<110> YOO YOUNG PHARM CO.,LTD.

<120> CHIMERIC ANTIGEN RECEPTOR AND T CELLS EXPRESSING THE CHIMERIC ANTIGEN RECEPTOR

<130> KR15P0802PCT

<150> 10-2015-0110788
<151> 2015-08-05

<160> 26

<170> KoPatentIn 3.0

<210> 1
<211> 112
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<213> Unknown

<220>
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Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu
1 5 10 15

Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
20 25 30

Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
35 40 45

Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
50 55 60

Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65 70 75 80

Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
85 90 95

Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu Gly Gln Phe Asn
100 105 110

<210> 2
<211> 92
<212> PRT
<213> Unknown

<220>
<223> HUMAN

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Glu Val Val Ala Ala Thr Pro Thr Ser Leu Leu Ile Ser Trp Arg His
1 5 10 15

Pro His Phe Pro Thr Arg Tyr Tyr Arg Ile Thr Tyr Gly Glu Thr Gly
20 25 30

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

Ala Thr Ile Ser Gly Leu Lys Pro Gly Val Asp Tyr Thr Ile Thr Val

50 55 60

Tyr Ala Val Val Glu Arg Asn Gly Arg Glu Leu Asn Thr Pro Pro Ile
65 70 75 80

Ser Ile Asn Tyr Arg Thr His His His His His His
85 90

<210> 3
<211> 252
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 3
Gln Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1 5 10 15

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

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

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

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

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

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

Gly Thr Met Val Thr Val Ser Ser Gly Ser Thr Ser Gly Ser Gly Lys
115 120 125

Pro Gly Ser Gly Glu Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser
130 135 140

Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Met Thr
145 150 155 160

Ser Thr Asp Ile Asp Asp Asp Met Asn Trp Tyr Gln Gln Lys Pro Gly
165 170 175

Lys Thr Pro Lys Leu Leu Ile Tyr Glu Gly Asn Thr Leu Arg Pro Gly
180 185 190

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ile Phe
195 200 205

Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu
210 215 220

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

Ile Lys Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
245 250

<210> 4
<211> 141
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<213> Unknown

<220>
<223> HUMAN

<400> 4

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Asp Arg His Thr Val Phe Trp Asn Ser Ser Asn Pro Lys Phe Arg Asn
  1               5                  10                  15

Glu Asp Tyr Thr Ile His Val Gln Leu Asn Asp Tyr Val Asp Ile Ile
            20                  25                  30

Cys Pro His Tyr Glu Asp His Ser Val Ala Asp Ala Ala Met Glu Gln
        35                  40                  45

Tyr Ile Leu Tyr Leu Val Glu His Glu Glu Tyr Gln Leu Cys Gln Pro
    50                  55                  60

Gln Ser Lys Asp Gln Val Arg Trp Gln Cys Asn Arg Pro Ser Ala Lys
65                  70                  75                  80

His Gly Pro Glu Lys Leu Ser Glu Lys Phe Gln Arg Phe Thr Ala Phe
                85                  90                  95

Ala Leu Ala Lys Glu Phe Lys Ala Gly His Ser Tyr Tyr Tyr Ile Ser
            100                 105                 110

Lys Pro Ile His Gln His Glu Asp Arg Cys Leu Arg Leu Lys Val Thr
        115                 120                 125

