SEQUENCE LISTING

<110> Griswold-Prenner, Irene
Stagliano, Nancy E.
Dang, Vu

<120> METHODS OF TREATING A TAUOPATHY

<130> IPRN-745WO

<150> US 61/833,355
<151> 2013-06-10

<150> US 61/833,355
<151> 2013-04-19

<150> US 61/833,355
<151> 2013-03-14

<150> US 61/754,085
<151> 2013-01-18

<150> US 61/683,902
<151> 2012-08-16

<160> 86

<170> PatentIn version 3.5

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Arg Ser Ser Gln Thr Ile Leu His Ser Asn Gly Asn Thr Tyr Leu Glu
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Lys Val Ser Lys Arg Phe Ser
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Phe Gln Gly Ser Leu Val Pro Trp Ala

1 5

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<400> 4

Ser Tyr Gly Met Ser
1 5

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

Gly

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Thr Trp Asp Gly Ala Met Asp Tyr
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Lys Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

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<400> 8

Lys Val Ser Asn Arg Phe Ser
1   5

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Phe Gln Gly Ser Leu Val Pro Trp Ala
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Lys Tyr Gly Met Ser
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<400> 11

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

Gly

<210> 12
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<400> 12

Ser Trp Asp Gly Ala Met Asp Tyr
1   5

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<400> 13

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

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

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

Pro Arg Leu Leu Ile Tyr Lys Val Ser Lys Arg Phe 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 Asp Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly
85 90 95

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

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

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

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

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

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

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


Thr Ile Thr Trp Asp Gly Ala Met Asp Tyr Trp Gly Arg Gly Ile Ser
            100                 105                 110


Val Thr Val Ser Ser
        115


<210>  15
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<400>  15

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


Asp Gln Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Ile Val His Ser
            20                  25                  30


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


Pro Lys Leu Leu Val Tyr Lys Val Ser Asn Arg Phe 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 Leu Gly Thr Tyr Tyr Cys Phe Gln Gly
                85                  90                  95


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


<210>  16
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<400>  16

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


Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Lys Tyr
            20                  25                  30
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Gly Met Ser Trp Val Arg Gln Thr Pro Asp Lys Arg Leu Glu Trp Val
35 40 45

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

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

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

Ser Ile Ser Trp Asp Gly Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser
100 105 110

Val Thr Val Ser Ser
115

<210> 17
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<212> DNA
<213> Artificial sequence

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ctctcttgca gatcgagtca gactatttta catagtaatg gaaataccta tttagaatgg 120

tatttgcaga aaccaggcca gtctccaaga ctcctgatct acaaagtttc taaacgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgacga tctgggaatt tattactgct ttcaaggttc acttgttcct 300

tgggcgttcg gtggaggcac caagctggaa atcaaa 336

<210> 18
<211> 351
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

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gaggtgcagt tggtggagtc tggggaagac ttagtgaagc ctggagggtc cctgaaactc 60

tcctgtgtcg cttctggatt cgctttcagt agctatggca tgtcttgggt tcgccagact 120

ccagacatga ggctggagtg ggtcgcaaca attagtagca gtggtagtcg cacctacttt 180

ccagacagtg tgaaggggcg actcaccatc tccagagaca atgacaagaa catcctatac 240

ctacaaatga gcagtctgag gtctgaggac acagccatgt actattgtac gattacctgg 300

gacggtgcta tggactactg gggtcgtgga atatcagtca ccgtctcctc a 351

<210> 19
<211> 336
<212> DNA
<213> Artificial sequence

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gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca aatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccaaag ctcctggtct acaaagtttc caatcgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tctgggaact tattactgct ttcaaggttc acttgttcct 300

tgggcgttcg gtggaggcac caagctggaa atcaaa 336

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<212> DNA
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tcctgtgcag cctctggatt cagtttcagt aaatatggca tgtcttgggt tcgccagact 120

ccagacaaga ggctggagtg ggtcgcaacc attagtagta gtgggagtcg cacctactat 180

ccagacagtg tgaagggcca attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga gcagtctgaa gtctgaggac acagccatgt attactgttc aattagctgg 300

gacggtgcta tggactactg gggtcaaggg acctcagtca ccgtctcctc a 351

<210> 21
<211> 441
<212> PRT
<213> Artificial sequence

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<223> Synthetic amino acid sequence

