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SEQUENCE LISTING

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<120> Anticancer fusion protein

<130> P069/02/PCT

<150> PL391627
<151> 2010-06-25

<160> 184

<170> PatentIn version 3.5

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Lys Lys Leu Ser Glu Cys Leu Lys Arg Ile Gly Asp Glu Leu Asp Ser
1 5 10 15

Arg Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu Gly Leu Ala
20 25 30

Gly Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr
35 40 45

Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile
50 55 60

Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu
65 70 75 80

His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr
85 90 95

Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn
100 105 110

Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser
115 120 125

Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp
130 135 140

Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile
145 150 155 160

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

His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu
180 185 190

Val Gly

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Arg Asn Ile Ala Arg His Leu Ala Gln Val Gly Asp Ser Met Asp Arg
1 5 10 15

Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu Gly Leu Ala Gly
20 25 30

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
35 40 45

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
50 55 60

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
65 70 75 80

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
85 90 95

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
100 105 110

Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr
115 120 125

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
130 135 140

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
145 150 155 160

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

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
180 185 190

Gly

<210> 3
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<400> 3

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
100 105 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
115 120 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
130 135 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145 150 155 160

Gly Gly Gly Ser Gly Pro Leu Gly Leu Ala Gly Arg Val Val Arg Lys
165 170 175

Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser Ser Thr
180 185 190

Ser Ala Ala Ser Ser Ser Asn Tyr Cys Asn Gln Met Met Lys Ser Arg
195 200 205

Asn Leu Thr Lys Asp Arg Cys Lys Pro Val Asn Thr Phe Val His Glu
210 215 220

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

Lys Asn Gly Gln Thr Asn Cys Tyr Gln Ser Tyr Ser Thr Met Ser Ile
245 250 255

Thr Asp Cys Arg Glu Thr Gly Ser Ser Lys Tyr Pro Asn Cys Ala Tyr
260 265 270

Lys Thr Thr Gln Ala Asn Lys His Ile Ile Val Ala Cys Glu Gly Asn
275 280 285

Pro Tyr Val Pro Val His Phe Asp Ala Ser Val Lys Glu Asp Leu
290 295 300

<210> 4
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<400> 4

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
100 105 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
115 120 125

```
Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Gly Ser Gly Gly Gly Ser Lys Glu Thr Ala Ala Ala Lys
                165                 170                 175

Phe Glu Arg Gln His Met Asp Ser Ser Thr Ser Ala Ala Ser Ser Ser
            180                 185                 190

Asn Tyr Cys Asn Gln Met Met Lys Ser Arg Asn Leu Thr Lys Asp Arg
        195                 200                 205

Cys Lys Pro Val Asn Thr Phe Val His Glu Ser Leu Ala Asp Val Gln
    210                 215                 220

Ala Val Cys Ser Gln Lys Asn Val Ala Cys Lys Asn Gly Gln Thr Asn
225                 230                 235                 240

Cys Tyr Gln Ser Tyr Ser Thr Met Ser Ile Thr Asp Cys Arg Glu Thr
                245                 250                 255

Gly Ser Ser Lys Tyr Pro Asn Cys Ala Tyr Lys Thr Thr Gln Ala Asn
            260                 265                 270

Lys His Ile Ile Val Ala Cys Glu Gly Asn Pro Tyr Val Pro Val His
        275                 280                 285

Phe Asp Ala Ser Val
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<400> 5

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Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1               5                   10                  15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
            20                  25                  30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
        35                  40                  45
```

```
Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
    50                  55                  60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65                  70                  75                  80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
            100                 105                 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Ser Gly Pro Leu Gly Leu Ala Gly Arg Val Val Arg Gly
                165                 170                 175

Asp Val Glu Lys Gly Lys Lys Ile Phe Ile Met Lys Cys Ser Gln Cys
            180                 185                 190

His Thr Val Glu Lys Gly Gly Lys His Lys Thr Gly Pro Asn Leu His
        195                 200                 205

Gly Leu Phe Gly Arg Lys Thr Gly Gln Ala Pro Gly Tyr Ser Tyr Thr
    210                 215                 220

Ala Ala Asn Lys Asn Lys Gly Ile Ile Trp Gly Glu Asp Thr Leu Met
225                 230                 235                 240

Glu Tyr Leu Glu Asn Pro Lys Lys Tyr Ile Pro Gly Thr Lys Met Ile
                245                 250                 255

Phe Val Gly Ile Lys Lys Lys Glu Glu Arg Ala Asp Leu Ile Ala Tyr
            260                 265                 270

Leu Lys Lys Ala Thr Asn Glu Lys Glu Asp Leu
        275                 280
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<210> 6
<211> 407
<212> PRT
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<223> artificial

<400> 6

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Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1               5                  10                  15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
            20                  25                  30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
        35                  40                  45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
    50                  55                  60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65                  70                  75                  80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
            100                 105                 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Gly Ser Arg Lys Lys Arg Ala Ser Gly Gly Pro Glu Gly
                165                 170                 175

Gly Ser Leu Ala Ala Leu Thr Ala His Gln Ala Cys His Leu Pro Leu
            180                 185                 190

Glu Thr Phe Thr Arg His Arg Gln Pro Arg Gly Trp Glu Gln Leu Glu
        195                 200                 205

Gln Cys Gly Tyr Pro Val Gln Arg Leu Val Ala Leu Tyr Leu Ala Ala
    210                 215                 220

Arg Leu Ser Trp Asn Gln Val Asp Gln Val Ile Ala Asn Ala Leu Ala
225                 230                 235                 240

Ser Pro Gly Ser Gly Gly Asp Leu Gly Glu Ala Ile Arg Glu Ser Pro
                245                 250                 255

Glu Gln Ala Arg Leu Ala Leu Thr Leu Ala Ala Ala Glu Ser Glu Arg
            260                 265                 270
```

```
Phe Val Arg Gln Gly Thr Gly Asn Asp Glu Ala Gly Ala Ala Asn Gly
        275                 280                 285

Pro Ala Asp Gly Gly Gly Ser Gly Gly Gly Met Gly Asp Val Glu Lys
    290                 295                 300

Gly Lys Lys Ile Phe Ile Met Lys Cys Ser Gln Cys His Thr Val Glu
305                 310                 315                 320

Lys Gly Gly Lys His Lys Thr Gly Pro Asn Leu His Gly Leu Phe Gly
                325                 330                 335

Arg Lys Thr Gly Gln Ala Pro Gly Tyr Ser Tyr Thr Ala Ala Asn Lys
            340                 345                 350

Asn Lys Gly Ile Ile Trp Gly Glu Asp Thr Leu Met Glu Tyr Leu Glu
        355                 360                 365

Asn Pro Lys Lys Tyr Ile Pro Gly Thr Lys Met Ile Phe Val Gly Ile
    370                 375                 380

Lys Lys Lys Glu Glu Arg Ala Asp Leu Ile Ala Tyr Leu Lys Lys Ala
385                 390                 395                 400

Thr Asn Glu Lys Asp Glu Leu
                405
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<210> 7
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<220>
<223> artificial

<400> 7

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Ile Ile Gly Gly His Val Ala Lys Pro His Ser Arg Pro Tyr Met Ala
1               5                   10                  15

Tyr Leu Met Ile Trp Asp Gln Lys Ser Leu Lys Arg Cys Gly Gly Phe
            20                  25                  30

Leu Ile Arg Asp Asp Phe Val Leu Thr Ala Ala His Cys Trp Gly Ser
        35                  40                  45

Ser Ile Asn Val Thr Leu Gly Ala His Asn Ile Lys Glu Gln Glu Pro
    50                  55                  60

Thr Gln Gln Phe Ile Pro Val Lys Arg Ala Ile Pro His Pro Ala Tyr
65                  70                  75                  80
```

```
Asn Pro Lys Asn Phe Ser Asn Asp Ile Met Leu Leu Gln Leu Glu Arg
                85                  90                  95

Lys Ala Lys Arg Thr Arg Ala Val Gln Pro Leu Arg Leu Pro Ser Asn
            100                 105                 110

Lys Ala Gln Val Lys Pro Gly Gln Thr Cys Ser Val Ala Gly Trp Gly
        115                 120                 125

Gln Thr Ala Pro Leu Gly Lys His Ser His Thr Leu Gln Glu Val Lys
    130                 135                 140

Met Thr Val Gln Glu Asp Arg Lys Cys Glu Ser Asp Leu Arg His Tyr
145                 150                 155                 160

Tyr Asp Ser Thr Ile Glu Leu Cys Val Gly Asp Pro Glu Ile Lys Lys
                165                 170                 175

Thr Ser Phe Lys Gly Asp Ser Gly Gly Pro Leu Val Cys Asn Lys Val
            180                 185                 190

Ala Gln Gly Ile Val Ser Tyr Gly Arg Asn Asn Gly Met Pro Pro Arg
        195                 200                 205

Ala Cys Thr Lys Val Ser Ser Phe Val His Trp Ile Lys Lys Thr Met
    210                 215                 220

Lys Arg Tyr Gly Gly Gly Gly Ser Arg Lys Lys Arg Gly Gly Gly Gly
225                 230                 235                 240

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

Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu
            260                 265                 270

Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly
        275                 280                 285

His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile
    290                 295                 300

His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe
305                 310                 315                 320

Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln
                325                 330                 335

Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys
            340                 345                 350
```

Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr
355 360 365

Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile
370 375 380

Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala
385 390 395 400

Ser Phe Phe Gly Ala Phe Leu Val Gly
405

<210> 8
<211> 405
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 8

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
100 105 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
115 120 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
130 135 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145 150 155 160

Gly Gly Gly Gly Ser Arg Lys Lys Arg Gly Gly Gly Gly Ser Ile Ile
165 170 175

```
Gly Gly His Val Ala Lys Pro His Ser Arg Pro Tyr Met Ala Tyr Leu
            180                 185                 190

Met Ile Trp Asp Gln Lys Ser Leu Lys Arg Cys Gly Gly Phe Leu Ile
        195                 200                 205

Arg Asp Asp Phe Val Leu Thr Ala Ala His Cys Trp Gly Ser Ser Ile
    210                 215                 220

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

Gln Phe Ile Pro Val Lys Arg Ala Ile Pro His Pro Ala Tyr Asn Pro
                245                 250                 255

Lys Asn Phe Ser Asn Asp Ile Met Leu Leu Gln Leu Glu Arg Lys Ala
            260                 265                 270

Lys Arg Thr Arg Ala Val Gln Pro Leu Arg Leu Pro Ser Asn Lys Ala
        275                 280                 285

Gln Val Lys Pro Gly Gln Thr Cys Ser Val Ala Gly Trp Gly Gln Thr
    290                 295                 300

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

Val Gln Glu Asp Arg Lys Cys Glu Ser Asp Leu Arg His Tyr Tyr Asp
                325                 330                 335

Ser Thr Ile Glu Leu Cys Val Gly Asp Pro Glu Ile Lys Lys Thr Ser
            340                 345                 350

Phe Lys Gly Asp Ser Gly Gly Pro Leu Val Cys Asn Lys Val Ala Gln
        355                 360                 365

Gly Ile Val Ser Tyr Gly Arg Asn Asn Gly Met Pro Pro Arg Ala Cys
    370                 375                 380

Thr Lys Val Ser Ser Phe Val His Trp Ile Lys Lys Thr Met Lys Arg
385                 390                 395                 400

Tyr Lys Asp Glu Leu
                405
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Phe Ser Arg Ser Leu His Ser Leu Leu Arg Arg Arg Arg Arg Arg Arg
1               5                  10                  15

Arg Val Val Arg Pro Leu Gly Leu Ala Gly Arg Val Ala Ala His Ile
            20                  25                  30

Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys
        35                  40                  45

Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg
    50                  55                  60

Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu
65                  70                  75                  80

Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe
                85                  90                  95

Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met
            100                 105                 110

Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu
        115                 120                 125

Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly
    130                 135                 140

Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp
145                 150                 155                 160

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

Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
            180                 185
```

<210> 10
<211> 193
<212> PRT
<213> Artificial Sequence

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<400> 10

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

Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu Gly Leu Ala Gly
            20                  25                  30
```

```
Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
        35                  40                  45

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
    50                  55                  60

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
65                  70                  75                  80

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
                85                  90                  95

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
            100                 105                 110

Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr
        115                 120                 125

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
    130                 135                 140

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
145                 150                 155                 160

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

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
            180                 185                 190

Gly
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<400> 11

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Glu Glu Gln Trp Ala Arg Glu Ile Gly Ala Gln Leu Arg Arg Met Ala
1               5                   10                  15

Asp Asp Leu Asn Ala Gln Tyr Glu Arg Arg Arg Arg Arg Arg Arg Arg
            20                  25                  30