Val Ser Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
    130                 135                 140
```

<210> 5
<211> 104
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<213> Unknown

<220>
<223> HUMAN

<400> 5

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

Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr
            20                  25                  30

Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe
        35                  40                  45

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

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

Trp Asn Glu Gly Ser Lys Pro Ile Ser Ile Asn Tyr Arg Thr Glu Gln
                85                  90                  95
```

```
Lys Leu Ile Ser Glu Glu Asp Leu
            100


<210>     6
<211>     418
<212>     PRT
<213>     Unknown

<220>
<223>     HUMAN


<400>     6
Thr Ser Pro Cys Asp Asn Phe Asp Cys Gln Asn Gly Ala Gln Cys Ile
  1               5                  10                  15

Val Arg Ile Asn Glu Pro Ile Cys Gln Cys Leu Pro Gly Tyr Gln Gly
            20                  25                  30

Glu Lys Cys Glu Lys Leu Val Ser Val Asn Phe Ile Asn Lys Glu Ser
        35                  40                  45

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

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

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

Ser Tyr Asp Thr Gly Ser His Pro Ala Ser Ala Ile Tyr Ser Val Glu
            100                 105                 110

Thr Ile Asn Asp Gly Asn Phe His Ile Val Glu Leu Leu Ala Leu Asp
        115                 120                 125

Gln Ser Leu Ser Leu Ser Val Asp Gly Gly Asn Pro Lys Ile Ile Thr
    130                 135                 140

Asn Leu Ser Lys Gln Ser Thr Leu Asn Phe Asp Ser Pro Leu Tyr Val
145                 150                 155                 160

Gly Gly Met Pro Gly Lys Ser Asn Val Ala Ser Leu Arg Gln Ala Pro
                165                 170                 175

Gly Gln Asn Gly Thr Ser Phe His Gly Cys Ile Arg Asn Leu Tyr Ile
            180                 185                 190

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

Leu Pro Gly Cys Glu Pro Cys His Lys Lys Val Cys Ala His Gly Thr
    210                 215                 220

Cys Gln Pro Ser Ser Gln Ala Gly Phe Thr Cys Glu Cys Gln Glu Gly
225                 230                 235                 240

Trp Met Gly Pro Leu Cys Asp Gln Arg Thr Asn Asp Pro Cys Leu Gly
                245                 250                 255

Asn Lys Cys Val His Gly Thr Cys Leu Pro Ile Asn Ala Phe Ser Tyr
            260                 265                 270

Ser Cys Lys Cys Leu Glu Gly His Gly Gly Val Leu Cys Asp Glu Glu
        275                 280                 285
```

```
Glu Asp Leu Phe Asn Pro Cys Gln Ala Ile Lys Cys Lys His Gly Lys
    290                 295                 300

Cys Arg Leu Ser Gly Leu Gly Gln Pro Tyr Cys Glu Cys Ser Ser Gly
305                 310                 315                 320

Tyr Thr Gly Asp Ser Cys Asp Arg Glu Ile Ser Cys Arg Gly Glu Arg
                325                 330                 335

Ile Arg Asp Tyr Tyr Gln Lys Gln Gln Gly Tyr Ala Ala Cys Gln Thr
            340                 345                 350

Thr Lys Lys Val Ser Arg Leu Glu Cys Arg Gly Gly Cys Ala Gly Gly
        355                 360                 365

Gln Cys Cys Gly Pro Leu Arg Ser Lys Arg Arg Lys Tyr Ser Phe Glu
    370                 375                 380

Cys Thr Asp Gly Ser Ser Phe Val Asp Glu Val Glu Lys Val Val Lys
385                 390                 395                 400

Cys Gly Cys Thr Arg Cys Val Ser Glu Gln Lys Leu Ile Ser Glu Glu
                405                 410                 415

Asp Leu
```

<210> 7
<211> 41
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 7

```
Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr
  1               5                  10                  15

Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro
            20                  25                  30

Pro Arg Asp Phe Ala Ala Tyr Arg Ser
        35                  40
```

<210> 8
<211> 42
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 8

```
Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met
  1               5                  10                  15

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

Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
        35                  40
```

<210> 9
<211> 47
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 9
Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr
1 5 10 15

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

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

<210> 10
<211> 45
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 10
Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr
1 5 10 15

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

Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala
35 40 45

<210> 11
<211> 21
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 11
Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu
1 5 10 15

Ser Leu Val Ile Thr
20

<210> 12
<211> 23
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 12
Leu Ala Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile Leu
1 5 10 15

Thr Ala Leu Phe Leu Arg Val
20

<210> 13
<211> 113
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 13
Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
1 5 10 15

