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<120> HETEROARYL COMPOUNDS AND USES THEREOF

<130> 2007878-0080

<160> 6

<170> PatentIn version 3.5

<210> 1
<211> 540
<212> PRT
<213> Homo sapiens

<400> 1

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

Thr Val His Lys Leu Ser Tyr Tyr Glu Tyr Asp Phe Glu Arg Gly Arg
        35                  40                  45

Arg Gly Ser Lys Lys Gly Ser Ile Asp Val Glu Lys Ile Thr Cys Val
    50                  55                  60

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

Arg Arg Gly Glu Glu Ser Ser Glu Met Glu Gln Ile Ser Ile Ile Glu
                85                  90                  95

Arg Phe Pro Tyr Pro Phe Gln Val Val Tyr Asp Glu Gly Pro Leu Tyr
            100                 105                 110

Val Phe Ser Pro Thr Glu Glu Leu Arg Lys Arg Trp Ile His Gln Leu
        115                 120                 125

Lys Asn Val Ile Arg Tyr Asn Ser Asp Leu Val Gln Lys Tyr His Pro
    130                 135                 140
```

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

Asn Ala Met Gly Cys Gln Ile Leu Glu Asn Arg Asn Gly Ser Leu Lys
                165                 170                 175

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

Glu Glu Asp Gln Ile Leu Lys Lys Pro Leu Pro Pro Glu Pro Ala Ala
        195                 200                 205

Ala Pro Val Ser Thr Ser Glu Leu Lys Lys Val Val Ala Leu Tyr Asp
    210                 215                 220

Tyr Met Pro Met Asn Ala Asn Asp Leu Gln Leu Arg Lys Gly Asp Glu
225                 230                 235                 240

Tyr Phe Ile Leu Glu Glu Ser Asn Leu Pro Trp Trp Arg Ala Arg Asp
                245                 250                 255

Lys Asn Gly Gln Glu Gly Tyr Ile Pro Ser Asn Tyr Val Thr Glu Ala
            260                 265                 270

Glu Asp Ser Ile Glu Met Tyr Glu Trp Tyr Ser Lys His Met Thr Arg
        275                 280                 285

Ser Gln Ala Glu Gln Leu Leu Lys Gln Glu Gly Lys Glu Gly Gly Phe
    290                 295                 300

Ile Val Arg Asp Ser Ser Lys Ala Gly Lys Tyr Thr Val Ser Val Phe
305                 310                 315                 320

Ala Lys Ser Thr Gly Asp Pro Gln Gly Val Ile Arg His Tyr Val Val
                325                 330                 335

Cys Ser Thr Pro Gln Ser Gln Tyr Tyr Leu Ala Glu Lys His Leu Phe
            340                 345                 350

Ser Thr Ile Pro Glu Leu Ile Asn Tyr His Gln His Asn Ser Ala Gly
        355                 360                 365

Leu Ile Ser Arg Leu Lys Tyr Pro Val Ser Gln Gln Asn Lys Asn Ala
    370                 375                 380
```

```
Pro Ser Thr Ala Gly Leu Gly Tyr Gly Ser Trp Glu Ile Asp Pro Lys
385                 390                 395                 400

Asp Leu Thr Phe Leu Lys Glu Leu Gly Thr Gly Gln Phe Gly Val Val
                405                 410                 415

Lys Tyr Gly Lys Trp Arg Gly Gln Tyr Asp Val Ala Ile Lys Met Ile
            420                 425                 430

Lys Glu Gly Ser Met Ser Glu Asp Glu Phe Ile Glu Glu Ala Lys Val
        435                 440                 445

Met Met Asn Leu Ser His Glu Lys Leu Val Gln Leu Tyr Gly Val Cys
    450                 455                 460

Thr Lys Gln Arg Pro Ile Phe Ile Ile Thr Glu Tyr Met Ala Asn Gly
465                 470                 475                 480

Cys Leu Leu Asn Tyr Leu Arg Glu Met Arg His Arg Phe Gln Thr Gln
                485                 490                 495

Gln Leu Leu Glu Met Cys Lys Asp Val Cys Glu Ala Met Glu Tyr Leu
            500                 505                 510

Glu Ser Lys Gln Phe Leu His Arg Asp Leu Ala Ala Arg Asn Cys Leu
        515                 520                 525

Val Asn Asp Gln Gly Val Val Lys Val Ser Asp Phe
    530                 535                 540
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<210> 2
<211> 631
<212> PRT
<213> Homo sapiens

<400> 2

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Met Asn Phe Asn Thr Ile Leu Glu Glu Ile Leu Ile Lys Arg Ser Gln
1               5                   10                  15

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

Leu Thr Lys Ser Met Leu Thr Tyr Tyr Glu Gly Arg Ala Glu Lys Lys
        35                  40                  45

Tyr Arg Lys Gly Phe Ile Asp Val Ser Lys Ile Lys Cys Val Glu Ile
    50                  55                  60
```

