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Glaxosmithkline Biologicals

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<170> PatentIn version 3.5

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Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly Gly Leu Glu Gly
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515 520 525
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530 535 540
Gly Lys Ile Ser Lys Ile Gly Pro Glu Asn Pro Tyr Asn Thr Pro Ile
545 550 555 560
Phe Ala Ile Lys Lys Lys Asp Ser Thr Lys Trp Arg Lys Leu Val Asp
565 570 575
Phe Arg Glu Leu Asn Lys Arg Thr Gln Asp Phe Trp Glu Val Gln Leu
580 585 590
Gly Ile Pro His Pro Ala Gly Leu Lys Lys Lys Lys Ser Val Thr Val
595 600 605
Leu Asp Val Gly Asp Ala Tyr Phe Ser Val Pro Leu Asp Glu Asn Phe
610 615 620
Arg Lys Tyr Thr Ala Phe Thr Ile Pro Ser Thr Asn Asn Glu Thr Pro
625 630 635 640
Gly Val Arg Tyr Gln Tyr Asn Val Leu Pro Gln Gly Trp Lys Gly Ser
645 650 655
Pro Ala Ile Phe Gln Ser Ser Met Thr Lys Ile Leu Glu Pro Phe Arg
660 665 670
Ser Lys Asn Pro Glu Ile Ile Ile Tyr Gln Tyr Met Ala Ala Leu Tyr
675 680 685
Val Gly Ser Asp Leu Glu Ile Gly Gln His Arg Thr Lys Ile Glu Glu
690 695 700
Leu Arg Ala His Leu Leu Ser Trp Gly Phe Thr Thr Pro Asp Lys Lys
705 710 715 720
His Gln Lys Glu Pro Pro Phe Leu Trp Met Gly Tyr Glu Leu His Pro
725 730 735
Asp Lys Trp Thr Val Gln Pro Ile Met Leu Pro Asp Lys Glu Ser Trp
740 745 750

Thr Val Asn Asp Ile Gln Lys Leu Val Gly Lys Leu Asn Trp Ala Ser
 755 760 765
 Gln Ile Tyr Ala Gly Ile Lys Val Lys Gln Leu Cys Arg Leu Leu Arg
 770 775 780
 Gly Ala Lys Ala Leu Thr Asp Ile Val Thr Leu Thr Glu Glu Ala Glu
 785 790 795 800
 Leu Glu Leu Ala Glu Asn Arg Glu Ile Leu Lys Asp Pro Val His Gly
 805 810 815
 Val Tyr Tyr Asp Pro Ser Lys Asp Leu Val Ala Glu Ile Gln Lys Gln
 820 825 830
 Gly Gln Asp Gln Trp Thr Tyr Gln Ile Tyr Gln Glu Pro Phe Lys Asn
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 Leu Lys Thr Gly Lys Tyr Ala Arg Lys Arg Ser Ala His Thr Asn Asp
 850 855 860
 Val Arg Gln Leu Ala Glu Val Val Gln Lys Val Ala Met Glu Ser Ile
 865 870 875 880
 Val Ile Trp Gly Lys Thr Pro Lys Phe Lys Leu Pro Ile Gln Lys Glu
 885 890 895
 Thr Trp Glu Thr Trp Trp Met Asp Tyr Trp Gln Ala Thr Trp Ile Pro
 900 905 910
 Glu Trp Glu Phe Val Asn Thr Pro Pro Leu Val Lys Leu Trp Tyr Gln
 915 920 925
 Leu Glu Lys Asp Pro Ile Leu Gly Ala Glu Thr Phe Tyr Val Asp Gly
 930 935 940
 Ala Ala Asn Arg Glu Thr Lys Leu Gly Lys Ala Gly Tyr Val Thr Asp
 945 950 955 960
 Arg Gly Arg Gln Lys Val Val Ser Leu Thr Glu Thr Thr Asn Gln Lys
 965 970 975
 Thr Glu Leu His Ala Ile Leu Leu Ala Leu Gln Asp Ser Gly Ser Glu
 980 985 990
 Val Asn Ile Val Thr Asp Ser Gln Tyr Ala Leu Gly Ile Ile Gln Ala
 995 1000 1005
 Gln Pro Asp Arg Ser Glu Ser Glu Leu Val Asn Gln Ile Ile Glu
 1010 1015 1020

