SEQUENCE LISTING

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<130> B1698PC00

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<170> PatentIn version 3.5

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106
Met Pro Arg Ala Pro Arg Cys Arg Ala Val Arg Ser Leu Leu Arg Ser
1 5 10 15

cac tac cgc gag gtg ctg ccg ctg gcc acg ttc gtg cgg cgc ctg ggg
154
His Tyr Arg Glu Val Leu Pro Leu Ala Thr Phe Val Arg Arg Leu Gly
20 25 30

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202
Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp Pro Ala Ala Phe Arg
35 40 45

gcg ctg gtg gcc cag tgc ctg gtg tgc gtg ccc tgg gac gca cgg ccg
250
Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro
50 55 60

ccc ccc gcc gcc ccc tcc ttc cgc cag gtg tcc tgc ctg aag gag ctg
298
Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu
65 70 75 80

gtg gcc cga gtg ctg cag agg ctg tgc gag cgc ggc gcg aag aac gtg
346
Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val
85 90 95

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394
Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro
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gag gcc ttc acc acc agc gtg cgc agc tac ctg ccc aac acg gtg acc
442
Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val Thr
        115                 120                 125

gac gca ctg cgg ggg agc ggg gcg tgg ggg ctg ctg ctg cgc cgc gtg
490
Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val
    130                 135                 140

ggc gac gac gtg ctg gtt cac ctg ctg gca cgc tgc gcg ctc ttt gtg
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Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val
145                 150                 155                 160

ctg gtg gct ccc agc tgc gcc tac cag gtg tgc ggg ccg ccg ctg tac
586
Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr
                165                 170                 175

cag ctc ggc gct gcc act cag gcc cgg ccc ccg cca cac gct agt gga
634
Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly
            180                 185                 190

ccc cga agg cgt ctg gga tgc gaa cgg gcc tgg aac cat agc gtc agg
682
Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg
        195                 200                 205

gag gcc ggg gtc ccc ctg ggc ctg cca gcc ccg ggt gcg agg agg cgc
730
Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg
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778
Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg
225                 230                 235                 240

ggc gct gcc cct gag ccg gag cgg acg ccc gtt ggg cag ggg tcc tgg
826
Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser Trp
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gcc cac ccg ggc agg acg cgt gga ccg agt gac cgt ggt ttc tgt gtg
874
Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val
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gtg tca cct gcc aga ccc gcc gaa gaa gcc acc tct ttg gag ggt gcg
922
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Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala
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ctc tct ggc acg cgc cac tcc cac cca tcc gtg ggc cgc cag cac cac
970
Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His
    290                 295                 300

gcg ggc ccc cca tcc aca tcg cgg cca cca cgt ccc tgg gac acg cct
1018
Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro
305                 310                 315                 320

tgt ccc ccg gtg tac gcc gag acc aag cac ttc ctc tac tcc tca ggc
1066
Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly
                325                 330                 335

gac aag gag cag ctg cgg ccc tcc ttc cta ctc agc tct ctg agg ccc
1114
Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro
            340                 345                 350

agc ctg act ggc gct cgg agg ctc gtg gag acc atc ttt ctg ggt tcc
1162
Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser
        355                 360                 365

agg ccc tgg atg cca ggg act ccc cgc agg ttg ccc cgc ctg ccc cag
1210
Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln
    370                 375                 380

cgc tac tgg caa atg cgg ccc ctg ttt ctg gag ctg ctt ggg aac cac
1258
Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His
385                 390                 395                 400

gcg cag tgc ccc tac ggg gtg ctc ctc aag acg cac tgc ccg ctg cga
1306
Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg
                405                 410                 415

gct gcg gtc acc cca gca gcc ggt gtc tgt gcc cgg gag aag ccc cag
1354
Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln
            420                 425                 430

ggc tct gtg gcg gcc ccc gag gag gag gac aca gac ccc cgt cgc ctg
1402
Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu
        435                 440                 445

gtg cag ctg ctc cgc cag cac agc agc ccc tgg cag gtg tac ggc ttc
1450
Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe
    450                 455                 460
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1498
Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser
465                 470                 475                 480

agg cac aac gaa cgc cgc ttc ctc agg aac acc aag aag ttc atc tcc
1546
Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser
                485                 490                 495

ctg ggg aag cat gcc aag ctc tcg ctg cag gag ctg acg tgg aag atg
1594
Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met
            500                 505                 510