Val Lys Asn Asp Asp Gly Val Ile Pro Cys Gln Asn Lys Tyr Pro Phe
65 70 75 80

Gln Val Val His Asp Ala Asn Thr Leu Tyr Ile Phe Ala Pro Ser Pro
85 90 95

Gln Ser Arg Asp Leu Trp Val Lys Lys Leu Lys Glu Glu Ile Lys Asn
100 105 110

Asn Asn Asn Ile Met Ile Lys Tyr His Pro Lys Phe Trp Thr Asp Gly
115 120 125

Ser Tyr Gln Cys Cys Arg Gln Thr Glu Lys Leu Ala Pro Gly Cys Glu
130 135 140

Lys Tyr Asn Leu Phe Glu Ser Ser Ile Arg Lys Ala Leu Pro Pro Ala
145 150 155 160

Pro Glu Thr Lys Lys Arg Arg Pro Pro Pro Pro Ile Pro Leu Glu Glu
165 170 175

Glu Asp Asn Ser Glu Glu Ile Val Val Ala Met Tyr Asp Phe Gln Ala
180 185 190

Ala Glu Gly His Asp Leu Arg Leu Glu Arg Gly Gln Glu Tyr Leu Ile
195 200 205

Leu Glu Lys Asn Asp Val His Trp Trp Arg Ala Arg Asp Lys Tyr Gly
210 215 220

Asn Glu Gly Tyr Ile Pro Ser Asn Tyr Val Thr Gly Lys Lys Ser Asn
225 230 235 240

Asn Leu Asp Gln Tyr Glu Trp Tyr Cys Arg Asn Met Asn Arg Ser Lys
245 250 255

Ala Glu Gln Leu Leu Arg Ser Glu Asp Lys Glu Gly Gly Phe Met Val
260 265 270

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

Phe Gly Gly Glu Gly Ser Ser Gly Phe Arg His Tyr His Ile Lys Glu
290 295 300

Thr Thr Thr Ser Pro Lys Lys Tyr Tyr Leu Ala Glu Lys His Ala Phe
305 310 315 320

```
Gly Ser Ile Pro Glu Ile Ile Glu Tyr His Lys His Asn Ala Ala Gly
                325                 330                 335

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

Pro Thr Thr Ala Gly Phe Ser Tyr Glu Lys Trp Glu Ile Asn Pro Ser
        355                 360                 365

Glu Leu Thr Phe Met Arg Glu Leu Gly Ser Gly Leu Phe Gly Val Val
    370                 375                 380

Arg Leu Gly Lys Trp Arg Ala Gln Tyr Lys Val Ala Ile Lys Ala Ile
385                 390                 395                 400

Arg Glu Gly Ala Met Cys Glu Glu Asp Phe Ile Glu Glu Ala Lys Val
                405                 410                 415

Met Met Lys Leu Thr His Pro Lys Leu Val Gln Leu Tyr Gly Val Cys
            420                 425                 430

Thr Gln Gln Lys Pro Ile Tyr Ile Val Thr Glu Phe Met Glu Arg Gly
        435                 440                 445

Cys Leu Leu Asn Phe Leu Arg Gln Arg Gln Gly His Phe Ser Arg Asp
    450                 455                 460

Val Leu Leu Ser Met Cys Gln Asp Val Cys Glu Gly Met Glu Tyr Leu
465                 470                 475                 480

Glu Arg Asn Ser Phe Ile His Arg Asp Leu Ala Ala Arg Asn Cys Leu
                485                 490                 495

Val Ser Glu Ala Gly Val Val Lys Val Ser Asp Phe Gly Met Ala Arg
            500                 505                 510

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

Val Lys Trp Cys Pro Pro Glu Val Phe Asn Tyr Ser Arg Phe Ser Ser
    530                 535                 540

Lys Ser Asp Val Trp Ser Phe Gly Val Leu Met Trp Glu Val Phe Thr
545                 550                 555                 560
```

```
Glu Gly Arg Met Pro Phe Glu Lys Tyr Thr Asn Tyr Glu Val Val Thr
                565                 570                 575

Met Val Thr Arg Gly His Arg Leu Tyr Gln Pro Lys Leu Ala Ser Asn
            580                 585                 590

Tyr Val Tyr Glu Val Met Leu Arg Cys Trp Gln Glu Lys Pro Glu Gly
        595                 600                 605

Arg Pro Ser Phe Glu Asp Leu Leu Arg Thr Ile Asp Glu Leu Val Glu
    610                 615                 620

Cys Glu Glu Thr Phe Gly Arg
