Leu Thr
```

<210> 301
<211> 302
<212> DNA
<213> Homo sapiens

<400> 301

```
gaggtgcagc tggtggagtc tgggggagcc ttggtaaagc ctgggggtc ccttagactc       60

tcctgtgcag cctctggatt cactttcagt aacgcctgga tgagctgggt ccgccaggct      120

ccagggaagg ggctggagtg ggttggccgt attaaaagca aaactgatgg tgggacaaca      180

gactacgctg cacccgtgaa aggcagattc accatctcaa gagatgattc aaaaaacacg      240

ctgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccaca      300

ga                                                                     302
```

<210> 302
<211> 108
<212> PRT
<213> Homo sapiens

<400> 302

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


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


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


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

```
His Val Arg Gly Arg Phe Thr Ile Ala Arg Asp Asp Ser Asn Arg Thr
65                  70                  75                  80


Leu Tyr Leu Gln Met Ser Asn Leu Lys Ile Asp Asp Thr Ala Val Tyr
                85                  90                  95


Tyr Cys Thr Thr Gly Leu Gly Gly Gly Thr Tyr Gly
            100                 105


<210>  303
<211>  302
<212>  DNA
<213>  Homo sapiens

<400>  303
gatgttgtga tgactcagtc tccactctcc ctgcccgtca cccttggaca gccggcctcc       60

atctcctgca ggtctagtca aagcctcgta tacagtgatg gaaacaccta cttgaattgg      120

tttcagcaga ggccaggcca atctccaagg cgcctaattt ataaggtttc taaccgggac      180

tctggggtcc cagacagatt cagcggcagt gggtcaggca ctgatttcac actgaaaatc      240

agcagggtgg aggctgagga tgttggggtt tattactgca tgcaaggtac acactggcct      300

cc                                                                     302


<210>  304
<211>  98
<212>  PRT
<213>  Homo sapiens

<400>  304

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


Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Ala Gly Leu Arg Asn Asn
            20                  25                  30


Asp Gly Asp Ile Leu Leu Ser Trp Phe His Gln Arg Pro Gly Gln Ser
        35                  40                  45
```

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

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

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

Pro Tyr

<210> 305
<211> 296
<212> DNA
<213> Homo sapiens

<400> 305
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctggagggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt agttatgaaa tgaactgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtttcatac attagtagta gtggtagtac catatactac 180

gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgttt attactgtgc gagaga 296

<210> 306
<211> 108
<212> PRT
<213> Homo sapiens

<400> 306

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

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

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

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


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


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


Ala Lys Pro Arg Ile Gly Ala Arg Val Phe Asp Val
            100                 105


<210>  307
<211>  103
<212>  PRT
<213>  Homo sapiens

<400>  307

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


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


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


Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60


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


Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95


Tyr Phe Thr Thr Ala Leu Thr
```

100

<210> 308
<211> 296
<212> DNA
<213> Homo sapiens

<400> 308
gaggtgcagc tggtgcagtc tggagcagag gtgaaaaagc ccggggagtc tctgaagatc 60

tcctgtaagg gttctggata cagctttacc agctactgga tcggctgggt gcgccagatg 120

cccgggaaag gcctggagtg gatggggatc atctatcctg gtgactctga taccagatac 180

agcccgtcct tccaaggcca ggtcaccatc tcagccgaca agtccatcag caccgcctac 240

ctgcagtgga gcagcctgaa ggcctcggac accgccatgt attactgtgc gagaca 296

<210> 309
<211> 110
<212> PRT
<213> Homo sapiens

<400> 309

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

Ser Leu Lys Ile Ser Cys Glu Ala Ser Gly Tyr Met Phe Leu Asp His
20 25 30

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

Gly Ile Ile Phe Pro Glu Asp Ser Asp Thr Arg Tyr Ser Gly Ser Phe
50 55 60

Glu Gly Gln Val Thr Ile Ser Ala Asp Arg Ser Val Asn Thr Val Tyr
65 70 75 80

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

```
Ala Arg Val Ser Val Val Arg Lys Gly Gly Trp Phe Asp Pro
            100                 105                 110


<210>  310
<211>  103
<212>  PRT
<213>  Homo sapiens

<400>  310

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


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


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


Thr Pro Lys Leu Leu Ile Ile Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60


Pro Asp Arg Phe Thr 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 Asn Ser Pro Tyr Thr
            100


<210>  311
<211>  110
<212>  PRT
<213>  Homo sapiens

<400>  311

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