Arg Arg Val Val Arg Pro Leu Gly Leu Ala Gly Arg Val Ala Ala His
        35                  40                  45
```

Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser
50 55 60

Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser
65 70 75 80

Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu
85 90 95

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

Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln
115 120 125

Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu
130 135 140

Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr
145 150 155 160

Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn
165 170 175

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

His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
195 200

<210> 12
<211> 372
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 12

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
            100                 105                 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Ser Gly Gly Pro Leu Gly Leu Ala Gly Arg Val Val Arg
                165                 170                 175

Ala Arg Ala Arg Gln Glu Gly Ser Ser Pro Glu Pro Val Glu Gly Leu
            180                 185                 190

Ala Arg Asp Gly Pro Arg Pro Phe Pro Leu Gly Arg Leu Val Pro Ser
        195                 200                 205

Ala Val Ser Cys Gly Leu Cys Glu Pro Gly Leu Ala Ala Ala Pro Ala
    210                 215                 220

Ala Pro Thr Leu Leu Pro Ala Ala Tyr Leu Cys Ala Pro Thr Ala Pro
225                 230                 235                 240

Pro Ala Val Thr Ala Ala Leu Gly Gly Ser Arg Trp Pro Gly Gly Pro
                245                 250                 255

Arg Ser Arg Pro Arg Gly Pro Arg Pro Asp Gly Pro Gln Pro Ser Leu
            260                 265                 270

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

Ala Leu Ala Gly Gly Pro Thr Gln Ala Ala Pro Gly Val Arg Gly Glu
    290                 295                 300

Glu Glu Gln Trp Ala Arg Glu Ile Gly Ala Gln Leu Arg Arg Met Ala
305                 310                 315                 320

Asp Asp Leu Asn Ala Gln Tyr Glu Arg Arg Arg Gln Glu Glu Gln Gln
                325                 330                 335

Arg His Arg Pro Ser Pro Trp Arg Val Leu Tyr Asn Leu Ile Met Gly
            340                 345                 350
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Leu Leu Pro Leu Pro Arg Gly His Arg Ala Pro Glu Met Glu Pro Asn
355 360 365

Lys Glu Asp Leu
370

<210> 13
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<213> Artificial Sequence

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<400> 13

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
100 105 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
115 120 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
130 135 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145 150 155 160

Gly Gly Gly Gly Ser Arg Lys Lys Arg Ala Ser Gly Gly Pro Glu Gly
165 170 175

Gly Ser Leu Ala Ala Leu Thr Ala His Gln Ala Cys His Leu Pro Leu
180 185 190

```
Glu Thr Phe Thr Arg His Arg Gln Pro Arg Gly Trp Glu Gln Leu Glu
        195                 200                 205

Gln Cys Gly Tyr Pro Val Gln Arg Leu Val Ala Leu Tyr Leu Ala Ala
    210                 215                 220

Arg Leu Ser Trp Asn Gln Val Asp Gln Val Ile Ala Asn Ala Leu Ala
225                 230                 235                 240

Ser Pro Gly Ser Gly Gly Asp Leu Gly Glu Ala Ile Arg Glu Ser Pro
                245                 250                 255

Glu Gln Ala Arg Leu Ala Leu Thr Leu Ala Ala Ala Glu Ser Glu Arg
            260                 265                 270

Phe Val Arg Gln Gly Thr Gly Asn Asp Glu Ala Gly Ala Ala Asn Gly
        275                 280                 285

Pro Ala Asp Gly Gly Ser Gly Gly Gly Ala Arg Ala Arg Gln Glu Gly
    290                 295                 300

Ser Ser Pro Glu Pro Val Glu Gly Leu Ala Arg Asp Gly Pro Arg Pro
305                 310                 315                 320

Phe Pro Leu Gly Arg Leu Val Pro Ser Ala Val Ser Cys Gly Leu Cys
                325                 330                 335

Glu Pro Gly Leu Ala Ala Ala Pro Ala Ala Pro Thr Leu Leu Pro Ala
            340                 345                 350

Ala Tyr Leu Cys Ala Pro Thr Ala Pro Pro Ala Val Thr Ala Ala Leu
        355                 360                 365

Gly Gly Ser Arg Trp Pro Gly Gly Pro Arg Ser Arg Pro Arg Gly Pro
    370                 375                 380

Arg Pro Asp Gly Pro Gln Pro Ser Leu Ser Leu Ala Glu Gln His Leu
385                 390                 395                 400

Glu Ser Pro Val Pro Ser Ala Pro Gly Ala Leu Ala Gly Gly Pro Thr
                405                 410                 415

Gln Ala Ala Pro Gly Val Arg Gly Glu Glu Glu Gln Trp Ala Arg Glu
            420                 425                 430

Ile Gly Ala Gln Leu Arg Arg Met Ala Asp Asp Leu Asn Ala Gln Tyr
        435                 440                 445

Glu Arg Arg Arg Gln Glu Glu Gln Gln Arg His Arg Pro Ser Pro Trp
    450                 455                 460
```

Arg Val Leu Tyr Asn Leu Ile Met Gly Leu Leu Pro Leu Pro Arg Gly
465 470 475 480

His Arg Ala Pro Glu Met Glu Pro Asn Lys Asp Glu Leu
485 490

<210> 14
<211> 186
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 14

Ala Val Pro Ile Ala Gln Lys Pro Arg Arg Arg Arg Arg Arg Arg Arg
1 5 10 15

Val Val Arg Pro Leu Gly Leu Ala Gly Arg Val Ala Ala His Ile Thr
20 25 30

Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn
35 40 45

Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser
50 55 60

Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val
65 70 75 80

Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg
85 90 95

Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val
100 105 110

Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met
115 120 125

Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu
130 135 140

Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg
145 150 155 160

Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu
165 170 175

Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
180 185

<210> 15
<211> 191

<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 15

```
Arg Ala Gly Leu Gln Phe Pro Val Gly Arg Leu Leu Arg Arg Leu Leu
1               5                   10                  15

Arg Arg Leu Leu Arg Val Val Arg Pro Leu Gly Leu Ala Gly Arg Val
            20                  25                  30

Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser
        35                  40                  45

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

Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg
65                  70                  75                  80

Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser
                85                  90                  95

Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn
            100                 105                 110

Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp
        115                 120                 125

Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp
    130                 135                 140

Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu
145                 150                 155                 160

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

Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
            180                 185                 190
```

<210> 16
<211> 279
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 16

```
Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1               5                   10                  15
```

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
100 105 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
115 120 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
130 135 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145 150 155 160

Gly Gly Gly Ser Gly Pro Leu Gly Leu Ala Gly Arg Val Val Arg Gln
165 170 175

Asp Trp Leu Thr Phe Gln Lys Lys His Ile Thr Asn Thr Arg Asp Val
180 185 190

Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp Lys
195 200 205

Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys Lys
210 215 220

Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr Leu
225 230 235 240

Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys Lys
245 250 255

Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val His
260 265 270

Phe Val Gly Val Gly Ser Cys
275

<210> 17
<211> 274
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 17

```
Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1               5                  10                  15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
            20                  25                  30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
        35                  40                  45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
    50                  55                  60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65                  70                  75                  80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
            100                 105                 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Asp Trp Leu Thr Phe
                165                 170                 175

Gln Lys Lys His Ile Thr Asn Thr Arg Asp Val Asp Cys Asp Asn Ile
            180                 185                 190

Met Ser Thr Asn Leu Phe His Cys Lys Asp Lys Asn Thr Phe Ile Tyr
        195                 200                 205

Ser Arg Pro Glu Pro Val Lys Ala Ile Cys Lys Gly Ile Ile Ala Ser
    210                 215                 220
```

Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr Leu Ser Asp Cys Asn Val
225 230 235 240

Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys Lys Ser Thr Asn Lys Phe
245 250 255

Cys Val Thr Cys Glu Asn Gln Ala Pro Val His Phe Val Gly Val Gly
260 265 270

Ser Cys

<210> 18
<211> 197
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 18

Val Arg Arg Phe Leu Val Thr Leu Arg Ile Arg Arg Ala Cys Gly Pro
1 5 10 15

Pro Arg Val Arg Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu
20 25 30

Gly Leu Ala Gly Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg
35 40 45

Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly
50 55 60

Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu
65 70 75 80

Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly
85 90 95

Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile
100 105 110

Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys
115 120 125

Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn
130 135 140

Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln
145 150 155 160

Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val
165 170 175

Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly
180 185 190

Ala Phe Leu Val Gly
195

<210> 19
<211> 189
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 19

Pro Arg Phe Met Asp Thr Trp Glu Gly Leu Asn Arg Arg Arg Arg Arg
1 5 10 15

Arg Arg Arg Val Val Arg Pro Leu Gly Leu Ala Gly Arg Val Ala Ala
20 25 30

His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn
35 40 45

Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser
50 55 60

Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly
65 70 75 80

Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr
85 90 95

Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys
100 105 110

Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile
115 120 125

Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu
130 135 140

Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu
145 150 155 160

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

Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
180 185

<210> 20
<211> 195
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 20

```
Cys Glu Lys His Ile Met Glu Lys Ile Gln Gly Arg Gly Asp Asp Asp
1               5                  10                  15

Asp Arg Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu Gly Leu
            20                  25                  30

Ala Gly Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn
        35                  40                  45

Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys
    50                  55                  60

Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn
65                  70                  75                  80

Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr
                85                  90                  95

Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu
            100                 105                 110

Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr
        115                 120                 125

Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys
    130                 135                 140

Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly
145                 150                 155                 160

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

Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe
            180                 185                 190

Leu Val Gly
        195
```

<210> 21
<211> 218
<212> PRT
<213> Artificial Sequence

<220>

<223> artificial

<400> 21

```
Ala Val Pro Ile Ala Gln Lys Pro Arg Arg Arg Arg Arg Arg Arg
1               5                  10                  15

Val Val Arg Pro Leu Gly Leu Ala Gly Arg Val Ala Ala His Ile Thr
            20                  25                  30

Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn
        35                  40                  45

Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser
    50                  55                  60

Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val
65                  70                  75                  80

Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg
                85                  90                  95

Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val
            100                 105                 110

Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met
        115                 120                 125

Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu
    130                 135                 140

Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg
145                 150                 155                 160

Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu
                165                 170                 175

Ala Ser Phe Phe Gly Ala Phe Leu Val Gly Pro Leu Gly Leu Ala Gly
            180                 185                 190

Arg Val Val Arg Arg Arg Arg Arg Arg Arg Arg Leu Ala Leu Arg Leu
        195                 200                 205

Ala Cys Ile Gly Asp Glu Met Asp Val Ser
    210                 215
```

<210> 22
<211> 199
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 22

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
100 105 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
115 120 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
130 135 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145 150 155 160

Gly Arg Val Val Arg Pro Leu Gly Leu Ala Gly Ala Gly Ala Gly Gly
165 170 175

Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Gly Ala Gly Gly Ala Gly Arg
180 185 190

Arg Arg Arg Arg Arg Arg Arg
195

<210> 23
<211> 289
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 23

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

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```
Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
            20                  25                  30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
        35                  40                  45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
    50                  55                  60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65                  70                  75                  80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
            100                 105                 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Gly Ser Gly Gly Arg Lys Lys Arg Met Thr Ile Ser Gln
                165                 170                 175

Gln Glu Phe Gly Arg Thr Gly Leu Pro Asp Leu Ser Ser Met Thr Glu
            180                 185                 190

Glu Glu Gln Ile Ala Tyr Ala Met Gln Met Ser Leu Gln Gly Ala Glu
        195                 200                 205

Phe Gly Gln Ala Glu Ser Ala Asp Ile Asp Ala Ser Ser Ala Met Asp
    210                 215                 220

Thr Ser Glu Pro Ala Lys Glu Glu Asp Asp Tyr Asp Val Met Gln Asp
225                 230                 235                 240

Pro Glu Phe Leu Gln Ser Val Leu Glu Asn Leu Pro Gly Val Asp Pro
                245                 250                 255

Asn Asn Glu Ala Ile Arg Asn Ala Met Gly Ser Leu Ala Ser Gln Ala
            260                 265                 270

Thr Lys Asp Gly Lys Lys Asp Lys Lys Glu Glu Asp Lys Lys Glu Asp
        275                 280                 285
```

Leu

<210> 24
<211> 183
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 24

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

Gly Leu Ala Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg
20 25 30

Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala
35 40 45

Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser
50 55 60

Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu
65 70 75 80

Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu
85 90 95

Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile
100 105 110

Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala
115 120 125

Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile
130 135 140

Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val
145 150 155 160

Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe
165 170 175

Phe Gly Ala Phe Leu Val Gly
180

<210> 25
<211> 179
<212> PRT
<213> Artificial Sequence

<220>

<223> artificial

<400> 25

```
Leu Ala Asn Gly Val Glu Arg Val Val Arg Pro Leu Gly Leu Ala Gly
1               5                  10                  15

Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn
            20                  25                  30

Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys
        35                  40                  45

Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn
    50                  55                  60

Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr
65                  70                  75                  80

Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu
                85                  90                  95

Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr
            100                 105                 110

Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys
        115                 120                 125

Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly
    130                 135                 140

Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn
145                 150                 155                 160

Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe
                165                 170                 175

Leu Val Gly
```

<210> 26
<211> 180
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial

<400> 26

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

Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser
            20                  25                  30
```

```
Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg
        35                  40                  45

Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser
    50                  55                  60

Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe
65                  70                  75                  80

Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys
                85                  90                  95

Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr
            100                 105                 110

Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser
        115                 120                 125

Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly
    130                 135                 140

Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr
145                 150                 155                 160

Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala
                165                 170                 175

Phe Leu Val Gly
            180
```

<210> 27
<211> 168
<212> PRT
<213> Homo sapiens

<300>
<308> P50591
<309> 1996-10-01
<313> (114)..(281)

<400> 27

```
Val Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr
1               5                   10                  15

Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys
            20                  25                  30

Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His
        35                  40                  45

Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His
    50                  55                  60
```

```
Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln
65                  70                  75                  80

Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr
                85                  90                  95

Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser
            100                 105                 110

Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser
        115                 120                 125

Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe
    130                 135                 140

Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser
145                 150                 155                 160

Phe Phe Gly Ala Phe Leu Val Gly
                165
```

<210> 28
<211> 163
<212> PRT
<213> Homo sapiens

<300>
<308> P50591
<309> 1996-10-01
<313> (119)..(281)

<400> 28

```
Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn
1               5                   10                  15

Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys
            20                  25                  30

Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn
        35                  40                  45

Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr
    50                  55                  60

Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu
65                  70                  75                  80

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

Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys
            100                 105                 110
```

```
Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly
        115                 120                 125

Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn
    130                 135                 140

Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe
145                 150                 155                 160

Leu Val Gly
```

<210> 29
<211> 161
<212> PRT
<213> Homo sapiens

<300>
<308> P50591
<309> 1996-10-01
<313> (121)..(281)

<400> 29

```
Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1               5                   10                  15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
            20                  25                  30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
        35                  40                  45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
    50                  55                  60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65                  70                  75                  80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
            100                 105                 110