625                 630
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<210> 3
<211> 620
<212> PRT
<213> Homo sapiens

<400> 3

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Met Asn Asn Phe Ile Leu Leu Glu Glu Gln Leu Ile Lys Lys Ser Gln
1               5                   10                  15

Gln Lys Arg Arg Thr Ser Pro Ser Asn Phe Lys Val Arg Phe Phe Val
            20                  25                  30

Leu Thr Lys Ala Ser Leu Ala Tyr Phe Glu Asp Arg His Gly Lys Lys
        35                  40                  45

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

Ile Val Lys Ser Asp Ile Ser Ile Pro Cys His Tyr Lys Tyr Pro Phe
65                  70                  75                  80

Gln Val Val His Asp Asn Tyr Leu Leu Tyr Val Phe Ala Pro Asp Arg
                85                  90                  95

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

Asn Asn Ser Leu Val Pro Lys Tyr His Pro Asn Phe Trp Met Asp Gly
        115                 120                 125
Lys Trp Arg Cys Cys Ser Gln Leu Glu Lys Leu Ala Thr Gly Cys Ala
    130                 135                 140
```

```
Gln Tyr Asp Pro Thr Lys Asn Ala Ser Lys Lys Pro Leu Pro Pro Thr
145                 150                 155                 160

Pro Glu Asp Asn Arg Arg Pro Leu Trp Glu Pro Glu Glu Thr Val Val
                165                 170                 175

Ile Ala Leu Tyr Asp Tyr Gln Thr Asn Asp Pro Gln Glu Leu Ala Leu
            180                 185                 190

Arg Arg Asn Glu Glu Tyr Cys Leu Leu Asp Ser Ser Glu Ile His Trp
        195                 200                 205

Trp Arg Val Gln Asp Arg Asn Gly His Glu Gly Tyr Val Pro Ser Ser
    210                 215                 220

Tyr Leu Val Glu Lys Ser Pro Asn Asn Leu Glu Thr Tyr Glu Trp Tyr
225                 230                 235                 240

Asn Lys Ser Ile Ser Arg Asp Lys Ala Glu Lys Leu Leu Leu Asp Thr
                245                 250                 255

Gly Lys Glu Gly Ala Phe Met Val Arg Asp Ser Arg Thr Ala Gly Thr
            260                 265                 270

Tyr Thr Val Ser Val Phe Thr Lys Ala Val Val Ser Glu Asn Asn Pro
        275                 280                 285

Cys Ile Lys His Tyr His Ile Lys Glu Thr Asn Asp Asn Pro Lys Arg
    290                 295                 300

Tyr Tyr Val Ala Glu Lys Tyr Val Phe Asp Ser Ile Pro Leu Leu Ile
305                 310                 315                 320

Asn Tyr His Gln His Asn Gly Gly Gly Leu Val Thr Arg Leu Arg Tyr
                325                 330                 335

Pro Val Cys Phe Gly Arg Gln Lys Ala Pro Val Thr Ala Gly Leu Arg
            340                 345                 350

Tyr Gly Lys Trp Val Ile Asp Pro Ser Glu Leu Thr Phe Val Gln Glu
        355                 360                 365

Ile Gly Ser Gly Gln Phe Gly Leu Val His Leu Gly Tyr Trp Leu Asn
    370                 375                 380

Lys Asp Lys Val Ala Ile Lys Thr Ile Arg Glu Gly Ala Met Ser Glu
385                 390                 395                 400
```

```
Glu Asp Phe Ile Glu Glu Ala Glu Val Met Met Lys Leu Ser His Pro
                405                 410                 415

Lys Leu Val Gln Leu Tyr Gly Val Cys Leu Glu Gln Ala Pro Ile Cys
            420                 425                 430

Leu Val Phe Glu Phe Met Glu His Gly Cys Leu Ser Asp Tyr Leu Arg
        435                 440                 445