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
20 25 30

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
35 40 45

Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln
50 55 60

Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu
65 70 75 80

Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr
85 90 95

Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro
100 105 110

Arg

<210> 14
<211> 359
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 14
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15

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

Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn
35 40 45

Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala
50 55 60

Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys
65 70 75 80

```
Thr Gln Asp Met Leu Asp Gly Phe Cys Pro His Lys Val Ser Ala Gly
                85                  90                  95

Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln
            100                 105                 110

Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Lys Glu Gly
        115                 120                 125

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

Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu
145                 150                 155                 160

Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg
                165                 170                 175

Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly
            180                 185                 190

Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr Lys Arg Gly Arg
        195                 200                 205

Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln
    210                 215                 220

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

Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala
                245                 250                 255

Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu
            260                 265                 270

Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp
        275                 280                 285

Pro Glu Met Gly Gly Lys Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly
    290                 295                 300

Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu
305                 310                 315                 320

Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu
                325                 330                 335

Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His
            340                 345                 350

Met Gln Ala Leu Pro Pro Arg
        355
```

<210> 15
<211> 400
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 15

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15
```

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

Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn
        35                  40                  45

Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala
    50                  55                  60

Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys
65                  70                  75                  80

Thr Gln Asp Met Leu Asp Gly Phe Cys Pro His Lys Val Ser Ala Gly
                85                  90                  95

Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln
            100                 105                 110

Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Lys Glu Gly
        115                 120                 125

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

Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu
145                 150                 155                 160

Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg
                165                 170                 175

Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly
            180                 185                 190

Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr Arg Ser Lys Arg
        195                 200                 205

Ser Arg Gly Gly His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro
    210                 215                 220

Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe
225                 230                 235                 240

Ala Ala Tyr Arg Ser Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
                245                 250                 255

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
            260                 265                 270

Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg
        275                 280                 285

Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
    290                 295                 300

Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
305                 310                 315                 320

Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
                325                 330                 335

Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
            340                 345                 350

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
        355                 360                 365

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
    370                 375                 380
```

```
Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
385                 390                 395                 400


<210>    16
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<212>    PRT
<213>    Unknown

<220>
<223>    HUMAN


<400>    16
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

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

Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn
         35                  40                  45

Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala
     50                  55                  60

Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys
 65                  70                  75                  80

Thr Gln Arg Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly
                 85                  90                  95

Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln
            100                 105                 110

Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Lys Glu Gly
        115                 120                 125

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

Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu
145                 150                 155                 160

Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg
                165                 170                 175

Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly
            180                 185                 190

Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr Arg Ser Lys Arg
        195                 200                 205

Ser Arg Gly Gly His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro
    210                 215                 220

Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe
225                 230                 235                 240

Ala Ala Tyr Arg Ser Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
                245                 250                 255

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
            260                 265                 270

Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg
        275                 280                 285
```

```
Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
    290                 295                 300

Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
305                 310                 315                 320

Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
                325                 330                 335

Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
            340                 345                 350

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
        355                 360                 365

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
    370                 375                 380

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
385                 390                 395                 400


<210>    17
<211>    339
<212>    PRT
<213>    Unknown

<220>
<223>    HUMAN


<400>    17
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

Val His Ser Glu Val Val Ala Ala Thr Pro Thr Ser Leu Leu Ile Ser
            20                  25                  30

Trp Arg His Pro His Phe Pro Thr Arg Tyr Tyr Arg Ile Thr Tyr Gly
        35                  40                  45

Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe Thr Val Leu Gln Pro
    50                  55                  60

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

Ile Thr Val Tyr Ala Val Val Glu Arg Asn Gly Arg Glu Leu Asn Thr
                85                  90                  95

Pro Pro Ile Ser Ile Asn Tyr Arg Thr His His His His His His Gly
            100                 105                 110

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

Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala
    130                 135                 140

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

Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val
                165                 170                 175

Leu Leu Leu Ser Leu Val Ile Thr Lys Arg Gly Arg Lys Lys Leu Leu
            180                 185                 190
```

```
Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu
        195                 200                 205

Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys
    210                 215                 220

Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln
225                 230                 235                 240

Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu
                245                 250                 255

Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly
            260                 265                 270

Gly Lys Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu
        275                 280                 285

Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys
    290                 295                 300

Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu
305                 310                 315                 320

Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu
                325                 330                 335

Pro Pro Arg
```