<400> 21

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

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 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 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
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
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
305 310 315 320

Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln

325 330 335

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
355 360 365

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
405 410 415

Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val
420 425 430

Ser Ala Ser Leu Ala Lys Gln Gly Leu
435 440

<210> 22
<211> 383
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 22

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

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

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

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

His Val Pro Gly Gly Gly Ser 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
        355                 360                 365

Thr Leu Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
    370                 375                 380
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<210> 23
<211> 352
<212> PRT
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<223> Synthetic amino acid sequence

<400> 23

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Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1               5                  10                  15

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
        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

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

Ala Thr Leu Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
340 345 350

<210> 24
<211> 412
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 24

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

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 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

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
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Thr Gly Ser Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala
385                 390                 395                 400


Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
                405                 410


<210>  25
<211>  776
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic amino acid sequence

<400>  25

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1               5                   10                  15


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 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 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
            100                 105                 110


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


Gly Lys Val Val Gln Glu Gly Phe Leu Arg Glu Pro Gly Pro Pro Gly
    130                 135                 140


Leu Ser His Gln Leu Met Ser Gly Met Pro Gly Ala Pro Leu Leu Pro
145                 150                 155                 160


Glu Gly Pro Arg Glu Ala Thr Arg Gln Pro Ser Gly Thr Gly Pro Glu
                165                 170                 175


Asp Thr Glu Gly Gly Arg His Ala Pro Glu Leu Leu Lys His Gln Leu
            180                 185                 190


Leu Gly Asp Leu His Gln Glu Gly Pro Pro Leu Lys Gly Ala Gly Gly
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195 200 205

Lys Glu Arg Pro Gly Ser Lys Glu Glu Val Asp Glu Asp Arg Asp Val
210 215 220

Asp Glu Ser Ser Pro Gln Asp Ser Pro Pro Ser Lys Ala Ser Pro Ala
225 230 235 240

Gln Asp Gly Arg Pro Pro Gln Thr Ala Ala Arg Glu Ala Thr Ser Ile
245 250 255

Pro Gly Phe Pro Ala Glu Gly Ala Ile Pro Leu Pro Val Asp Phe Leu
260 265 270

Ser Lys Val Ser Thr Glu Ile Pro Ala Ser Glu Pro Asp Gly Pro Ser
275 280 285

Val Gly Arg Ala Lys Gly Gln Asp Ala Pro Leu Glu Phe Thr Phe His
290 295 300

Val Glu Ile Thr Pro Asn Val Gln Lys Glu Gln Ala His Ser Glu Glu
305 310 315 320

His Leu Gly Arg Ala Ala Phe Pro Gly Ala Pro Gly Glu Gly Pro Glu
325 330 335

Ala Arg Gly Pro Ser Leu Gly Glu Asp Thr Lys Glu Ala Asp Leu Pro
340 345 350

Glu Pro Ser Glu Lys Gln Pro Ala Ala Ala Pro Arg Gly Lys Pro Val
355 360 365

Ser Arg Val Pro Gln Leu Lys Ala Arg Met Val Ser Lys Ser Lys Asp
370 375 380

Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Thr Ser Thr Arg Ser Ser
385 390 395 400