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160
```

Gly

<210> 30
<211> 16
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank/ AAF71267.1
<309> 2000-05-21
<313> (57)..(72)

<400> 30

Lys Lys Leu Ser Glu Cys Leu Lys Arg Ile Gly Asp Glu Leu Asp Ser
1 5 10 15

<210> 31
<211> 15
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank/ AAH22072.2
<309> 2005-07-21
<313> (141)..(155)

<400> 31

Arg Asn Ile Ala Arg His Leu Ala Gln Val Gly Asp Ser Met Asp
1 5 10 15

<210> 32
<211> 124
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank/ AAA72757.1
<309> 1993-08-30
<313> (33)..(156)

<400> 32

Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser Ser
1 5 10 15

Thr Ser Ala Ala Ser Ser Ser Asn Tyr Cys Asn Gln Met Met Lys Ser
20 25 30

Arg Asn Leu Thr Lys Asp Arg Cys Lys Pro Val Asn Thr Phe Val His
35 40 45

Glu Ser Leu Ala Asp Val Gln Ala Val Cys Ser Gln Lys Asn Val Ala
50 55 60

Cys Lys Asn Gly Gln Thr Asn Cys Tyr Gln Ser Tyr Ser Thr Met Ser
65 70 75 80

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

Tyr Lys Thr Thr Gln Ala Asn Lys His Ile Ile Val Ala Cys Glu Gly
100 105 110

Asn Pro Tyr Val Pro Val His Phe Asp Ala Ser Val
115 120

<210> 33
<211> 104
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank/ AAH67222.1
<309> 2006-07-15
<313> (2)..(105)

<400> 33

Gly Asp Val Glu Lys Gly Lys Lys Ile Phe Ile Met Lys Cys Ser Gln
1 5 10 15

Cys His Thr Val Glu Lys Gly Gly Lys His Lys Thr Gly Pro Asn Leu
20 25 30

His Gly Leu Phe Gly Arg Lys Thr Gly Gln Ala Pro Gly Tyr Ser Tyr
35 40 45

Thr Ala Ala Asn Lys Asn Lys Gly Ile Ile Trp Gly Glu Asp Thr Leu
50 55 60

Met Glu Tyr Leu Glu Asn Pro Lys Lys Tyr Ile Pro Gly Thr Lys Met
65 70 75 80

Ile Phe Val Gly Ile Lys Lys Lys Glu Glu Arg Ala Asp Leu Ile Ala
85 90 95

Tyr Leu Lys Lys Ala Thr Asn Glu
100

<210> 34
<211> 227
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank/ CAA01810.1
<309> 1995-10-17
<313> (1)..(227)

<400> 34

Ile Ile Gly Gly His Val Ala Lys Pro His Ser Arg Pro Tyr Met Ala
1 5 10 15

Tyr Leu Met Ile Trp Asp Gln Lys Ser Leu Lys Arg Cys Gly Gly Phe
20 25 30

Leu Ile Arg Asp Asp Phe Val Leu Thr Ala Ala His Cys Trp Gly Ser
35 40 45

Ser Ile Asn Val Thr Leu Gly Ala His Asn Ile Lys Glu Gln Glu Pro
50 55 60

Thr Gln Gln Phe Ile Pro Val Lys Arg Ala Ile Pro His Pro Ala Tyr
65 70 75 80

Asn Pro Lys Asn Phe Ser Asn Asp Ile Met Leu Leu Gln Leu Glu Arg
85 90 95

Lys Ala Lys Arg Thr Arg Ala Val Gln Pro Leu Arg Leu Pro Ser Asn
100 105 110

Lys Ala Gln Val Lys Pro Gly Gln Thr Cys Ser Val Ala Gly Trp Gly
115 120 125

Gln Thr Ala Pro Leu Gly Lys His Ser His Thr Leu Gln Glu Val Lys
130 135 140

Met Thr Val Gln Glu Asp Arg Lys Cys Glu Ser Asp Leu Arg His Tyr
145 150 155 160

Tyr Asp Ser Thr Ile Glu Leu Cys Val Gly Asp Pro Glu Ile Lys Lys
165 170 175

Thr Ser Phe Lys Gly Asp Ser Gly Gly Pro Leu Val Cys Asn Lys Val
180 185 190

Ala Gln Gly Ile Val Ser Tyr Gly Arg Asn Asn Gly Met Pro Pro Arg
195 200 205

Ala Cys Thr Lys Val Ser Ser Phe Val His Trp Ile Lys Lys Thr Met
210 215 220

Lys Arg Tyr
225

<210> 35
<211> 9
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank/ EAW58223.1
<309> 2006-12-18
<313> (561)..(569)

<400> 35

Phe Ser Arg Ser Leu His Ser Leu Leu
1 5

<210> 36
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<212> PRT
<213> Homo sapiens

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<309> 2009-03-18
<313> (72)..(86)

<400> 36

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

<210> 37
<211> 24
<212> PRT
<213> Homo sapiens

<300>
<308> GenBank/ AAB51243.2
<309> 2001-09-26
<313> (130)..(153)

<400> 37

Glu Glu Gln Trp Ala Arg Glu Ile Gly Ala Gln Leu Arg Arg Met Ala
1 5 10 15

Asp Asp Leu Asn Ala Gln Tyr Glu
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<210> 38
<211> 192
<212> PRT
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<300>
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<309> 2001-09-26
<313> (2)..(193)

<400> 38

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

Ala Arg Asp Gly Pro Arg Pro Phe Pro Leu Gly Arg Leu Val Pro Ser
20 25 30

Ala Val Ser Cys Gly Leu Cys Glu Pro Gly Leu Ala Ala Ala Pro Ala
35 40 45

Ala Pro Thr Leu Leu Pro Ala Ala Tyr Leu Cys Ala Pro Thr Ala Pro
50 55 60

Pro Ala Val Thr Ala Ala Leu Gly Gly Ser Arg Trp Pro Gly Gly Pro
65 70 75 80

Arg Ser Arg Pro Arg Gly Pro Arg Pro Asp Gly Pro Gln Pro Ser Leu
85 90 95

Ser Leu Ala Glu Gln His Leu Glu Ser Pro Val Pro Ser Ala Pro Gly
100 105 110

Ala Leu Ala Gly Gly Pro Thr Gln Ala Ala Pro Gly Val Arg Gly Glu
115 120 125

Glu Glu Gln Trp Ala Arg Glu Ile Gly Ala Gln Leu Arg Arg Met Ala
130 135 140

Asp Asp Leu Asn Ala Gln Tyr Glu Arg Arg Arg Gln Glu Glu Gln Gln
145 150 155 160

Arg His Arg Pro Ser Pro Trp Arg Val Leu Tyr Asn Leu Ile Met Gly
165 170 175

Leu Leu Pro Leu Pro Arg Gly His Arg Ala Pro Glu Met Glu Pro Asn
180 185 190

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<309> 2006-12-18
<313> (132)..(138)

<400> 39

Ala Val Pro Ile Ala Gln Lys Pro
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<210> 40
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<309> 2008-05-24
<313> (21)..(36)

<400> 40

Arg Ala Gly Leu Gln Phe Pro Val Gly Arg Leu Leu Arg Arg Leu Leu
1 5 10 15

Arg Arg Leu Leu
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<210> 41
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<212> PRT
<213> Homo sapiens

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<308> Swiss-Prot/ P22069.2
<309> 2010-03-02
<313> (1)..(104)

<400> 41

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Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp
            20                  25                  30

Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys
        35                  40                  45

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

Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
65                  70                  75                  80

Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
                85                  90                  95

His Phe Val Gly Val Gly Ser Cys
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<313> (18)..(36)

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Pro Arg Val
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<301> Böttger
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<304> 13
<306> 2141-2147
<307> 1996

<400> 43

Pro Arg Phe Met Asp Thr Trp Glu Gly Leu Asn
1 5 10

<210> 44
<211> 17
<212> PRT
<213> Glycine max

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<308> GenBank/ ACE36683.1
<309> 2008-07-10
<313> (43)..(59)

<400> 44

Cys Glu Lys His Ile Met Glu Lys Ile Gln Gly Arg Gly Asp Asp Asp
1 5 10 15

Asp

<210> 45
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<212> PRT
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<300>
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<313> (132)..(138)

<400> 45

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

<210> 46
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<220>
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<400> 46

Ala Gly Ala Gly Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala
1 5 10 15

Gly Gly Ala Gly

20

<210> 47
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<309> 2009-01-13
<313> (79)..(191)

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Met Thr Ile Ser Gln Gln Glu Phe Gly Arg Thr Gly Leu Pro Asp Leu
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Ser Ser Met Thr Glu Glu Glu Gln Ile Ala Tyr Ala Met Gln Met Ser
20 25 30

Leu Gln Gly Ala Glu Phe Gly Gln Ala Glu Ser Ala Asp Ile Asp Ala
35 40 45

Ser Ser Ala Met Asp Thr Ser Glu Pro Ala Lys Glu Glu Asp Asp Tyr
50 55 60

Asp Val Met Gln Asp Pro Glu Phe Leu Gln Ser Val Leu Glu Asn Leu
65 70 75 80

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

Leu Ala Ser Gln Ala Thr Lys Asp Gly Lys Lys Asp Lys Lys Glu Glu
100 105 110

Asp Lys

<210> 48
<211> 10
<212> PRT
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<300>
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Val Ala Asn Pro Gln Ala Glu Gly Gln Leu
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<212> PRT
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<313> (113)..(118)

<400> 49

Leu Ala Asn Gly Val Glu
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<210> 50
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<213> Homo sapiens

<300>
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<313> (127)..(131)

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Cys Pro Ser Glu Gly Leu Cys
1 5

<210> 51
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<220>
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<400> 51

Pro Leu Gly Leu Ala Gly
1 5

<210> 52
<211> 4
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<220>
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<400> 52

Arg Val Val Arg
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<210> 53
<211> 4
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<220>
<223> artificial

<400> 53

Arg Lys Lys Arg
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<210> 54
<211> 118
<212> PRT
<213> Pseudomonas aeruginosa

<400> 54

Pro Glu Gly Gly Ser Leu Ala Ala Leu Thr Ala His Gln Ala Cys His
1 5 10 15

Leu Pro Leu Glu Thr Phe Thr Arg His Arg Gln Pro Arg Gly Trp Glu
20 25 30

Gln Leu Glu Gln Cys Gly Tyr Pro Val Gln Arg Leu Val Ala Leu Tyr
35 40 45

Leu Ala Ala Arg Leu Ser Trp Asn Gln Val Asp Gln Val Ile Ala Asn
50 55 60

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

Glu Ser Pro Glu Gln Ala Arg Leu Ala Leu Thr Leu Ala Ala Ala Glu
85 90 95

Ser Glu Arg Phe Val Arg Gln Gly Thr Gly Asn Asp Glu Ala Gly Ala
100 105 110

Ala Asn Gly Pro Ala Asp
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<210> 55
<211> 4
<212> PRT
<213> Homo sapiens

<400> 55

Lys Asp Glu Leu
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<210> 56
<211> 4
<212> PRT
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<400> 56

Lys Glu Asp Leu
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<210> 57
<211> 4
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<220>

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<400> 57

Gly Gly Ser Gly
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<210> 58
<211> 4
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<400> 58

Gly Gly Gly Ser
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<210> 59
<211> 5
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<400> 59

Gly Gly Gly Gly Ser
1 5

<210> 60
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<400> 60

Gly Gly Ser Gly Gly
1 5

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<400> 61

Gly Gly Gly Ser Gly Gly
1 5

<210> 62
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<220>
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<400> 62

Gly Gly Gly Ser Gly Gly Gly
1 5

<210> 63
<211> 8
<212> PRT
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<220>
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<400> 63

Gly Gly Gly Ser Gly Gly Gly Ser
1 5

<210> 64
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Gly Gly Gly Ser Gly Gly Gly Gly Ser
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<210> 65
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Ala Ser Gly Gly
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<210> 66
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<220>
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<400> 66

Gly Gly Gly Ser Ala Ser Gly Gly
1 5

<210> 67
<211> 582

<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 67
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ggtcacgctc acaaaaatgc gatcattttc tttcagttca aaaatgccac cctgataaat 120

gctatacagg ccatattctg catctttgct ccaacagcta ttacgtgcgc ttttcatcag 180

cagaatcgga tccggatagc tggtatattt ataaatgtac tgcaccattt gtttatcatt 240

tttggtattt tctttaattt cttcctgaaa gcgaaaatag gtctggctat aaatataata 300

aaagcctttt tcatgaatca ccagttcacc attacgcaga tgcagattgc tcagaaagct 360

