

SEQUENCE LISTING

<110> Novartis AG
 Parkinson, Scott J
 Perez, Laurent-Hervé

<120> Anti-Bacterial Compositions

<130> 52356-EP-EPA

<140> 08150290.8

<141> 2008-01-15

<160> 11

<170> PatentIn version 3.3

<210> 1

<211> 1040

<212> PRT

<213> Homo sapiens

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 35 40 45

Ser Leu Glu Gly Phe Glu Ser Val Leu Asp Trp Leu Leu Ser Trp Glu
 50 55 60

Val Leu Ser Trp Glu Asp Tyr Glu Gly Phe His Leu Leu Gly Gln Pro
 65 70 75 80

Leu Ser His Leu Ala Arg Arg Leu Leu Asp Thr Val Trp Asn Lys Gly
 85 90 95

Thr Trp Ala Cys Gln Lys Leu Ile Ala Ala Ala Gln Glu Ala Gln Ala
 100 105 110

Asp Ser Gln Ser Pro Lys Leu His Gly Cys Trp Asp Pro His Ser Leu
 115 120 125

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

Leu His Ser His Val Glu Asn Met Leu Asp Leu Ala Trp Glu Arg Gly
 145 150 155 160

Phe Val Ser Gln Tyr Glu Cys Asp Glu Ile Arg Leu Pro Ile Phe Thr
 165 170 175

Pro Ser Gln Arg Ala Arg Arg Leu Leu Asp Leu Ala Thr Val Lys Ala
 180 185 190

Asn Gly Leu Ala Ala Phe Leu Leu Gln His Val Gln Glu Leu Pro Val
 195 200 205

Pro Leu Ala Leu Pro Leu Glu Ala Ala Thr Cys Lys Lys Tyr Met Ala
 210 215 220

Lys Leu Arg Thr Thr Val Ser Ala Gln Ser Arg Phe Leu Ser Thr Tyr
 225 230 235 240

Asp Gly Ala Glu Thr Leu Cys Leu Glu Asp Ile Tyr Thr Glu Asn Val
 245 250 255

Leu Glu Val Trp Ala Asp Val Gly Met Ala Gly Pro Pro Gln Lys Ser
 260 265 270

Pro Ala Thr Leu Gly Leu Glu Glu Leu Phe Ser Thr Pro Gly His Leu
 275 280 285

Asn Asp Asp Ala Asp Thr Val Leu Val Val Gly Glu Ala Gly Ser Gly
 290 295 300

Lys Ser Thr Leu Leu Gln Arg Leu His Leu Leu Trp Ala Ala Gly Gln
 305 310 315 320

Asp Phe Gln Glu Phe Leu Phe Val Phe Pro Phe Ser Cys Arg Gln Leu
 325 330 335

Gln Cys Met Ala Lys Pro Leu Ser Val Arg Thr Leu Leu Phe Glu His
 340 345 350

Cys Cys Trp Pro Asp Val Gly Gln Glu Asp Ile Phe Gln Leu Leu Leu
 355 360 365

Asp His Pro Asp Arg Val Leu Leu Thr Phe Asp Gly Phe Asp Glu Phe
 370 375 380

Lys Phe Arg Phe Thr Asp Arg Glu Arg His Cys Ser Pro Thr Asp Pro
 385 390 395 400

Thr Ser Val Gln Thr Leu Leu Phe Asn Leu Leu Gln Gly Asn Leu Leu
 405 410 415

Lys Asn Ala Arg Lys Val Val Thr Ser Arg Pro Ala Ala Val Ser Ala
 420 425 430

Phe Leu Arg Lys Tyr Ile Arg Thr Glu Phe Asn Leu Lys Gly Phe Ser
 435 440 445

Glu Gln Gly Ile Glu Leu Tyr Leu Arg Lys Arg His His Glu Pro Gly
 450 455 460

Val Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser Ala Leu His
 465 470 475 480

Gly Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser Lys Cys His
 485 490 495

Gln Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr Thr Thr Asp
 500 505 510

Met Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala Thr Pro Pro
 515 520 525

Asp Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg Gly Arg Leu
 530 535 540

Pro Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly Leu Gly Met
 545 550 555 560

Cys Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala Gln Val Ser
 565 570 575