```
Ser Leu Lys Ile Ser Cys Glu Ala Ser Gly Tyr Ile Phe Ala Asp His
            20                  25                  30

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

Gly Ile Ile Phe Pro Gly Asp Ser Asp Ile Arg Tyr Ser Pro Ser Phe
    50                  55                  60

Glu Gly Gln Val Thr Ile Ser Val Asp Arg Ser Val Ser Thr Ala Phe
65                  70                  75                  80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Phe Cys
                85                  90                  95

Ala Arg Val Ala Val Val Arg Lys Gly Gly Trp Phe Asp Ser
            100                 105                 110
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<210> 312
<211> 103
<212> PRT
<213> Homo sapiens

<400> 312

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

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

Ala Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Arg Gln Lys Pro Arg Gln
        35                  40                  45

Thr Pro Glu Leu Leu Ile Thr 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
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```
Ile Thr Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95


Tyr Tyr Asn Ser Pro Tyr Thr
            100


<210>  313
<211>  115
<212>  PRT
<213>  Homo sapiens

<400>  313

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


Ser Leu Lys Ile Ser Cys Leu Ala Ser Gly Tyr Asp Phe Ala Ser Tyr
            20                  25                  30


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


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


Glu Gly Arg Val Thr Met Ser Val Asp Thr Ser Thr Asn Thr Ala Tyr
65                  70                  75                  80


Leu Gln Trp Thr Ser Leu Lys Val Ser Asp Thr Gly Met Tyr Tyr Cys
                85                  90                  95


Ala Arg Arg Asp Arg Asn Cys Ser Gly Thr Thr Cys Tyr Pro Arg Trp
            100                 105                 110


Phe Asp Ser
        115


<210>  314
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<211> 103
<212> PRT
<213> Homo sapiens

<400> 314

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

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

Gly Asn Ser Lys Asp Phe Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Arg Leu Leu Val Tyr Trp Ala Ser Thr Arg Asp Ser Gly Val
50 55 60

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

Ile Ser Arg Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys His Gln
85 90 95

Tyr His Ser Thr Pro Leu Ser
100

<210> 315
<211> 19
<212> PRT
<213> synthetic

<220>
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<222> (9)..(9)
<223> PHOSPHORYLATION

<220>
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<222> (12)..(12)
<223> PHOSPHORYLATION

<400> 315

Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg
1   5   10   15

Ser Arg Thr

<210> 316
<211> 19
<212> PRT
<213> synthetic

<400> 316

Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg
1   5   10   15

Ser Arg Thr

<210> 317
<211> 18
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 317

Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro
1   5   10   15

Thr Arg

<210> 318
<211> 18
<212> PRT
<213> synthetic

<400> 318

Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro
1   5   10   15

Thr Arg

<210> 319
<211> 18
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<400> 319

Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu
1   5   10   15

Pro Thr

<210> 320
<211> 18
<212> PRT
<213> synthetic

<400> 320

Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu
1   5   10   15

Pro Thr

<210> 321
<211> 68
<212> PRT
<213> synthetic

<400> 321

Gly Glu Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly
1   5   10   15

Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr
            20   25   30

Pro Pro Thr Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro
        35   40   45

Lys Ser Pro Ser Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val Pro
    50   55   60

Met Pro Asp Leu
65

<210> 322
<211> 19
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 322

Glu Pro Gly Ser Glu Thr Ser Asp Ala Lys Ser Thr Pro Thr Ala Glu
1   5   10   15

Asp Val Thr

<210> 323
<211> 20
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 323

Pro Gly Ser Glu Thr Ser Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp
1   5   10   15

