SEQUENCE LISTING

<110> F. Hoffmann-La Roche AG

<120> Selection method

<130> 23731 FT

<150> EP06026654.1
<151> 2006-12-22

<160> 25

<170> PatentIn version 3.2

<210> 1
<211> 575
<212> PRT
<213> Bos taurus

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Met Arg Pro Trp Thr Gly Ser Trp Arg Trp Ile Met Leu Ile Leu Phe
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Ala Trp Gly Thr Leu Leu Phe Tyr Ile Gly Gly His Leu Val Arg Asp
20 25 30

Asn Asp His Pro Asp His Ser Ser Arg Glu Leu Ser Lys Ile Leu Ala
35 40 45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
50 55 60

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

Gly Arg Ile Arg Ala Leu Glu Glu Gln Leu Val Lys Ala Lys Glu Gln
85 90 95

Ile Glu Asn Tyr Lys Lys Gln Thr Arg Asn Gly Leu Gly Lys Asp His
100 105 110

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
115 120 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys Asn Leu Glu Gly Asn Glu
130 135 140

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Leu Gln Arg His Ala Asp Glu Phe Leu Ser Asp Leu Gly His His Glu
145                 150                 155                 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
                165                 170                 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
            180                 185                 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Lys
        195                 200                 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
    210                 215                 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225                 230                 235                 240

Leu Ile Leu Glu Ser His Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
                245                 250                 255

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

Tyr Thr Gly His Trp Ser Gly Glu Ile Lys Asp Lys Asn Val Gln Val
        275                 280                 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu
    290                 295                 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Val Arg Val His
305                 310                 315                 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
                325                 330                 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys
            340                 345                 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
        355                 360                 365
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Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
370 375 380

His Val Glu Glu His Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp
385 390 395 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ser Leu Leu Lys Glu
405 410 415

Ala Lys Thr Lys Tyr Pro His Tyr Glu Phe Ile Ser Asp Asn Ser Ile
420 425 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
435 440 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
450 455 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
465 470 475 480

Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
485 490 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Ile Tyr Pro
500 505 510

His Glu Pro Arg Thr Ala Asp Glu Ile Pro Met Glu Pro Gly Asp Ile
515 520 525

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Val Asn
530 535 540

Arg Lys Leu Gly Arg Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
545 550 555 560

Lys Ile Glu Thr Val Lys Val Pro His Val Pro Glu Ala Glu Lys
565 570 575

<210> 2
<211> 619

<212> PRT
<213> Drosophila melanogaster

<400> 2

Met Leu Leu Val Arg Gln Leu Phe Gly Ala Ser Ala Asn Ser Trp Ala
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Arg Ala Leu Ile Ile Phe Val Leu Ala Trp Ile Gly Leu Val Tyr Val
20 25 30