Thr Gln Arg Gly Leu Phe Ala Ala Glu Thr Leu Leu Gly Met Cys Leu
    450                 455                 460

Asp Val Cys Glu Gly Met Ala Tyr Leu Glu Glu Ala Cys Val Ile His
465                 470                 475                 480

Arg Asp Leu Ala Ala Arg Asn Cys Leu Val Gly Glu Asn Gln Val Ile
                485                 490                 495

Lys Val Ser Asp Phe Gly Met Thr Arg Phe Val Leu Asp Asp Gln Tyr
            500                 505                 510

Thr Ser Ser Thr Gly Thr Lys Phe Pro Val Lys Trp Ala Ser Pro Glu
        515                 520                 525

Val Phe Ser Phe Ser Arg Tyr Ser Ser Lys Ser Asp Val Trp Ser Phe
    530                 535                 540

Gly Val Leu Met Trp Glu Val Phe Ser Glu Gly Lys Ile Pro Tyr Glu
545                 550                 555                 560

Asn Arg Ser Asn Ser Glu Val Val Glu Asp Ile Ser Thr Gly Phe Arg
                565                 570                 575

Leu Tyr Lys Pro Arg Leu Ala Ser Thr His Val Tyr Gln Ile Met Asn
            580                 585                 590

His Cys Trp Lys Glu Arg Pro Glu Asp Arg Pro Ala Phe Ser Arg Leu
        595                 600                 605

Leu Arg Gln Leu Ala Glu Ile Ala Glu Ser Gly Leu
    610                 615                 620
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<210> 4
<211> 675
<212> PRT
<213> Homo sapiens

<400> 4

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Met Asp Thr Lys Ser Ile Leu Glu Glu Leu Leu Leu Lys Arg Ser Gln
1               5                  10                  15

Gln Lys Lys Lys Met Ser Pro Asn Asn Tyr Lys Glu Arg Leu Phe Val
            20                  25                  30

Leu Thr Lys Thr Asn Leu Ser Tyr Tyr Glu Tyr Asp Lys Met Lys Arg
        35                  40                  45

Gly Ser Arg Lys Gly Ser Ile Glu Ile Lys Lys Ile Arg Cys Val Glu
    50                  55                  60

Lys Val Asn Leu Glu Glu Gln Thr Pro Val Glu Arg Gln Tyr Pro Phe
65                  70                  75                  80

Gln Ile Val Tyr Lys Asp Gly Leu Leu Tyr Val Tyr Ala Ser Asn Glu
                85                  90                  95

Glu Ser Arg Ser Gln Trp Leu Lys Ala Leu Gln Lys Glu Ile Arg Gly
            100                 105                 110

Asn Pro His Leu Leu Val Lys Tyr His Ser Gly Phe Phe Val Asp Gly
        115                 120                 125

Lys Phe Leu Cys Cys Gln Gln Ser Cys Lys Ala Ala Pro Gly Cys Thr
    130                 135                 140

Leu Trp Glu Ala Tyr Ala Asn Leu His Thr Ala Val Asn Glu Glu Lys
145                 150                 155                 160

His Arg Val Pro Thr Phe Pro Asp Arg Val Leu Lys Ile Pro Arg Ala
                165                 170                 175

Val Pro Val Leu Lys Met Asp Ala Pro Ser Ser Ser Thr Thr Leu Ala
            180                 185                 190

Gln Tyr Asp Asn Glu Ser Lys Lys Asn Tyr Gly Ser Gln Pro Pro Ser
        195                 200                 205
Ser Ser Thr Ser Leu Ala Gln Tyr Asp Ser Asn Ser Lys Lys Ile Tyr
    210                 215                 220

Gly Ser Gln Pro Asn Phe Asn Met Gln Tyr Ile Pro Arg Glu Asp Phe
225                 230                 235                 240

Pro Asp Trp Trp Gln Val Arg Lys Leu Lys Ser Ser Ser Ser Ser Glu
                245                 250                 255
```