<210> 18
<211> 380
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 18

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

Val His Ser Glu Val Val Ala Ala Thr Pro Thr Ser Leu Leu Ile Ser
            20                  25                  30

Trp Arg His Pro His Phe Pro Thr Arg Tyr Tyr Arg Ile Thr Tyr Gly
        35                  40                  45

Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe Thr Val Leu Gln Pro
    50                  55                  60

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

Ile Thr Val Tyr Ala Val Val Glu Arg Asn Gly Arg Glu Leu Asn Thr
                85                  90                  95

Pro Pro Ile Ser Ile Asn Tyr Arg Thr His His His His His His Gly
            100                 105                 110

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

Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala
    130                 135                 140
```

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

Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val
                165                 170                 175

Leu Leu Leu Ser Leu Val Ile Thr Arg Ser Lys Arg Ser Arg Gly Gly
            180                 185                 190

His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg
        195                 200                 205

Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg
    210                 215                 220

Ser Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe
225                 230                 235                 240

Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg
                245                 250                 255

Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser
            260                 265                 270

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

Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys
    290                 295                 300

Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Gln Arg Arg Lys
305                 310                 315                 320

Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala
                325                 330                 335

Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys
            340                 345                 350

Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr
        355                 360                 365

Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
    370                 375                 380


<210>    19
<211>    497
<212>    PRT
<213>    Unknown

<220>
<223>    HUMAN


<400>    19
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1                 5                  10                  15

Val His Ser Gln Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Lys
             20                  25                  30

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
         35                  40                  45

Ser Lys Phe Gly Met Ser Trp Val Arg Gln Thr Pro Asp Lys Arg Leu
     50                  55                  60
```

```
Glu Trp Val Ala Ser Ile Ser Thr Gly Gly Tyr Asn Thr Phe Tyr Ser
 65                  70                  75                  80

Asp Asn Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
                 85                  90                  95

Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met
            100                 105                 110

Tyr Tyr Cys Ala Arg Gly Tyr Ser Ser Thr Ser Phe Ala Met Asp Tyr
        115                 120                 125

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Ser Thr Ser Gly
    130                 135                 140

Ser Gly Lys Pro Gly Ser Gly Glu Gly Ser Asp Ile Gln Met Thr Gln
145                 150                 155                 160

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
                165                 170                 175

Cys Met Thr Ser Thr Asp Ile Asp Asp Asp Met Asn Trp Tyr Gln Gln
            180                 185                 190

Lys Pro Gly Lys Thr Pro Lys Leu Leu Ile Tyr Glu Gly Asn Thr Leu
        195                 200                 205

Arg Pro Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
    210                 215                 220

Phe Ile Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr
225                 230                 235                 240

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

Lys Val Glu Ile Lys Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly
            260                 265                 270

Gly Gly Pro Arg Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr
        275                 280                 285

Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala
    290                 295                 300

Ala Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp Phe
305                 310                 315                 320

Ala Leu Ala Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile
                325                 330                 335

Leu Thr Ala Leu Phe Leu Arg Val Lys Arg Gly Arg Lys Lys Leu Leu
            340                 345                 350

Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu
        355                 360                 365

Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys
    370                 375                 380

Glu Leu Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
385                 390                 395                 400

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
                405                 410                 415

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
```

420 425 430

Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln
435 440 445

Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu
450 455 460

Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr
465 470 475 480

Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro
485 490 495

Arg

<210> 20
<211> 538
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 20
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15