Phe Val Val Lys Leu Thr Asn Thr Gln Gly Gln Gln Ala Ala Gly Glu
35 40 45

Ser Glu Leu Asn Ala Arg Arg Ile Ser Gln Ala Leu Gln Met Leu Glu
50 55 60

His Thr Arg Gln Arg Asn Glu Glu Leu Lys Gln Leu Ile Asp Glu Leu
65 70 75 80

Met Ser Asp Gln Leu Asp Lys Gln Ser Ala Met Lys Leu Val Gln Arg
85 90 95

Leu Glu Asn Asp Ala Leu Asn Pro Lys Leu Ala Pro Glu Val Ala Gly
100 105 110

Pro Glu Pro Glu Ser Met Phe Glu Ser Ala Pro Ala Asp Leu Arg Gly
115 120 125

Trp Asn Asn Val Ala Glu Gly Ala Pro Asn Asp Leu Glu Ala Gly Val
130 135 140

Pro Asp His Gly Glu Phe Glu Pro Ser Leu Glu Tyr Glu Phe Thr Arg
145 150 155 160

Arg Arg Ile Gln Thr Asn Ile Gly Glu Ile Trp Asn Phe Phe Ser Ser
165 170 175

Glu Leu Gly Lys Val Arg Lys Ala Val Ala Ala Gly His Ala Ser Ala
180 185 190

Asp Leu Glu Glu Ser Ile Asn Gln Val Leu Leu Gln Gly Ala Glu His
195 200 205

Lys Arg Ser Leu Leu Ser Asp Met Glu Arg Met Arg Gln Ser Asp Gly
210 215 220

Tyr Glu Ala Trp Arg His Lys Glu Ala Arg Asp Leu Ser Asp Leu Val
225 230 235 240

Gln Arg Arg Leu His His Leu Gln Asn Pro Ser Asp Cys Gln Asn Ala
245 250 255

Arg Lys Leu Val Cys Lys Leu Asn Lys Gly Cys Gly Tyr Gly Cys Gln
260 265 270

Leu His His Val Val Tyr Cys Phe Ile Val Ala Tyr Ala Thr Glu Arg
275 280 285

Thr Leu Ile Leu Lys Ser Arg Gly Trp Arg Tyr His Lys Gly Gly Trp
290 295 300

Glu Glu Val Phe Gln Pro Val Ser Asn Ser Cys His Asp Ala Gly Thr
305 310 315 320

Ala Asn Thr Tyr Asn Trp Pro Gly Lys Pro Asn Thr Gln Val Leu Val
325 330 335

Leu Pro Ile Ile Asp Ser Leu Met Pro Arg Pro Pro Tyr Leu Pro Leu
340 345 350

Ala Val Pro Glu Asp Leu Ala Pro Arg Leu Lys Arg Leu His Gly Asp
355 360 365

Pro Ile Val Trp Trp Val Gly Gln Phe Leu Lys Tyr Leu Leu Arg Pro
370 375 380

Gln Pro Thr Thr Arg Asp Phe Leu Thr Ser Gly Met Arg Asn Leu Gly
385 390 395 400

Trp Glu Arg Pro Ile Val Gly Val His Val Arg Arg Thr Asp Lys Val
405 410 415

Gly Thr Glu Ala Ala Cys His Ser Val Glu Glu Tyr Met Thr Tyr Val
420 425 430

Glu Asp Tyr Tyr Arg Thr Leu Glu Val Asn Gly Ser Thr Val Ala Arg
435 440 445

Arg Ile Phe Leu Ala Ser Asp Asp Ala Gln Val Ile Glu Glu Ala Arg
450 455 460

Arg Lys Tyr Pro Gln Tyr Gln Ile Ile Gly Asp Pro Glu Val Ala Arg
465 470 475 480

Met Ala Ser Val Ser Thr Arg Tyr Thr Asp Thr Ala Leu Asn Gly Ile
485 490 495

Ile Leu Asp Ile His Leu Leu Ser Met Ser Asp His Leu Val Cys Thr
500 505 510

Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln Thr Met
515 520 525

Tyr Pro Asp Ala Ala His Arg Phe Lys Ser Leu Asp Asp Ile Tyr Tyr
530 535 540

Tyr Gly Gly Gln Asn Ala His Asn Arg Arg Val Val Ile Ala His Lys
545 550 555 560

Pro Arg Thr His Glu Asp Leu Gln Leu Arg Val Gly Asp Leu Val Ser
565 570 575

Val Ala Gly Asn His Trp Asp Gly Asn Ser Lys Gly Lys Asn Thr Arg
580 585 590

Thr Asn Gln Gly Gly Leu Phe Pro Ser Phe Lys Val Glu Glu Lys Val
595 600 605

Asp Thr Ala Lys Leu Pro Leu Tyr Ala Gly Ile
610 615

<210> 3
<211> 575
<212> PRT
<213> Homo sapiens

<400> 3

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Met Arg Pro Trp Thr Gly Ser Trp Arg Trp Ile Met Leu Ile Leu Phe
1               5                  10                  15

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

Asn Asp His Pro Asp His Ser Ser Arg Glu Leu Ser Lys Ile Leu Ala
        35                  40                  45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
    50                  55                  60

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

Gly Arg Val Arg Val Leu Glu Glu Gln Leu Val Lys Ala Lys Glu Gln
                85                  90                  95

Ile Glu Asn Tyr Lys Lys Gln Thr Arg Asn Gly Leu Gly Lys Asp His
            100                 105                 110

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
        115                 120                 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys Asn Leu Glu Gly Asn Glu
    130                 135                 140

Leu Gln Arg His Ala Asp Glu Phe Leu Leu Asp Leu Gly His His Glu
145                 150                 155                 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
                165                 170                 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
            180                 185                 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Lys
        195                 200                 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
    210                 215                 220
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His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225                 230                 235                 240

Leu Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
                245                 250                 255

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

Ser Thr Gly His Trp Ser Gly Glu Val Lys Asp Lys Asn Val Gln Val
        275                 280                 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu
    290                 295                 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Val Arg Val His
305                 310                 315                 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
                325                 330                 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys
            340                 345                 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
        355                 360                 365

Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
    370                 375                 380

His Val Glu Glu His Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp
385                 390                 395                 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ser Leu Leu Lys Glu
                405                 410                 415

Ala Lys Thr Lys Tyr Pro Asn Tyr Glu Phe Ile Ser Asp Asn Ser Ile
            420                 425                 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
        435                 440                 445
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Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
450 455 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
465 470 475 480

Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
485 490 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Ile Tyr Ala
500 505 510