Asp Val Ala Ser Ser Asn Gln Lys Glu Arg Asn Val Asn His Thr Thr
260 265 270

Ser Lys Ile Ser Trp Glu Phe Pro Glu Ser Ser Ser Ser Glu Glu Glu
275 280 285

Glu Asn Leu Asp Asp Tyr Asp Trp Phe Ala Gly Asn Ile Ser Arg Ser
290 295 300

Gln Ser Glu Gln Leu Leu Arg Gln Lys Gly Lys Glu Gly Ala Phe Met
305 310 315 320

Val Arg Asn Ser Ser Gln Val Gly Met Tyr Thr Val Ser Leu Phe Ser
325 330 335

Lys Ala Val Asn Asp Lys Lys Gly Thr Val Lys His Tyr His Val His
340 345 350

Thr Asn Ala Glu Asn Lys Leu Tyr Leu Ala Glu Asn Tyr Cys Phe Asp
355 360 365

Ser Ile Pro Lys Leu Ile His Tyr His Gln His Asn Ser Ala Gly Met
370 375 380

Ile Thr Arg Leu Arg His Pro Val Ser Thr Lys Ala Asn Lys Val Pro
385 390 395 400

Asp Ser Val Ser Leu Gly Asn Gly Ile Trp Glu Leu Lys Arg Glu Glu
405 410 415

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

Leu Gly Lys Trp Lys Gly Gln Tyr Asp Val Ala Val Lys Met Ile Lys
435 440 445

Glu Gly Ser Met Ser Glu Asp Glu Phe Phe Gln Glu Ala Gln Thr Met
450 455 460

Met Lys Leu Ser His Pro Lys Leu Val Lys Phe Tyr Gly Val Cys Ser
465 470 475 480

Lys Glu Tyr Pro Ile Tyr Ile Val Thr Glu Tyr Ile Ser Asn Gly Cys
485 490 495

Leu Leu Asn Tyr Leu Arg Ser His Gly Lys Gly Leu Glu Pro Ser Gln
500 505 510

```
Leu Leu Glu Met Cys Tyr Asp Val Cys Glu Gly Met Ala Phe Leu Glu
        515                 520                 525

Ser His Gln Phe Ile His Arg Asp Leu Ala Ala Arg Asn Cys Leu Val
    530                 535                 540

Asp Arg Asp Leu Cys Val Lys Val Ser Asp Phe Gly Met Thr Arg Tyr
545                 550                 555                 560

Val Leu Asp Asp Gln Tyr Val Ser Ser Val Gly Thr Lys Phe Pro Val
                565                 570                 575

Lys Trp Ser Ala Pro Glu Val Phe His Tyr Phe Lys Tyr Ser Ser Lys
            580                 585                 590

Ser Asp Val Trp Ala Phe Gly Ile Leu Met Trp Glu Val Phe Ser Leu
        595                 600                 605

Gly Lys Gln Pro Tyr Asp Leu Tyr Asp Asn Ser Gln Val Val Leu Lys
    610                 615                 620

Val Ser Gln Gly His Arg Leu Tyr Arg Pro His Leu Ala Ser Asp Thr
625                 630                 635                 640

Ile Tyr Gln Ile Met Tyr Ser Cys Trp His Glu Leu Pro Glu Lys Arg
                645                 650                 655

Pro Thr Phe Gln Gln Leu Leu Ser Ser Ile Glu Pro Leu Arg Glu Lys
            660                 665                 670

Asp Lys His
        675
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<210> 5
<211> 527
<212> PRT
<213> Homo sapiens

<400> 5

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Met Ile Leu Ser Ser Tyr Asn Thr Ile Gln Ser Val Phe Cys Cys Cys
1               5                   10                  15

Cys Cys Cys Ser Val Gln Lys Arg Gln Met Arg Thr Gln Ile Ser Leu
            20                  25                  30

Ser Thr Asp Glu Glu Leu Pro Glu Lys Tyr Thr Gln Arg Arg Arg Pro
        35                  40                  45
```

```
Trp Leu Ser Gln Leu Ser Asn Lys Lys Gln Ser Asn Thr Gly Arg Val
    50                  55                  60

Gln Pro Ser Lys Arg Lys Pro Leu Pro Pro Leu Pro Pro Ser Glu Val
65                  70                  75                  80

Ala Glu Glu Lys Ile Gln Val Lys Ala Leu Tyr Asp Phe Leu Pro Arg
                85                  90                  95

Glu Pro Cys Asn Leu Ala Leu Arg Arg Ala Glu Glu Tyr Leu Ile Leu
            100                 105                 110

Glu Lys Tyr Asn Pro His Trp Trp Lys Ala Arg Asp Arg Leu Gly Asn
        115                 120                 125

Glu Gly Leu Ile Pro Ser Asn Tyr Val Thr Glu Asn Lys Ile Thr Asn
    130                 135                 140