PhoenixTemp65258.tmp.txt

Lys Leu Ile Gly Lys Asp Lys Ile Tyr Leu Ser Trp Val Pro Ala
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 His Lys Gly Ile Gly Gly Asn Glu Gln Val Asp Lys Leu Val Ser
 1040 1045 1050
 Ser Gly Ile Arg Lys Val Leu Phe Leu Asp Gly Ile Asp Lys Ala
 1055 1060 1065
 Gln Glu Asp His Glu Arg Tyr His Ser Asn Trp Arg Thr Met Ala
 1070 1075 1080
 Ser Asp Phe Asn Leu Pro Pro Ile Val Ala Lys Glu Ile Val Ala
 1085 1090 1095
 Ser Cys Asp Lys Cys Gln Leu Lys Gly Glu Ala Met His Gly Gln
 1100 1105 1110
 Val Asp Cys Ser Pro Gly Ile Trp Gln Leu Ala Cys Thr His Leu
 1115 1120 1125
 Glu Gly Lys Val Ile Leu Val Ala Val His Val Ala Ser Gly Tyr
 1130 1135 1140
 Ile Glu Ala Glu Val Ile Pro Ala Glu Thr Gly Gln Glu Thr Ala
 1145 1150 1155
 Tyr Phe Leu Leu Lys Leu Ala Gly Arg Trp Pro Val Lys Val Val
 1160 1165 1170
 His Thr Ala Asn Gly Ser Asn Phe Thr Ser Ala Ala Val Lys Ala
 1175 1180 1185
 Ala Cys Trp Trp Ala Asn Ile Gln Gln Glu Phe Gly Ile Pro Tyr
 1190 1195 1200
 Asn Pro Gln Ser Gln Gly Val Val Ala Ser Met Asn Lys Glu Leu
 1205 1210 1215
 Lys Lys Ile Ile Gly Gln Val Arg Asp Gln Ala Glu His Leu Lys
 1220 1225 1230
 Thr Ala Val Gln Met Ala Val Phe Ile His Asn Phe Lys Arg Lys
 1235 1240 1245
 Gly Gly Ile Gly Gly Tyr Ser Ala Gly Glu Arg Ile Ile Asp Ile
 1250 1255 1260
 Ile Ala Thr Asp Ile Gln Thr Lys Glu Leu Gln Lys Gln Ile Thr
 1265 1270 1275

PhoenixTemp65258.tmp.txt

Lys Ile Gln Asn Phe Arg Val Tyr Tyr Arg Asp Ser Arg Asp Pro
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 Ile Trp Lys Gly Pro Ala Lys Leu Leu Trp Lys Gly Glu Gly Ala
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 Val Val Ile Gln Asp Asn Ser Asp Ile Lys Val Val Pro Arg Arg
 1310 1315 1320
 Lys Ala Lys Ile Leu Arg Asp Tyr Gly Lys Gln Met Ala Gly Asp
 1325 1330 1335
 Asp Cys Val Ala Gly Arg Gln Asp Glu Asp Arg Ser Met Gly Gly
 1340 1345 1350
 Lys Trp Ser Lys Gly Ser Ile Val Gly Trp Pro Glu Ile Arg Glu
 1355 1360 1365
 Arg Met Arg Arg Ala Pro Ala Ala Ala Pro Gly Val Gly Ala Val
 1370 1375 1380
 Ser Gln Asp Leu Asp Lys His Gly Ala Ile Thr Ser Ser Asn Ile
 1385 1390 1395
 Asn Asn Pro Ser Cys Val Trp Leu Glu Ala Gln Glu Glu Glu Glu
 1400 1405 1410
 Val Gly Phe Pro Val Arg Pro Gln Val Pro Leu Arg Pro Met Thr
 1415 1420 1425
 Tyr Lys Gly Ala Phe Asp Leu Ser His Phe Leu Lys Glu Lys Gly
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 Gly Leu Asp Gly Leu Ile Tyr Ser Arg Lys Arg Gln Glu Ile Leu
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 Asp Leu Trp Val Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln
 1460 1465 1470
 Asn Tyr Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly
 1475 1480 1485
 Trp Cys Phe Lys Leu Val Pro Met Glu Pro Asp Glu Val Glu Lys
 1490 1495 1500
 Ala Thr Glu Gly Glu Asn Asn Ser Leu Leu His Pro Ile Cys Gln
 1505 1510 1515
 His Gly Met Asp Asp Glu Glu Arg Glu Val Leu Ile Trp Lys Phe
 1520 1525 1530
 Asp Ser Arg Leu Ala Leu Lys His Arg Ala Gln Glu Leu His Pro
 1535 1540 1545

1535

PhoenixTemp65258.tmp.txt
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<211> 2025
<212> DNA
<213> HIV

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gtgcctgtgt ggagagatgc cgagaccacc ctgttctgcg ccagcgacgc caaggcctac      180
agcaccgaga agcacaatgt gtgggccacc cagcctgctg tgcctaccga tcccaaccct      240
caggagatcc ccctggacaa cgtgaccgag gagttcaaca tgtggaagaa caacatggtg      300
gaccagatgc acgaggacat catcagcctg tgggaccaga gcctgaagcc ctgctgcag      360
ctgaccccc tgtgctgac cctgaactgc agcaacgcc gagtgaacgc caccttcaac      420
tccaccgagg acagggaggg catgaagaac tgcagcttca acatgaccac cgagctgcgg      480
gataagaagc agcaggtgta cagcctgttc taccggctgg acatcgagaa gatcaacagc      540
agcaacaaca acagcgagta ccgctggtg aactgcaata ccagcgccat caccagggc      600
tgccctaagg tgaccttca gcccattccc atccactact gcgcccctgc cggcttcgcc      660
atcctgaagt gcaacgacac cgagttcaat ggcaccggcc cctgcaagaa tgtgagcacc      720
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agagccgtgg gcatcggcgc cgtgtttctg ggcttctctg gagccgccgg atctacaatg     1560
ggagccgcca gcatcaccct gaccgtgcag gccagacagc tgctgagcgg catcgtgcag     1620
cagcagagca atctgctgag agccatcgag gccagcagc agctgctgaa gctgacagtg     1680