His Gln Pro Arg Thr Ala Asp Glu Ile Pro Met Glu Pro Gly Asp Ile
515 520 525

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Val Asn
530 535 540

Arg Lys Leu Gly Arg Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
545 550 555 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Glu Lys
565 570 575

<210> 4
<211> 575
<212> PRT
<213> Mus musculus

<400> 4

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

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

Asn Asp His Pro Asp His Ser Thr Arg Glu Leu Ser Lys Ile Leu Ala
35 40 45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
50 55 60

Glu Ser Leu Arg Ile Pro Glu Gly Pro Ile Asp Gln Gly Thr Ala Thr

65 70 75 80

Gly Arg Val Arg Val Leu Glu Glu Gln Leu Val Lys Ala Lys Glu Gln
85 90 95

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

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
115 120 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys His Leu Glu Gly Asn Glu
130 135 140

Leu Gln Arg His Ala Asp Glu Ile Leu Leu Asp Leu Gly His His Glu
145 150 155 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
165 170 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
180 185 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Arg
195 200 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
210 215 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225 230 235 240

Leu Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
245 250 255

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

Ser Thr Gly His Trp Ser Gly Glu Val Asn Asp Lys Asn Ile Gln Val
275 280 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu

290 295 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Leu Arg Val His
305 310 315 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
325 330 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys
340 345 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
355 360 365

Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
370 375 380

His Val Glu Gln His Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp
385 390 395 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Thr Leu Leu Lys Glu
405 410 415

Ala Asn Thr Lys Tyr Ser Asn Tyr Glu Phe Ile Ser Asp Asn Ser Ile
420 425 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
435 440 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
450 455 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
465 470 475 480

Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
485 490 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Val Tyr Pro
500 505 510

His Lys Pro Arg Thr Glu Glu Glu Ile Pro Met Glu Pro Gly Asp Ile

515 520 525

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Ile Asn
530 535 540

Arg Lys Leu Gly Lys Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
545 550 555 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Glu Lys
565 570 575

<210> 5
<211> 575
<212> PRT
<213> Pan troglodytes

<400> 5

Met Arg Pro Trp Thr Gly Ser Trp Arg Trp Ile Met Leu Ile Leu Phe
1 5 10 15

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

Asn Asp His Pro Asp His Ser Ser Arg Glu Leu Ser Lys Ile Leu Ala
35 40 45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
50 55 60

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

Gly Arg Val Arg Val Leu Glu Glu Gln Leu Val Lys Ala Lys Glu Gln
85 90 95

Ile Glu Asn Tyr Lys Lys Gln Thr Arg Asn Gly Leu Gly Lys Asp His
100 105 110

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
115 120 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys Asn Leu Glu Gly Asn Glu
130 135 140

Leu Gln Arg His Ala Asp Glu Phe Leu Leu Asp Leu Gly His His Glu
145 150 155 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
165 170 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
180 185 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Lys
195 200 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
210 215 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225 230 235 240