agc gtg cgg gac tgc gct tgg ctg cgc agg agc cca ggg gtt ggc tgt
1642
Ser Val Arg Asp Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys
        515                 520                 525

gtt ccg gcc gca gag cac cgt ctg cgt gag gag atc ctg gcc aag ttc
1690
Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe
    530                 535                 540

ctg cac tgg ctg atg agt gtg tac gtc gtc gag ctg ctc agg tct ttc
1738
Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe
545                 550                 555                 560

ttt tat gtc acg gag acc acg ttt caa aag aac agg ctc ttt ttc tac
1786
Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr
                565                 570                 575

cgg aag agt gtc tgg agc aag ttg caa agc att gga atc aga cag cac
1834
Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His
            580                 585                 590

ttg aag agg gtg cag ctg cgg gag ctg tcg gaa gca gag gtc agg cag
1882
Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg Gln
        595                 600                 605

cat cgg gaa gcc agg ccc gcc ctg ctg acg tcc aga ctc cgc ttc atc
1930
His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile
    610                 615                 620

ccc aag cct gac ggg ctg cgg ccg att gtg aac atg gac tac gtc gtg
1978
Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val
625                 630                 635                 640
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gga gcc aga acg ttc cgc aga gaa aag agg gcc gag cgt ctc acc tcg
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Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser
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agg gtg aag gca ctg ttc agc gtg ctc aac tac gag cgg gcg cgg cgc
2074
Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg
            660                 665                 670

ccc ggc ctc ctg ggc gcc tct gtg ctg ggc ctg gac gat atc cac agg
2122
Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg
        675                 680                 685

gcc tgg cgc acc ttc gtg ctg cgt gtg cgg gcc cag gac ccg ccg cct
2170
Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro
    690                 695                 700

gag ctg tac ttt gtc aag gtg gat gtg acg ggc gcg tac gac acc atc
2218
Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile
705                 710                 715                 720

ccc cag gac agg ctc acg gag gtc atc gcc agc atc atc aaa ccc cag
2266
Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln
                725                 730                 735

aac acg tac tgc gtg cgt cgg tat gcc gtg gtc cag aag gcc gcc cat
2314
Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His
            740                 745                 750

ggg cac gtc cgc aag gcc ttc aag agc cac gtc tct acc ttg aca gac
2362
Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp
        755                 760                 765

ctc cag ccg tac atg cga cag ttc gtg gct cac ctg cag gag acc agc
2410
Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser
    770                 775                 780

ccg ctg agg gat gcc gtc gtc atc gag cag agc tcc tcc ctg aat gag
2458
Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu
785                 790                 795                 800

gcc agc agt ggc ctc ttc gac gtc ttc cta cgc ttc atg tgc cac cac
2506
Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His
                805                 810                 815

gcc gtg cgc atc agg ggc aag tcc tac gtc cag tgc cag ggg atc ccg
2554
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Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro
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cag ggc tcc atc ctc tcc acg ctg ctc tgc agc ctg tgc tac ggc gac
2602
Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp
        835                 840                 845

atg gag aac aag ctg ttt gcg ggg att cgg cgg gac ggg ctg ctc ctg
2650
Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu
    850                 855                 860

cgt ttg gtg gat gat ttc ttg ttg gtg aca cct cac ctc acc cac gcg
2698
Arg Leu Val Asp Asp Phe Leu Leu Val Thr Pro His Leu Thr His Ala
865                 870                 875                 880

aaa acc ttc ctc agg acc ctg gtc cga ggt gtc cct gag tat ggc tgc
2746
Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys
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gtg gtg aac ttg cgg aag aca gtg gtg aac ttc cct gta gaa gac gag
2794
Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu
            900                 905                 910

gcc ctg ggt ggc acg gct ttt gtt cag atg ccg gcc cac ggc cta ttc
2842
Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe
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ccc tgg tgc ggc ctg ctg ctg gat acc cgg acc ctg gag gtg cag agc
2890
Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser
    930                 935                 940

gac tac tcc agc tat gcc cgg acc tcc atc aga gcc agt ctc acc ttc
2938
Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe
945                 950                 955                 960

aac cgc ggc ttc aag gct ggg agg aac atg cgt cgc aaa ctc ttt ggg
2986
Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly
                965                 970                 975