atgaccgcta cggctgcttt cccagctatt aattttgcga cccagggctt tttcattttt 420

gctattcggg ctgctcaggg tattgctacg accacgggtg ccggtaatat gtgctgcaac 480

acgacctgcc agacccagcg gacgaacaac acgacgacgg cgacgacgac gacggctatc 540

cagttcatca ccaatacgtt tcaggcattc gctcagtttt tt 582

<210> 68
<211> 579
<212> DNA
<213> Artificial Sequence

<220>
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<400> 68
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cgtcgtcgtg ttgttcgtcc gctgggtctg gcaggtcgtg ttgcagcaca tattaccggc 120

acccgtggtc gtagcaatac cctgagcagc ccgaatagca aaaatgaaaa agccctgggt 180

cgcaaaatta atagctggga aagcagccgt agcggtcata gctttctgag caatctgcat 240

ctgcgtaatg gtgaactggt gattcatgaa aaaggctttt attatattta tagccagacc 300

tattttcgct ttcaggaaga aattaaagaa aataccaaaa atgataaaca aatggtgcag 360

tacatttata aatataccag ctatccggat ccgattctgc tgatgaaaag cgcacgtaat 420

agctgttgga gcaaagatgc agaatatggc ctgtatagca tttatcaggg tggcattttt 480

gaactgaaag aaaatgatcg cattttgtg agcgtgacca atgaacatct gattgatatg 540

gatcatgaag ccagcttttt tggtgcattt ctggtgggc 579

<210> 69
<211> 909
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 69
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agcaaaaatg aaaaagccct gggtcgcaaa attaatagct gggaaagcag ccgtagcggt 120

catagctttc tgagcaatct gcatctgcgt aatggtgaac tggtgattca tgaaaaaggc 180

ttttattata tttatagcca gacctatttt cgctttcagg aagaaattaa agaaaatacc 240

aaaaatgaca aacaaatggt gcagtatatc tacaaataca ccagctatcc ggatccgatt 300

ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggcctgtat 360

agcatttatc agggtggcat ttttgaactg aaagaaaatg atcgcatttt tgtgagcgtg 420

accaatgaac atctgattga tatggatcat gaagccagct tttttggtgc atttctggtt 480

ggtggtggta gcggtccgct gggtctggca ggtcgtgttg ttcgtaaaga aaccgcagca 540

gccaaatttg aacgtcagca catggatagc agcaccagcg cagcaagcag cagcaattat 600

tgcaatcaga tgatgaaaag ccgcaatctg accaaagatc gttgtaaacc ggtgaatacc 660

tttgttcatg aaagcctggc agatgttcag gcagtttgca gccagaaaaa tgtggcctgt 720

aaaaatggtc agaccaattg ctatcagagc tatagcacca tgagcattac cgattgtcgt 780

gaaaccggta gcagcaaata tccgaattgc gcctataaaa ccacccaggc caataaacat 840

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gaagatctg 909

<210> 70
<211> 879
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 70
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agcaaaaatg aaaaagcact gggtcgcaaa attaatagct gggaaagcag ccgtagcggt 120

catagctttc tgagcaatct gcatctgcgt aatggtgaac tggtgattca tgaaaaaggc 180

ttttattata tttatagcca gacctatttt cgctttcaag aagaaattaa agaaaatacc 240

aaaaatgata agcagatggt gcagtatatc tataaatata ccagctatcc ggatccgatt 300

ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggtctgtat 360

agcatttatc agggtggcat ttttgaactg aaagaaaatg atcgcatttt tgtgagcgtg 420

accaatgaac atctgattga tatggatcat gaagccagct tttttggtgc atttctggtt 480

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cacatggata gcagcaccag cgcagcaagc agcagcaatt attgtaatca gatgatgaaa 600

agccgcaatc tgaccaaaga tcgttgtaaa ccggtgaata cctttgttca tgaaagcctg 660

gcagatgttc aggcagtttg tagccagaaa aatgttgcct gtaaaaatgg tcagaccaat 720

tgctatcaga gctatagcac catgagcatt accgattgtc gtgaaaccgg tagcagcaaa 780

tatccgaatt gtgcatataa aaccacccag gccaataaac atattattgt tgcctgtgaa 840

ggcaatccgt atgttccggt tcattttgat gcaagcgtt 879

<210> 71
<211> 852
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 71
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ttttttttta atgcccacaa aaatcatttt cgtacccgga atatattttt tcggattttc 120

cagatattcc atcagggtat cttcacccca aataatgcct ttgtttttat tggctgcggt 180

atagctataa cccggtgcct gaccggtttt acgaccaaac agaccatgca gattcggacc 240

ggttttatgt ttgccacctt tttcaacggt atgacactgg ctgcatttca taataaaaat 300

ttttttgcct ttttccacat caccacgaac aacacgacct gccagaccca gcggaccgct 360

accaccacca accagaaatg caccaaaaaa gctggcttca tgatccatat caatcagatg 420

ttcattggtc acgctcacaa aaatgcgatc attttctttc agttcaaaaa tgccaccctg 480

ataaatgcta tacaggccat attctgcatc tttgctccaa cagctattac gtgcgctttt 540

catcagcaga atcggatccg gatagctggt atatttataa atgtactgca ccatttgttt 600

atcgtttttg gtattttctt taatttcttc ctgaaagcga aaataggtct ggctataaat 660

ataataaaag ccttttttcat gaatcaccag ttcaccatta cgcagatgca gattgctcag 720

aaagctatga ccgctacggc tgctttccca gctattaatt ttgcgaccca gggctttttc 780

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tgcaacacgc at 852

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<211> 800
<212> DNA
<213> Artificial Sequence

<220>
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<400> 72
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agcaaaaatg aaaaagcact gggtcgcaaa attaatagct gggaaagcag ccgtagcggt 120

catagctttc tgagcaatct gcatctgcgt aatggtgaac tggtgattca tgaaaaaggc 180

ttttattata tttatagcca gacctatttt cgctttcaag aagaaattaa agaaaatacc 240

aaaaatgaca aacaaatggt gcagtatatc tataaatata ccagctatcc ggatccgatt 300

ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggtctgtat 360

agcatttatc agggtggcat ttttgaactg aaagaaaatg atcgcatttt tgtgagcgtg 420

accaatgaac atctgattga tatggatcat gaagccagct tttttggtgc atttctggtt 480

ggtggtggtg gtagccgtaa aaaacgtgca agcggtggtc cggaaggtgg tagcctggca 540

gcactgaccg cacatcaggc atgtcatctg ccgctggaaa cctttacccg tcatcgtcag 600

cctcgtggtt gggaacagct ggaacagtgt ggttatccgg ttcagcgtct ggttgcactg 660

tatctggcag cacgtctgag ctggaatcag gttgatcagg ttattgcaaa tgcactggca 720

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<210> 73
<211> 1215
<212> DNA
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<220>
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<400> 73
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agcaaaaatg aaaaagccct gggtcgtaaa attaatagct gggaaagcag ccgtagcggt 120

catagctttc tgagcaatct gcatctgcgt aatggcgaac tggtgattca tgaaaaaggc 180

ttttattata tttatagcca gacctatttt cgctttcagg aagaaattaa agaaaatacc 240

aaaaatgata aacaaatggt gcagtatatc tataaatata ccagctatcc ggatccgatt 300

ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgccgaata tggtctgtat 360

agcatttatc agggtggcat ttttgaactg aaagaaaatg atcgcatttt tgtgagcgtg 420

accaatgaac atctgattga tatggatcat gaagccagct tttttggtgc atttctggtt 480

ggtggtggtg gtagccgtaa aaaacgtggt ggtggcggtt ctattattgg tggtcatgtt 540

gcaaaaccgc atagccgtcc gtatatggca tatctgatga tttgggatca gaaaagcctg 600

aaacgttgtg gtggctttct gattcgtgat gattttgttc tgaccgcagc acattgttgg 660

ggtagcagca ttaatgttac cctgggtgcc cataatatta aagaacagga accgacccag 720

cagtttattc cggttaaacg tgcaattccg catccggcat ataatccgaa aaattttagc 780

aatgatatca tgctgctgca gctggaacgt aaagcaaaac gtacccgtgc agttcagccg 840

ctgcgtctgc cgagcaataa agcacaggtt aaaccgggtc agacctgtag cgttgcaggt 900

tggggtcaga ccgcaccgct gggtaaacat tctcataccc tgcaagaggt taaaatgacc 960

gtccaagagg atcgtaaatg cgaaagcgat ctgcgccatt attatgatag caccattgaa 1020

ctgtgtgtgg gcgatccgga aatcaaaaaa accagcttta aaggtgatag cggtggtccg 1080

ctggtttgta ataaagttgc ccagggtatt gttagctatg gtcgtaataa tggtatgccg 1140

ccgcgtgcat gtaccaaagt tagcagcttt gtgcattgga ttaaaaaaac gatgaaacgc 1200

tataaagatg aactg 1215

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<211> 1215

<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 74
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catagctttc tgagcaatct gcatctgcgt aatggtgaac tggtgattca tgaaaaaggc 180

ttttattata tttatagcca gacctatttt cgctttcaag aagaaattaa agaaaacacc 240

aaaaatgata aacaaatggt gcagtatatt tacaaatata ccagctatcc ggatccgatt 300

ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggtctgtat 360

agcatttatc agggtggcat ttttgaactg aaagaaaatg atcgcatttt tgtgagcgtg 420

accaatgaac atctgattga tatggatcat gaagccagct tttttggtgc atttctggtt 480

ggtggtggtg gtagccgtaa aaaacgtggt ggtggcggta gtattattgg tggtcatgtt 540

gcaaaaccgc atagccgtcc gtatatggca tatctgatga tttgggatca gaaaagcctg 600

aaacgttgtg gtggttttct gattcgtgat gattttgttc tgaccgcagc acattgttgg 660

ggtagcagca ttaatgttac cctgggtgcc cataatatta aagaacaaga accgacccag 720

cagtttattc cggttaaacg tgcaattccg catccggcat ataatccgaa aaattttagc 780

aatgatatta tgctgctgca gctggaacgc aaagcaaaac gtacccgtgc agttcagccg 840

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tggggtcaga ccgcaccgct gggtaaacat tcacataccc tgcaagaggt gaaaatgacc 960

gttcaagagg atcgtaaatg cgaaagcgat ctgcgccatt attatgatag caccattgaa 1020

ctgtgtgttg gtgatccgga aattaaaaaa accagcttta aaggcgatag cggtggtccg 1080

ctggtttgta ataaagttgc acagggtatt gtgagctatg gtcgtaataa tggtatgcct 1140

ccgcgtgcat gtaccaaagt tagcagcttt gtgcattgga ttaaaaaaac gatgaaacgc 1200

tataaagatg aactg 1215

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<211> 561
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 75
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gaaagcagcc gtagcggtca tagctttctg agcaatctgc atctgcgtaa tggtgaactg 240

gtgattcatg aaaaaggctt ttattatatt tatagccaga cctattttcg ctttcaggaa 300

gaaattaaag aaaataccaa aaatgataaa caaatggtgc agtacattta taaatatacc 360

agctatccgg atccgattct gctgatgaaa agcgcacgta atagctgttg gagcaaagat 420

gcagaatatg gcctgtatag catttatcag ggtggcattt ttgaactgaa agaaaatgat 480

cgcatttttg tgagcgtgac caatgaacat ctgattgata tggatcatga agccagcttt 540

tttggtgcat ttctggtggg c 561

<210> 76
<211> 579
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 76
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acccgtggtc gtagcaatac cctgagcagc ccgaatagca aaaatgaaaa agccctgggt 180

cgcaaaatta atagctggga aagcagccgt agcggtcata gctttctgag caatctgcat 240

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tacatttata aatataccag ctatccggat ccgattctgc tgatgaaaag cgcacgtaat 420

agctgttgga gcaaagatgc agaatatggc ctgtatagca tttatcaggg tggcattttt 480

gaactgaaag aaaatgatcg catttttgtg agcgtgacca atgaacatct gattgatatg 540

gatcatgaag ccagcttttt tggtgcattt ctggtgggc 579

<210> 77
<211> 666
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<220>
<223> artificial

<400> 77
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gacccgattc tgctgatgaa aagcgcacgt aatagctgtt ggagcaaaga tgcagaatat 480

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agcggt 666

<210> 78
<211> 1116
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 78
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agcatttatc agggtggcat ctttgagctg aaagaaaatg atcgcatctt tgttagcgtg 420

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<400> 79
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ggtggtggtg gtagccgtaa aaaacgtgca agcggtggtc cggaaggtgg tagcctggca 540

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catcgtgcac cggaaatgga accgaataaa gatgaactg 1479

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<211> 558
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<213> Artificial Sequence

<220>
<223> artificial

<400> 80
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<211> 627
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 81
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tggagcaaag atgcagaata tggtctgtat agcatttatc agggtggcat ctttgagctg 480

aaagaaaatg atcgcatctt tgttagcgtg accaacgaac atctgatcga tatggatcat 540

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catcatcatc atcaccatag cagcggt 627

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<211> 837
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial

<400> 82
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ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggtctgtat 360

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<213> Artificial Sequence

<220>
<223> artificial

<400> 83
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<212> DNA
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<220>
<223> artificial

<400> 84
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<211> 567
<212> DNA
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<223> artificial

<400> 85
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<223> artificial

<400> 86
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<211> 654
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<400> 87
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<400> 88
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<400> 93

eolf-seql