Pro Asp Asp Ile Ser Leu Gly Phe Leu Val Arg Ala Lys Gly Val Val
 580 585 590

Pro Gly Ser Thr Ala Pro Leu Glu Phe Leu His Ile Thr Phe Gln Cys
 595 600 605

Phe Phe Ala Ala Phe Tyr Leu Ala Leu Ser Ala Asp Val Pro Pro Ala
 610 615 620

Leu Leu Arg His Leu Phe Asn Cys Gly Arg Pro Gly Asn Ser Pro Met
 625 630 635 640

Ala Arg Leu Leu Pro Thr Met Cys Ile Gln Ala Ser Glu Gly Lys Asp
 645 650 655

Ser Ser Val Ala Ala Leu Leu Gln Lys Ala Glu Pro His Asn Leu Gln
 660 665 670

Ile Thr Ala Ala Phe Leu Ala Gly Leu Leu Ser Arg Glu His Trp Gly
 675 680 685

Leu Leu Ala Glu Cys Gln Thr Ser Glu Lys Ala Leu Leu Arg Arg Gln
 690 695 700

Ala Cys Ala Arg Trp Cys Leu Ala Arg Ser Leu Arg Lys His Phe His
 705 710 715 720

Ser Ile Pro Pro Ala Ala Pro Gly Glu Ala Lys Ser Val His Ala Met
 725 730 735

Pro Gly Phe Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu
 740 745 750

Arg Leu Ala Arg Lys Ala Ala Arg Gly Leu Asn Val Gly His Leu Lys
 755 760 765

Leu Thr Phe Cys Ser Val Gly Pro Thr Glu Cys Ala Ala Leu Ala Phe
 770 775 780

Val Leu Gln His Leu Arg Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn
 785 790 795 800

Ser Val Gly Asp Ile Gly Val Glu Gln Leu Leu Pro Cys Leu Gly Val
 805 810 815

Cys Lys Ala Leu Tyr Leu Arg Asp Asn Asn Ile Ser Asp Arg Gly Ile
 820 825 830

Cys Lys Leu Ile Glu Cys Ala Leu His Cys Glu Gln Leu Gln Lys Leu
 835 840 845

Ala Leu Phe Asn Asn Lys Leu Thr Asp Gly Cys Ala His Ser Met Ala
 850 855 860

Lys Leu Leu Ala Cys Arg Gln Asn Phe Leu Ala Leu Arg Leu Gly Asn
 865 870 875 880

Asn Tyr Ile Thr Ala Ala Gly Ala Gln Val Leu Ala Glu Gly Leu Arg
 885 890 895

Gly Asn Thr Ser Leu Gln Phe Leu Gly Phe Trp Gly Asn Arg Val Gly
 900 905 910

Asp Glu Gly Ala Gln Ala Leu Ala Glu Ala Leu Gly Asp His Gln Ser
 915 920 925

Leu Arg Trp Leu Ser Leu Val Gly Asn Asn Ile Gly Ser Val Gly Ala
 930 935 940

Gln Ala Leu Ala Leu Met Leu Ala Lys Asn Val Met Leu Glu Glu Leu
 945 950 955 960

Cys Leu Glu Glu Asn His Leu Gln Asp Glu Gly Val Cys Ser Leu Ala
 965 970 975

Glu Gly Leu Lys Lys Asn Ser Ser Leu Lys Ile Leu Lys Leu Ser Asn
 980 985 990

Asn Cys Ile Thr Tyr Leu Gly Ala Glu Ala Leu Leu Gln Ala Leu Glu
 995 1000 1005

Arg Asn Asp Thr Ile Leu Glu Val Trp Leu Arg Gly Asn Thr Phe
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Ser Leu Glu Glu Val Asp Lys Leu Gly Cys Arg Asp Thr Arg Leu
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Leu Leu
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 <212> PRT
 <213> Homo sapiens

<400> 2

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His Ile Arg Asn Thr Gln Cys Leu Val Asp Asn Leu Leu Lys Asn Asp
 35 40 45

Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro Thr Gln
 50 55 60

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

Glu Val Ser Glu Phe Phe Leu Tyr Leu Leu Gln Gln Leu Ala Asp Ala
 85 90 95

Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser Pro Ser
 100 105 110

Leu Leu Thr Gln Ser Lys Val Val Val Asn Thr Asp Pro Val Ser Arg
 115 120 125

Tyr Thr Gln Gln Leu Arg His His Leu Gly Arg Asp Ser Lys Phe Val
 130 135 140

Leu Cys Tyr Ala Gln Lys Glu Glu Leu Leu Leu Glu Glu Ile Tyr Met
 145 150 155 160

Asp Thr Ile Met Glu Leu Val Gly Phe Ser Asn Glu Ser Leu Gly Ser

165 170 175

Leu Asn Ser Leu Ala Cys Leu Leu Asp His Thr Thr Gly Ile Leu Asn
180 185 190

Glu Gln Gly Glu Thr Ile Phe Ile Leu Gly Asp Ala Gly Val Gly Lys
195 200 205

Ser Met Leu Leu Gln Arg Leu Gln Ser Leu Trp Ala Thr Gly Arg Leu
210 215 220

Asp Ala Gly Val Lys Phe Phe Phe His Phe Arg Cys Arg Met Phe Ser
225 230 235 240

Cys Phe Lys Glu Ser Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe Lys
245 250 255