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PhoenixTemp65258.tmp.txt

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 aatagcagct ggagcaacaa gagctacgac gacatctggc agaacatgac ctggctgcag 1860
 tgggacaagg agatcagcaa ctacaccgac atcatctaca gcctgatcga ggagagccag 1920
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 aactggttcg acatcagcaa gtggctgtgg tacatcagat ctgga 2025

<210> 6
 <211> 674
 <212> PRT
 <213> HIV

<400> 6

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Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp Arg Asp Ala Glu
35 40 45

Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr Ser Thr Glu Lys
50 55 60

His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr Asp Pro Asn Pro
65 70 75 80

Gln Glu Ile Pro Leu Asp Asn Val Thr Glu Glu Phe Asn Met Trp Lys
85 90 95

Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile Ser Leu Trp Asp
100 105 110

Gln Ser Leu Lys Pro Cys Val Gln Leu Thr Pro Leu Cys Val Thr Leu
115 120 125

Asn Cys Ser Asn Ala Arg Val Asn Ala Thr Phe Asn Ser Thr Glu Asp
130 135 140

Arg Glu Gly Met Lys Asn Cys Ser Phe Asn Met Thr Thr Glu Leu Arg
145 150 155 160

Asp Lys Lys Gln Gln Val Tyr Ser Leu Phe Tyr Arg Leu Asp Ile Glu
165 170 175

Lys Ile Asn Ser Ser Asn Asn Asn Ser Glu Tyr Arg Leu Val Asn Cys
180 185 190

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

Asn Asp Thr Glu Phe Asn Gly Thr Gly Pro Cys Lys Asn Val Ser Thr
225 230 235 240

Val Gln Cys Thr His Gly Ile Lys Pro Val Val Ser Thr Gln Leu Leu
245 250 255

Leu Asn Gly Ser Leu Ala Glu Arg Glu Val Arg Ile Arg Ser Glu Asn
260 265 270

Ile Ala Asn Asn Ala Lys Asn Ile Ile Val Gln Phe Ala Ser Pro Val
275 280 285

Lys Ile Asn Cys Ile Arg Pro Asn Asn Asn Thr Arg Lys Ser Tyr Arg
290 295 300

Ile Gly Pro Gly Gln Thr Phe Tyr Ala Thr Asp Ile Val Gly Asp Ile
305 310 315 320

Arg Gln Ala His Cys Asn Val Ser Arg Thr Asp Trp Asn Asn Thr Leu
325 330 335

Arg Leu Val Ala Asn Gln Leu Arg Lys Tyr Phe Ser Asn Lys Thr Ile
340 345 350

Ile Phe Thr Asn Ser Ser Gly Gly Asp Leu Glu Ile Thr Thr His Ser
355 360 365

Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asn Thr Ser Gly Leu Phe
370 375 380

Asn Ser Thr Trp Thr Thr Asn Asn Met Gln Glu Ser Asn Asp Thr Ser
385 390 395 400

Asn Gly Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Arg Met
405 410 415

Trp Gln Arg Val Gly Gln Ala Met Tyr Ala Pro Pro Ile Glu Gly Val
420 425 430

Ile Arg Cys Glu Ser Asn Ile Thr Gly Leu Ile Leu Thr Arg Asp Gly
435 440 445

Gly Asn Asn Asn Ser Ala Asn Glu Thr Phe Arg Pro Gly Gly Gly Asp
450 455 460

Ile Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys
465 470 475 480

PhoenixTemp65258.tmp.txt

Ile Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys Arg Arg Val Val
485 490 495

Glu Arg Glu Lys Arg Ala Val Gly Ile Gly Ala Val Phe Leu Gly Phe
500 505 510

Leu Gly Ala Ala Gly Ser Thr Met Gly Ala Ala Ser Ile Thr Leu Thr
515 520 525

Val Gln Ala Arg Gln Leu Leu Ser Gly Ile Val Gln Gln Gln Ser Asn
530 535 540

Leu Leu Arg Ala Ile Glu Ala Gln Gln Gln Leu Leu Lys Leu Thr Val
545 550 555 560

Trp Gly Ile Lys Gln Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr
565 570 575

Leu Arg Asp Gln Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu
580 585 590

Ile Cys Thr Thr Asn Val Pro Trp Asn Ser Ser Trp Ser Asn Lys Ser
595 600 605

Tyr Asp Asp Ile Trp Gln Asn Met Thr Trp Leu Gln Trp Asp Lys Glu
610 615 620

Ile Ser Asn Tyr Thr Asp Ile Ile Tyr Ser Leu Ile Glu Glu Ser Gln
625 630 635 640

Asn Gln Gln Glu Lys Asn Glu Gln Asp Leu Leu Ala Leu Asp Lys Trp
645 650 655

Ala Asn Leu Trp Asn Trp Phe Asp Ile Ser Lys Trp Leu Trp Tyr Ile
660 665 670

Arg Ser

<210> 7
<211> 1545
<212> DNA
<213> HIV

<400> 7
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cttgggatgt tgatgatctg tagtgctgca gaacaattgt gggtcacagt ctattatggg 120
gtacctgtgt gaaagaagc aactaccact ctattctgtg catcagatgc taaagcatat 180
gatacagagg tacataatgt ttgggccaca catgcctgtg taccacaga cccaaccca 240
caagaagtag tattgggaaa tgtgacagaa tttttaaca tgtggaaaaa taacatggta 300