Ala Lys Thr Leu Lys Asn Arg Pro Cys Leu Ser Pro Lys His Pro Thr
405 410 415

Pro Gly Ser Ser Asp Pro Leu Ile Gln Pro Ser Ser Pro Ala Val Cys
420 425 430

Pro Glu Pro Pro Ser Ser Pro Lys His Val Ser Ser Val Thr Ser Arg
435 440 445

Thr Gly Ser Ser Gly Ala Lys Glu Met Lys Leu Lys Gly Ala Asp Gly
450 455 460

Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro Gly Gln Lys

```
465                 470                 475                 480

Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro Pro Ala Pro
                485                 490                 495

Lys Thr Pro Pro Ser Ser Ala Thr Lys Gln Val Gln Arg Arg Pro Pro
            500                 505                 510

Pro Ala Gly Pro Arg Ser Glu Arg Gly Glu Pro Pro Lys Ser Gly Asp
        515                 520                 525

Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg
    530                 535                 540

Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys Lys
545                 550                 555                 560

Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys Ser
                565                 570                 575

Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val Lys
            580                 585                 590

Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly Gly
        595                 600                 605

Lys Val Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser Asn Val Gln Ser
    610                 615                 620

Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly Ser
625                 630                 635                 640

Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser Lys
                645                 650                 655

Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln Val
            660                 665                 670

Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser Lys
        675                 680                 685

Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn Lys
    690                 695                 700

Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala Lys
705                 710                 715                 720

Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser Gly
                725                 730                 735

Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile
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740 745 750

Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val Ser
755 760 765

Ala Ser Leu Ala Lys Gln Gly Leu
770 775

<210> 26
<211> 758
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 26

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

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 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 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
100 105 110

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

Gly Lys Val Val Gln Glu Gly Phe Leu Arg Glu Pro Gly Pro Pro Gly
130 135 140

Leu Ser His Gln Leu Met Ser Gly Met Pro Gly Ala Pro Leu Leu Pro
145 150 155 160

Glu Gly Pro Arg Glu Ala Thr Arg Gln Pro Ser Gly Thr Gly Pro Glu
165 170 175

Asp Thr Glu Gly Gly Arg His Ala Pro Glu Leu Leu Lys His Gln Leu
180 185 190

```
Leu Gly Asp Leu His Gln Glu Gly Pro Pro Leu Lys Gly Ala Gly Gly
        195                 200                 205

Lys Glu Arg Pro Gly Ser Lys Glu Glu Val Asp Glu Asp Arg Asp Val
    210                 215                 220

Asp Glu Ser Ser Pro Gln Asp Ser Pro Pro Ser Lys Ala Ser Pro Ala
225                 230                 235                 240

Gln Asp Gly Arg Pro Pro Gln Thr Ala Ala Arg Glu Ala Thr Ser Ile
                245                 250                 255

Pro Gly Phe Pro Ala Glu Gly Ala Ile Pro Leu Pro Val Asp Phe Leu
            260                 265                 270

Ser Lys Val Ser Thr Glu Ile Pro Ala Ser Glu Pro Asp Gly Pro Ser
        275                 280                 285

Val Gly Arg Ala Lys Gly Gln Asp Ala Pro Leu Glu Phe Thr Phe His
    290                 295                 300

Val Glu Ile Thr Pro Asn Val Gln Lys Glu Gln Ala His Ser Glu Glu
305                 310                 315                 320

His Leu Gly Arg Ala Ala Phe Pro Gly Ala Pro Gly Glu Gly Pro Glu
                325                 330                 335

Ala Arg Gly Pro Ser Leu Gly Glu Asp Thr Lys Glu Ala Asp Leu Pro
            340                 345                 350

Glu Pro Ser Glu Lys Gln Pro Ala Ala Ala Pro Arg Gly Lys Pro Val
        355                 360                 365

Ser Arg Val Pro Gln Leu Lys Ala Arg Met Val Ser Lys Ser Lys Asp
    370                 375                 380

Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Thr Ser Thr Arg Ser Ser
385                 390                 395                 400

Ala Lys Thr Leu Lys Asn Arg Pro Cys Leu Ser Pro Lys His Pro Thr
                405                 410                 415