```
Gly Cys Ala Ala Ala Cys Ala Ala Cys Thr Ser Glu Glu Thr Ile Ser
1               5                  10                  15

Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg Glu Arg
            20                  25                  30

Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser
        35                  40                  45

Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg
    50                  55                  60

Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser
65                  70                  75                  80

Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe
                85                  90                  95

Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys
            100                 105                 110

Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr
        115                 120                 125

Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser
    130                 135                 140

Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly
145                 150                 155                 160

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

Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala
            180                 185                 190

Phe Leu Val Gly Gly Gly Gly Ser Ala Ser Gly Cys Gly Pro Glu Arg
        195                 200                 205

Lys Lys Arg Ala Ser Gly Gly Pro Glu Gly Gly Ser Leu Ala Ala Leu
    210                 215                 220

Thr Ala His Gln Ala Cys His Leu Pro Leu Glu Thr Phe Thr Arg His
225                 230                 235                 240

Arg Gln Pro Arg Gly Trp Glu Gln Leu Glu Gln Cys Gly Tyr Pro Val
                245                 250                 255

Gln Arg Leu Val Ala Leu Tyr Leu Ala Ala Arg Leu Ser Trp Asn Gln
            260                 265                 270
```

Val Asp Gln Val Ile Arg Asn Ala Leu Ala Ser Pro Gly Ser Gly Gly
275 280 285

Asp Leu Gly Glu Ala Ile Arg Glu Gln Pro Glu Gln Ala Arg Leu Ala
290 295 300

Leu Thr Leu Ala Ala Ala Glu Ser Glu Arg Phe Val Arg Gln Gly Thr
305 310 315 320

Gly Asn Gly Gly Gly Gly Ser Gly Gly Gly Ser Lys Glu Thr Ala Ala
325 330 335

Ala Lys Phe Glu Arg Gln His Met Asp Ser Ser Thr Ser Ala Ala Ser
340 345 350

Ser Ser Asn Tyr Cys Asn Gln Met Met Lys Ser Arg Asn Leu Thr Lys
355 360 365

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

Val Gln Ala Val Cys Ser Gln Lys Asn Val Ala Cys Lys Asn Gly Gln
385 390 395 400

Thr Asn Cys Tyr Gln Ser Tyr Ser Thr Met Ser Ile Thr Asp Cys Arg
405 410 415

Glu Thr Gly Ser Ser Lys Tyr Pro Asn Cys Ala Tyr Lys Thr Thr Gln
420 425 430

Ala Asn Lys His Ile Ile Val Ala Cys Glu Gly Asn Pro Tyr Val Pro
435 440 445

Val His Phe Asp Ala Ser Val Lys Asp Glu Leu
450 455

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

<220>
<223> fusion protein

<400> 94

Phe Ser Arg Ser Leu His Ser Leu Leu Arg Arg Arg Arg Arg Arg Arg
1 5 10 15

Arg Val Val Arg Pro Leu Gly Leu Ala Gly Thr Ser Glu Glu Thr Ile
20 25 30

Ser Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg Glu
35 40 45

```
Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg
    50                  55                  60

Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly
65                  70                  75                  80

Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu
                85                  90                  95

Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly
            100                 105                 110

Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile
        115                 120                 125

Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys
    130                 135                 140

Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn
145                 150                 155                 160

Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln
                165                 170                 175

Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val
            180                 185                 190

Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly
        195                 200                 205

Ala Phe Leu Val Gly
    210
```

<210> 95
<211> 204
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 95

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

Ser Gly Leu Asp Lys Asp Tyr Leu Lys Pro Asp Asp Pro Leu Gly Leu
            20                  25                  30

Ala Gly Arg Val Val Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His
        35                  40                  45
```

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

Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser
65                  70                  75                  80

Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu
                85                  90                  95

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

Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln
        115                 120                 125

Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu
    130                 135                 140

Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr
145                 150                 155                 160

Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn
                165                 170                 175

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

His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
        195                 200
```

<210> 96
<211> 205
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 96

```
Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr
1               5                   10                  15

Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile
            20                  25                  30

Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu
        35                  40                  45

His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr
    50                  55                  60

Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn
65                  70                  75                  80
```

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

Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp
            100                 105                 110

Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile
        115                 120                 125

Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu
    130                 135                 140

His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu
145                 150                 155                 160

Val Gly Gly Gly Gly Ser Arg Lys Lys Arg Val Lys Arg Leu Ser Thr
                165                 170                 175

Ala Ala Asp Met Gln Gly Val Val Thr Asp Gly Met Ala Ser Gly Leu
            180                 185                 190

Asp Lys Asp Tyr Leu Lys Pro Asp Asp Lys Asp Glu Leu
        195                 200                 205
```

<210> 97
<211> 207
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 97

```
Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr
1               5                   10                  15

Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile
            20                  25                  30

Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu
        35                  40                  45

His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr
    50                  55                  60

Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn
65                  70                  75                  80

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

Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp
100 105 110

Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile
115 120 125

Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu
130 135 140

His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu
145 150 155 160

Val Gly Gly Gly Gly Ser Gly Gly Gly Pro Leu Gly Leu Ala Gly Arg
165 170 175

Val Val Arg Leu Ser Thr Ala Ala Asp Met Gln Gly Val Val Thr Asp
180 185 190

Gly Met Ala Ser Gly Leu Asp Lys Asp Tyr Leu Lys Pro Asp Asp
195 200 205

<210> 98
<211> 327
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 98

Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr
1 5 10 15

Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile
20 25 30

Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu
35 40 45

His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr
50 55 60

Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn
65 70 75 80

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

Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp
100 105 110

Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile
115 120 125

```
Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu
    130                 135                 140

His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu
145                 150                 155                 160

Val Gly Gly Gly Gly Ser Gly Gly Gly Pro Leu Gly Leu Ala Gly Arg
                165                 170                 175

Val Val Arg Met Leu Arg Lys Leu Ala Ala Val Ser Leu Leu Ser Leu
            180                 185                 190

Leu Ser Ala Pro Leu Leu Ala Ala Glu Cys Ser Val Asp Ile Gln Gly
        195                 200                 205

Asn Asp Gln Met Gln Phe Asn Thr Asn Ala Ile Thr Val Asp Lys Ser
    210                 215                 220

Cys Lys Gln Phe Thr Val Asn Leu Ser His Pro Gly Asn Leu Pro Lys
225                 230                 235                 240

Asn Val Met Gly His Asn Trp Val Leu Ser Thr Ala Ala Asp Met Gln
                245                 250                 255

Gly Val Val Thr Asp Gly Met Ala Ser Gly Leu Asp Lys Asp Tyr Leu
            260                 265                 270

Lys Pro Asp Asp Ser Arg Val Ile Ala His Thr Lys Leu Ile Gly Ser
        275                 280                 285

Gly Glu Lys Asp Ser Val Thr Phe Asp Val Ser Lys Leu Lys Glu Gly
    290                 295                 300

Glu Gln Tyr Met Phe Phe Cys Thr Phe Pro Gly His Ser Ala Leu Met
305                 310                 315                 320

Lys Gly Thr Leu Thr Leu Lys
                325
```

<210> 99
<211> 193
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 99

```
Ala Val Pro Ile Ala Gln Lys Pro Arg Arg Arg Arg Arg Arg Arg Arg
1               5                   10                  15
```

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Val Val Arg Pro Leu Gly Leu Ala Gly Val Arg Glu Arg Gly Pro Gln
20 25 30

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
35 40 45

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
50 55 60

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
65 70 75 80

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
85 90 95

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
100 105 110

Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr
115 120 125

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
130 135 140

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
145 150 155 160

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

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
180 185 190

Gly

<210> 100
<211> 221
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 100

Ala Val Pro Ile Ala Gln Lys Pro Arg Arg Arg Arg Arg Arg Arg Arg
1 5 10 15

Val Val Arg Pro Leu Gly Leu Ala Gly Gly Cys Ala Ala Ala Cys Ala
20 25 30

Ala Cys Thr Ser Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln
35 40 45

```
Asn Ile Ser Pro Leu Val Arg Glu Arg Gly Pro Gln Arg Cys Ala Ala
    50                  55                  60

His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn
65                  70                  75                  80

Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser
                85                  90                  95

Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly
            100                 105                 110

Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr
        115                 120                 125

Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys
    130                 135                 140

Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile
145                 150                 155                 160

Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu
                165                 170                 175

Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu
            180                 185                 190

Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met
        195                 200                 205

Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
    210                 215                 220
```

<210> 101
<211> 212
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 101

```
Ala Val Pro Ile Ala Gln Lys Pro Arg Arg Arg Arg Arg Arg Arg Arg
1               5                   10                  15

Val Val Arg Pro Leu Gly Leu Ala Gly Thr Ser Glu Glu Thr Ile Ser
            20                  25                  30

Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg Glu Arg
        35                  40                  45
```

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

Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg
65 70 75 80

Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser
85 90 95

Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe
100 105 110

Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys
115 120 125

Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr
130 135 140

Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser
145 150 155 160

Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly
165 170 175

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

Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala
195 200 205

Phe Leu Val Gly
210

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

<220>
<223> fusion protein

<400> 102

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

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

Asn Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu Gly
35 40 45

Leu Ala Gly Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser
50 55 60

```
Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg
65                  70                  75                  80

Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser
                85                  90                  95

Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe
            100                 105                 110

Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys
        115                 120                 125

Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr
    130                 135                 140

Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser
145                 150                 155                 160

Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly
                165                 170                 175

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

Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala
        195                 200                 205

Phe Leu Val Gly
    210
```

<210> 103
<211> 247
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 103

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

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

Asn Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu Gly
        35                  40                  45

Leu Ala Gly Gly Cys Ala Ala Ala Cys Ala Ala Cys Thr Ser Glu Glu
    50                  55                  60
```

Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val
65 70 75 80

Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg
85 90 95

Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala
100 105 110

Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser
115 120 125

Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu
130 135 140

Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu
145 150 155 160

Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile
165 170 175

Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala
180 185 190

Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile
195 200 205

Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val
210 215 220

Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe
225 230 235 240

Phe Gly Ala Phe Leu Val Gly
245

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

<220>
<223> fusion protein

<400> 104

Val Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr
1 5 10 15

Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys
20 25 30

Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His
35 40 45

```
Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His
    50                  55                  60

Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln
65                  70                  75                  80

Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr
                85                  90                  95

Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser
            100                 105                 110

Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser
        115                 120                 125

Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe
    130                 135                 140

Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser
145                 150                 155                 160

Phe Phe Gly Ala Phe Leu Val Gly Pro Leu Gly Leu Ala Gly Arg Val
                165                 170                 175

Val Arg Gly Pro Arg Arg Pro Arg Arg Pro Gly Asp Asp Ala Pro Val
            180                 185                 190

Glu Asp Leu Ile Arg Phe Val Gly Arg Leu Leu Ala Tyr Phe Gly Asp
        195                 200                 205

Thr Ile Asn Arg
    210
```

<210> 105
<211> 221
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 105

```
Arg Thr His Ile Asn Thr Val Val Ala Lys Ile Gln Ala Lys Ile Pro
1               5                   10                  15

Gly Ala Lys Arg His Ala Glu Glu Glu Glu Ala Ala Gly Arg Lys Arg
            20                  25                  30

Lys Lys Arg Thr Arg Val Val Arg Pro Leu Gly Leu Ala Gly Gly Gly
        35                  40                  45
```

Cys Ala Ala Ala Cys Ala Ala Cys Gly Gly Gly Gln Arg Val Ala Ala
50 55 60

His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn
65 70 75 80

Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser
85 90 95

Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly
100 105 110

Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr
115 120 125

Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys
130 135 140

Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile
145 150 155 160

Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu
165 170 175

Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu
180 185 190

Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met
195 200 205

Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
210 215 220

<210> 106
<211> 435
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 106

Ala Glu Pro Ser Ala Ala Thr Gln Ser His Ser Ile Ser Ser Ser Ser
1 5 10 15

Phe Gly Ala Glu Pro Ser Ala Pro Gly Gly Gly Gly Ser Pro Gly Ala
20 25 30

Cys Pro Ala Leu Gly Thr Lys Ser Cys Ser Ser Ser Cys Ala Val His
35 40 45

Asp Leu Ile Phe Trp Arg Asp Val Lys Lys Thr Gly Phe Val Phe Gly
50 55 60

```
Thr Thr Leu Ile Met Leu Leu Ser Leu Ala Ala Phe Ser Val Ile Ser
65                  70                  75                  80

Val Val Ser Tyr Leu Ile Leu Ala Leu Leu Ser Val Thr Ile Ser Phe
                85                  90                  95

Arg Ile Tyr Lys Ser Val Ile Gln Ala Val Gln Lys Ser Glu Glu Gly
            100                 105                 110

His Pro Phe Lys Ala Tyr Leu Asp Val Asp Ile Thr Leu Ser Ser Glu
        115                 120                 125

Ala Phe His Asn Tyr Met Asn Ala Ala Met Val His Ile Asn Arg Ala
    130                 135                 140

Leu Lys Leu Ile Ile Arg Leu Phe Leu Val Glu Asp Leu Val Asp Ser
145                 150                 155                 160

Leu Lys Leu Ala Val Phe Met Trp Leu Met Thr Tyr Val Gly Ala Val
                165                 170                 175

Phe Asn Gly Ile Thr Leu Leu Ile Leu Ala Glu Leu Leu Ile Phe Ser
            180                 185                 190

Val Pro Ile Val Tyr Glu Lys Tyr Lys Thr Gln Ile Asp His Tyr Val
        195                 200                 205

Gly Ile Ala Arg Asp Gln Thr Lys Ser Ile Val Glu Lys Ile Gln Ala
    210                 215                 220

Lys Leu Pro Gly Ile Ala Lys Lys Lys Ala Glu Arg Arg Arg Arg Arg
225                 230                 235                 240

Arg Arg Arg Gly Gly Ser Gly Gly Arg Val Val Arg Pro Leu Gly Leu
                245                 250                 255

Ala Gly Gly Gly Ser Gly Gly Cys Ala Ala Glu Cys Ala Ala Ala Cys
            260                 265                 270

Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn
        275                 280                 285

Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys
    290                 295                 300

Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn
305                 310                 315                 320

Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr
                325                 330                 335
```

Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu
340 345 350

Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr
355 360 365

Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys
370 375 380

Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly
385 390 395 400

Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn
405 410 415

Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe
420 425 430

Leu Val Gly
435

<210> 107
<211> 580
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 107

Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1 5 10 15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
20 25 30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
35 40 45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
50 55 60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65 70 75 80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
100 105 110

```
Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Gly Ser Arg Lys Lys Arg Ala Ser Gly Gly Pro Glu Gly
                165                 170                 175

Gly Ser Leu Ala Ala Leu Thr Ala His Gln Ala Cys His Leu Pro Leu
            180                 185                 190

Glu Thr Phe Thr Arg His Arg Gln Pro Arg Gly Trp Glu Gln Leu Glu
        195                 200                 205

Gln Cys Gly Tyr Pro Val Gln Arg Leu Val Ala Leu Tyr Leu Ala Ala
    210                 215                 220

Arg Leu Ser Trp Asn Gln Val Asp Gln Val Ile Ala Asn Ala Leu Ala
225                 230                 235                 240

Ser Pro Gly Ser Gly Gly Asp Leu Gly Glu Ala Ile Arg Glu Ser Pro
                245                 250                 255

Glu Gln Ala Arg Leu Ala Leu Thr Leu Ala Ala Ala Glu Ser Glu Arg
            260                 265                 270

Phe Val Arg Gln Gly Thr Gly Asn Asp Glu Ala Gly Ala Ala Asn Gly
        275                 280                 285

Pro Ala Asp Gly Gly Gly Ser Gly Gly Gly Met Ile Glu Thr Asp Ser
    290                 295                 300

Gly Val Asp Asp Asp Met Ala Cys His Lys Ile Pro Val Asp Ala Asp
305                 310                 315                 320

Phe Leu Tyr Ala Tyr Ser Thr Ala Pro Gly Tyr Tyr Ser Trp Arg Asn
                325                 330                 335

Ser Lys Asp Gly Ser Trp Phe Ile Gln Ser Leu Cys Ala Met Leu Lys
            340                 345                 350

Gln Tyr Ala Asp Lys Leu Glu Phe Met His Ile Leu Thr Arg Val Asn
        355                 360                 365

Arg Lys Val Ala Thr Glu Phe Glu Ser Phe Ser Phe Asp Ala Thr Phe
    370                 375                 380
```

```
His Ala Lys Lys Gln Ile Pro Cys Ile Val Ser Met Leu Thr Lys Glu
385                 390                 395                 400

Leu Tyr Phe Tyr His Asp Val Asp Gly Met Glu Asn Thr Glu Asn Ser
                405                 410                 415

Val Asp Ser Lys Ser Ile Lys Asn Leu Glu Pro Lys Ile Ile His Gly
            420                 425                 430

Ser Glu Ser Met Asp Ser Gly Met Ser Trp Asp Thr Gly Tyr Lys Met
        435                 440                 445

Asp Tyr Pro Glu Met Gly Leu Cys Ile Ile Ile Asn Asn Lys Asn Phe
    450                 455                 460

His Lys Ser Thr Gly Met Thr Ser Arg Ser Gly Thr Asp Val Asp Ala
465                 470                 475                 480

Ala Asn Leu Arg Glu Thr Phe Arg Asn Leu Lys Tyr Glu Val Arg Asn
                485                 490                 495

Lys Asn Asp Leu Thr Arg Glu Glu Ile Val Glu Leu Met Arg Asp Val
            500                 505                 510

Ser Lys Glu Asp His Ser Lys Arg Ser Ser Phe Val Cys Val Leu Leu
        515                 520                 525

Ser His Gly Glu Glu Gly Ile Ile Phe Gly Thr Asn Gly Pro Val Asp
    530                 535                 540

Leu Lys Lys Ile Thr Asn Phe Phe Arg Gly Asp Arg Cys Arg Ser Leu
545                 550                 555                 560

Thr Gly Lys Pro Lys Leu Phe Ile Ile Gln Ala Cys Arg Gly Thr Glu
                565                 570                 575

Leu Asp Cys Gly
            580
```

<210> 108
<211> 247
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 108

```
Ala Arg Lys Gly Lys Gly Gln Ile Glu Lys Arg Lys Leu Arg Glu Lys
1               5                   10                  15

Arg Arg Ser Thr Gly Val Val Asn Ile Pro Ala Ala Glu Cys Leu Asp
            20                  25                  30
```

```
Glu Tyr Glu Asp Asp Glu Ala Gly Gln Lys Glu Arg Lys Arg Glu Asp
        35                  40                  45

Ala Ile Thr Gln Gln Asn Thr Ile Gln Asn Glu Ala Arg Arg Arg Arg
    50                  55                  60

Arg Arg Arg Arg Val Val Arg Pro Leu Gly Leu Ala Gly Gln Gly Gly
65                  70                  75                  80

Ser Gly Gly Ser Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg
                85                  90                  95

Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala
            100                 105                 110

Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser
        115                 120                 125

Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu
    130                 135                 140

Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu
145                 150                 155                 160

Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile
                165                 170                 175

Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala
            180                 185                 190

Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile
        195                 200                 205

Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val
    210                 215                 220

Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe
225                 230                 235                 240

Phe Gly Ala Phe Leu Val Gly
                245
```

<210> 109
<211> 260
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 109

eolf-seql

```
Glu Glu Glu Ala Ala Gly Arg Lys Arg Lys Lys Arg Thr Ala Arg Lys
1               5                  10                  15

Gly Lys Gly Gln Ile Glu Lys Arg Lys Leu Arg Glu Lys Arg Arg Ser
            20                  25                  30

Thr Gly Val Val Asn Ile Pro Ala Ala Glu Cys Leu Asp Glu Tyr Glu
        35                  40                  45

Asp Asp Glu Ala Gly Gln Lys Glu Arg Lys Arg Glu Asp Ala Ile Thr
    50                  55                  60

Gln Gln Asn Thr Ile Gln Asn Glu Ala Arg Arg Arg Arg Arg Arg Arg
65                  70                  75                  80

Arg Val Val Arg Pro Leu Gly Leu Ala Gly Gln Gly Gly Ser Gly Gly
                85                  90                  95

Ser Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser
            100                 105                 110

Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg
        115                 120                 125

Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser
    130                 135                 140

Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe
145                 150                 155                 160

Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys
                165                 170                 175

Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr
            180                 185                 190

Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser
        195                 200                 205

Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly
    210                 215                 220

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

Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala
                245                 250                 255

Phe Leu Val Gly
            260
```

<210> 110
<211> 270
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 110

```
Thr Ser Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile
1               5                  10                  15

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

Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys
        35                  40                  45

Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg
    50                  55                  60

Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu
65                  70                  75                  80

Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe
                85                  90                  95

Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met
            100                 105                 110

Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu
        115                 120                 125

Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly
    130                 135                 140

Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp
145                 150                 155                 160

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

Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly Gly Gly Ser Gly Cys
            180                 185                 190

Ala Ala Cys Ala Ala Ala Cys Pro Leu Gly Leu Ala Gly Arg Val Val
        195                 200                 205

Arg Arg Arg Arg Arg Arg Arg Arg Met Pro Gly Lys Lys Ala Arg Lys
    210                 215                 220

Asn Ala Gln Pro Ser Pro Ala Arg Ala Pro Ala Glu Leu Glu Val Glu
225                 230                 235                 240
```

```
Cys Ala Thr Gln Leu Arg Arg Phe Gly Asp Lys Leu Asn Phe Arg Gln
                245                 250                 255

Lys Leu Leu Asn Leu Ile Ser Lys Leu Phe Cys Ser Gly Thr
            260                 265                 270
```

<210> 111
<211> 207
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 111

```
Val Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr
1               5                  10                  15

Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys
            20                  25                  30

Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His
        35                  40                  45

Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His
    50                  55                  60

Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln
65                  70                  75                  80

Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr
                85                  90                  95

Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser
            100                 105                 110

Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser
        115                 120                 125

Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe
    130                 135                 140

Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser
145                 150                 155                 160

Phe Phe Gly Ala Phe Leu Val Gly Gly Gly Ser Gly Cys Ala Ala Cys
                165                 170                 175

Ala Ala Ala Cys Pro Leu Gly Leu Ala Gly Arg Val Val Arg Arg Arg
            180                 185                 190
```

Arg Arg Arg Arg Arg Lys Leu Leu Asn Leu Ile Ser Lys Leu Phe
195 200 205

<210> 112
<211> 311
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 112

Gln Asp Trp Leu Thr Phe Gln Lys Lys His Ile Thr Asn Thr Arg Asp
1 5 10 15

Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp
20 25 30

Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys
35 40 45

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

Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
65 70 75 80

Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
85 90 95

His Phe Val Gly Val Gly Ser Cys Arg Val Val Arg Pro Leu Gly Leu
100 105 110

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

Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val
130 135 140

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

Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala
165 170 175

Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser
180 185 190

Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu
195 200 205

Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu
210 215 220

```
Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile
225                 230                 235                 240

Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala
                245                 250                 255

Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile
            260                 265                 270

Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val
        275                 280                 285

Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe
    290                 295                 300

Phe Gly Ala Phe Leu Val Gly
305                 310
```

<210> 113
<211> 230
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 113

```
Glu Glu Gln Trp Ala Arg Glu Ile Gly Ala Gln Leu Arg Arg Met Ala
1               5                   10                  15

Asp Asp Leu Asn Ala Gln Tyr Glu Arg Arg Arg Arg Arg Arg Arg Arg
            20                  25                  30

Arg Arg Val Val Arg Pro Leu Gly Leu Ala Gly Thr Ser Glu Glu Thr
        35                  40                  45

Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg
    50                  55                  60

Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly
65                  70                  75                  80

Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu
                85                  90                  95

Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe
            100                 105                 110

Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys
        115                 120                 125
```

Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu
130 135 140

Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr
145 150 155 160

Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg
165 170 175

Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr
180 185 190

Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser
195 200 205

Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe
210 215 220

Gly Ala Phe Leu Val Gly
225 230

<210> 114
<211> 225
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 114

Thr Ser Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile
1 5 10 15

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

Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys
35 40 45

Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg
50 55 60

Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu
65 70 75 80

Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe
85 90 95

Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met
100 105 110

Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu
115 120 125

Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly
130 135 140

Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp
145 150 155 160

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

Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly Cys Ala Ala Cys Ala
180 185 190

Ala Ala Cys Pro Leu Gly Leu Ala Gly Arg Val Val Arg Asn Ile Ala
195 200 205

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

Tyr
225

<210> 115
<211> 234
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 115

Thr Ser Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile
1 5 10 15

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

Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys
35 40 45

Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg
50 55 60

Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu
65 70 75 80

Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe
85 90 95

Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met
100 105 110

Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu
115 120 125

Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly
130 135 140

Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp
145 150 155 160

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

Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly Cys Ala Ala Cys Ala
180 185 190

Ala Ala Cys Gly Gly Pro Leu Gly Leu Ala Gly Arg Val Val Arg Gln
195 200 205

Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Lys Ala
210 215 220

Tyr Ala Ala Ala Gly Asn Ser Tyr Phe Lys
225 230

<210> 116
<211> 216
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 116

Phe Ile Ser Lys Glu Arg Arg Glu Arg Ala Ile Leu Ser Thr Lys Pro
1 5 10 15

Pro Gly Thr Phe Leu Leu Arg Phe Ser Glu Ser Ser Lys Arg Val Val
20 25 30

Arg Pro Leu Gly Ile Ala Gly Glu Gly Gly Gly Cys Ala Ala Ala Cys
35 40 45

Ala Ala Cys Gly Ser Gly Gln Arg Val Ala Ala His Ile Thr Gly Thr
50 55 60

Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys
65 70 75 80

Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His
85 90 95

Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His
100 105 110

```
Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln
        115                 120                 125

Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr
    130                 135                 140

Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser
145                 150                 155                 160

Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser
                165                 170                 175

Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe
            180                 185                 190

Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser
        195                 200                 205

Phe Phe Gly Ala Phe Leu Val Gly
    210                 215
```

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

<220>
<223> fusion protein

<400> 117

```
Gly Gln Val Gly Arg Gln Leu Ala Ile Ile Gly Asp Asp Ile Asn Arg
1               5                   10                  15

Arg Arg Arg Arg Arg Arg Arg Arg Val Val Arg Pro Leu Gly Leu Ala
            20                  25                  30

Gly Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr
        35                  40                  45

Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile
    50                  55                  60

Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu
65                  70                  75                  80

His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr
                85                  90                  95

Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn
            100                 105                 110
```

Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser
115 120 125

Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp
130 135 140

Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile
145 150 155 160

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

His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu
180 185 190

Val Gly

<210> 118
<211> 243
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 118

Lys Asn Leu Trp Ala Ala Gln Arg Tyr Gly Arg Glu Leu Arg Arg Met
1 5 10 15

Ser Asp Glu Phe Glu Gly Ser Phe Lys Gly Leu Arg Arg Arg Arg Arg
20 25 30

Arg Arg Arg Arg Val Val Arg Pro Leu Gly Leu Ala Gly Arg Val Ala
35 40 45

Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro
50 55 60

Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu
65 70 75 80

Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn
85 90 95

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

Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp
115 120 125

Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro
130 135 140

```
Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala
145                 150                 155                 160

Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys
                165                 170                 175

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

Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly Gly Gly
        195                 200                 205

Ser His Gly Leu Val Pro Arg Gly Ser Thr Ser Glu Glu Thr Ile Ser
    210                 215                 220

Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg Glu Arg
225                 230                 235                 240

Gly Pro Gln
```

<210> 119
<211> 236
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 119

```
Thr Ser Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile
1               5                   10                  15

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

Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys
        35                  40                  45

Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg
    50                  55                  60

Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu
65                  70                  75                  80

Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe
                85                  90                  95

Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met
            100                 105                 110
```

```
Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu
        115                 120                 125

Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly
    130                 135                 140

Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp
145                 150                 155                 160

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

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

Gly Leu Ala Gly Cys Arg Val Val Arg Arg Arg Arg Arg Arg Arg Arg
        195                 200                 205

Arg Lys Asn Leu Trp Ala Ala Gln Arg Tyr Gly Arg Glu Leu Arg Arg
    210                 215                 220

Met Ser Asp Glu Phe Glu Gly Ser Phe Lys Gly Leu
225                 230                 235
```

<210> 120
<211> 216
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 120

```
Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
1               5                   10                  15

Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
            20                  25                  30

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
        35                  40                  45

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
    50                  55                  60

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
65                  70                  75                  80

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

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
            100                 105                 110
```

```
Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
        115                 120                 125

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
    130                 135                 140

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
145                 150                 155                 160

Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Pro Leu Gly Leu Ala Gly
                165                 170                 175

Arg Val Val Arg Lys Phe Glu Pro Lys Ser Gly Trp Met Thr Phe Leu
            180                 185                 190

Glu Val Thr Gly Lys Ile Cys Glu Met Leu Ser Leu Leu Lys Gln Tyr
        195                 200                 205

Cys Lys Pro Arg Arg Pro Tyr Arg
    210                 215
```