gtc ttg cgg ctg aag tgt cac agc ctg ttt ctg gat ttg cag gtg aac
3034
Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn
            980                 985                 990

agc ctc cag acg gtg tgc acc aac  atc tac aag atc ctc  ctg ctg cag
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Ser Leu Gln Thr Val Cys Thr Asn  Ile Tyr Lys Ile Leu  Leu Leu Gln
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gcg tac  agg ttt cac gca tgt  gtg ctg cag ctc cca  ttt cat cag
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Ala Tyr  Arg Phe His Ala Cys  Val Leu Gln Leu Pro  Phe His Gln
    1010                 1015                 1020

caa gtt  tgg aag aac ccc aca  ttt ttc ctg cgc gtc  atc tct gac
3172
Gln Val  Trp Lys Asn Pro Thr  Phe Phe Leu Arg Val  Ile Ser Asp
    1025                 1030                 1035

acg gcc  tcc ctc tgc tac tcc  atc ctg aaa gcc aag  aac gca ggg
3217
Thr Ala  Ser Leu Cys Tyr Ser  Ile Leu Lys Ala Lys  Asn Ala Gly
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atg tcg  ctg ggg gcc aag ggc  gcc gcc ggc cct ctg  ccc tcc gag
3262
Met Ser  Leu Gly Ala Lys Gly  Ala Ala Gly Pro Leu  Pro Ser Glu
    1055                 1060                 1065

gcc gtg  cag tgg ctg tgc cac  caa gca ttc ctg ctc  aag ctg act
3307
Ala Val  Gln Trp Leu Cys His  Gln Ala Phe Leu Leu  Lys Leu Thr
    1070                 1075                 1080

cga cac  cgt gtc acc tac gtg  cca ctc ctg ggg tca  ctc agg aca
3352
Arg His  Arg Val Thr Tyr Val  Pro Leu Leu Gly Ser  Leu Arg Thr
    1085                 1090                 1095

gcc cag  acg cag ctg agt cgg  aag ctc ccg ggg acg  acg ctg act
3397
Ala Gln  Thr Gln Leu Ser Arg  Lys Leu Pro Gly Thr  Thr Leu Thr
    1100                 1105                 1110

gcc ctg  gag gcc gca gcc aac  ccg gca ctg ccc tca  gac ttc aag
3442
Ala Leu  Glu Ala Ala Ala Asn  Pro Ala Leu Pro Ser  Asp Phe Lys
    1115                 1120                 1125

acc atc  ctg gac tga tggccacccg cccacagcca ggccgagagc agacaccagc
3497
Thr Ile  Leu Asp
    1130

agccctgtca cgccgggctc tacgtcccag ggagggaggg gcggcccaca cccaggcccg
3557

caccgctggg agtctgaggc ctgagtgagt gtttggccga ggcctgcatg tccggctgaa
3617

ggctgagtgt ccggctgagg cctgagcgag tgtccagcca agggctgagt gtccagcaca
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cctgccgtct tcacttcccc acaggctggc gctcggctcc accccagggc cagcttttcc
3737
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3797

gttcacccct cgccctgccc tcctttgcct tccaccccca ccatccaggt ggagaccctg
3857

agaaggaccc tgggagctct gggaatttgg agtgaccaaa ggtgtgccct gtacacaggc
3917

gaggaccctg cacctggatg ggggtccctg tgggtcaaat tgggggggagg tgctgtggga
3977

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35 40 45

Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro
50 55 60

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

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

Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro
100 105 110

Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val Thr
115 120 125

Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val

130 135 140

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

Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr
165 170 175

Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly
180 185 190

Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg
195 200 205

Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg
210 215 220

Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg
225 230 235 240

Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser Trp
245 250 255

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

Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala
275 280 285

Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His
290 295 300

Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro
305 310 315 320

Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly
325 330 335

Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro
340 345 350

Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser
355 360 365

Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln
370 375 380

Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His
385 390 395 400

Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg
405 410 415

Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln
420 425 430

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

Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe
450 455 460

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

Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser
485 490 495

Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met
500 505 510

Ser Val Arg Asp Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys
515 520 525

Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe
530 535 540

Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe
545 550 555 560

Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr
565 570 575

Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His
580 585 590

Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg Gln
595 600 605

His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile
610 615 620

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

Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser
645 650 655

Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg
660 665 670

Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg
675 680 685

Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro
690 695 700

Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile
705 710 715 720

Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln
725 730 735

Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His
740 745 750

Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp
755 760 765

Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser
770 775 780

Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu
785 790 795 800

Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His
805 810 815

Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro
820 825 830

Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp
835 840 845

Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu
850 855 860

Arg Leu Val Asp Asp Phe Leu Leu Val Thr Pro His Leu Thr His Ala
865 870 875 880

Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys
885 890 895

Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu
900 905 910

Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe
915 920 925

Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser
930 935 940

Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe
945 950 955 960

Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly
965 970 975

Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn
980 985 990

Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln
995 1000 1005

Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln
1010 1015 1020

Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp
1025 1030 1035

Thr Ala Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly

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     1040                1045                1050

Met Ser  Leu Gly Ala Lys Gly  Ala Ala Gly Pro Leu  Pro Ser Glu
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Ala Val  Gln Trp Leu Cys His  Gln Ala Phe Leu Leu  Lys Leu Thr
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Arg His  Arg Val Thr Tyr Val  Pro Leu Leu Gly Ser  Leu Arg Thr
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Ala Gln  Thr Gln Leu Ser Arg  Lys Leu Pro Gly Thr  Thr Leu Thr
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Ala Leu  Glu Ala Ala Ala Asn  Pro Ala Leu Pro Ser  Asp Phe Lys
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Thr Ile  Leu Asp
     1130
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cca ccc cct gcc gca ccc tca ttc cgc caa gtg tcc tgc ctg aag gag
96
Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu
            20                  25                  30

ctg gtg gcc cga gtg ctg cag agg ctg tgc gag cgc ggc gcg aag aac
144
Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn
        35                  40                  45

gtg ctg gcc ttc ggc ttc gcg ctg ctg gac ggg gct cgc gga ggc cca
192
Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro
    50                  55                  60
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ccc gag gcc ttc acc acc agc gtg cgc agc tac ctg ccc aac acg gtg
240
Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val
65                  70                  75                  80

acc gac gca ctg cgg ggg agc ggg gcg tgg ggg ctg ctg ttg cgc cgc
288
Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg
                85                  90                  95

gtg ggc gac gac gtg ctg gtt cac ctg ctg gca cgc tgc gcg ctc ttt
336
Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe
            100                 105                 110

gtg ctg gtg gct ccc agc tgc gcc tac cag gtg tgc ggg ccg ccg ctg
384
Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu
        115                 120                 125

tac cag ctc ggc gct gcc act cag gca cgg cct cca cct cac gct agt
432
Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser
    130                 135                 140

gga ccc cga agg cgt ctg gga tgc gaa cgg gcc tgg aac cat agc gtc
480
Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val
145                 150                 155                 160

agg gag gcc ggg gtc ccc ctg ggc ctg cca gcc ccg ggt gcg agg agg
528
Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg
                165                 170                 175

cgc ggg ggc agt gcc agc cga agt ctg ccg ttg ccc aag agg ccc agg
576
Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg
            180                 185                 190

cgt ggc gct gcc cct gag ccg gag cgg acg ccc gtt ggg cag ggg tcc
624
Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser
        195                 200                 205

tgg gcc cac ccg ggc agg acg cgt gga ccg agt gac cgt ggt ttc tgt
672
Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys
    210                 215                 220

gtg gtg tca cct gcc aga ccc gcc gaa gaa gcc acc tct ttg gag ggt
720
Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly
225                 230                 235                 240
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gcg ctc tct ggc acg cgc cac tcc cac cca tcc gtg ggc cgc cag cac
768
Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His
245 250 255

cac gcg ggc ccc cca tcc aca tcg cgg cca cca cgt ccc tgg gac acg
816
His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr
260 265 270

cct tgt ccc ccg gtg tac gcc gag acc aag cac ttc ctc tac tcc tca
864
Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser
275 280 285

ggc gac aag gag cag ctg cgg cca tcc ttc ctg ctg agc tct ctg agg
912
Gly Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg
290 295 300

ccc agc ctg act ggc gct cgg agg ctc gtg gag acc atc ttt ctg ggt
960
Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly
305 310 315 320

tcc agg ccc tgg atg cca ggg act ccc cgc agg ttg ccc cgc ctg ccc
1008
Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro
325 330 335

cag cgc tac tgg caa atg cgg ccc ctg ttt ctg gag ctg ctt ggg aac
1056
Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn
340 345 350