PhoenixTemp65258.tmp.txt

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 aatatcacca caagcataag agataagggt caaaaagaat atgcactttt ttataacctt 540
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 gtagcaatta attgtacaag acccaacaac aatacaagaa aagggtatata tataggacca 960
 gggagagcct tttatgcagc aagaaaaata ataggagata taagacaagc acattgtaac 1020
 cttagtagag cacaatggaa taacacttta aaacagatag ttataaaatt aagagaacac 1080
 tttgggaata aaacaataaa atttaataca tcctcaggag gggaccaga aattgtaagg 1140
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 ggtaccgaag ggaatgggac agagaatgag acagagatct tcagacctgg aggaggagat 1440
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 ggagtagcac ccaccagggc aaagagaaga gtggtgcaga gataa 1545

<210> 8
 <211> 514
 <212> PRT
 <213> HIV

<400> 8

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Gly Thr Met Leu Leu Gly Met Leu Met Ile Cys Ser Ala Ala Glu Gln
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Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp Lys Glu Ala Thr
 35 40 45

Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr Asp Thr Glu Val
 50 55 60

His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr Asp Pro Asn Pro
 65 70 75 80

PhoenixTemp65258.tmp.txt

Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe Asn Met Trp Lys
85 90 95

Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile Ser Leu Trp Asp
100 105 110

Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu Cys Val Thr Leu
115 120 125

Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr Thr Thr Ser Asn
130 135 140

Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys Asn Cys Ser Phe
145 150 155 160

Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys Glu Tyr Ala Leu
165 170 175

Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp Asn Ala Thr Thr
180 185 190

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

Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu Pro Ile Pro Ile
210 215 220

His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys Cys Asn Asn Lys
225 230 235 240

Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser Thr Val Gln Cys
245 250 255

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

Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp Asn Phe Met Asp
275 280 285

Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser Val Ala Ile Asn
290 295 300

Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile His Ile Gly Pro
305 310 315 320

Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly Asp Ile Arg Gln
325 330 335

Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn Thr Leu Lys Gln
340 345 350

PhoenixTemp65258.tmp.txt

Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys Thr Ile Lys Phe
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370 375 380
Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln Leu Phe Asn Ser
385 390 395
Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly Asn Ser Thr Ile
405 410 415
Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met Trp Gln Glu Val
420 425 430
Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln Ile Arg Cys Ser
435 440 445
Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly Gly Thr Glu Gly
450 455 460
Asn Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro Gly Gly Gly Asp
465 470 475 480
Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys
485 490 495
Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys Arg Arg Val Val
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Gln Arg

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<211> 2178
<212> DNA
<213> Mycobacterium tuberculosis

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PhoenixTemp65258.tmp.txt

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aacacggcc cgtcctag	2178

<210> 10
 <211> 725
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 10

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 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Met Val Asp Phe Gly Ala Leu
 130 135 140
 Pro Pro Glu Ile Asn Ser Ala Arg Met Tyr Ala Gly Pro Gly Ser Ala
 145 150 155 160
 Ser Leu Val Ala Ala Ala Gln Met Trp Asp Ser Val Ala Ser Asp Leu
 165 170 175
 Phe Ser Ala Ala Ser Ala Phe Gln Ser Val Val Trp Gly Leu Thr Val
 180 185 190
 Gly Ser Trp Ile Gly Ser Ser Ala Gly Leu Met Val Ala Ala Ala Ser
 195 200 205
 Pro Tyr Val Ala Trp Met Ser Val Thr Ala Gly Gln Ala Glu Leu Thr
 210 215 220
 Ala Ala Gln Val Arg Val Ala Ala Ala Tyr Glu Thr Ala Tyr Gly
 225 230 235 240
 Leu Thr Val Pro Pro Val Ile Ala Glu Asn Arg Ala Glu Leu Met
 245 250 255
 Ile Leu Ile Ala Thr Asn Leu Leu Gly Gln Asn Thr Pro Ala Ile Ala
 260 265 270
 Val Asn Glu Ala Glu Tyr Gly Glu Met Trp Ala Gln Asp Ala Ala Ala
 275 280 285
 Met Phe Gly Tyr Ala Ala Ala Thr Ala Thr Ala Thr Ala Thr Leu Leu
 290 295 300