Leu Glu Ile Tyr Glu Trp Tyr His Arg Asn Ile Thr Arg Asn Gln Ala
145                 150                 155                 160

Glu His Leu Leu Arg Gln Glu Ser Lys Glu Gly Ala Phe Ile Val Arg
                165                 170                 175

Asp Ser Arg His Leu Gly Ser Tyr Thr Ile Ser Val Phe Met Gly Ala
            180                 185                 190

Arg Arg Ser Thr Glu Ala Ala Ile Lys His Tyr Gln Ile Lys Lys Asn
        195                 200                 205

Asp Ser Gly Gln Trp Tyr Val Ala Glu Arg His Ala Phe Gln Ser Ile
    210                 215                 220
Pro Glu Leu Ile Trp Tyr His Gln His Asn Ala Ala Gly Leu Met Thr
225                 230                 235                 240

Arg Leu Arg Tyr Pro Val Gly Leu Met Gly Ser Cys Leu Pro Ala Thr
                245                 250                 255

Ala Gly Phe Ser Tyr Glu Lys Trp Glu Ile Asp Pro Ser Glu Leu Ala
            260                 265                 270

Phe Ile Lys Glu Ile Gly Ser Gly Gln Phe Gly Val Val His Leu Gly
        275                 280                 285

Glu Trp Arg Ser His Ile Gln Val Ala Ile Lys Ala Ile Asn Glu Gly
    290                 295                 300
```

```
Ser Met Ser Glu Glu Asp Phe Ile Glu Glu Ala Lys Val Met Met Lys
305                 310                 315                 320

Leu Ser His Ser Lys Leu Val Gln Leu Tyr Gly Val Cys Ile Gln Arg
                325                 330                 335

Lys Pro Leu Tyr Ile Val Thr Glu Phe Met Glu Asn Gly Cys Leu Leu
            340                 345                 350

Asn Tyr Leu Arg Glu Asn Lys Gly Lys Leu Arg Lys Glu Met Leu Leu
        355                 360                 365

Ser Val Cys Gln Asp Ile Cys Glu Gly Met Glu Tyr Leu Glu Arg Asn
    370                 375                 380

Gly Tyr Ile His Arg Asp Leu Ala Ala Arg Asn Cys Leu Val Ser Ser
385                 390                 395                 400

Thr Cys Ile Val Lys Ile Ser Asp Phe Gly Met Thr Arg Tyr Val Leu
                405                 410                 415

Asp Asp Glu Tyr Val Ser Ser Phe Gly Ala Lys Phe Pro Ile Lys Trp
            420                 425                 430

Ser Pro Pro Glu Val Phe Leu Phe Asn Lys Tyr Ser Ser Lys Ser Asp
        435                 440                 445

Val Trp Ser Phe Gly Val Leu Met Trp Glu Val Phe Thr Glu Gly Lys
    450                 455                 460

Met Pro Phe Glu Asn Lys Ser Asn Leu Gln Val Val Glu Ala Ile Ser
465                 470                 475                 480

Glu Gly Phe Arg Leu Tyr Arg Pro His Leu Ala Pro Met Ser Ile Tyr
                485                 490                 495

Glu Val Met Tyr Ser Cys Trp His Glu Lys Pro Glu Gly Arg Pro Thr
            500                 505                 510

Phe Ala Glu Leu Leu Arg Ala Val Thr Glu Ile Ala Glu Thr Trp
        515                 520                 525
```

<210> 6
<211> 1124
<212> PRT
<213> Homo sapiens

<400> 6

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Met Ala Pro Pro Ser Glu Glu Thr Pro Leu Ile Pro Gln Arg Ser Cys
1               5                  10                  15

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

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

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

Pro Val Tyr His Ser Leu Phe Ala Leu Ala Thr Glu Asp Leu Ser Cys
65                  70                  75                  80

Trp Phe Pro Pro Ser His Ile Phe Ser Val Glu Asp Ala Ser Thr Gln
                85                  90                  95

Val Leu Leu Tyr Arg Ile Arg Phe Tyr Phe Pro Asn Trp Phe Gly Leu
            100                 105                 110