Leu Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
245 250 255

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

Ser Thr Gly His Trp Ser Gly Glu Val Lys Asp Lys Asn Val Gln Val
275 280 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu
290 295 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Val Arg Val His
305 310 315 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
325 330 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys
340 345 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
355 360 365

```
Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
    370                 375                 380

His Val Glu Glu His Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp
385                 390                 395                 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ser Leu Leu Lys Glu
                405                 410                 415

Ala Lys Thr Lys Tyr Pro Asn Tyr Glu Phe Ile Ser Asp Asn Ser Ile
            420                 425                 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
        435                 440                 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
    450                 455                 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
465                 470                 475                 480

Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
                485                 490                 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Ile Tyr Ala
            500                 505                 510

His Gln Pro Arg Thr Ala Asp Glu Ile Pro Met Glu Pro Gly Asp Ile
        515                 520                 525

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Val Asn
    530                 535                 540

Arg Lys Leu Gly Arg Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
545                 550                 555                 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Glu Lys
                565                 570                 575
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<212> PRT
<213> Caenorhabditis elegans

<400> 6

Met Leu Lys Cys Ile Ala Ala Val Gly Thr Val Val Trp Met Thr Met
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Phe Leu Phe Leu Tyr Ser Gln Leu Ser Asn Asn Gln Ser Gly Gly Asp
20 25 30

Ser Ile Arg Ala Trp Arg Gln Thr Lys Glu Ala Ile Asp Lys Leu Gln
35 40 45

Glu Gln Asn Glu Asp Leu Lys Ser Ile Leu Glu Lys Glu Arg Gln Glu
50 55 60

Arg Asn Asp Gln His Lys Lys Ile Met Glu Gln Ser His Gln Leu Pro
65 70 75 80

Pro Asn Pro Glu Asn Pro Ser Leu Pro Lys Pro Glu Pro Val Lys Glu
85 90 95

Ile Ile Ser Lys Pro Ser Ile Leu Gly Pro Val Gln Gln Glu Val Gln
100 105 110

Lys Arg Met Leu Asp Asp Arg Ile Arg Glu Met Phe Tyr Leu Leu His
115 120 125

Ser Gln Thr Ile Glu Asn Ser Thr Lys Ile Leu Leu Glu Thr Gln Met
130 135 140

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

Glu Glu Glu Arg Phe Lys Gln Arg Thr Ala Ile Thr Gln Arg Ile Phe
165 170 175

Lys Ser Ile Glu Lys Leu Gln Asn Pro Lys Ala Cys Ser Glu Ala Lys
180 185 190

Thr Leu Val Cys Asn Leu Asp Lys Glu Cys Gly Phe Gly Cys Gln Leu
195 200 205

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His His Val Thr Tyr Cys Ala Ile Thr Ala Phe Ala Thr Gln Arg Met
    210                 215                 220

Met Val Leu Lys Arg Asp Gly Ser Ser Trp Lys Tyr Ser Ser His Gly
225                 230                 235                 240

Trp Thr Ser Val Phe Lys Lys Leu Ser Lys Cys Ser Phe Asp Glu Ala
                245                 250                 255

Val Gly Asn Thr Glu Ala Lys Pro Phe Ala Glu Pro Ser Pro Ala Arg
            260                 265                 270

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

Leu Pro Gln Ala Val Pro Glu Gln Leu Leu Glu Ser Leu Thr Ser Leu
    290                 295                 300

His Ser His Pro Pro Ala Phe Phe Val Gly Thr Phe Ile Ser Tyr Leu
305                 310                 315                 320

Met Arg Phe Asn Ser Ala Thr Gln Glu Lys Leu Asp Lys Ala Leu Lys
                325                 330                 335

Ser Ile Pro Leu Asp Lys Gly Pro Ile Val Gly Leu Gln Ile Arg Arg
            340                 345                 350

Thr Asp Lys Val Gly Thr Glu Ala Ala Phe His Ala Leu Lys Glu Tyr
        355                 360                 365

Met Glu Trp Thr Glu Ile Trp Phe Lys Val Glu Glu Lys Arg Gln Gly