His Tyr Cys Tyr Pro Glu Arg Asp Pro Glu Glu Val Phe Ala Phe Leu
260 265 270

Leu Arg Phe Pro His Val Ala Leu Phe Thr Phe Asp Gly Leu Asp Glu
275 280 285

Leu His Ser Asp Leu Asp Leu Ser Arg Val Pro Asp Ser Ser Cys Pro
290 295 300

Trp Glu Pro Ala His Pro Leu Val Leu Leu Ala Asn Leu Leu Ser Gly
305 310 315 320

Lys Leu Leu Lys Gly Ala Ser Lys Leu Leu Thr Ala Arg Thr Gly Ile
325 330 335

Glu Val Pro Arg Gln Phe Leu Arg Lys Lys Val Leu Leu Arg Gly Phe
340 345 350

Ser Pro Ser His Leu Arg Ala Tyr Ala Arg Arg Met Phe Pro Glu Arg

355 360 365

Ala Leu Gln Asp Arg Leu Leu Ser Gln Leu Glu Ala Asn Pro Asn Leu
370 375 380

Cys Ser Leu Cys Ser Val Pro Leu Phe Cys Trp Ile Ile Phe Arg Cys
385 390 395 400

Phe Gln His Phe Arg Ala Ala Phe Glu Gly Ser Pro Gln Leu Pro Asp
405 410 415

Cys Thr Met Thr Leu Thr Asp Val Phe Leu Leu Val Thr Glu Val His
420 425 430

Leu Asn Arg Met Gln Pro Ser Ser Leu Val Gln Arg Asn Thr Arg Ser
435 440 445

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

Gln Val Ala His Arg Gly Met Glu Lys Ser Leu Phe Val Phe Thr Gln
465 470 475 480

Glu Glu Val Gln Ala Ser Gly Leu Gln Glu Arg Asp Met Gln Leu Gly
485 490 495

Phe Leu Arg Ala Leu Pro Glu Leu Gly Pro Gly Gly Asp Gln Gln Ser
500 505 510

Tyr Glu Phe Phe His Leu Thr Leu Gln Ala Phe Phe Thr Ala Phe Phe
515 520 525

Leu Val Leu Asp Asp Arg Val Gly Thr Gln Glu Leu Leu Arg Phe Phe
530 535 540

Gln Glu Trp Met Pro Pro Ala Gly Ala Ala Thr Thr Ser Cys Tyr Pro

545 550 555 560

Pro Phe Leu Pro Phe Gln Cys Leu Gln Gly Ser Gly Pro Ala Arg Glu
 565 570 575

Asp Leu Phe Lys Asn Lys Asp His Phe Gln Phe Thr Asn Leu Phe Leu
 580 585 590

Cys Gly Leu Leu Ser Lys Ala Lys Gln Lys Leu Leu Arg His Leu Val
 595 600 605

Pro Ala Ala Ala Leu Arg Arg Lys Arg Lys Ala Leu Trp Ala His Leu
 610 615 620

Phe Ser Ser Leu Arg Gly Tyr Leu Lys Ser Leu Pro Arg Val Gln Val
 625 630 635 640

Glu Ser Phe Asn Gln Val Gln Ala Met Pro Thr Phe Ile Trp Met Leu
 645 650 655

Arg Cys Ile Tyr Glu Thr Gln Ser Gln Lys Val Gly Gln Leu Ala Ala
 660 665 670

Arg Gly Ile Cys Ala Asn Tyr Leu Lys Leu Thr Tyr Cys Asn Ala Cys
 675 680 685

Ser Ala Asp Cys Ser Ala Leu Ser Phe Val Leu His His Phe Pro Lys
 690 695 700

Arg Leu Ala Leu Asp Leu Asp Asn Asn Asn Leu Asn Asp Tyr Gly Val
 705 710 715 720

Arg Glu Leu Gln Pro Cys Phe Ser Arg Leu Thr Val Leu Arg Leu Ser
 725 730 735

Val Asn Gln Ile Thr Asp Gly Gly Val Lys Val Leu Ser Glu Glu Leu

740 745 750

Thr Lys Tyr Lys Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln Ile
755 760 765

Thr Asp Val Gly Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu Cys Lys
770 775 780

Gly Leu Thr His Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser Glu Gly
785 790 795 800

Gly Lys Tyr Leu Ala Leu Ala Val Lys Asn Ser Lys Ser Ile Ser Glu
805 810 815

Val Gly Met Trp Gly Asn Gln Val Gly Asp Glu Gly Ala Lys Ala Phe
820 825 830

Ala Glu Ala Leu Arg Asn His Pro Ser Leu Thr Thr Leu Ser Leu Ala
835 840 845

Ser Asn Gly Ile Ser Thr Glu Gly Gly Lys Ser Leu Ala Arg Ala Leu
850 855 860

Gln Gln Asn Thr Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu Leu
865 870 875 880

Asn Asp Glu Val Ala Glu Ser Leu Ala Glu Met Leu Lys Val Asn Gln
885 890 895

Thr Leu Lys His Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala Lys Gly
900 905 910

Thr Ala Gln Leu Ala Asp Ala Leu Gln Ser Asn Thr Gly Ile Thr Glu
915 920 925

Ile Cys Leu Asn Gly Asn Leu Ile Lys Pro Glu Glu Ala Lys Val Tyr

930 935 940

Glu Asp Glu Lys Arg Ile Ile Cys Phe
945 950

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<213> Homo sapiens

<400> 3

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Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu Arg Leu Ala
20 25 30

Arg Lys Ala Ala Arg Gly Leu Asn Val Gly His Leu Lys Leu Thr Phe
35 40 45

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

His Leu Arg Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn Ser Val Gly
65 70 75 80

Asp Ile Gly Val Glu Gln Leu Leu Pro Cys Leu Gly Val Cys Lys Ala
85 90 95

Leu Tyr Leu Arg Asp Asn Asn Ile Ser Asp Arg Gly Ile Cys Lys Leu
100 105 110

Ile Glu Cys Ala Leu His Cys Glu Gln Leu Gln Lys Leu Ala Leu Phe
115 120 125

Asn Asn Lys Leu Thr Asp Gly Cys Ala His Ser Met Ala Lys Leu Leu
130 135 140

Ala Cys Arg Gln Asn Phe Leu Ala Leu Arg Leu Gly Asn Asn Tyr Ile
 145 150 155 160

Thr Ala Ala Gly Ala Gln Val Leu Ala Glu Gly Leu Arg Gly Asn Thr
 165 170 175

Ser Leu Gln Phe Leu Gly Phe Trp Gly Asn Arg Val Gly Asp Glu Gly
 180 185 190

Ala Gln Ala Leu Ala Glu Ala Leu Gly Asp His Gln Ser Leu Arg Trp
 195 200 205

Leu Ser Leu Val Gly Asn Asn Ile Gly Ser Val Gly Ala Gln Ala Leu
 210 215 220

Ala Leu Met Leu Ala Lys Asn Val Met Leu Glu Glu Leu Cys Leu Glu
 225 230 235 240

Glu Asn His Leu Gln Asp Glu Gly Val Cys Ser Leu Ala Glu Gly Leu
 245 250 255

Lys Lys Asn Ser Ser Leu Lys Ile Leu Lys Leu Ser Asn Asn Cys Ile
 260 265 270

Thr Tyr Leu Gly Ala Glu Ala Leu Leu Gln Ala Leu Glu Arg Asn Asp
 275 280 285

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

Val Asp Lys Leu Gly Cys Arg Asp Thr Arg Leu Leu Leu
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<213> Homo sapiens

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Leu Arg Arg Lys Arg Lys Ala Leu Trp Ala His Leu Phe Ser Ser Leu
 35 40 45