Glu Lys Cys His Arg Phe Gly Leu Arg Lys Asp Leu Ala Ser Ala Ile
        115                 120                 125

Leu Asp Leu Pro Val Leu Glu His Leu Phe Ala Gln His Arg Ser Asp
    130                 135                 140

Leu Val Ser Gly Arg Leu Pro Val Gly Leu Ser Leu Lys Glu Gln Gly
145                 150                 155                 160

Glu Cys Leu Ser Leu Ala Val Leu Asp Leu Ala Arg Met Ala Arg Glu
                165                 170                 175

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

Cys Leu Pro Pro Ser Leu Arg Asp Leu Ile Gln Gly Leu Ser Phe Val
        195                 200                 205

Thr Arg Arg Arg Ile Arg Arg Thr Val Arg Arg Ala Leu Arg Arg Val
    210                 215                 220

Ala Ala Cys Gln Ala Asp Arg His Ser Leu Met Ala Lys Tyr Ile Met
225                 230                 235                 240

Asp Leu Glu Arg Leu Asp Pro Ala Gly Ala Ala Glu Thr Phe His Val
                245                 250                 255
```

```
Gly Leu Pro Gly Ala Leu Gly Gly His Asp Gly Leu Gly Leu Leu Arg
            260                 265                 270

Val Ala Gly Asp Gly Gly Ile Ala Trp Thr Gln Gly Glu Gln Glu Val
        275                 280                 285

Leu Gln Pro Phe Cys Asp Phe Pro Glu Ile Val Asp Ile Ser Ile Lys
    290                 295                 300

Gln Ala Pro Arg Val Gly Pro Ala Gly Glu His Arg Leu Val Thr Val
305                 310                 315                 320

Thr Arg Thr Asp Asn Gln Ile Leu Glu Ala Glu Phe Pro Gly Leu Pro
                325                 330                 335

Glu Ala Leu Ser Phe Val Ala Leu Val Asp Gly Tyr Phe Arg Leu Thr
            340                 345                 350

Thr Asp Ser Gln His Phe Phe Cys Lys Glu Val Ala Pro Pro Arg Leu
        355                 360                 365

Leu Glu Glu Val Ala Glu Gln Cys His Gly Pro Ile Thr Leu Asp Phe
    370                 375                 380

Ala Ile Asn Lys Leu Lys Thr Gly Gly Ser Arg Pro Gly Ser Tyr Val
385                 390                 395                 400

Leu Arg Arg Ser Pro Gln Asp Phe Asp Ser Phe Leu Leu Thr Val Cys
                405                 410                 415

Val Gln Asn Pro Leu Gly Pro Asp Tyr Lys Gly Cys Leu Ile Arg Arg
            420                 425                 430

Ser Pro Thr Gly Thr Phe Leu Leu Val Gly Leu Ser Arg Pro His Ser
        435                 440                 445

Ser Leu Arg Glu Leu Leu Ala Thr Cys Trp Asp Gly Gly Leu His Val
    450                 455                 460

Asp Gly Val Ala Val Thr Leu Thr Ser Cys Cys Ile Pro Arg Pro Lys
465                 470                 475                 480

Glu Lys Ser Asn Leu Ile Val Val Gln Arg Gly His Ser Pro Pro Thr
                485                 490                 495
```

```
Ser Ser Leu Val Gln Pro Gln Ser Gln Tyr Gln Leu Ser Gln Met Thr
            500                 505                 510

Phe His Lys Ile Pro Ala Asp Ser Leu Glu Trp His Glu Asn Leu Gly
        515                 520                 525

His Gly Ser Phe Thr Lys Ile Tyr Arg Gly Cys Arg His Glu Val Val
    530                 535                 540

Asp Gly Glu Ala Arg Lys Thr Glu Val Leu Leu Lys Val Met Asp Ala
545                 550                 555                 560

Lys His Lys Asn Cys Met Glu Ser Phe Leu Glu Ala Ala Ser Leu Met
                565                 570                 575

Ser Gln Val Ser Tyr Arg His Leu Val Leu Leu His Gly Val Cys Met
            580                 585                 590

Ala Gly Asp Ser Thr Met Val Gln Glu Phe Val His Leu Gly Ala Ile
        595                 600                 605

Asp Met Tyr Leu Arg Lys Arg Gly His Leu Val Pro Ala Ser Trp Lys
    610                 615                 620