    370                 375                 380

Lys Pro Leu Glu Arg Arg Ile Phe Ile Ala Ser Asp Asp Pro Thr Val
385                 390                 395                 400

Val Pro Glu Ala Lys Asn Asp Tyr Pro Asn Tyr Glu Val Tyr Gly Ser
                405                 410                 415

Thr Glu Ile Ala Lys Thr Ala Gln Leu Asn Asn Arg Tyr Thr Asp Ala
            420                 425                 430
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Ser Leu Met Gly Val Ile Thr Asp Ile Tyr Ile Leu Ser Lys Val Asn
435 440 445

Tyr Leu Val Cys Thr Phe Ser Ser Gln Val Cys Arg Met Gly Tyr Glu
450 455 460

Leu Arg Gln Pro Ser Gly Ala Asp Asp Gly Ser Lys Phe His Ser Leu
465 470 475 480

Asp Asp Ile Tyr Tyr Phe Gly Gly Gln Gln Ala His Glu Val Ile Val
485 490 495

Ile Glu Asp His Ile Ala Gln Asn Asn Lys Glu Ile Asp Leu Lys Val
500 505 510

Gly Asp Lys Val Gly Ile Ala Gly Asn His Trp Asn Gly Tyr Ser Lys
515 520 525

Gly Thr Asn Arg Gln Thr Tyr Lys Glu Gly Val Phe Pro Ser Tyr Lys
530 535 540

Val Val Asn Asp Trp Arg Lys Phe Lys Phe Glu Ala Leu Leu Asp
545 550 555

<210> 7
<211> 603
<212> PRT
<213> Dictyostelium discoideum

<400> 7

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

Ile Lys Gln Pro Lys Leu Asn Asn Ile Thr Val Asn Tyr Asn Phe Lys
35 40 45

Asn Asn Ile Glu Ile Val Asp Leu Ile Phe Ile Gln Tyr Tyr Asn Pro
50 55 60

Leu Glu Lys Glu Tyr Ile Lys Ile Ile Asn Asn Asn His Ser Val Leu
65 70 75 80

Asn Tyr Phe Thr Ser Asn Leu Ile Asn Ser His Lys Ser Tyr Lys Asn
85 90 95

Phe Lys Ile Ile Asn Phe Leu Asn Asn Asn Asn Asn Asn Asn Lys Ser
100 105 110

Pro Ile Leu Lys Tyr Asn Ile Glu Asn Asn Asn Asn Asn Asn Asn Lys
115 120 125

Ile Phe Lys Asp Ile Ser Phe Ser Asn Asn Lys Asn Ile Phe Asp Lys
130 135 140

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

Ile Asp Leu Phe Asp Phe Ile Glu Phe Ile Glu Gly Lys Ile Lys Asn
165 170 175

Ser Ile Thr Ile Phe Gly Phe Cys Phe Leu Arg Glu Asn Leu Glu Glu
180 185 190

Asn Ile Asp Asn Phe Leu Ser Ser His Arg Val Trp Ser Ile Lys Phe
195 200 205

Asn Tyr Ser Phe Asn Cys Lys Leu Asn Asn Tyr Glu Lys Ser Phe Glu
210 215 220

Tyr Gly Gln Leu Ile Gln Leu Ile Lys Val Ser Glu Ser Phe Asp Thr
225 230 235 240

Phe Lys Phe Tyr Asn Tyr Leu Asp Lys Leu Gln Phe Tyr Asn Asn Asn
245 250 255

Asn Gly Gly Asn Lys Asn Asn Tyr Asn Asn Lys Ile Leu Ile His Ser
260 265 270

Leu Arg Pro Phe Gly Met Ile Ser Ser Leu His Phe Leu Gly Tyr Ser
275 280 285

Leu Thr Leu Ser Leu Glu Trp Asn Arg Thr Leu Ile Ile Asp Asp Ser
290 295 300

Lys Phe Leu Phe Ser Asn Lys Phe Thr Asp Leu Phe Leu Pro Ile Thr
305 310 315 320

Ala Lys Thr Lys Phe Glu Asn Phe Asn Asn Val Glu Glu Lys Ser Ala
325 330 335

Gln Ile Ile Asn Phe Leu Lys Ser Glu Lys Glu Tyr Asn His Ser Asn
340 345 350

Pro Ile Ser Ile Ile Thr Asn Asp Tyr His Val Tyr Val Asp Phe Lys
355 360 365

Ser Cys Asn Glu Phe Pro Lys Gln Trp Phe Gln Gly Gly Asp Leu Tyr
370 375 380

Cys Phe Lys Ser His Ile Met Asn Tyr Ile Ile Arg Pro Asn Tyr Lys
385 390 395 400

Ile Arg Lys Ile Ile Glu Leu His Lys Leu Asn Leu Phe His Asn Asp
405 410 415

Lys Asn Asn Tyr Asn Ile Asn Asn Asp Glu Leu Asn Cys Leu Ala Ile
420 425 430

His Ile Arg Asn Gly Asp Lys Val Ile Glu Asn Ser Met Lys Asn Lys
435 440 445

Ser Ile Val Leu Asn Tyr Phe Gln Asp Tyr Leu Asp Phe Ile Val Asn
450 455 460

Asp Lys Tyr Leu Asn Asn Gly Arg Asn Phe Ile Lys Asn Ile Phe Val
465 470 475 480

Met Ser Asp Asn Gln Thr Ile Phe Asn Ile Asp Leu Pro Asn Ala Gln
485 490 495

Ile Arg Tyr Pro Gln Phe Lys Phe His Tyr Leu Lys Asp Ile Ile Arg
500 505 510

Asp Asp Asn Thr Thr Asn Phe Ile Lys Tyr Leu Asn Asp Asp Asn Tyr
515 520 525

Asp Thr Asn Leu Lys Thr Leu Lys Asn Arg Pro Asn Ser Asn Ile Gly
530 535 540

Asn Gly Leu Leu Ser Glu Ile Ile Ile Ala Ser Glu Cys Gln Tyr Phe
545 550 555 560

Ile Gly Ser Gln Thr Ser Asn Val Ala Arg Leu Ile Val Glu Leu Met
565 570 575

Asn Ala Asn Arg Lys Ser Asn Pro Ser Leu Lys Ile Lys Leu Tyr Lys
580 585 590

Thr Leu Asp Asn Ser Ser Trp Phe Ala Asp Pro
595 600

<210> 8
<211> 575
<212> PRT
<213> Gallus gallus

<400> 8

Met Arg Pro Trp Thr Gly Ser Trp Arg Trp Ile Met Leu Ile Leu Phe
1 5 10 15

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

Ser Glu His Pro Asp His Ser Ser Arg Glu Leu Ser Lys Ile Leu Ala
35 40 45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
50 55 60

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

Gly Lys Val His Ala Leu Glu Glu Gln Leu Leu Lys Ala Lys Glu Gln
85 90 95

Ile Glu Asn Tyr Lys Lys Gln Thr Gly Asp Gly Leu Gly Lys Asp His