Pro Gly Ser Ser Asp Pro Leu Ile Gln Pro Ser Ser Pro Ala Val Cys
            420                 425                 430

Pro Glu Pro Pro Ser Ser Pro Lys His Val Ser Ser Val Thr Ser Arg
        435                 440                 445

Thr Gly Ser Ser Gly Ala Lys Glu Met Lys Leu Lys Gly Ala Asp Gly
    450                 455                 460
```

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Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro Gly Gln Lys
465                 470                 475                 480

Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro Pro Ala Pro
                485                 490                 495

Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly Asp Arg Ser
            500                 505                 510

Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser Arg Ser Arg
        515                 520                 525

Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys Lys Val Ala
    530                 535                 540

Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys Ser Arg Leu
545                 550                 555                 560

Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val Lys Ser Lys
                565                 570                 575

Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly Gly Lys Val
            580                 585                 590

Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser Asn Val Gln Ser Lys Cys
        595                 600                 605

Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly Ser Val Gln
    610                 615                 620

Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser Lys Cys Gly
625                 630                 635                 640

Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln Val Glu Val
                645                 650                 655

Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser Lys Ile Gly
            660                 665                 670

Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn Lys Lys Ile
        675                 680                 685

Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala Lys Thr Asp
    690                 695                 700

His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser Gly Asp Thr
705                 710                 715                 720

Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile Asp Met
                725                 730                 735
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Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val Ser Ala Ser
740 745 750

Leu Ala Lys Gln Gly Leu
755

<210> 27
<211> 352
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 27

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

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
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

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

Ala Thr Leu Ala Asp Glu Val Ser Ala Ser Leu Ala Lys Gln Gly Leu
340 345 350

<210> 28
<211> 351
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 28
gaggttcatc tggtggagtc tgggggagcc ttagtgaagc ctggagggtc cctgagactc 60

tcctgtgcag cctctggatt cagtttcagt aaatatggca tgtcttgggt tcgccaggcc 120

ccaggcaagg gcctggagtg ggtcgcaacc attagtagta gtgggagtcg cacctactat 180

ccagacagtg tgaagggcag attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga gcagtctgaa gtctgaggac acagccatgt attactgttc aattagctgg 300

gacggtgcta tggactactg gggtcaaggg acctcagtca ccgtctcctc a 351

<210> 29
<211> 351
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 29
gaggttcatc tggtggagtc tgggggagcc ttagtgaagc ctggagggtc cctgagactc 60

tcctgtgcag cctctggatt cagtttcagt aaatatggca tgtcttgggt tcgccaggcc 120

ccaggcaagg gcctggagtg ggtcgcaacc attagtagta gtgggagtcg cacctactat 180

ccagacagtg tgaagggcag attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga acagtctgag agccgaggac acagccatgt attactgttc aattagctgg 300

gacggtgcta tggactactg gggtcaaggg accaccgtca ccgtctcctc a 351

<210> 30
<211> 351
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 30
gaggttcagc tggtggagtc tgggggagcc ttagtgaagc ctggagggtc cctgagactc 60

tcctgtgcag cctctggatt cagtttcagt aaatatggca tgtcttgggt tcgccaggcc 120

ccaggcaagg gcctggagtg ggtcgcaacc attagtagta gtgggagtcg cacctactat 180

ccagacagtg tgaagggcag attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga acagtctgag agccgaggac acagccatgt attactgttc aattagctgg 300

gacggtgcta tggactactg gggtcaaggg accaccgtca ccgtctcctc a 351

<210> 31
<211> 351
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 31
gaggttcagc tggtggagtc tgggggagcc ttagtgaagc ctggagggtc cctgagactc 60

tcctgtgcag cctctggatt cagtttcagt aaatatggca tgtcttgggt tcgccaggcc 120

ccaggcaagg gcctggagtg ggtcgcaacc attagtagta gtgggagtcg cacctactat 180

ccagacagtg tgaagggcag attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga acagtctgag agccgaggac acagccatgt attactgtgc cattagctgg 300

gacggtgcta tggactactg gggtcaaggg accaccgtca ccgtctcctc a 351

<210> 32
<211> 336
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 32

gatgttttga tgacccaaag cccactctcc ctgcctgtca cccttggaca gcccgcctcc 60

atctcttgca aatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccacag ctcctggtct acaaagtttc caatcgattt 180

tctggggtcc cagacagatt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tgtgggaact tattactgct ttcaaggctc acttgttcct 300

tgggcgttcg gtggaggcac caaggtggaa atcaaa 336

<210> 33
<211> 336
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 33
gatgttgtga tgacccaaag cccactctcc ctgcctgtca cccttggaca gcccgcctcc 60

atctcttgca aatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccacag ctcctggtct acaaagtttc caatcgattt 180

tctggggtcc cagacagatt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tgtgggaact tattactgct ttcaaggctc acttgttcct 300

tgggcgttcg gtggaggcac caaggtggaa atcaaa 336

<210> 34
<211> 336
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 34