<210> 121
<211> 237
<212> PRT
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 121

```
Arg Val Ser Phe Cys Arg Pro Gly Trp Ser Ala Met Ala Arg Ser Arg
1               5                   10                  15

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

Lys Phe Glu Pro Lys Ser Gly Trp Met Thr Phe Leu Glu Val Thr Gly
        35                  40                  45

Lys Ile Cys Glu Met Leu Ser Leu Leu Lys Gln Tyr Cys Arg Val Val
    50                  55                  60

Arg Pro Leu Gly Leu Ala Gly Gly Gly Ser Gly Gly Arg Val Ala Ala
65                  70                  75                  80

His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn
                85                  90                  95

Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser
            100                 105                 110
```

```
Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly
        115                 120                 125

Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr
    130                 135                 140

Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys
145                 150                 155                 160

Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile
                165                 170                 175

Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu
            180                 185                 190

Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu
        195                 200                 205

Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met
    210                 215                 220

Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
225                 230                 235
```

<210> 122
<211> 1377
<212> DNA
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 122

```
ggttgtgcag cagcatgtgc agcctgtacc agcgaagaaa ccattagcac cgttcaagaa      60

aaacagcaga atattagtcc gctggttcgt gaacgtggtc cgcagcgtgt tgcagcacat     120

attaccggca cccgtggtcg tagcaatacc ctgagcagcc cgaatagcaa aaatgaaaaa     180

gccctgggtc gcaaaattaa cagctgggaa agcagccgta gcggtcatag ctttctgagc     240

aatctgcatc tgcgtaatgg tgaactggtg attcacgaga aaggcttcta ttatatctat     300

agccagacct atttccgctt ccaagaagag atcaaagaga acaccaaaaa cgacaaacaa     360

atggtgcagt acatctataa atacaccagc tatccggatc cgattctgct gatgaaaagc     420

gcacgtaata gctgttggag caaagatgca gaatatggcc tgtatagcat ctatcagggt     480

ggcatttttg aactgaaaga aaacgatcgc atctttgtga gcgtgaccaa tgaacatctg     540

attgatatgg atcacgaagc cagcttttt ggtgcatttc tggttggtgg tggtggtagc     600

gcaagcggtt gtggtccgga acgtaaaaaa cgtgcaagcg gtggtccgga aggtggtagt     660

ctggcagcac tgaccgcaca tcaggcatgt catctgccgc tggaaacctt tacccgtcat     720

cgtcagcctc gtggttggga acagctggaa cagtgtggtt atccggttca gcgtctggtt     780

gcactgtatc tggcagctcg tctgagctgg aatcaggttg atcaggttat tcgtaatgca     840
```

ctggcaagtc cgggtagcgg tggcgatctg ggtgaagcaa ttcgtgaaca gccggaacag 900

gcacgtctgg cactgaccct ggcagcagca gaaagcgaac gttttgttcg tcaaggcacc 960

ggtaatggtg gtggcggtag tggtggtggt tcaaaagaaa ccgcagcagc caaatttgaa 1020

cgtcagcaca tggatagcag caccagcgca gcaagcagca gcaattattg caatcagatg 1080

atgaaaagcc gcaatctgac caaagatcgt tgtaaaccgg tgaatacctt tgttcatgaa 1140

agcctggcag atgttcaggc agtttgcagc cagaaaaatg tggcctgtaa aaatggtcag 1200

accaattgct atcagagcta tagcaccatg agcattaccg attgtcgtga aaccggtagc 1260

agcaaatatc cgaattgcgc ctataaaacc acccaggcca ataaacatat tattgtggcc 1320

tgtgaaggca atccgtatgt tccggttcat tttgatgcca gcgtgaaaga tgaactg 1377

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<213> Artificial Sequence

<220>
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<400> 123
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aatattagtc cgctggttcg tgaacgtggt ccgcagcgtg ttgcagcaca tattaccggc 180

acccgtggtc gtagcaatac cctgagcagc ccgaatagca aaaatgaaaa agccctgggt 240

cgcaaaatta acagctggga aagcagccgt agcggtcata gctttctgag caatctgcat 300

ctgcgtaatg gtgaactggt gattcacgag aaaggcttct attatatcta tagccagacc 360

tatttccgct tccaagaaga gatcaaagag aacaccaaaa acgacaaaca aatggtgcag 420

tacatctata aatacaccag ctatccggat ccgattctgc tgatgaaaag cgcacgtaat 480

agctgttgga gcaaagatgc agaatatggc ctgtatagca tctatcaggg tggcattttt 540

gaactgaaag aaaacgatcg catctttgtg agcgtgacca atgaacatct gattgatatg 600

gatcacgaag ccagcttttt tggtgccttt ctggttggt 639

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<213> Artificial Sequence

<220>
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ggtccgcagc gtgttgcagc acatattacc ggcacccgtg gtcgtagcaa taccctgagc 180

agcccgaata gcaaaaatga aaaagccctg ggtcgcaaaa ttaatagctg ggaaagcagc 240

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gaaaaaggct tttattatat ttatagccag acctattttc gctttcagga agaaattaaa 360

gaaaacacca aaaatgataa acaaatggtg cagtatatct ataaatatac cagctatccg 420

gatccgattc tgctgatgaa aagcgcacgt aatagctgtt ggagcaaaga tgcagaatat 480

ggcctgtata gcatttatca gggtggcatt tttgaactga aagaaaatga tcgcattttt 540

gtgagcgtga ccaatgaaca tctgattgat atggatcatg aagccagctt ttttggtgca 600

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<220>
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<400> 125
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ggtcatagct ttctgagcaa tctgcatctg cgtaatggtg aactggtgat tcatgaaaaa 180

ggcttctact atatctacag ccagacctat ttcgcttcc aagaagagat taaagaaaac 240

accaaaaacg ataaacaaat ggtgcagtac atctataaat acaccagcta tccggatccg 300

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tatagcattt atcagggtgg catctttgaa ctgaaagaaa acgatcgtat ttcgtgagc 420

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gtgggtggtg gtggtagccg taaaaaacgt gttaaacgtc tgagcaccgc agcagatatg 540

cagggtgttg ttaccgatgg tatggcaagc ggtctggata aagattatct gaaaccggat 600

gataaagatg aactg 615

<210> 126
<211> 621
<212> DNA
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 126
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ggtcatagct ttctgagcaa tctgcatctg cgtaatggtg aactggtgat tcatgaaaaa 180

ggcttttatt atatttatag ccagacctat tttcgctttc aagaagagat taaagaaaat 240

accaaaaatg ataaacaaat ggtgcagtac atttataaat ataccagcta tccggacccg 300

attctgctga tgaaaagcgc acgtaatagc tgttggagca aagatgcaga atatggtctg 360

tatagcattt atcagggtgg catctttgag ctgaaagaaa atgatcgcat ctttgttagc 420

gtgaccaacg aacatctgat cgatatggat catgaagcca gctttttgg tgcatttctg 480

gttggtggtg gtggtagcgg tggtggtccg ctgggtctgg caggtcgtgt tgttcgtctg 540

agcaccgcag cagatatgca gggtgttgtt accgatggta tggcaagcgg tctggataaa 600

gattatctga aaccggatga t 621

<210> 127
<211> 981
<212> DNA
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 127
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ggtcatagct ttctgagcaa tctgcatctg cgtaatggtg aactggtgat tcatgaaaaa 180

ggcttttatt atatttatag ccagacctat tttcgctttc aagaagagat taaagaaaat 240

accaaaaatg ataaacaaat ggtgcagtac atttataaat ataccagcta tccggacccg 300

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tatagcattt atcagggtgg catctttgag ctgaaagaaa atgatcgcat ctttgttagc 420

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gttggtggtg gtggtagcgg tggtggtccg ctgggtctgg caggtcgtgt tgttcgtatg 540

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gaatgtagcg ttgatattca gggtaatgat cagatgcagt ttaacaccaa tgccattacc 660

gttgacaaaa gctgtaaaca gtttaccgtg aatctgagcc atccgggtaa tctgccgaaa 720

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gatggtatgg caagcggtct ggataaagat tatctgaaac cggatgatag ccgtgttatt 840

gcacatacca aactgattgg tagcggtgaa aaagatagcg ttacctttga tgtgagcaaa 900

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<212> DNA
<213> Artificial Sequence

<220>
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<400> 128
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acccgtggtc gtagcaatac cctgagcagc ccgaatagca aaaatgaaaa agcactgggt 180

cgcaaaatca atagctggga aagcagccgt agcggtcata gctttctgag caatctgcat 240

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agctgttgga gcaaagatgc agaatatggt ctgtatagca tttatcaggg tggcatcttt 480

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gatcatgaag ccagcttttt tggtgcattt ctggttggt 579

<210> 129
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<220>
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cgttgtgcag cacatattac cggcacccgt ggtcgtagca ataccctgag cagcccgaat 240

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ttctactata tctatagcca gacctatttc cgcttccaag aagaaatcaa agaaaatacc 420

aaaaatgata aacaaatggt gcagtatatt tacaaatata ccagctatcc ggatccgatt 480

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agcatttatc agggtggcat ctttgagctg aaagaaaatg atcgcatctt tgttagcgtg 600

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ggt 663

<210> 130
<211> 636
<212> DNA
<213> Artificial Sequence

<220>
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attagtccgc tggttcgtga acgtggtccg cagcgtgttg cagcacatat taccggcacc 180

cgtggtcgta gcaataccct gagcagcccg aatagcaaaa atgaaaaagc actgggtcgc 240

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cgtaatggtg aactggtgat tcatgaaaaa ggcttctact atatctacag ccagacctat 360

tttcgcttcc aagaagaaat caaagagaac accaaaaacg acaaacaaat ggtgcagtac 420

atctacaaat ataccagcta tccggatccg attctgctga tgaaaagcgc acgtaatagc 480

tgttggagca aagatgcaga atatggtctg tatagcattt atcagggtgg catctttgag 540

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<210> 131
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<220>
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<400> 131
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cgtcgtgttg ttcgtccgct gggtctggca ggtcgtgttg cagcacatat taccggcacc 180

cgtggtcgta gcaataccct gagcagcccg aatagcaaaa atgaaaaagc actgggtcgc 240

aaaatcaata gctgggaaag cagccgtagc ggtcatagct ttctgagcaa tctgcatctg 300

cgtaatggtg aactggtgat tcatgaaaaa ggcttttatt atatttatag ccagacctat 360

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tgttggagca aagatgcaga atatggtctg tatagcattt atcagggtgg catctttgag 540

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catgaagcca gctttttgg tgcatttctg gtgggt 636

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

<220>
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<400> 132
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cgtcgtgttg ttcgtccgct gggtctggca ggcggttgtg cagcagcatg tgcagcctgt 180

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accctgagca gcccgaatag caaaaatgaa aaagcactgg gtcgcaaaat caatagctgg 360

gaaagcagcc gtagcggtca tagctttctg agcaatctgc atctgcgtaa tggtgaactg 420

gtgattcatg aaaaaggctt ctactatatc tatagccaga cctatttccg cttccaagaa 480

gaaatcaaag aaaataccaa aaatgataaa caaatggtgc agtatattta caaatatacc 540

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gcagaatatg gtctgtatag catttatcag ggtggcatct ttgagctgaa agaaaatgat 660

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tttggtgcat ttctggtggg t 741

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<212> DNA
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<220>
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<400> 133
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gtggtccgca gcgtgttgca gcacatatta ccggcacccg tggtcgtagc aataccctga 120

gcagcccgaa tagcaaaaat gaaaaagcac tgggtcgcaa aatcaatagc tgggaaagca 180

gccgtagcgg tcatagcttt ctgagcaatc tgcatctgcg taatggtgaa ctggtgattc 240

atgaaaaagg cttttattat atttatagcc agacctattt tcgctttcaa gaagagatta 300

aagaaaatac caaaaatgat aaacaaatgg tgcagtatat ctataaatat accagctatc 360

cggacccgat tctgctgatg aaaagcgcac gtaatagctg ttggagcaaa gatgcagaat 420

atggtctgta tagcatttat cagggtggca tctttgagct gaaagaaaat gatcgcatct 480

ttgttagcgt gaccaacgaa catctgatcg atatggatca tgaagccagc ttttttggtg 540

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catattttgg cgataccatt aaccgc 686

<210> 134
<211> 663
<212> DNA
<213> Artificial Sequence

<220>
<223> fusion protein

<400> 134
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ccgctgggtc tggcaggcgg tggttgtgca gcagcatgtg cagcctgtgg tggtggtcag 180

cgtgttgcag cacatattac cggcacccgt ggtcgtagca ataccctgag cagcccgaat 240

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ttctactata tctacagcca gacctatttt cgcttccaag aagagattaa agaaaacacc 420

aaaaacgata aacaaatggt gcagtacatc tataaataca ccagctatcc ggatccgatt 480

ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggcctgtat 540

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tgtagcagca gttgtgcagt tcatgatctg atttttttggc gtgacgtgaa aaaaaccggc 180

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gttgtgagct atctgattct ggcactgctg agcgttacca ttagctttcg tatctataaa 300

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aaaattcagg caaaactgcc tgggatcgca aaaaaaaaag cagaacgtcg tcgtcgccgt 720

cgtcggcgtg gtggttcagg tggtcgtgtt gttcgtccgc tgggtctggc aggcggtggt 780

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<220>
<223> fusion protein

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ttttattata tttatagcca gacctatttt cgctttcaag aagagattaa agaaaatacc 240

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ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggtctgtat 360

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accaacgaac atctgatcga tatggatcat gaagccagct tttttggtgc atttctggtt 480

ggtggtggtg gtagccgtaa aaaacgtgca agcggtggtc cggaaggtgg tagcctggca 540

gcactgaccg cacatcaggc atgtcatctg ccgctggaaa cctttacccg tcatcgtcag 600

cctcgtggtt gggaacagct ggaacagtgt ggttatccgg ttcagcgtct ggttgcactg 660

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<210> 137
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<212> DNA
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<220>
<223> fusion protein

<400> 137
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cagaaagaac gtaaacgtga agatgcaatt acccagcaga ataccattca gaatgaagca 180