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

Gln Val Gln Ala Met Pro Thr Phe Ile Trp Met Leu Arg Cys Ile Tyr
 65 70 75 80

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

Ala Asn Tyr Leu Lys Leu Thr Tyr Cys Asn Ala Cys Ser Ala Asp Cys
 100 105 110

Ser Ala Leu Ser Phe Val Leu His His Phe Pro Lys Arg Leu Ala Leu
 115 120 125

Asp Leu Asp Asn Asn Asn Leu Asn Asp Tyr Gly Val Arg Glu Leu Gln
 130 135 140

Pro Cys Phe Ser Arg Leu Thr Val Leu Arg Leu Ser Val Asn Gln Ile
 145 150 155 160

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

Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln Ile Thr Asp Val Gly
 180 185 190

Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu Cys Lys Gly Leu Thr His
 195 200 205

Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser Glu Gly Gly Lys Tyr Leu
 210 215 220

Ala Leu Ala Val Lys Asn Ser Lys Ser Ile Ser Glu Val Gly Met Trp
 225 230 235 240

Gly Asn Gln Val Gly Asp Glu Gly Ala Lys Ala Phe Ala Glu Ala Leu
 245 250 255

Arg Asn His Pro Ser Leu Thr Thr Leu Ser Leu Ala Ser Asn Gly Ile
 260 265 270

Ser Thr Glu Gly Gly Lys Ser Leu Ala Arg Ala Leu Gln Gln Asn Thr
 275 280 285

Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu Leu Asn Asp Glu Val
 290 295 300

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

Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala Lys Gly Thr Ala Gln Leu
 325 330 335

Ala Asp Ala Leu Gln Ser Asn Thr Gly Ile Thr Glu Ile Cys Leu Asn
 340 345 350

Gly Asn Leu Ile Lys Pro Glu Glu Ala Lys Val Tyr Glu Asp Glu Lys
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Arg Ile Ile Cys Phe