gatgttgtga tgacccaaag cccactctcc ctgcctgtca cccttggaca gcccgcctcc 60

atctcttgca aatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccacag ctcctggtct acaaagtttc caatcgattt 180

tctggggtcc cagacagatt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tgtgggagtg tattactgct ttcaaggctc acttgttcct 300

tgggcgttcg gtggaggcac caaggtggaa atcaaa 336

<210> 35
<211> 336
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic nucleic acid sequence

<400> 35
gatgttgtga tgacccaaag cccactctcc ctgcctgtca cccttggaca gcccgcctcc 60

atctcttgca aatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccacag ctcctgatct acaaagtttc caatcgattt 180

tctggggtcc cagacagatt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tgtgggagtg tattactgct ttcaaggctc acttgttcct 300

tgggcgttcg gtggaggcac caaggtggaa atcaaa 336

<210> 36
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 36

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

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

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

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

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

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

Ser Ile Ser Trp Asp Gly Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser
100 105 110

Val Thr Val Ser Ser
115

<210> 37
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 37

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Lys Tyr

20 25 30

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

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

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

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

Ser Ile Ser Trp Asp Gly Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
100 105 110

Val Thr Val Ser Ser
115

<210> 38
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 38

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

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

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

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

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

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

Ser Ile Ser Trp Asp Gly Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
100 105 110

Val Thr Val Ser Ser
115

<210> 39
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 39

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

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

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

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

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

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

Ala Ile Ser Trp Asp Gly Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
100 105 110

Val Thr Val Ser Ser
115

<210> 40
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 40

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Ile Val His Ser
20 25 30

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

Pro Gln Leu Leu Val Tyr Lys Val Ser Asn Arg Phe 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 Thr Tyr Tyr Cys Phe Gln Gly
85 90 95

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

<210> 41
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 41

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Ile Val His Ser
20 25 30

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

Pro Gln Leu Leu Val Tyr Lys Val Ser Asn Arg Phe 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 Thr Tyr Tyr Cys Phe Gln Gly
85 90 95

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

<210> 42
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 42

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Ile Val His Ser
20 25 30

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

Pro Gln Leu Leu Val Tyr Lys Val Ser Asn Arg Phe 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 Val Tyr Tyr Cys Phe Gln Gly
                85                  90                  95

Ser Leu Val Pro Trp Ala Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105                 110
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<210> 43
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 43

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Ile Val His Ser
            20                  25                  30

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

Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe 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 Val Tyr Tyr Cys Phe Gln Gly
                85                  90                  95

Ser Leu Val Pro Trp Ala Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105                 110
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<210> 44
<211> 171
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 44

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Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly Thr
1               5                   10                  15

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

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

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

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

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

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

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

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

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

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


<210>  45
<211>  175
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic amino acid sequence

<400>  45

Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly Thr
1               5                   10                  15

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

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

Ile Gly Asp Thr Pro Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr
```