Val His Ser Gln Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Lys
20 25 30

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

Ser Lys Phe Gly Met Ser Trp Val Arg Gln Thr Pro Asp Lys Arg Leu
50 55 60

Glu Trp Val Ala Ser Ile Ser Thr Gly Gly Tyr Asn Thr Phe Tyr Ser
65 70 75 80

Asp Asn Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
85 90 95

Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met
100 105 110

Tyr Tyr Cys Ala Arg Gly Tyr Ser Ser Thr Ser Phe Ala Met Asp Tyr
115 120 125

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Ser Thr Ser Gly
130 135 140

Ser Gly Lys Pro Gly Ser Gly Glu Gly Ser Asp Ile Gln Met Thr Gln
145 150 155 160

Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
165 170 175

Cys Met Thr Ser Thr Asp Ile Asp Asp Asp Met Asn Trp Tyr Gln Gln
180 185 190

Lys Pro Gly Lys Thr Pro Lys Leu Leu Ile Tyr Glu Gly Asn Thr Leu
195 200 205

Arg Pro Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp

210 215 220

Phe Ile Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr
225 230 235 240

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

Lys Val Glu Ile Lys Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly
260 265 270

Gly Gly Pro Arg Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr
275 280 285

Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala
290 295 300

Ala Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp Phe
305 310 315 320

Ala Leu Ala Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile
325 330 335

Leu Thr Ala Leu Phe Leu Arg Val Arg Ser Lys Arg Ser Arg Gly Gly
340 345 350

His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg
355 360 365

Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg
370 375 380

Ser Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe
385 390 395 400

Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg
405 410 415

Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Lys Phe Ser Arg Ser
420 425 430

Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu
435 440 445

Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg
450 455 460

Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Gln Arg Arg Lys Asn Pro
465 470 475 480

Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala
485 490 495

Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His
500 505 510

Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp
515 520 525

Ala Leu His Met Gln Ala Leu Pro Pro Arg
530 535

<210> 21
<211> 388
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 21

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Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

Val His Ser Asp Arg His Thr Val Phe Trp Asn Ser Ser Asn Pro Lys
            20                  25                  30

Phe Arg Asn Glu Asp Tyr Thr Ile His Val Gln Leu Asn Asp Tyr Val
        35                  40                  45

Asp Ile Ile Cys Pro His Tyr Glu Asp His Ser Val Ala Asp Ala Ala
    50                  55                  60

Met Glu Gln Tyr Ile Leu Tyr Leu Val Glu His Glu Glu Tyr Gln Leu
65                  70                  75                  80

Cys Gln Pro Gln Ser Lys Asp Gln Val Arg Trp Gln Cys Asn Arg Pro
                85                  90                  95

Ser Ala Lys His Gly Pro Glu Lys Leu Ser Glu Lys Phe Gln Arg Phe
            100                 105                 110

Thr Ala Phe Ala Leu Ala Lys Glu Phe Lys Ala Gly His Ser Tyr Tyr
        115                 120                 125

Tyr Ile Ser Lys Pro Ile His Gln His Glu Asp Arg Cys Leu Arg Leu
    130                 135                 140

Lys Val Thr Val Ser Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
145                 150                 155                 160

Gly Gly Gly Pro Arg Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro
                165                 170                 175

Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu
            180                 185                 190

Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp
        195                 200                 205

Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly
    210                 215                 220

Val Leu Leu Leu Ser Leu Val Ile Thr Lys Arg Gly Arg Lys Lys Leu
225                 230                 235                 240

Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln
                245                 250                 255

Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly
            260                 265                 270

Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr
        275                 280                 285

Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg
    290                 295                 300

Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met
305                 310                 315                 320

Gly Gly Lys Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn
                325                 330                 335
```

```
Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met
            340                 345                 350

Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly
        355                 360                 365

Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala
    370                 375                 380