```
          100                 105                 110

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
        115                 120                 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys Asn Leu Glu Gly Ser Glu
    130                 135                 140

Leu Gln Arg Arg Ile Asp Glu Phe Leu Ser Asp Leu Gly His Gln Glu
145                 150                 155                 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
                165                 170                 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Asp Leu Val Gln
            180                 185                 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Lys
        195                 200                 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
    210                 215                 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225                 230                 235                 240

Leu Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
                245                 250                 255

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

Thr Thr Gly His Trp Ser Gly Glu Thr Asn Asp Lys Asp Val Gln Val
        275                 280                 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu
    290                 295                 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Ile Arg Val His
305                 310                 315                 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
```

325 330 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Arg Lys
340 345 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
355 360 365

Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
370 375 380

His Val Glu Glu Arg Phe Glu Leu Leu Ala Arg Arg Met His Val Asp
385 390 395 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ser Leu Leu Gln Glu
405 410 415

Ala Lys Ser Lys Tyr Pro Asn Tyr Glu Phe Ile Ser Asp Asn Ser Ile
420 425 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
435 440 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
450 455 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Pro Tyr Glu Ile Met Gln
465 470 475 480

Thr Leu His Pro Asp Ala Ser Ala Tyr Phe His Ser Leu Asp Asp Ile
485 490 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Val Tyr Ala
500 505 510

His His Pro Arg Thr Ala Asp Glu Ile Pro Met Glu Pro Gly Asp Ile
515 520 525

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Ile Asn
530 535 540

Arg Lys Leu Gly Lys Thr Gly Leu Tyr Pro Ser Tyr Lys Val Lys Glu

545 550 555 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Glu Lys
565 570 575

<210> 9
<211> 575
<212> PRT
<213> Canis familiaris

<400> 9

Met Arg Pro Trp Thr Gly Ser Trp Arg Trp Ile Met Leu Ile Leu Phe
1 5 10 15

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

Asn Asp His Pro Asp His Ser Ser Arg Glu Leu Ser Lys Ile Leu Ala
35 40 45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
50 55 60

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

Gly Arg Val Arg Ala Leu Glu Glu Gln Leu Leu Lys Ala Lys Glu Gln
85 90 95

Ile Glu Asn Tyr Lys Lys Gln Thr Arg Asn Gly Leu Gly Lys Asp His
100 105 110

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
115 120 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys Asn Leu Glu Gly Asn Val
130 135 140

Leu Gln Arg His Ala Asp Glu Phe Leu Ser Asp Leu Gly His His Glu
145 150 155 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
165 170 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
180 185 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Lys
195 200 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
210 215 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225 230 235 240

Leu Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
245 250 255

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

Ser Thr Gly His Trp Ser Gly Glu Val Lys Asp Lys Asn Val Gln Val
275 280 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu
290 295 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Val Arg Val His
305 310 315 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
325 330 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys
340 345 350

Leu Gly Phe Asn Ile Pro Val Ile Gly Val His Val Arg Arg Thr Asp
355 360 365

Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
370 375 380

His Val Glu Glu His Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp
385 390 395 400

Lys Arg Arg Val Tyr Leu Ala Thr Asp Asp Pro Ser Leu Leu Lys Glu
405 410 415

Ala Lys Thr Lys Tyr Pro Thr Tyr Glu Phe Ile Ser Asp Asn Ser Ile
420 425 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
435 440 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
450 455 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
465 470 475 480

Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
485 490 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Ile Tyr Pro
500 505 510

His Gln Pro Arg Thr Ala Asp Glu Ile Pro Met Glu Pro Gly Asp Ile
515 520 525

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Val Asn
530 535 540

Arg Lys Leu Gly Arg Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
545 550 555 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Glu Lys
565 570 575

<210> 10
<211> 575
<212> PRT
<213> Rattus norvegicus

<400> 10

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

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

Asn Asp His Pro Asp His Ser Ser Arg Glu Leu Ser Lys Ile Leu Ala
        35                  40                  45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
    50                  55                  60

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

Gly Arg Val Arg Val Leu Glu Glu Gln Leu Val Lys Ala Lys Glu Gln
                85                  90                  95

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

Glu Leu Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
        115                 120                 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys His Leu Glu Gly Asn Glu
    130                 135                 140

Leu Gln Arg His Ala Asp Glu Ile Leu Leu Asp Leu Gly His His Glu
145                 150                 155                 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
                165                 170                 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
            180                 185                 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Arg
        195                 200                 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
    210                 215                 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225                 230                 235                 240
```

Leu Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
245 250 255

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

Ser Thr Gly His Trp Ser Gly Glu Val Asn Asp Lys Asn Ile Gln Val
275 280 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu
290 295 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Val Arg Val His
305 310 315 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
325 330 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys
340 345 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
355 360 365

Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
370 375 380

His Val Glu Glu His Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp
385 390 395 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ala Leu Leu Lys Glu
405 410 415