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Pro Phe Glu Glu Ala Pro Glu Met Thr Ser Ala Gly Gly Leu Leu Glu
 305 310 315 320
 Gln Ala Ala Ala Val Glu Glu Ala Ser Asp Thr Ala Ala Ala Asn Gln
 325 330 335
 Leu Met Asn Asn Val Pro Gln Ala Leu Gln Gln Leu Ala Gln Pro Thr
 340 345 350
 Gln Gly Thr Thr Pro Ser Ser Lys Leu Gly Gly Leu Trp Lys Thr Val
 355 360 365
 Ser Pro His Arg Ser Pro Ile Ser Asn Met Val Ser Met Ala Asn Asn
 370 375 380
 His Met Ser Met Thr Asn Ser Gly Val Ser Met Thr Asn Thr Leu Ser
 385 390 395 400
 Ser Met Leu Lys Gly Phe Ala Pro Ala Ala Ala Gln Ala Val Gln
 405 410 415
 Thr Ala Ala Gln Asn Gly Val Arg Ala Met Ser Ser Leu Gly Ser Ser
 420 425 430
 Leu Gly Ser Ser Gly Leu Gly Gly Val Ala Ala Asn Leu Gly Arg
 435 440 445
 Ala Ala Ser Val Gly Ser Leu Ser Val Pro Gln Ala Trp Ala Ala Ala
 450 455 460
 Asn Gln Ala Val Thr Pro Ala Ala Arg Ala Leu Pro Leu Thr Ser Leu
 465 470 475 480
 Thr Ser Ala Ala Glu Arg Gly Pro Gly Gln Met Leu Gly Gly Leu Pro
 485 490 495
 Val Gly Gln Met Gly Ala Arg Ala Gly Gly Gly Leu Ser Gly Val Leu
 500 505 510
 Arg Val Pro Pro Arg Pro Tyr Val Met Pro His Ser Pro Ala Ala Gly
 515 520 525
 Asp Ile Ala Pro Pro Ala Leu Ser Gln Asp Arg Phe Ala Asp Phe Pro
 530 535 540
 Ala Leu Pro Leu Asp Pro Ser Ala Met Val Ala Gln Val Gly Pro Gln
 545 550 555 560
 Val Val Asn Ile Asn Thr Lys Leu Gly Tyr Asn Asn Ala Val Gly Ala
 565 570 575

PhoenixTemp65258.tmp.txt

Gly Thr Gly Ile Val Ile Asp Pro Asn Gly Val Val Leu Thr Asn Asn
580 585 590

His Val Ile Ala Gly Ala Thr Asp Ile Asn Ala Phe Ser Val Gly Ser
595 600 605

Gly Gln Thr Tyr Gly Val Asp Val Val Gly Tyr Asp Arg Thr Gln Asp
610 615 620

Val Ala Val Leu Gln Leu Arg Gly Ala Gly Gly Leu Pro Ser Ala Ala
625 630 635 640

Ile Gly Gly Gly Val Ala Val Gly Glu Pro Val Val Ala Met Gly Asn
645 650 655

Ser Gly Gly Gln Gly Gly Thr Pro Arg Ala Val Pro Gly Arg Val Val
660 665 670

Ala Leu Gly Gln Thr Val Gln Ala Ser Asp Ser Leu Thr Gly Ala Glu
675 680 685

Glu Thr Leu Asn Gly Leu Ile Gln Phe Asp Ala Ala Ile Gln Pro Gly
690 695 700

Asp Ala Gly Gly Pro Val Val Asn Gly Leu Gly Gln Val Val Gly Met
705 710 715 720

Asn Thr Ala Ala Ser
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<211> 1149
<212> DNA
<213> Plasmodium falciparum

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gacaacgctg gaacgaacct gtataacgag ctggagatga actactatgg caagcaggag 180
aactggtata gcctgaagaa gaacagccgg tccctgggcg agaacgacga cggcaacaac 240
aacaacggcg acaacggcag ggagggcaaa gatgaggaca agagggacgg gaacaacgag 300
gataacgaga agctgcggaa gccaagcac aagaaactca agcagccgc cgacgggaac 360
ccggacccca atgcaaatcc caacgtcgac ccaaacgcaa accctaacgt ggaccccaac 420
gccaatccca acgtcgatcc taatgccaat ccaaatgcca accctaacgc aaatccta 480
gcaaacccca acgccaatcc taacgccaac ccaaatgcca acccaaacgc taacccaac 540
gctaacccaa atgcaaatcc caatgctaac ccaaactgg accctaacgc taacccaac 600
gcaaacccta acgccaatcc taacgcaaac ccaatgcaa acccaaacgc aaatcccaac 660

PhoenixTemp65258.tmp.txt

gctaacccta acgcaaacc caacgccaac cctaattgcca accccaatgc taaccccaac	720
gccaatccaa acgcaaattcc aaacgccaac ccaaattgcaa accccaacgc taatcccaac	780
gccaacccaa acgccaatcc taacaagaac aatcagggca acgggcaggg ccataacatg	840
ccgaacgacc ctaatcgga tgtggacgag aacgccaacg ccaacagcgc cgtgaagaac	900
aacaacaacg aggagccctc cgacaagcac atcaaggaat acctgaacaa gatccagaac	960
agtctgagca ccgagtggtc cccctgctcc gtgacctgcg gcaacggcat ccaggtgagg	1020
atcaagcccg gctccgcaa caagcccaag gacgagctgg actacgcaa cgacatcgag	1080
aagaagatct gcaagatgga gaaatgcagc tctgtgttca acgtcgtgaa ctccgccatc	1140
ggcctgtga	1149

<210> 12
 <211> 382
 <212> PRT
 <213> Plasmodium falciparum

<400> 12

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Glu Ala Leu Phe Gln Glu Tyr Gln Cys Tyr Gly Ser Ser Ser Asn Thr
 20 25 30