Leu Pro Pro Arg
385
```

<210> 22
<211> 429
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 22

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

Val His Ser Asp Arg His Thr Val Phe Trp Asn Ser Ser Asn Pro Lys
            20                  25                  30

Phe Arg Asn Glu Asp Tyr Thr Ile His Val Gln Leu Asn Asp Tyr Val
        35                  40                  45

Asp Ile Ile Cys Pro His Tyr Glu Asp His Ser Val Ala Asp Ala Ala
    50                  55                  60

Met Glu Gln Tyr Ile Leu Tyr Leu Val Glu His Glu Glu Tyr Gln Leu
65                  70                  75                  80

Cys Gln Pro Gln Ser Lys Asp Gln Val Arg Trp Gln Cys Asn Arg Pro
                85                  90                  95

Ser Ala Lys His Gly Pro Glu Lys Leu Ser Glu Lys Phe Gln Arg Phe
            100                 105                 110

Thr Ala Phe Ala Leu Ala Lys Glu Phe Lys Ala Gly His Ser Tyr Tyr
        115                 120                 125

Tyr Ile Ser Lys Pro Ile His Gln His Glu Asp Arg Cys Leu Arg Leu
    130                 135                 140

Lys Val Thr Val Ser Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
145                 150                 155                 160

Gly Gly Gly Pro Arg Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro
                165                 170                 175

Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu
            180                 185                 190

Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp
        195                 200                 205

Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly
    210                 215                 220

Val Leu Leu Leu Ser Leu Val Ile Thr Arg Ser Lys Arg Ser Arg Gly
225                 230                 235                 240
```

```
Gly His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr
                245                 250                 255

Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr
            260                 265                 270

Arg Ser Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro
        275                 280                 285

Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys
    290                 295                 300

Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe
305                 310                 315                 320

Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu
                325                 330                 335

Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp
            340                 345                 350

Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Gln Arg Arg
        355                 360                 365

Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met
    370                 375                 380

Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly
385                 390                 395                 400

Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp
                405                 410                 415

Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
            420                 425


<210>    23
<211>    351
<212>    PRT
<213>    Unknown

<220>
<223>    HUMAN


<400>    23
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1                 5                  10                  15

Val His Ser Val Ser Asp Val Pro Arg Asp Leu Glu Val Val Ala Ala
             20                  25                  30

Thr Pro Thr Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val
         35                  40                  45

Arg Tyr Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val
     50                  55                  60

Gln Glu Phe Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly
 65                  70                  75                  80

Leu Lys Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Pro
                 85                  90                  95

Arg Gly Asp Trp Asn Glu Gly Ser Lys Pro Ile Ser Ile Asn Tyr Arg
             100                 105                 110
```

```
Thr Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly Gly Gly Pro Arg
        115                 120                 125

Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr
    130                 135                 140

Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala
145                 150                 155                 160

Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile
                165                 170                 175

Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser
            180                 185                 190

Leu Val Ile Thr Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys
        195                 200                 205

Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys
    210                 215                 220

Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg Val
225                 230                 235                 240

Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn
                245                 250                 255

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

Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Gln
        275                 280                 285

Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp
    290                 295                 300

Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg
305                 310                 315                 320

Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr
                325                 330                 335

Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
            340                 345                 350
```

<210> 24
<211> 392
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 24

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

Val His Ser Val Ser Asp Val Pro Arg Asp Leu Glu Val Val Ala Ala
             20                  25                  30

Thr Pro Thr Ser Leu Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val
         35                  40                  45