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<211> 441

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<213> Homo sapiens

<400> 5

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20

25

30

Leu Ala Leu Ser Gly Glu Ile Lys Asp Lys Glu Leu Pro Gln Tyr Leu

35

40

45

Ala Leu Thr Pro Arg Lys Lys Arg Pro Tyr Asp Asn Trp Leu Glu Gly

50

55

60

Val Pro Arg Phe Leu Ala Gly Leu Ile Phe Gln Pro Pro Ala Arg Cys

65

70

75

80

Leu Gly Ala Leu Leu Gly Pro Ser Ala Ala Ala Ser Val Asp Arg Lys

85

90

95

Gln Lys Val Leu Ala Arg Tyr Leu Lys Arg Leu Gln Pro Gly Thr Leu

100

105

110

Arg Ala Arg Gln Leu Leu Glu Leu Leu His Cys Ala His Glu Ala Glu

115

120

125

Glu Ala Gly Ile Trp Gln His Val Val Gln Glu Leu Pro Gly Arg Leu

130

135

140

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

Lys Ala Leu Glu Ala Ala Gly Gln Asp Phe Ser Leu Asp Leu Arg Ser
 165 170 175

Thr Gly Ile Cys Pro Ser Gly Leu Gly Ser Leu Val Gly Leu Ser Cys
 180 185 190

Val Thr Arg Phe Arg Ala Ala Leu Ser Asp Thr Val Ala Leu Trp Glu
 195 200 205

Ser Leu Arg Gln His Gly Glu Thr Lys Leu Leu Gln Ala Ala Glu Glu
 210 215 220

Lys Phe Thr Ile Glu Pro Phe Lys Ala Lys Ser Leu Lys Asp Val Glu
 225 230 235 240

Asp Leu Gly Lys Leu Val Gln Thr Gln Arg Thr Arg Ser Ser Ser Glu
 245 250 255

Asp Thr Ala Gly Glu Leu Pro Ala Val Arg Asp Leu Lys Lys Leu Glu
 260 265 270

Phe Ala Leu Gly Pro Val Ser Gly Pro Gln Ala Phe Pro Lys Leu Val
 275 280 285

Arg Ile Leu Thr Ala Phe Ser Ser Leu Gln His Leu Asp Leu Asp Ala
 290 295 300

Leu Ser Glu Asn Lys Ile Gly Asp Glu Gly Val Ser Gln Leu Ser Ala
 305 310 315 320

Thr Phe Pro Gln Leu Lys Ser Leu Glu Thr Leu Asn Leu Ser Gln Asn
 325 330 335

Asn Ile Thr Asp Leu Gly Ala Tyr Lys Leu Ala Glu Ala Leu Pro Ser
 340 345 350

Leu Ala Ala Ser Leu Leu Arg Leu Ser Leu Tyr Asn Asn Cys Ile Cys
 355 360 365

Asp Val Gly Ala Glu Ser Leu Ala Arg Val Leu Pro Asp Met Val Ser
 370 375 380

Leu Arg Val Met Asp Val Gln Tyr Asn Lys Phe Thr Ala Ala Gly Ala
 385 390 395 400

Gln Gln Leu Ala Ala Ser Leu Arg Arg Cys Pro His Val Glu Thr Leu
 405 410 415

Ala Met Trp Thr Pro Thr Ile Pro Phe Ser Val Gln Glu His Leu Gln
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Gln Gln Asp Ser Arg Ile Ser Leu Arg
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<212> PRT

<213> Homo sapiens

<400> 6

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 35 40 45

Ile Ser Asn Ser Asp Leu Gln Arg Cys Val Asn Leu Gln Ala Leu Val

50 55 60

Leu Thr Ser Asn Gly Ile Asn Thr Ile Glu Glu Asp Ser Phe Ser Ser
65 70 75 80

Leu Gly Ser Leu Glu His Leu Asp Leu Ser Tyr Asn Tyr Leu Ser Asn
85 90 95

Leu Ser Ser Ser Trp Phe Lys Pro Leu Ser Ser Leu Thr Phe Leu Asn
100 105 110

Leu Leu Gly Asn Pro Tyr Lys Thr Leu Gly Glu Thr Ser Leu Phe Ser
115 120 125

His Leu Thr Lys Leu Gln Ile Leu Arg Val Gly Asn Met Asp Thr Phe
130 135 140

Thr Lys Ile Gln Arg Lys Asp Phe Ala Gly Leu Thr Phe Leu Glu Glu
145 150 155 160

Leu Glu Ile Asp Ala Ser Asp Leu Gln Ser Tyr Glu Pro Lys Ser Leu
165 170 175

Lys Ser Ile Gln Asn Val Ser His Leu Ile Leu His Met Lys Gln His
180 185 190

Ile Leu Leu Leu Glu Ile Phe Val Asp Val Thr Ser Ser Val Glu Cys
195 200 205

Leu Glu Leu Arg Asp Thr Asp Leu Asp Thr Phe His Phe Ser Glu Leu
210 215 220

Ser Thr Gly Glu Thr Asn Ser Leu Ile Lys Lys Phe Thr Phe Arg Asn
225 230 235 240

Val Lys Ile Thr Asp Glu Ser Leu Phe Gln Val Met Lys Leu Leu Asn

245 250 255

Gln Ile Ser Gly Leu Leu Glu Leu Glu Phe Asp Asp Cys Thr Leu Asn
260 265 270

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

Gly Lys Val Glu Thr Leu Thr Ile Arg Arg Leu His Ile Pro Arg Phe
290 295 300

Tyr Leu Phe Tyr Asp Leu Ser Thr Leu Tyr Ser Leu Thr Glu Arg Val
305 310 315 320

Lys Arg Ile Thr Val Glu Asn Ser Lys Val Phe Leu Val Pro Cys Leu
325 330 335

Leu Ser Gln His Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Glu Asn
340 345 350