Val Thr Ala Pro
            20

<210> 324
<211> 18
<212> PRT
<213> synthetic

<220>
<221> MOD_RES
<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 324

Ser Glu Thr Ser Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr

1 5 10 15

Ala Pro

<210> 325
<211> 62
<212> PRT
<213> synthetic

<400> 325

Gly Leu Lys Glu Ser Pro Leu Gln Thr Pro Thr Glu Asp Gly Ser Glu
1 5 10 15

Glu Pro Gly Ser Glu Thr Ser Asp Ala Lys Ser Thr Pro Thr Ala Glu
20 25 30

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

Ala Ala Gln Pro His Thr Glu Ile Pro Glu Gly Thr Thr Ala
50 55 60

<210> 326
<211> 24
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<222> (17)..(17)
<223> PHOSPHORYLATION

<400> 326

Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val Asp
1 5 10 15

Ser Pro Gln Leu Ala Thr Leu Ala
            20

<210> 327
<211> 53
<212> PRT
<213> synthetic

<400> 327

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

Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val
            20   25   30

Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val Ser Ala Ser Leu
        35   40   45

Ala Lys Gln Gly Leu
    50

<210> 328
<211> 25
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 328

Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro
1   5   10   15

Ser Ser Ala Lys Ser Arg Leu Gln Thr
            20   25

<210> 329
<211> 18
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 329

Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys Ser Arg Leu
1   5   10   15

Gln Thr

<210> 330
<211> 21
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 330

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
1   5   10   15

Ser Arg Leu Gln Thr
            20

<210> 331
<211> 71
<212> PRT
<213> synthetic

<400> 331

His Val Pro Gly Gly Gly Ser Val Gln Ile Val Tyr Lys Pro Val Asp
1 5 10 15

Leu Ser Lys Val Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile His His
20 25 30

Lys Pro Gly Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu Asp Phe
35 40 45

Lys Asp Arg Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His
50 55 60

Val Pro Gly Gly Gly Asn Lys
65 70

<210> 332
<211> 16
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<400> 332

Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
1 5 10 15

<210> 333
<211> 18
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 333

Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala
1   5   10   15

Lys Ser

<210> 334
<211> 26
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

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<223> PHOSPHORYLATION

<400> 334

Glu Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser
1   5   10   15

Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr
            20   25

<210> 335
<211> 18

<212> PRT
<213> synthetic

<220>
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<223> Phosphorylation of serine at amino acid 11

<220>
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<223> PHOSPHORYLATION

<400> 335

Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro
1 5 10 15

Gly Thr

<210> 336
<211> 19
<212> PRT
<213> synthetic

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<223> PHOSPHORYLATION

<220>
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<222> (12)..(12)
<223> PHOSPHORYLATION

<400> 336

Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro
1 5 10 15

Gly Thr Pro

<210> 337
<211> 22
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<222> (15)..(15)
<223> PHOSPHORYLATION

<400> 337

Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro
1   5   10   15

Gly Thr Pro Gly Ser Arg
            20

<210> 338
<211> 25
<212> PRT
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<400> 338

Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro
1   5   10   15

Gly Thr Pro Gly Ser Arg Ser Arg Thr
            20   25

<210> 339
<211> 18
<212> PRT
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<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 339

Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly
1   5   10   15

Thr Pro

<210> 340
<211> 21
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<213> synthetic

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<220>
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<400> 340

Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly
1   5   10   15

Thr Pro Gly Ser Arg
            20

<210> 341

<211> 24
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 341

Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly
1 5 10 15

Thr Pro Gly Ser Arg Ser Arg Thr
20

<210> 342
<211> 20
<212> PRT
<213> synthetic

<400> 342

Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr
1 5 10 15

Pro Gly Ser Arg
20

<210> 343
<211> 18
<212> PRT
<213> synthetic

<220>
<221> MOD_RES
<222> (11)..(11)

<400> 343

Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly
1 5 10 15

Ser Arg

<210> 344
<211> 21
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 344

Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly
1 5 10 15

Ser Arg Ser Arg Thr
20

<210> 345
<211> 24
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 345

Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly
1   5   10   15

Ser Arg Ser Arg Thr Pro Ser Leu
            20

<210> 346
<211> 26
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 346

Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly
1   5   10   15

Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr
            20   25

<210> 347
<211> 18
<212> PRT
<213> synthetic

<220>
<221> MOD_RES
<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 347

Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser
1   5   10   15

Arg Thr

<210> 348
<211> 21
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<222> (14)..(14)
<223> PHOSPHORYLATION