Arg Tyr Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val
```

50 55 60

Gln Glu Phe Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly
65 70 75 80

Leu Lys Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Pro
85 90 95

Arg Gly Asp Trp Asn Glu Gly Ser Lys Pro Ile Ser Ile Asn Tyr Arg
100 105 110

Thr Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly Gly Gly Pro Arg
115 120 125

Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr
130 135 140

Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala
145 150 155 160

Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile
165 170 175

Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser
180 185 190

Leu Val Ile Thr Arg Ser Lys Arg Ser Arg Gly Gly His Ser Asp Tyr
195 200 205

Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln
210 215 220

Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Lys Arg Gly
225 230 235 240

Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val
245 250 255

Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu
260 265 270

Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp
275 280 285

Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn
290 295 300

Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg
305 310 315 320

Asp Pro Glu Met Gly Gly Lys Pro Gln Arg Arg Lys Asn Pro Gln Glu
325 330 335

Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser
340 345 350

Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly
355 360 365

Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu
370 375 380

His Met Gln Ala Leu Pro Pro Arg
385 390

<210> 25
<211> 665

<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 25

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

Val His Ser Thr Ser Pro Cys Asp Asn Phe Asp Cys Gln Asn Gly Ala
            20                  25                  30

Gln Cys Ile Val Arg Ile Asn Glu Pro Ile Cys Gln Cys Leu Pro Gly
        35                  40                  45

Tyr Gln Gly Glu Lys Cys Glu Lys Leu Val Ser Val Asn Phe Ile Asn
    50                  55                  60

Lys Glu Ser Tyr Leu Gln Ile Pro Ser Ala Lys Val Arg Pro Gln Thr
65                  70                  75                  80

Asn Ile Thr Leu Gln Ile Ala Thr Asp Glu Asp Ser Gly Ile Leu Leu
                85                  90                  95

Tyr Lys Gly Asp Lys Asp His Ile Ala Val Glu Leu Tyr Arg Gly Arg
            100                 105                 110

Val Arg Ala Ser Tyr Asp Thr Gly Ser His Pro Ala Ser Ala Ile Tyr
        115                 120                 125

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

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

Ile Ile Thr Asn Leu Ser Lys Gln Ser Thr Leu Asn Phe Asp Ser Pro
                165                 170                 175

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

Gln Ala Pro Gly Gln Asn Gly Thr Ser Phe His Gly Cys Ile Arg Asn
        195                 200                 205

Leu Tyr Ile Asn Ser Glu Leu Gln Asp Phe Gln Lys Val Pro Met Gln
    210                 215                 220

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

His Gly Thr Cys Gln Pro Ser Ser Gln Ala Gly Phe Thr Cys Glu Cys
                245                 250                 255

Gln Glu Gly Trp Met Gly Pro Leu Cys Asp Gln Arg Thr Asn Asp Pro
            260                 265                 270

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

Phe Ser Tyr Ser Cys Lys Cys Leu Glu Gly His Gly Gly Val Leu Cys
    290                 295                 300

Asp Glu Glu Glu Asp Leu Phe Asn Pro Cys Gln Ala Ile Lys Cys Lys
305                 310                 315                 320
```

```
His Gly Lys Cys Arg Leu Ser Gly Leu Gly Gln Pro Tyr Cys Glu Cys
                325                 330                 335

Ser Ser Gly Tyr Thr Gly Asp Ser Cys Asp Arg Glu Ile Ser Cys Arg
            340                 345                 350

Gly Glu Arg Ile Arg Asp Tyr Tyr Gln Lys Gln Gln Gly Tyr Ala Ala
        355                 360                 365

Cys Gln Thr Thr Lys Lys Val Ser Arg Leu Glu Cys Arg Gly Gly Cys
    370                 375                 380

Ala Gly Gly Gln Cys Cys Gly Pro Leu Arg Ser Lys Arg Arg Lys Tyr
385                 390                 395                 400

Ser Phe Glu Cys Thr Asp Gly Ser Ser Phe Val Asp Glu Val Glu Lys
                405                 410                 415

Val Val Lys Cys Gly Cys Thr Arg Cys Val Ser Glu Gln Lys Leu Ile
            420                 425                 430

Ser Glu Glu Asp Leu Gly Gly Gly Pro Arg Lys Pro Thr Thr Thr Pro
        435                 440                 445

Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu
    450                 455                 460

Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His
465                 470                 475                 480

Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu
                485                 490                 495

Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr Lys Arg
            500                 505                 510

Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro
        515                 520                 525

Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu
    530                 535                 540

Glu Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala
545                 550                 555                 560

Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu
                565                 570                 575

Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly
            580                 585                 590

Arg Asp Pro Glu Met Gly Gly Lys Pro Gln Arg Arg Lys Asn Pro Gln
        595                 600                 605

Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr
    610                 615                 620

Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp
625                 630                 635                 640

Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala
                645                 650                 655

Leu His Met Gln Ala Leu Pro Pro Arg
            660                 665
```

<210> 26

<211> 706
<212> PRT
<213> Unknown

<220>
<223> HUMAN

<400> 26

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
  1               5                  10                  15