Ala Lys Thr Lys Tyr Ser Asn Tyr Glu Phe Ile Ser Asp Asn Ser Ile
420 425 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
435 440 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
450 455 460

```
Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
465                 470                 475                 480

Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
                485                 490                 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Val Tyr Pro
            500                 505                 510

His Lys Pro Arg Thr Asp Glu Glu Ile Pro Met Glu Pro Gly Asp Ile
        515                 520                 525

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Val Asn
    530                 535                 540

Arg Lys Leu Gly Lys Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
545                 550                 555                 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Glu Lys
                565                 570                 575
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<210> 11
<211> 575
<212> PRT
<213> Sus scrofa

<400> 11

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Met Arg Pro Trp Thr Gly Ser Trp Arg Trp Ile Met Leu Ile Leu Phe
1               5                   10                  15

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

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

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
    50                  55                  60

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

Gly Arg Val Arg Ala Leu Glu Glu Gln Phe Met Lys Ala Lys Glu Gln
85 90 95

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

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
115 120 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys Asn Leu Glu Gly Asn Glu
130 135 140

Leu Gln Arg His Ala Asp Glu Phe Leu Ser Asp Leu Gly His His Glu
145 150 155 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
165 170 175

Gly Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
180 185 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Lys
195 200 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
210 215 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
225 230 235 240

Leu Ala Leu Glu Ser His Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
245 250 255

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

Ser Thr Gly His Trp Ser Gly Glu Val Lys Asp Lys Asn Val Gln Val
275 280 285

Val Glu Leu Pro Ile Val Asp Ser Val His Pro Arg Pro Pro Tyr Leu
290 295 300

```
Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Val Arg Val His
305                 310                 315                 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
                325                 330                 335

Arg Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys
            340                 345                 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
        355                 360                 365

Lys Val Gly Ala Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Thr Val
    370                 375                 380

His Val Glu Glu Asp Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp
385                 390                 395                 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ala Leu Leu Lys Glu
                405                 410                 415

Ala Lys Thr Lys Tyr Pro Ser Tyr Glu Phe Ile Ser Asp Asn Ser Ile
            420                 425                 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
        435                 440                 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
    450                 455                 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
465                 470                 475                 480

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

Tyr Tyr Phe Gly Gly Pro Asn Ala His Asn Gln Ile Ala Ile Tyr Pro
            500                 505                 510