50 55 60

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

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

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

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

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

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

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

<210> 46
<211> 150
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 46

Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly Thr
1 5 10 15

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

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

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

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

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

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

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

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

Gly Thr Pro Gly Ser Arg
145 150

<210> 47
<211> 121
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 47

Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly Thr
1 5 10 15

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

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

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

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

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

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

Pro Ala Lys Thr Pro Pro Ala Pro Lys
115 120

<210> 48
<211> 67
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 48

Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly Thr
1 5 10 15

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

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

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

Gln Ala Arg
65

<210> 49
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 49

Asp His Ala Gly Thr Tyr Gly Leu Gly Asp Arg Lys
1   5   10

<210> 50
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 50

Ala Gly Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr
1   5   10   15

Met His Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys
            20   25   30

<210> 51
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 51

Ala Gly Thr Tyr Gly Leu Gly Asp Arg Lys
1   5   10

<210> 52
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> The amino acid at this position is phosphorylated

<400> 52

Ala Gly Thr Tyr Gly Leu Gly Asp Arg Lys
1 5 10

<210> 53
<211> 18
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 53

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr

<210> 54
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X at this position is L or V

<400> 54

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

Gln Pro Ala Ser Ile Ser Cys
20

<210> 55
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<220>
<221> MISC_FEATURE

<222> (14)..(14)
<223> X at this position is V or I

<400> 55

Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Xaa Tyr
1 5 10 15

<210> 56
<211> 32
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<220>
<221> MISC_FEATURE
<222> (29)..(29)
<223> X at this position is T or V

<400> 56

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Xaa Tyr Tyr Cys
20 25 30

<210> 57
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 57

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
1 5 10

<210> 58
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 58

Gly Ser Gly Gly Ser
1 5

<210> 59
<211> 4
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 59

Gly Gly Gly Ser
1

<210> 60
<211> 4
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 60

Gly Gly Ser Gly
1

<210> 61
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 61

Gly Gly Ser Gly Gly
1 5

<210> 62
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 62

Gly Ser Gly Ser Gly
1 5

<210> 63
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 63

Gly Ser Gly Gly Gly
1 5

<210> 64
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 64

Gly Gly Gly Ser Gly
1   5

<210> 65
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 65

Gly Ser Ser Ser Gly
1   5

<210> 66
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 66

His His His His His
1   5

<210> 67
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 67

His His His His His His
1   5

<210> 68
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic amino acid sequence

<400> 68

Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1   5   10

<210> 69
<211> 8
<212> PRT

<213> Artificial sequence

<220>
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Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

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Trp Ser His Pro Gln Phe Glu Lys
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Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
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Arg Tyr Ile Arg Ser
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Phe His His Thr
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Ala

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Thr Phe Phe Tyr Gly Gly Cys Arg Gly Lys Arg Asn Asn Phe Lys Thr
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Glu Glu Tyr

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Glu Glu Tyr

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Thr Glu Glu Tyr

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Thr Phe Phe Tyr Gly Gly Ser Arg Gly Lys Arg Asn Asn Phe Lys Thr
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Glu Glu Tyr Cys
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Thr Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser
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Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly Thr
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Tyr

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Glu Val Met Glu Asp His Ala Gly Thr Tyr Gly Leu Gly Asp Arg Lys
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Ala Gly Thr Tyr Gly Leu Gly Asp
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<400> 83

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

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

<210> 84
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<400> 84

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

<210> 85
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<220>
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<223> X at this position is an S or L

<220>
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<220>
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<220>
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<223> X at this position is a S or A

<400> 85

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Xaa Ser Xaa Xaa Xaa Glu Asp Thr Ala Met Tyr Tyr Cys Xaa Ile
20 25 30

<210> 86
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<400> 86

Trp Gly Gln Gly Thr Xaa Val Thr Val Ser Ser
1 5 10