Val His Ser Thr Ser Pro Cys Asp Asn Phe Asp Cys Gln Asn Gly Ala
            20                  25                  30

Gln Cys Ile Val Arg Ile Asn Glu Pro Ile Cys Gln Cys Leu Pro Gly
        35                  40                  45

Tyr Gln Gly Glu Lys Cys Glu Lys Leu Val Ser Val Asn Phe Ile Asn
    50                  55                  60

Lys Glu Ser Tyr Leu Gln Ile Pro Ser Ala Lys Val Arg Pro Gln Thr
65                  70                  75                  80

Asn Ile Thr Leu Gln Ile Ala Thr Asp Glu Asp Ser Gly Ile Leu Leu
                85                  90                  95

Tyr Lys Gly Asp Lys Asp His Ile Ala Val Glu Leu Tyr Arg Gly Arg
            100                 105                 110

Val Arg Ala Ser Tyr Asp Thr Gly Ser His Pro Ala Ser Ala Ile Tyr
        115                 120                 125

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

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

Ile Ile Thr Asn Leu Ser Lys Gln Ser Thr Leu Asn Phe Asp Ser Pro
                165                 170                 175

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

Gln Ala Pro Gly Gln Asn Gly Thr Ser Phe His Gly Cys Ile Arg Asn
        195                 200                 205

Leu Tyr Ile Asn Ser Glu Leu Gln Asp Phe Gln Lys Val Pro Met Gln
    210                 215                 220

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

His Gly Thr Cys Gln Pro Ser Ser Gln Ala Gly Phe Thr Cys Glu Cys
                245                 250                 255

Gln Glu Gly Trp Met Gly Pro Leu Cys Asp Gln Arg Thr Asn Asp Pro
            260                 265                 270

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

Phe Ser Tyr Ser Cys Lys Cys Leu Glu Gly His Gly Gly Val Leu Cys
    290                 295                 300

Asp Glu Glu Glu Asp Leu Phe Asn Pro Cys Gln Ala Ile Lys Cys Lys
305                 310                 315                 320
```

```
His Gly Lys Cys Arg Leu Ser Gly Leu Gly Gln Pro Tyr Cys Glu Cys
                325                 330                 335

Ser Ser Gly Tyr Thr Gly Asp Ser Cys Asp Arg Glu Ile Ser Cys Arg
            340                 345                 350

Gly Glu Arg Ile Arg Asp Tyr Tyr Gln Lys Gln Gln Gly Tyr Ala Ala
        355                 360                 365

Cys Gln Thr Thr Lys Lys Val Ser Arg Leu Glu Cys Arg Gly Gly Cys
    370                 375                 380

Ala Gly Gly Gln Cys Cys Gly Pro Leu Arg Ser Lys Arg Arg Lys Tyr
385                 390                 395                 400

Ser Phe Glu Cys Thr Asp Gly Ser Ser Phe Val Asp Glu Val Glu Lys
                405                 410                 415

Val Val Lys Cys Gly Cys Thr Arg Cys Val Ser Glu Gln Lys Leu Ile
            420                 425                 430

Ser Glu Glu Asp Leu Gly Gly Gly Pro Arg Lys Pro Thr Thr Thr Pro
        435                 440                 445

Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu
    450                 455                 460

Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His
465                 470                 475                 480

Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu
                485                 490                 495

Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr Arg Ser
            500                 505                 510

Lys Arg Ser Arg Gly Gly His Ser Asp Tyr Met Asn Met Thr Pro Arg
        515                 520                 525

Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg
    530                 535                 540

Asp Phe Ala Ala Tyr Arg Ser Lys Arg Gly Arg Lys Lys Leu Leu Tyr
545                 550                 555                 560

Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu
                565                 570                 575

Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu
            580                 585                 590

Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln
        595                 600                 605

Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu
    610                 615                 620

Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly
625                 630                 635                 640

Lys Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu
                645                 650                 655

Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly
            660                 665                 670

Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser
```

675 680 685

Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro
690 695 700

Pro Arg
705