His Gln Pro Arg Thr Glu Gly Glu Ile Pro Met Glu Pro Gly Asp Ile
        515                 520                 525
```

Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Pro Lys Gly Val Asn
530 535 540

Arg Lys Leu Gly Arg Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
545 550 555 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Asp Lys
565 570 575

<210> 12
<211> 830
<212> DNA
<213> Macaca mulatta

<400> 12
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aacaaccaaa ctcagttcaa accatttgag ccaaactgta gatgaagagg gctctgatct 120

aacaaaataa ggttatatga gtagataccc tcagcaccaa gagcagctgg gaactgacag 180

aggcttcaat tggtggaatt cctctttaac aagggctgca atgccctcaa acccatgcac 240

agtacaataa tgtactcaca tataacatgc aaacaggttt tctactttgt ccctttcttt 300

caatgtgtcc ccataagaca aacactgcca tattgtgtaa tttaagtgac acagacattt 360

tgtgtgagac ttaaaacatg gtgcctatat ctgagagacc tatgtgaact attgagaaga 420

cctgaacagc tccttactct gacgaagttg attcttattt ggtggtggta ttgtgaccac 480

tgcattcact ccggtcaaca gattcagaat gagaatggac gtttggtttt tgtttttgtt 540

tttgtttttt tcctttataa ggttatctgg gttttttttt tttaaataat tgcatcagtt 600

cattgacctc atcattaata agtgaagaat acatcggaaa ataaaatatt cactctccat 660

tagaaaattt tgtaaaacaa tgccatgaac aaattcttta gtactcaatg tttctggaca 720

tactctttga taacaaaaat aaattttaaa aaggaatttt gtaaagtttc tagaactttg 780

tatcattgga tgttatgatg atcagcctca tgtggaagaa ctgtgataaa 830

<210> 13
<211> 2008
<212> DNA
<213> Cricetulus griseus

<400> 13
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tggcgttgga ttatgctcat tctttttgcc tgggggacct tattgtttta tataggtggt 180

catttggttc gagataatga ccaccctgac cattctagca gagaactctc caagattctt 240

gcaaagctgg agcgcttaaa acaacaaaat gaagacttga ggagaatggc tgagtctctc 300

cgaataccag aaggccctat tgatcagggg acagctacag gaagagtccg tgttttagaa 360

gaacagcttg ttaaggccaa agaacagatt gaaaattaca agaaacaagc taggaatgat 420

ctgggaaagg atcatgaaat cttaaggagg aggattgaaa atggagctaa agagctctgg 480

ttttttctac aaagtgaatt gaagaaatta aagaaattag aaggaaacga actccaaaga 540

catgcagatg aaattctttt ggatttagga catcatgaaa ggtctatcat gacagatcta 600

tactacctca gtcaaacaga tggagcaggt gagtggcggg aaaaagaagc caaagatctg 660

acagagctgg tccagcggag aataacatat ctgcagaatc ccaaggactg cagcaaagcc 720

agaaagctgg tatgtaatat caacaaaggc tgtggctatg gatgtcaact ccatcatgtg 780

gtttactgct tcatgattgc ttatggcacc cagcgaacac tcatcttgga atctcagaat 840

tggcgctatg ctactggagg atgggagact gtgtttagac ctgtaagtga gacatgcaca 900

gacaggtctg gcctctccac tggacactgg tcaggtgaag tgaaggacaa aaatgttcaa 960

gtggtcgagc tccccattgt agacagcctc catcctcgtc ctccttactt acccttggct 1020

gtaccagaag accttgcaga tcgactcctg agagtccatg gtgatcctgc agtgtggtgg 1080

gtatcccagt ttgtcaaata cttgatccgt ccacaacctt ggctggaaag ggaaatagaa 1140

gaaaccacca agaagcttgg cttcaaacat ccagttattg gagtccatgt cagacgcact 1200

gacaaagtgg gaacagaagc agccttccat cccattgagg aatacatggt acacgttgaa 1260

gaacattttc agcttctcga acgcagaatg aaagtggata aaaaaagagt gtatctggcc 1320

actgatgacc cttctttgtt aaaggaggca aagacaaagt actccaatta tgaatttatt 1380

agtgataact ctatttcttg gtcagctgga ctacacaacc gatacacaga aaattcactt 1440

cggggcgtga tcctggatat acactttctc tcccaggctg acttccttgt gtgtactttt 1500

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atcattggtg tggctggaaa ccattggaat ggttactcta aaggtgtcaa cagaaaacta 1740

ggaaaaacag gcctgtaccc ttcctacaaa gtccgagaga agatagaaac agtcaaatac 1800

cctacatatc ctgaagctga aaaatagaga tggagtgtaa gagattaaca acagaattta 1860

gttcagacca tctcagccaa gcagaagacc cagactaaca tatggttcat tgacagacat 1920

gctccgcacc aagagcaagt gggaaccctc agatgctgca ctggtggaac gcctctttgt 1980

gaagggctgc tgtgccctca agcccatg 2008

<210> 14
<211> 19
<212> DNA
<213> Artificial

<220>
<223> shRNA

<400> 14
ccagaaggcc ctattgatc 19

<210> 15
<211> 20
<212> DNA
<213> Artificial

<220>
<223> sh RNA

<400> 15
gccagaaggc cctattgatc 20

<210> 16
<211> 21
<212> DNA
<213> Artificial

<220>
<223> shRNA

<400> 16
gatcaatagg gccttctggt a 21

<210> 17
<211> 9
<212> DNA
<213> Artificial

<220>
<223> shRNA

<400> 17
ttcaagaga 9

<210> 18
<211> 28
<212> DNA
<213> Artificial

<220>
<223> Polylinker_top

<400> 18
tcgagggcgc gccagctcgg gccggcca 28

<210> 19
<211> 28
<212> DNA
<213> Artificial

<220>
<223> Polylinker_bot

<400> 19
agcttggccg gcccgagctg gcgcgccc 28

<210> 20
<211> 66
<212> DNA
<213> Artificial

<220>
<223> F8shRNA4top

<400> 20
gatccgccag aaggccctat tgatcttcaa gagagatcaa tagggccttc tggtattttt 60

tggaaa 66

<210> 21
<211> 66
<212> DNA
<213> Artificial

<220>
<223> F8shRNAbot

<400> 21
agcttttcca aaaaatacca gaaggcccta ttgatctctc ttgaagatca tagggccttt 60

ctggcg 66

<210> 22
<211> 20

<212> DNA
<213> Artificial

<220>
<223> FuT8forward primer

<400> 22
ggcgttggat tatgctcatt 20

<210> 23
<211> 20
<212> DNA
<213> Artificial

<220>
<223> FutT8reverse primer

<400> 23
ccctgatcaa tagggccttc 20

<210> 24
<211> 20
<212> DNA
<213> Artificial

<220>
<223> ALASfoward primer

<400> 24
ccgatgctgc taagaacaca 20

<210> 25
<211> 20
<212> DNA
<213> Artificial

<220>
<223> ALASreverse primer

<400> 25
cttcagttcc agcccaactc 20