Leu Met Val Glu Glu Tyr Leu Lys Asn Ser Ala Cys Glu Asp Ala Trp
355 360 365

Pro Ser Leu Gln Thr Leu Ile Leu Arg Gln Asn His Leu Ala Ser Leu
370 375 380

Glu Lys Thr Gly Glu Thr Leu Leu Thr Leu Lys Asn Leu Thr Asn Ile
385 390 395 400

Asp Ile Ser Lys Asn Ser Phe His Ser Met Pro Glu Thr Cys Gln Trp
405 410 415

Pro Glu Lys Met Lys Tyr Leu Asn Leu Ser Ser Thr Arg Ile His Ser
420 425 430

Val Thr Gly Cys Ile Pro Lys Thr Leu Glu Ile Leu Asp Val Ser Asn

435

440

445

Asn Asn Leu Asn Leu Phe Ser Leu Asn Leu Pro Gln Leu Lys Glu Leu
 450 455 460

Tyr Ile Ser Arg Asn Lys Leu Met Thr Leu Pro Asp Ala Ser Leu Leu
 465 470 475 480

Pro Met Leu Leu Val Leu Lys Ile Ser Arg Asn Ala Ile Thr Thr Phe
 485 490 495

Ser Lys Glu Gln Leu Asp Ser Phe His Thr Leu Lys Thr Leu Glu Ala
 500 505 510

Gly Gly Asn Asn Phe Ile Cys Ser Cys Glu Phe Leu Ser Phe Thr Gln
 515 520 525

Glu Gln Gln Ala Leu Ala Lys Val Leu Ile Asp Trp Pro Ala Asn Tyr
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Leu Cys Asp Ser Pro Ser His Val Arg Gly Gln Gln Val Gln Asp Val
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Arg Leu Ser Val Ser Glu Cys His Arg Thr
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<212> PRT

<213> Homo sapiens

<400> 7

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 20 25 30

Ser Val Leu Ser Thr Ser Gln Ser Leu Thr Glu Leu Asp Leu Ser Asp
 35 40 45

Asn Ser Leu Gly Asp Pro Gly Met Arg Val Leu Cys Glu Thr Leu Gln
 50 55 60

His Pro Gly Cys Asn Ile Arg Arg Leu Trp Leu Gly Arg Cys Gly Leu
 65 70 75 80

Ser His Glu Cys Cys Phe Asp Ile Ser Leu Val Leu Ser Ser Asn Gln
 85 90 95

Lys Leu Val Glu Leu Asp Leu Ser Asp Asn Ala Leu Gly Asp Phe Gly
 100 105 110

Ile Arg Leu Leu Cys Val Gly Leu Lys His Leu Leu Cys Asn Leu Lys
 115 120 125

Lys Leu Trp Leu Val Ser Cys Cys Leu Thr Ser Ala Cys Cys Gln Asp
 130 135 140

Leu Ala Ser Val Leu Ser Thr Ser His Ser Leu Thr Arg Leu Tyr Val
 145 150 155 160

Gly Glu Asn Ala Leu Gly Asp Ser Gly Val Ala Ile Leu Cys Glu Lys
 165 170 175

Ala Lys Asn Pro Gln Cys Asn Leu Gln Lys Leu Gly Leu Val Asn Ser
 180 185 190

Gly Leu Thr Ser Val Cys Cys Ser Ala Leu Ser Ser Val Leu Ser Thr
 195 200 205

Asn Gln Asn Leu Thr His Leu Tyr Leu Arg Gly Asn Thr Leu Gly Asp
 210 215 220

Lys Gly Ile Lys Leu Leu Cys Glu Gly Leu Leu His Pro Asp Cys Lys
 225 230 235 240

Leu Gln Val Leu Glu Leu Asp Asn Cys Asn Leu Thr Ser His Cys Cys
 245 250 255

Trp Asp Leu Ser Thr Leu Leu Thr Ser Ser Gln Ser Leu Arg Lys Leu
 260 265 270

Ser Leu Gly Asn Asn Asp Leu Gly Asp Leu Gly Val Met Met Phe Cys
 275 280 285

Glu Val Leu Lys Gln Gln Ser Cys Leu Leu Gln Asn Leu Gly Leu Ser
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Glu Met Tyr Phe Asn Tyr Glu Thr Lys Ser Ala Leu Glu Thr Leu Gln
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Glu Glu Lys Pro Glu Leu Thr Val Val Phe Glu Pro Ser Trp
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<211> 31

<212> DNA

<213> Artificial

<220>

<223> synthetic polymerase chain reaction primer sequence

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caccatgaac aaggatcact tccagttcac c

31

<210> 9

<211> 27

<212> DNA

<213> Artificial

<220>

<223> synthetic polymerase chain reaction primer sequence

<400> 9

tcagaaacag ataatccgct tctcatc

27

<210> 10

<211> 32

<212> DNA

<213> Artificial

<220>

<223> synthetic polymerase chain reaction primer sequence

<400> 10

caccatgacc atgccagctg caccgggtga gg

32

<210> 11

<211> 29

<212> DNA

<213> Artificial

<220>

<223> synthetic polymerase chain reaction primer sequence

<400> 11

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29