Arg Val Leu Asn Glu Leu Asn Tyr Asp Asn Ala Gly Thr Asn Leu Tyr
 35 40 45

Asn Glu Leu Glu Met Asn Tyr Tyr Gly Lys Gln Glu Asn Trp Tyr Ser
 50 55 60

Leu Lys Lys Asn Ser Arg Ser Leu Gly Glu Asn Asp Asp Gly Asn Asn
 65 70 75 80

Asn Asn Gly Asp Asn Gly Arg Glu Gly Lys Asp Glu Asp Lys Arg Asp
 85 90 95

Gly Asn Asn Glu Asp Asn Glu Lys Leu Arg Lys Pro Lys His Lys Lys
 100 105 110

Leu Lys Gln Pro Ala Asp Gly Asn Pro Asp Pro Asn Ala Asn Pro Asn
 115 120 125

Val Asp Pro Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn
 130 135 140

Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 145 150 155 160

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 165 170 175

PhoenixTemp65258.tmp.txt

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
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Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
195 200 205

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
210 215 220

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
225 230 235 240

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
245 250 255

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Lys Asn Asn Gln
260 265 270

Gly Asn Gly Gln Gly His Asn Met Pro Asn Asp Pro Asn Arg Asn Val
275 280 285

Asp Glu Asn Ala Asn Ala Asn Ser Ala Val Lys Asn Asn Asn Asn Glu
290 295 300

Glu Pro Ser Asp Lys His Ile Lys Glu Tyr Leu Asn Lys Ile Gln Asn
305 310 315 320

Ser Leu Ser Thr Glu Trp Ser Pro Cys Ser Val Thr Cys Gly Asn Gly
325 330 335

Ile Gln Val Arg Ile Lys Pro Gly Ser Ala Asn Lys Pro Lys Asp Glu
340 345 350

Leu Asp Tyr Ala Asn Asp Ile Glu Lys Lys Ile Cys Lys Met Glu Lys
355 360 365

Cys Ser Ser Val Phe Asn Val Val Asn Ser Ala Ile Gly Leu
370 375 380

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<211> 1275
<212> DNA
<213> Plasmodium falciparum

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aatcctaata gcaaaccacaa tgcaaatcct aatgcaaata ctaatgcaaa tccaaatgca	120
aatccaaatg caaacccaaa cgcaaacccc aatgcaaata ctaatgcaaa tccaaatgca	180
aatccaaatg caaacccaaa tgcaaaccca aatgcaaacc ccaatgcaaa tcctaataaa	240
aacaatcaag gtaatggaca aggtcacaat atgccaatg acccaaaccg aaatgtagat	300

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gaaaatgcta atgccaacag tgctgtaaaa aataataata acgaagaacc aagtgataag	360
cacataaaaag aatattttaaa caaaatacaaa aattctcttt caactgaatg gtcccatgt	420
agtgttaactt gtggaaatgg tattcaagtt agaataaagc ctggctctgc taataaacct	480
aaagacgaat tagattatgc aaatgatatt gaaaaaaaaa ttgttaaaat ggaaaaatgt	540
tccagtgtgt ttaatgtcgt aaatagttca ataggattag ggcctgtgac gaacatggag	600
aacatcacat caggattcct aggaccctg ctctgtttac aggcgggggtt tttcttgtt	660
acaagaatcc tcacaatacc gcagagtcta gactcgtggt ggacttctct caattttcta	720
gggggatcac ccgtgtgtct tggccaaaat tcgcagtccc caacctcaa tcactcacca	780
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tgggtatata tttaa	1275

<210> 14
 <211> 424
 <212> PRT
 <213> Plasmodium falciparum

<400> 14

Met Met Ala Pro Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
 1 5 10 15

Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
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Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
 35 40 45

Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
 50 55 60

Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Lys
 65 70 75 80

Asn Asn Gln Gly Asn Gly Gln Gly His Asn Met Pro Asn Asp Pro Asn
 85 90 95

Arg Asn Val Asp Glu Asn Ala Asn Ala Asn Ser Ala Val Lys Asn Asn
 100 105 110

PhoenixTemp65258.tmp.txt

Asn Asn Glu Glu Pro Ser Asp Lys His Ile Lys Glu Tyr Leu Asn Lys
 115 120 125
 Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro Cys Ser Val Thr Cys
 130 135 140
 Gly Asn Gly Ile Gln Val Arg Ile Lys Pro Gly Ser Ala Asn Lys Pro
 145 150 155 160
 Lys Asp Glu Leu Asp Tyr Ala Asn Asp Ile Glu Lys Lys Ile Cys Lys
 165 170 175
 Met Glu Lys Cys Ser Ser Val Phe Asn Val Val Asn Ser Ser Ile Gly
 180 185 190
 Leu Gly Pro Val Thr Asn Met Glu Asn Ile Thr Ser Gly Phe Leu Gly
 195 200 205
 Pro Leu Leu Val Leu Gln Ala Gly Phe Phe Leu Leu Thr Arg Ile Leu
 210 215 220
 Thr Ile Pro Gln Ser Leu Asp Ser Trp Trp Thr Ser Leu Asn Phe Leu
 225 230 235 240
 Gly Gly Ser Pro Val Cys Leu Gly Gln Asn Ser Gln Ser Pro Thr Ser
 245 250 255
 Asn His Ser Pro Thr Ser Cys Pro Pro Ile Cys Pro Gly Tyr Arg Trp
 260 265 270
 Met Cys Leu Arg Arg Phe Ile Ile Phe Leu Phe Ile Leu Leu Leu Cys
 275 280 285
 Leu Ile Phe Leu Leu Val Leu Leu Asp Tyr Gln Gly Met Leu Pro Val
 290 295 300
 Cys Pro Leu Ile Pro Gly Ser Thr Thr Thr Asn Thr Gly Pro Cys Lys
 305 310 315 320
 Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Met Phe Pro Ser Cys Cys
 325 330 335
 Cys Thr Lys Pro Thr Asp Gly Asn Cys Thr Cys Ile Pro Ile Pro Ser
 340 345 350
 Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu Trp Ala Ser Val Arg Phe
 355 360 365
 Ser Trp Leu Ser Leu Leu Val Pro Phe Val Gln Trp Phe Val Gly Leu
 370 375 380

PhoenixTemp65258.tmp.txt

Ser Pro Thr Val Trp Leu Ser Ala Ile Trp Met Met Trp Tyr Trp Gly
385 390 395 400

Pro Ser Leu Tyr Ser Ile Val Ser Pro Phe Ile Pro Leu Leu Pro Ile
405 410 415

Phe Phe Cys Leu Trp Val Tyr Ile
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<210> 15
<211> 3411
<212> DNA
<213> HIV

<400> 15
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actaaggctc taacagaggt catccatta acggaggaag cagagcttga gctggcagag	1620
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aagcaactta cggaagcagt acaaaagatt actactgagt ctattgtgat atggggcaag	1860
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tggtagcagc ttgaaaagga gccgatagta ggggcagaga cttctatgt cgatggcgcc	2040
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<210> 16
 <211> 1136
 <212> PRT
 <213> HIV

<400> 16

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 35 40 45
 Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr Val Gly Gly His Gln
 50 55 60
 Ala Ala Met Gln Met Leu Lys Glu Thr Ile Asn Glu Glu Ala Ala Glu
 65 70 75 80
 Trp Asp Arg Val His Pro Val His Ala Gly Pro Ile Ala Pro Gly Gln
 85 90 95
 Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly Thr Thr Ser Thr Leu
 100 105 110
 Gln Glu Gln Ile Gly Trp Met Thr Asn Asn Pro Pro Ile Pro Val Gly
 115 120 125
 Glu Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys Ile Val Arg
 130 135 140
 Met Tyr Ser Pro Thr Ser Ile Leu Asp Ile Arg Gln Gly Pro Lys Glu
 145 150 155 160
 Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys Thr Leu Arg Ala Glu
 165 170 175
 Gln Ala Ser Gln Glu Val Lys Asn Trp Met Thr Glu Thr Leu Leu Val
 180 185 190
 Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu Lys Ala Leu Gly Pro
 195 200 205
 Ala Ala Thr Leu Glu Glu Met Met Thr Ala Cys Gln Gly Val Gly Gly
 210 215 220
 Pro Gly His Lys Ala Arg Val Leu His Met Gly Pro Ile Ser Pro Ile
 225 230 235 240
 Glu Thr Val Ser Val Lys Leu Lys Pro Gly Met Asp Gly Pro Lys Val
 245 250 255
 Lys Gln Trp Pro Leu Thr Glu Glu Lys Ile Lys Ala Leu Val Glu Ile
 260 265 270

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Cys Thr Glu Met Glu Lys Glu Gly Lys Ile Ser Lys Ile Gly Pro Glu
 275 280 285
 Asn Pro Tyr Asn Thr Pro Val Phe Ala Ile Lys Lys Lys Asp Ser Thr
 290 295 300
 Lys Trp Arg Lys Leu Val Asp Phe Arg Glu Leu Asn Lys Arg Thr Gln
 305 310 315 320
 Asp Phe Trp Glu Val Gln Leu Gly Ile Pro His Pro Ala Gly Leu Lys
 325 330 335
 Lys Lys Lys Ser Val Thr Val Leu Asp Val Gly Asp Ala Tyr Phe Ser
 340 345 350
 Val Pro Leu Asp Glu Asp Phe Arg Lys Tyr Thr Ala Phe Thr Ile Pro
 355 360 365
 Ser Ile Asn Asn Glu Thr Pro Gly Ile Arg Tyr Gln Tyr Asn Val Leu
 370 375 380
 Pro Gln Gly Trp Lys Gly Ser Pro Ala Ile Phe Gln Ser Cys Met Thr
 385 390 395 400
 Lys Ile Leu Glu Pro Phe Arg Lys Gln Asn Pro Asp Ile Val Ile Tyr
 405 410 415
 Gln Tyr Met Asp Asp Leu Tyr Val Gly Ser Asp Leu Glu Ile Gly Gln
 420 425 430
 His Arg Thr Lys Ile Glu Glu Leu Arg Gln His Leu Leu Arg Trp Gly
 435 440 445
 Leu Thr Thr Pro Asp Lys Lys His Gln Lys Glu Pro Pro Phe Leu Lys
 450 455 460
 Met Gly Tyr Glu Leu His Pro Asp Lys Trp Thr Val Gln Pro Ile Val
 465 470 475 480
 Leu Pro Glu Lys Asp Ser Trp Thr Val Asn Asp Ile Gln Lys Leu Val
 485 490 495
 Gly Lys Leu Asn Trp Ala Ser Gln Ile Tyr Pro Gly Ile Lys Val Arg
 500 505 510
 Gln Leu Cys Lys Leu Leu Arg Gly Thr Lys Ala Leu Thr Glu Val Ile
 515 520 525
 Pro Leu Thr Glu Glu Ala Glu Leu Glu Leu Ala Glu Asn Arg Glu Ile
 530 535 540