cac gcg cag tgc ccc tac ggg gtg ctc ctc aag acg cac tgc ccg ctg
1104
His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu
355 360 365

cga gct gcg gtc acc cca gca gcc ggt gtc tgt gcc cgg gag aag ccc
1152
Arg Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro
370 375 380

cag ggc tct gtg gcg gcc ccc gag gag gag gac aca gac ccc cgt cgc
1200
Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg
385 390 395 400

ctg gtg cag ctg ctc cgc cag cac agc agc ccc tgg cag gtg tac ggc
1248
Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly
405 410 415

ttc gtg cgg gcc tgc ctg cgc cgg ctg gtg ccc cca ggc ctc tgg ggc
1296

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Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly
            420                 425                 430

tcc agg cac aac gaa cgc cgc ttc ctc agg aac acc aag aag ttc atc
1344
Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile
        435                 440                 445

tcc ctg ggg aag cat gcc aag ctc tcg ctg cag gag ctg acg tgg aag
1392
Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys
    450                 455                 460

atg agc gtg cgg ggc tgc gct tgg ctg cgc agg agc cca ggg gtt ggc
1440
Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly
465                 470                 475                 480

tgt gtt ccg gcc gca gag cac cgt ctg cgt gag gag atc ctg gcc aag
1488
Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys
                485                 490                 495

ttc ctg cac tgg ctg atg agt gtg tac gtc gtc gag ctg ctc agg tca
1536
Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser
            500                 505                 510

ttc ttt tac gtg acg gag acc acg ttt caa aag aac agg ctg ttt ttc
1584
Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe
        515                 520                 525

tac cgg aag agt gtc tgg agc aag ttg caa agc att gga atc aga cag
1632
Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln
    530                 535                 540

cac ttg aag agg gtg cag ctg cgg gag ctg tcg gaa gca gag gtc agg
1680
His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg
545                 550                 555                 560

cag cat cgg gaa gcc agg ccc gcc ctg ctg acg tcc aga ctc cgc ttc
1728
Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe
                565                 570                 575

atc ccc aag cct gac ggg ctg cgg ccg att gtg aac atg gac tac gtc
1776
Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val
            580                 585                 590

gtg gga gcc aga acg ttc cgc aga gaa aag agg gcc gag cgt ctc acc
1824
Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr
        595                 600                 605
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tca cgg gtg aag gca ctg ttc agc gtg ctc aac tac gag cgg gct cgg
1872
Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg
    610                 615                 620

cgc cct ggc ctc ctg ggc gcc tct gtg ctg ggc ctg gac gat atc cac
1920
Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His
625                 630                 635                 640

agg gcc tgg cgc acc ttc gtg ctg cgt gtg cgg gcc cag gac ccg ccg
1968
Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro
                645                 650                 655

cct gag ctg tac ttt gtc aag gtg gat gtg acg ggc gcg tac gac acc
2016
Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr
            660                 665                 670

atc ccc cag gac agg ctc acg gag gtc atc gcc agc atc atc aaa ccc
2064
Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro
        675                 680                 685

cag aac acg tac tgc gtg cgt cgg tat gcc gtg gtc cag aag gcc gcc
2112
Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala
    690                 695                 700

cat ggg cac gtc cgc aag gcc ttc aag agc cac gtc tct acc ttg aca
2160
His Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr
705                 710                 715                 720

gac ctc cag ccg tac atg cga cag ttc gtg gct cac ctg cag gag acc
2208
Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr
                725                 730                 735

agc ccg ctg agg gat gcc gtc gtc atc gag cag agc tcc tcc ctg aat
2256
Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn
            740                 745                 750

gag gcc agc agt ggc ctc ttc gac gtc ttc cta cgc ttc atg tgc cac
2304
Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His
        755                 760                 765

cac gcc gtg cgc atc agg ggc aag tcc tac gtc cag tgc cag ggc atc
2352
His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile
    770                 775                 780
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ccg cag ggc tcc atc ctc tcc acg ctg ctc tgc agc ctg tgc tac ggc
2400
Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly
785                 790                 795                 800

gac atg gag aac aag ctg ttt gcg ggg att cgg cgg gac ggg ctg ctc
2448
Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu
                805                 810                 815

ctg cgt ttg ttc ttg ttg gtg aca cct cac ctc acc cac gcg aaa acc
2496
Leu Arg Leu Phe Leu Leu Val Thr Pro His Leu Thr His Ala Lys Thr
            820                 825                 830