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gtgattcatg aaaaaggctt ttattatatt tatagccaga cctattttcg ctttcaggaa 480

gaaattaaag aaaataccaa aaacgataaa caaatggtgc agtatatcta taaatatacc 540

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gcagaatatg gtctgtatag catttatcag ggtggcattt ttgaactgaa agaaaatgat 660

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gcagaatgtc tggatgaata tgaagatgat gaagccggtc agaaagaacg caaacgtgaa 180

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gttgcagcac atattaccgg cacccgtggt cgtagcaata ccctgagcag cccgaatagc 360

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gcagaatatg gtctgtatag catttatcag ggtggcatct ttgagctgaa agaaaatgat 480

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gatgcagaat atggcctgta tagcatttat cagggtggca tctttgaact gaaagaaaac 420

gatcgtattt tcgtgagcgt gaccaatgaa catctgatcg atatggatca tgaagccagc 480

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ccggaaccgg ttaaagcaat ttgtaaaggt attatcgcca gcaaaaatgt tctgaccacg 180

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aatggtgaac tggtgattca tgaaaaaggc ttctactata tctatagcca gacctatttc 660

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tggagcaaag atgcagaata tggtctgtat agcatttatc agggtggcat ctttgagctg 840

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cgtagcaata ccctgagcag cccgaatagc aaaaatgaaa aagccctggg tcgcaaaatt 300

aacagctggg aaagcagccg tagcggtcat agctttctga gcaatctgca tctgcgtaat 360

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ttccaagaag agatcaaaga gaacaccaaa aacgacaaac aaatggtgca gtacatctat 480

aaatacacca gctatccgga tccgattctg ctgatgaaaa gcgcacgtaa tagctgttgg 540

agcaaagatg cagaatatgg cctgtatagc atctatcagg gtggcatttt tgaactgaaa 600

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gaaagcagcc gtagcggtca tagctttctg agcaatctgc atctgcgtaa tggtgaactg 240

gtgattcatg aaaaaggctt ctactatatc tatagccaga cctatttccg cttccaagaa 300

gaaatcaaag aaaataccaa aaatgataaa caaatggtgc agtatattta caaatatacc 360

agctatccgg atccgattct gctgatgaaa agcgcacgta atagctgttg gagcaaagat 420

gcagaatatg gtctgtatag catttatcag ggtggcatct ttgagctgaa agaaaatgat 480

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gaaagcagcc gtagcggtca tagctttctg agcaatctgc atctgcgtaa tggtgaactg 240

gtgattcatg aaaaaggctt ctactatatc tacagccaga cctattttcg cttccaagaa 300

gagattaaag aaaacaccaa aaacgataaa caaatggtgc agtacatcta taaatacacc 360

agctatccgg atccgattct gctgatgaaa agcgcacgta atagctgttg gagcaaagat 420

gcagaatatg gcctgtatag catttatcag ggtggcatct ttgaactgaa agaaaacgat 480

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ggtggtggtt gtgcagcagc atgtgcagcc tgtggtagcg gtcagcgtgt tgcagcacat 180

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aatctgcatc tgcgtaatgg tgaactggtg attcatgaaa aaggcttcta ctatatctac 360

agccagacct attttcgctt ccaagaagag attaaagaaa acaccaaaaa cgataaacaa 420

atggtgcagt acatctataa atacaccagc tatccggatc cgattctgct gatgaaaagc 480

gcacgtaata gctgttggag caaagatgca gaatatggcc tgtatagcat ttatcagggt 540

ggcatctttg aactgaaaga aaacgatcgt attttcgtga gcgtgaccaa tgaacatctg 600

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ggcacccgtg gtcgtagcaa taccctgagc agcccgaata gcaaaaatga aaaagcactg 180

ggtcgcaaaa tcaatagctg ggaaagcagc cgtagcggtc atagctttct gagcaatctg 240

catctgcgta atggtgaact ggtgattcat gaaaaaggct tttattatat ttatagccag 300

acctattttc gctttcaaga agagattaaa gaaaatacca aaaatgataa acaaatggtg 360

cagtacatct ataaatatac cagctatccg gacccgattc tgctgatgaa aagcgcacgt 420

aatagctgtt ggagcaaaga tgcagaatat ggtctgtata gcatttatca gggtggcatc 480

tttgagctga aagaaaatga tcgcatcttt gttagcgtga ccaacgaaca tctgatcgat 540

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attaaagaaa ataccaaaaa tgataaacaa atggtgcagt acatctataa atataccagc 420

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accctgagca gcccgaatag caaaaatgaa aaagcactgg gtcgcaaaat caatagctgg 180

gaaagcagcc gtagcggtca tagctttctg agcaatctgc atctgcgtaa tggtgaactg 240

gtgattcatg aaaaaggctt ttattatatt tatagccaga cctattttcg ctttcaagaa 300

gagattaaag aaaataccaa aaatgataaa caaatggtgc agtacatcta taaatatacc 360

agctatccgg acccgattct gctgatgaaa agcgcacgta atagctgttg gagcaaagat 420

gcagaatatg gtctgtatag catttatcag ggtggcatct ttgagctgaa agaaaatgat 480

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cgtcgtcgtc gccgtcgtcg gcgtcgtaaa aatctgtggg cagcacagcg ttatggtcgt 660

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catagctttc tgagcaatct gcatctgcgt aatggtgaac tggtgattca tgaaaaaggc 180

ttctactata tctacagcca gacctatttt cgcttccaag aagagattaa agaaaacacc 240

aaaaacgata aacaaatggt gcagtacatc tataaataca ccagctatcc ggatccgatt 300

ctgctgatga aaagcgcacg taatagctgt tggagcaaag atgcagaata tggcctgtat 360

agcatttatc agggtggcat ctttgaactg aaagaaaacg atcgtatttt cgtgagcgtg 420

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aaatttgaac cgaaaagcgg ttggatgacc tttctggaag ttaccggcaa aatttgtgaa 600

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atgacctttc tggaagttac cggcaaaatt tgtgaaatgc tgagcctgct gaaacagtat 180

tgtcgtgttg ttcgtccgct gggtctggca ggcggtggta gcggtggtcg tgttgcagca 240

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aaagcactgg gtcgcaaaat taacagctgg gaaagcagcc gtagcggtca tagctttctg 360

agcaatctgc atctgcgtaa tggtgaactg gtgattcatg aaaaaggctt ctactatatc 420

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<313> (70)..(97)

<400> 151

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Ser Gly Leu Asp Lys Asp Tyr Leu Lys Pro Asp Asp
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<210> 152
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35 40 45

Phe Thr Val Asn Leu Ser His Pro Gly Asn Leu Pro Lys Asn Val Met
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Gly His Asn Trp Val Leu Ser Thr Ala Ala Asp Met Gln Gly Val Val
65 70 75 80

Thr Asp Gly Met Ala Ser Gly Leu Asp Lys Asp Tyr Leu Lys Pro Asp
85 90 95

Asp Ser Arg Val Ile Ala His Thr Lys Leu Ile Gly Ser Gly Glu Lys
100 105 110

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

Met Phe Phe Cys Thr Phe Pro Gly His Ser Ala Leu Met Lys Gly Thr
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<300>
<301> E. P. Holinger, T. Chittenden, R. J. Lutz, J.
<302> Bak BH3 peptides antagonize Bcl-xL function and induce apoptosis through cytochrome c-independent activation of caspases.
<303> Journal of Biological Chemistry
<304> 7
<305> 274(19):
<306> 13298-304
<307> 1999-05-07

<400> 153

Gly Pro Ser Gln Pro Thr Tyr Pro Gly Asp Asp Ala Pro Val Glu Asp
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Asn Arg Arg
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<210> 154
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<301> E. P. Holinger, T. Chittenden, R. J. Lutz
<302> Bak BH3 Peptides Antagonize Bcl-xL Function and Induce Apoptosis through Cytochrome c-independent Activation of Caspases
<303> Journal of Biological Chemistry
<304> 7
<305> 274(19)
<306> 13298-304
<307> 1999-05-07

<400> 154

Gly Pro Arg Arg Pro Arg Arg Pro Gly Asp Asp Ala Pro Val Glu Asp
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20 25 30

Asn Arg

<210> 155
<211> 23
<212> PRT
<213> Homo sapiens

<300>
<301> Nepravishta R, Bellomaria A, Polizio F, Paci M, Melino S.
<302> Reticulon RTN1-C(CT)peptide: a potential nuclease and inhibitor of histone deacetylase enzymes
<303> Biochemistry
<304> 19
<305> 49(2)
<306> 252-8
<307> 2010-01-19

<400> 155

Arg Thr His Ile Asn Thr Val Val Ala Lys Ile Gln Ala Lys Ile Pro
1 5 10 15

Gly Ala Lys Arg His Ala Glu
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<400> 156

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Cys Pro Ala Leu Gly Thr Lys Ser Cys Ser Ser Ser Cys Ala Val His
35 40 45

Asp Leu Ile Phe Trp Arg Asp Val Lys Lys Thr Gly Phe Val Phe Gly
50 55 60

Thr Thr Leu Ile Met Leu Leu Ser Leu Ala Ala Phe Ser Val Ile Ser
65 70 75 80

Val Val Ser Tyr Leu Ile Leu Ala Leu Leu Ser Val Thr Ile Ser Phe

85 90 95

Arg Ile Tyr Lys Ser Val Ile Gln Ala Val Gln Lys Ser Glu Glu Gly
100 105 110

His Pro Phe Lys Ala Tyr Leu Asp Val Asp Ile Thr Leu Ser Ser Glu
115 120 125

Ala Phe His Asn Tyr Met Asn Ala Ala Met Val His Ile Asn Arg Ala
130 135 140

Leu Lys Leu Ile Ile Arg Leu Phe Leu Val Glu Asp Leu Val Asp Ser
145 150 155 160

Leu Lys Leu Ala Val Phe Met Trp Leu Met Thr Tyr Val Gly Ala Val
165 170 175

Phe Asn Gly Ile Thr Leu Leu Ile Leu Ala Glu Leu Leu Ile Phe Ser
180 185 190

Val Pro Ile Val Tyr Glu Lys Tyr Lys Thr Gln Ile Asp His Tyr Val
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Gly Ile Ala Arg Asp Gln Thr Lys Ser Ile Val Glu Lys Ile Gln Ala
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Lys Leu Pro Gly Ile Ala Lys Lys Lys Ala Glu
225 230 235

<210> 157
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<213> Homo sapiens

<300>
<301> Srinivasula SM, Ahmad M, MacFarlane M, Luo Z, Huang Z, Fernandes-Alnemri T, Alnemri ES
<302> Generation of constitutively active recombinant caspases-3 and -6 by rearrangement of their subunits
<303> Journal of Biological Chemistry
<304> 273
<305> 17
<306> 10107-11
<307> 1998-04-24

<400> 157

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Tyr Tyr Ser Trp Arg Asn Ser Lys Asp Gly Ser Trp Phe Ile Gln Ser
35 40 45

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Ser Phe Asp Ala Thr Phe His Ala Lys Lys Gln Ile Pro Cys Ile Val
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Ser Met Leu Thr Lys Glu Leu Tyr Phe Tyr His Asp Val Asp Gly Met
            100                 105                 110

Glu Asn Thr Glu Asn Ser Val Asp Ser Lys Ser Ile Lys Asn Leu Glu
        115                 120                 125

Pro Lys Ile Ile His Gly Ser Glu Ser Met Asp Ser Gly Met Ser Trp
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Asp Thr Gly Tyr Lys Met Asp Tyr Pro Glu Met Gly Leu Cys Ile Ile
145                 150                 155                 160

Ile Asn Asn Lys Asn Phe His Lys Ser Thr Gly Met Thr Ser Arg Ser
                165                 170                 175

Gly Thr Asp Val Asp Ala Ala Asn Leu Arg Glu Thr Phe Arg Asn Leu
            180                 185                 190

Lys Tyr Glu Val Arg Asn Lys Asn Asp Leu Thr Arg Glu Glu Ile Val
        195                 200                 205

Glu Leu Met Arg Asp Val Ser Lys Glu Asp His Ser Lys Arg Ser Ser
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Phe Val Cys Val Leu Leu Ser His Gly Glu Glu Gly Ile Ile Phe Gly
225                 230                 235                 240

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

Ala Cys Arg Gly Thr Glu Leu Asp Cys Gly
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<309> 1998-07-01
<313> (146)..(205)

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Arg Arg Ser Thr Gly Val Val Asn Ile Pro Ala Ala Glu Cys Leu Asp
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Glu Tyr Glu Asp Asp Glu Ala Gly Gln Lys Glu Arg Lys Arg Glu Asp
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Ala Pro Ala Glu Leu Glu Val Glu Cys Ala Thr Gln Leu Arg Arg Phe
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<301> Zhao W, Jaganathan S, Turkson
<302> A cell-permeable Stat3 SH2 domain mimetic inhibits Stat3 activation and induces antitumor cell effects in vitro
<303> Journal of Biological Chemistry
<304> 285
<305> 46
<306> 35855-65.
<307> 2010-11-12
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<301> Wang JL, Zhang ZJ, Choksi S, Shan S, Lu Z, Croce CM, Alnemri ES, Korngold R, Huang Z.
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<303> Cancer Research
<304> 60
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<306> 1498-502
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<301> Ko JK, Choi KH, Pan Z, Lin P, Weisleder N, Kim CW, Ma J.
<302> The tail-anchoring domain of Bfl1 and HCCS1 targets mitochondrial membrane permeability to induce apoptosis
<303> J Cell Sci.
<304> 120
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<307> 2007-07-31

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<302> Cleavage of the papillomavirus minor capsid protein, L2, at a furin consensus site is necessary for infection.
<303> Proc Natl Acad Sci U S A
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35 40 45

Leu Ala Ala Arg Leu Ser Trp Asn Gln Val Asp Gln Val Ile Arg Asn
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Ala Leu Ala Ser Pro Gly Ser Gly Gly Asp Leu Gly Glu Ala Ile Arg
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