Leu Lys Glu Pro Val His Gly Val Tyr Tyr Asp Pro Ser Lys Asp Leu
545 550 555 560

Ile Ala Glu Ile Gln Lys Gln Gly Gln Gly Gln Trp Thr Tyr Gln Ile
565 570 575

Tyr Gln Glu Pro Phe Lys Asn Leu Lys Thr Gly Lys Tyr Ala Arg Met
580 585 590

Arg Gly Ala His Thr Asn Asp Val Lys Gln Leu Thr Glu Ala Val Gln
595 600 605

Lys Ile Thr Thr Glu Ser Ile Val Ile Trp Gly Lys Thr Pro Lys Phe
610 615 620

Lys Leu Pro Ile Gln Lys Glu Thr Trp Glu Thr Trp Trp Thr Glu Tyr
625 630 635 640

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

Leu Val Lys Leu Trp Tyr Gln Leu Glu Lys Glu Pro Ile Val Gly Ala
660 665 670

Glu Thr Phe Tyr Val Asp Gly Ala Ala Asn Arg Glu Thr Lys Leu Gly
675 680 685

Lys Ala Gly Tyr Val Thr Asn Arg Gly Arg Gln Lys Val Val Thr Leu
690 695 700

Thr Asp Thr Thr Asn Gln Lys Thr Glu Leu Gln Ala Ile Tyr Leu Ala
705 710 715 720

Leu Gln Asp Ser Gly Leu Glu Val Asn Ile Val Thr Asp Ser Gln Tyr
725 730 735

Ala Leu Gly Ile Ile Gln Ala Gln Pro Asp Gln Ser Glu Ser Glu Leu
740 745 750

Val Asn Gln Ile Ile Glu Gln Leu Ile Lys Lys Glu Lys Val Tyr Leu
755 760 765

Ala Trp Val Pro Ala His Lys Gly Ile Gly Gly Asn Glu Gln Val Asp
770 775 780

Lys Leu Val Ser Ala Gly Ile Arg Lys Val Leu Ala Met Gly Gly Lys
785 790 795 800

Trp Ser Lys Ser Ser Val Val Gly Trp Pro Thr Val Arg Glu Arg Met
805 810 815

Arg Arg Ala Glu Pro Ala Ala Asp Gly Val Gly Ala Ala Ser Arg Asp
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820

825

830

Leu Glu Lys His Gly Ala Ile Thr Ser Ser Asn Thr Ala Ala Thr Asn
 835 840 845

Ala Ala Cys Ala Trp Leu Glu Ala Gln Glu Glu Glu Glu Val Gly Phe
 850 855 860

Pro Val Thr Pro Gln Val Pro Leu Arg Pro Met Thr Tyr Lys Ala Ala
 865 870 875 880

Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly Gly Leu Glu Gly Leu
 885 890 895

Ile His Ser Gln Arg Arg Gln Asp Ile Leu Asp Leu Trp Ile Tyr His
 900 905 910

Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr Thr Pro Gly Pro Gly
 915 920 925

Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr Lys Leu Val Pro Val
 930 935 940

Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly Glu Asn Thr Ser Leu
 945 950 955 960

Leu His Pro Val Ser Leu His Gly Met Asp Asp Pro Glu Arg Glu Val
 965 970 975

Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe His His Val Ala Arg
 980 985 990

Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Arg Pro Met Gly Ala Arg
 995 1000 1005

Ala Ser Val Leu Ser Gly Gly Glu Leu Asp Arg Trp Glu Lys Ile
 1010 1015 1020

Arg Leu Arg Pro Gly Gly Lys Lys Lys Tyr Lys Leu Lys His Ile
 1025 1030 1035

Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Ala Val Asn Pro Gly
 1040 1045 1050

Leu Leu Glu Thr Ser Glu Gly Cys Arg Gln Ile Leu Gly Gln Leu
 1055 1060 1065

Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu Leu Arg Ser Leu Tyr
 1070 1075 1080

Asn Thr Val Ala Thr Leu Tyr Cys Val His Gln Arg Ile Glu Ile
 1085 1090 1095

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Lys Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu Glu Gln Asn
1100 1105 1110

Lys Ser Lys Lys Lys Ala Gln Gln Ala Ala Ala Asp Thr Gly His
1115 1120 1125

Ser Asn Gln Val Ser Gln Asn Tyr
1130 1135