<400> 348

Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser
1   5   10   15

Arg Thr Pro Ser Leu
            20

<210> 349
<211> 23
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

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<222> (16)..(16)
<223> PHOSPHORYLATION

<400> 349

Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser
1   5   10   15

Arg Thr Pro Ser Leu Pro Thr
            20

<210> 350
<211> 25
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 350

Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser
1   5   10   15

Arg Thr Pro Ser Leu Pro Thr Pro Pro
            20   25

<210> 351
<211> 20
<212> PRT
<213> synthetic

<400> 351

Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser
1   5   10   15

Arg Thr Pro Ser
            20

<210> 352
<211> 18
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 352

Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro
1   5   10   15

Ser Leu

<210> 353
<211> 20
<212> PRT
<213> synthetic

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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<222> (13)..(13)
<223> PHOSPHORYLATION

<400> 353

Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro
1   5   10   15

Ser Leu Pro Thr
            20

<210> 354

<211> 22
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<222> (15)..(15)
<223> PHOSPHORYLATION

<400> 354

Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro
1   5   10   15

Ser Leu Pro Thr Pro Pro
            20

<210> 355
<211> 24
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
<221> MOD_RES
<222> (17)..(17)
<223> PHOSPHORYLATION

<400> 355

Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro
1   5   10   15

Ser Leu Pro Thr Pro Pro Thr Arg
            20

<210> 356
<211> 20
<212> PRT
<213> synthetic

<400> 356

Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro
1   5   10   15

Ser Leu Pro Thr
            20

<210> 357
<211> 20
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<222> (13)..(13)
<223> PHOSPHORYLATION

<400> 357

Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu
1   5   10   15

Pro Thr Pro Pro
            20

<210> 358
<211> 22
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<222> (15)..(15)
<223> PHOSPHORYLATION

<400> 358

Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu
1   5   10   15

Pro Thr Pro Pro Thr Arg
            20

<210> 359
<211> 25
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<222> (18)..(18)
<223> PHOSPHORYLATION

<400> 359

Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu
1   5   10   15

Pro Thr Pro Pro Thr Arg Glu Pro Lys
            20   25

<210> 360
<211> 18
<212> PRT
<213> synthetic

<220>
<221> MOD_RES
<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 360

Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met
1   5   10   15

Val Asp

<210> 361
<211> 26
<212> PRT
<213> synthetic

<220>
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<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 361

Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met
1   5   10   15

Val Asp Ser Pro Gln Leu Ala Thr Leu Ala
            20   25

<210> 362
<211> 19
<212> PRT
<213> synthetic

<400> 362

Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val
1   5   10   15

Asp Ser Pro

<210> 363
<211> 18
<212> PRT
<213> synthetic

<220>
<221> MOD_RES
<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 363

Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val Asp
1   5   10   15

Ser Pro

<210> 364
<211> 20
<212> PRT
<213> synthetic

<400> 364

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

Leu Ala Thr Leu
            20

<210> 365
<211> 18
<212> PRT
<213> synthetic

<220>
<221> MOD_RES

<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 365

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

Leu Ala

<210> 366
<211> 23
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<222> (16)..(16)
<223> PHOSPHORYLATION

<400> 366

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

Leu Ala Asp Glu Val Ser Ala
            20

<210> 367
<211> 68
<212> PRT
<213> synthetic

<400> 367

Gly Glu Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly
1   5   10   15

Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr Pro Ser Leu Pro Thr
            20   25   30

Pro Pro Thr Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro
        35   40   45

Lys Ser Pro Ser Ser Ala Lys Ser Arg Leu Gln Thr Ala Pro Val Pro
    50   55   60

Met Pro Asp Leu
65

<210> 368
<211> 18
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 368

Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro
1   5   10   15

Ser Ser

<210> 369
<211> 22
<212> PRT
<213> synthetic

<220>
<221> MOD_RES
<222> (15)..(15)
<223> PHOSPHORYLATION

<400> 369

Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro
1   5   10   15

Ser Ser Ala Lys Ser Arg
            20

<210> 370
<211> 24
<212> PRT
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<220>
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<223> PHOSPHORYLATION