Leu Gln Val Val Lys Gln Leu Ala Tyr Ala Leu Asn Tyr Leu Glu Asp
625                 630                 635                 640

Lys Gly Leu Pro His Gly Asn Val Ser Ala Arg Lys Val Leu Leu Ala
                645                 650                 655

Arg Glu Gly Ala Asp Gly Ser Pro Pro Phe Ile Lys Leu Ser Asp Pro
            660                 665                 670

Gly Val Ser Pro Ala Val Leu Ser Leu Glu Met Leu Thr Asp Arg Ile
        675                 680                 685

Pro Trp Val Ala Pro Glu Cys Leu Arg Glu Ala Gln Thr Leu Ser Leu
    690                 695                 700

Glu Ala Asp Lys Trp Gly Phe Gly Ala Thr Val Trp Glu Val Phe Ser
705                 710                 715                 720

Gly Val Thr Met Pro Ile Ser Ala Leu Asp Pro Ala Lys Lys Leu Gln
                725                 730                 735
```

Phe Tyr Glu Asp Arg Gln Gln Leu Pro Ala Pro Lys Trp Thr Glu Leu
740 745 750

Ala Leu Leu Ile Gln Gln Cys Met Ala Tyr Glu Pro Val Gln Arg Pro
755 760 765

Ser Phe Arg Ala Val Ile Arg Asp Leu Asn Ser Leu Ile Ser Ser Asp
770 775 780

Tyr Glu Leu Leu Ser Asp Pro Thr Pro Gly Ala Leu Ala Pro Arg Asp
785 790 795 800

Gly Leu Trp Asn Gly Ala Gln Leu Tyr Ala Cys Gln Asp Pro Thr Ile
805 810 815

Phe Glu Glu Arg His Leu Lys Tyr Ile Ser Gln Leu Gly Lys Gly Asn
820 825 830

Phe Gly Ser Val Glu Leu Cys Arg Tyr Asp Pro Leu Gly Asp Asn Thr
835 840 845

Gly Ala Leu Val Ala Val Lys Gln Leu Gln His Ser Gly Pro Asp Gln
850 855 860

Gln Arg Asp Phe Gln Arg Glu Ile Gln Ile Leu Lys Ala Leu His Ser
865 870 875 880
Asp Phe Ile Val Lys Tyr Arg Gly Val Ser Tyr Gly Pro Gly Arg Gln
885 890 895

Ser Leu Arg Leu Val Met Glu Tyr Leu Pro Ser Gly Cys Leu Arg Asp
900 905 910

Phe Leu Gln Arg His Arg Ala Arg Leu Asp Ala Ser Arg Leu Leu Leu
915 920 925

Tyr Ser Ser Gln Ile Cys Lys Gly Met Glu Tyr Leu Gly Ser Arg Arg
930 935 940

Cys Val His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Glu Ser Glu
945 950 955 960

Ala His Val Lys Ile Ala Asp Phe Gly Leu Ala Lys Leu Leu Pro Leu
965 970 975

Asp Lys Asp Tyr Tyr Val Val Arg Glu Pro Gly Gln Ser Pro Ile Phe
980 985 990

```
Trp Tyr Ala Pro Glu Ser Leu Ser  Asp Asn Ile Phe Ser  Arg Gln Ser
        995                 1000                1005

Asp Val  Trp Ser Phe Gly Val  Val Leu Tyr Glu Leu  Phe Thr Tyr
    1010                1015                1020

Cys Asp  Lys Ser Cys Ser Pro  Ser Ala Glu Phe Leu  Arg Met Met
    1025                1030                1035

Gly Cys  Glu Arg Asp Val Pro  Ala Leu Cys Arg Leu  Leu Glu Leu
    1040                1045                1050

Leu Glu  Glu Gly Gln Arg Leu  Pro Ala Pro Pro Ala  Cys Pro Ala
    1055                1060                1065

Glu Val  His Glu Leu Met Lys  Leu Cys Trp Ala Pro  Ser Pro Gln
    1070                1075                1080

Asp Arg  Pro Ser Phe Ser Ala  Leu Gly Pro Gln Leu  Asp Met Leu
    1085                1090                1095

Trp Ser  Gly Ser Arg Gly Cys  Glu Thr His Ala Phe  Thr Ala His
    1100                1105                1110

Pro Glu  Gly Lys His His Ser  Leu Ser Phe Ser
    1115                1120
```