<400> 370

Arg Glu Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro
1   5   10   15

Ser Ser Ala Lys Ser Arg Leu Gln
            20

<210> 371
<211> 18
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<400> 371

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
1   5   10   15

Ser Arg

<210> 372
<211> 20
<212> PRT
<213> synthetic

<220>
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<222> (11)..(11)
<223> PHOSPHORYLATION

<220>
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<223> PHOSPHORYLATION

<400> 372

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
1   5   10   15

Ser Arg Leu Gln
            20

<210> 373
<211> 18
<212> PRT
<213> synthetic

<220>
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<400> 373

Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys Ser Arg
1   5   10   15

Leu Gln

<210> 374
<211> 19
<212> PRT
<213> synthetic

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<222> (11)..(11)
<223> PHOSPHORYLATION

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<223> PHOSPHORYLATION

<400> 374

Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys Ser Arg
1   5   10   15

Leu Gln Thr

<210> 375
<211> 20
<212> PRT
<213> synthetic

<400> 375

His Val Pro Gly Gly Gly Ser Val Gln Ile Val Tyr Lys Pro Val Asp
1   5   10   15

Leu Ser Lys Val
            20

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Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser Lys Cys Gly Ser
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Leu Gly Asn Ile
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Thr Ser Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly
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Gly Gln Val Glu
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His His Lys Pro Gly Gly Gly Gln Val Glu Val Lys Ser Glu Lys Leu
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Asp Phe Lys Asp
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Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser Lys Ile
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Gly Ser Leu Asp

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Arg Val Gln Ser Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro
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Gly Gly Gly Asn Lys
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Gly Leu Lys Glu Ser Pro Leu Gln Thr Pro Thr Glu Asp Gly Ser Glu
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Glu Pro Gly Ser
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Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser Asp Ala Lys
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Ser Thr Pro Thr
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Asp Val

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Pro Leu Val Asp
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Ala Glu Asp Val Thr Ala Pro Leu Val Asp Glu Gly Ala Pro Gly Lys
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Gln Ala Ala Ala
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<400> 386

Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu Ile
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Pro Glu Gly Thr Thr Ala
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Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly
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Ser Arg Ser Arg
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Ala Pro Pro Lys Ser Gly Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser
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Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr
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Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr
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Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr
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Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr
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Pro Gly Thr Pro Gly Ser Arg Ser Arg Thr
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Ala Gly Thr Pro Gly Ser Arg Ser Arg Thr
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Pro Gly Ala Pro Gly Ser Arg Ser Arg Thr
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Pro Gly Thr Pro Ala Ser Arg Ser Arg Thr
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Pro Gly Thr Pro Gly Ser Ala Ser Arg Thr
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Pro Gly Thr Pro Gly Ser Arg Ala Arg Thr
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Pro Gly Thr Pro Gly Ser Arg Ser Ala Thr
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1   5   10   15

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

Ser Pro Gln Leu Ala Thr Leu Ala
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Ser Pro Gln Leu Ala Thr Leu Ala
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Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Pro Gln Leu Ala Thr Leu Ala

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Ser Pro Gln Leu Ala Thr Leu Ala
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1 5 10 15

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

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

Ser Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ala Pro Gln Leu Ala Thr Leu Ala
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1   5   10   15

Ser Ala Gln Leu Ala Thr Leu Ala

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1 5 10 15

Ser Pro Ala Leu Ala Thr Leu Ala
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1 5 10 15

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

Ser Pro Gln Leu Ala Ala Leu Ala
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Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met Val Asp

1 5 10 15

Ser Pro Gln Leu Ala Thr Ala Ala
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Arg Ala Pro Lys Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro
1 5 10 15

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

Ser Ser Ala Lys Ser Arg Leu Gln Thr
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1   5   10   15

Ser Ser Ala Lys Ser Arg Leu Gln Thr
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Leu Ser Lys Val Thr Ser Lys Cys Gly
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Ser Thr Pro Thr
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Ser Thr Pro Thr
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Ser Thr Pro Thr
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Ser Thr Pro Thr
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Ser Thr Pro Thr
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Ser Thr Pro Thr
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Ala Cys Cys Ala Thr Cys Ala Cys Cys
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