ttc ctc agg acc ctg gtc cga ggt gtc cct gag tat ggc tgc gtg gtg
2544
Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val
        835                 840                 845

aac ttg cgg aag aca gtg gtg aac ttc cct gta gaa gac gag gcc ctg
2592
Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu
    850                 855                 860

ggt ggc acg gct ttt gtt cag atg ccg gcc cac ggc cta ttc ccc tgg
2640
Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp
865                 870                 875                 880

tgc ggc ctg ctg ctg gat acc cgg acc ctg gag gtg cag agc gac tac
2688
Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr
                885                 890                 895

tcc agc tat gcc cgg acc tcc atc aga gcc agt ctc acc ttc aac cgc
2736
Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg
            900                 905                 910

ggc ttc aag gct ggg agg aac atg cgt cgc aaa ctc ttt ggg gtc ttg
2784
Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val Leu
        915                 920                 925

cgg ctg aag tgt cac agc ctg ttt ctg gat ttg cag gtg aac agc ctc
2832
Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser Leu
    930                 935                 940

cag acg gtg tgc acc aac atc tac aag atc ctc ctg ctg cag gcg tac
2880
Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala Tyr
945                 950                 955                 960

agg ttt cac gca tgt gtg ctg cag ctc cca ttt cat cag caa gtt tgg
2928
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Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val Trp
                965                 970                 975

aag aac ccc aca ttt ttc ctg cgc gtc atc tct gac acg gcc tcc ctc
2976
Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala Ser Leu
            980                 985                 990

tgc tac tcc atc ctg aaa gcc aag  aac gca ggg atg tcg  ctg ggg gcc
3024
Cys Tyr Ser Ile Leu Lys Ala Lys  Asn Ala Gly Met Ser  Leu Gly Ala
        995                 1000                1005

aag ggc  gcc gcc ggc cct ctg  ccc tcc gag gcc gtg  cag tgg ctg
3069
Lys Gly  Ala Ala Gly Pro Leu  Pro Ser Glu Ala Val  Gln Trp Leu
    1010                1015                1020

tgc cac  caa gca ttc ctg ctc  aag ctg act cga cac  cgt gtc acc
3114
Cys His  Gln Ala Phe Leu Leu  Lys Leu Thr Arg His  Arg Val Thr
    1025                1030                1035

tac gtg  cca ctc ctg ggg tca  ctc agg aca gcc cag  acg cag ctg
3159
Tyr Val  Pro Leu Leu Gly Ser  Leu Arg Thr Ala Gln  Thr Gln Leu
    1040                1045                1050

agt cgg  aag ctc ccg ggg acg  acg ctg act gcc ctg  gag gcc gca
3204
Ser Arg  Lys Leu Pro Gly Thr  Thr Leu Thr Ala Leu  Glu Ala Ala
    1055                1060                1065

gcc aac  ccg gca ctg ccc tca  gac ttc aag acc atc  ctg gac
3246
Ala Asn  Pro Ala Leu Pro Ser  Asp Phe Lys Thr Ile  Leu Asp
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Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn
        35                  40                  45
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Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro
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Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val
65 70 75 80

Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg
85 90 95

Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe
100 105 110

Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu
115 120 125

Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser
130 135 140

Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val
145 150 155 160

Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg
165 170 175

Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg
180 185 190

Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser
195 200 205

Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys
210 215 220

Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly
225 230 235 240

Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His
245 250 255

His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr
260 265 270

Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser
275 280 285

Gly Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg
290 295 300

Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly
305 310 315 320

Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro
325 330 335

Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn
340 345 350

His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu
355 360 365

Arg Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro
370 375 380

Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg
385 390 395 400

Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly
405 410 415

Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly
420 425 430

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

Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys
450 455 460

Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly
465 470 475 480

Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys
485 490 495

Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser

500 505 510

Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe
515 520 525

Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln
530 535 540

His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg
545 550 555 560

Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe
565 570 575

Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val
580 585 590

Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr
595 600 605

Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg
610 615 620

Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His
625 630 635 640

Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro
645 650 655

Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr
660 665 670

Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro
675 680 685

Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala
690 695 700

His Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr
705 710 715 720

Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr
725 730 735

Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn
740 745 750

Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His
755 760 765

His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile
770 775 780

Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly
785 790 795 800

Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu
805 810 815

Leu Arg Leu Phe Leu Leu Val Thr Pro His Leu Thr His Ala Lys Thr
820 825 830

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

Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu
850 855 860

Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp
865 870 875 880

Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr
885 890 895

Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg
900 905 910

Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val Leu
915 920 925

Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser Leu
930 935 940

Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala Tyr
945 950 955 960

Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val Trp
965 970 975

Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala Ser Leu
980 985 990

Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu Gly Ala
995 1000 1005

Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln Trp Leu
1010 1015 1020

Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg Val Thr
1025 1030 1035

Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr Gln Leu
1040 1045 1050

Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu Ala Ala
1055 1060 1065

Ala Asn Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile Leu Asp
1070 1075 1080

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cag cgc ggg gac cct gct gct ttc aga gct ctc gtc gcc cag tgt ctg
96
Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu
20 25 30

gtc tgc gtt cct tgg gac gca cgg ccc cca ccc gcc gcc ccc agt ttc
144
Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe

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        35                  40                  45

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192
Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg
    50                  55                  60

ctt tgt gaa agg gga gca aag aac gtc ctt gcc ttt ggc ttc gct ttg
240
Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu
65                  70                  75                  80

ctc gat gga gca cgc gga ggc cct cct gag gca ttc act act agc gtc
288
Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val
                85                  90                  95

cgg tcc tac ctg ccc aac aca gtg acc gac gct ctg aga ggt tca ggt
336
Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly
            100                 105                 110

gcc tgg ggt ctg ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt cac
384
Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His
        115                 120                 125

ctc ctg gcc cgg tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc gca
432
Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala
    130                 135                 140

tac cag gtc tgc gga ccc cca ctt tat cag ctc ggc gct gct act cag
480
Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln
145                 150                 155                 160

gcc cgc cca cca cca cac gcc tca ggt cca aga cgc cgg ctg ggc tgc
528
Ala Arg Pro Pro Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys
                165                 170                 175

gaa cgg gca tgg aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc
576
Glu Arg Ala Trp Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly
            180                 185                 190

ctg cca gcc ccc gga gca agg aga cgc ggt gga tcc gcc agt cgc tca
624
Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser
        195                 200                 205

ctc ccc ttg cct aag agg cca aga aga gga gcc gcc cct gaa ccc gag
672
Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu
    210                 215                 220
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aga aca cct gtc ggc cag ggc tcc tgg gct cac ccc gga agg acc agg
720
Arg Thr Pro Val Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg
225                 230                 235                 240

ggc cca agc gat agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc
768
Gly Pro Ser Asp Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala
                245                 250                 255

gaa gag gct acc tcc ttg gaa gga gcc ctc agt ggc acc agg cat tct
816
Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser
            260                 265                 270

cat cca tct gtg ggt agg cag cat cat gcc ggc ccc ccc tct aca agc
864
His Pro Ser Val Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser
        275                 280                 285

aga cct ccc aga cct tgg gac aca ccc tgc cca cca gtg tat gcc gag
912
Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu
    290                 295                 300

acc aag cac ttt ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc
960
Thr Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro
305                 310                 315                 320

tct ttt ctg ctc tca agc ctc cgc ccc tct ctg acc gga gct cgc agg
1008
Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg
                325                 330                 335

ctg gtg gag acc atc ttt ctg ggc tca aga cca tgg atg cca ggc acc
1056
Leu Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr
            340                 345                 350

ccc cgc aga ctg ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct
1104
Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro
        355                 360                 365

ctc ttt ctg gaa ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc
1152
Leu Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val
    370                 375                 380

ctg ctg aag acc cac tgt cct ctg agg gcc gcc gtg acc cca gcc gcc
1200
Leu Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala
385                 390                 395                 400

ggt gtg tgt gct aga gaa aaa ccc cag ggc tca gtg gct gca cct gaa
1248
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Gly Val Cys Ala Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu
                405                 410                 415

gag gag gac act gac cct cgc cgc ctt gtc cag ttg ctc agg cag cat
1296
Glu Glu Asp Thr Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His
            420                 425                 430

tca tca cca tgg cag gtg tac ggc ttc gtg agg gct tgc ctg cgg aga
1344
Ser Ser Pro Trp Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg
        435                 440                 445

ctg gtc ccc ccc gga ttg tgg gga tct cgg cac aac gaa cgg cgc ttt
1392
Leu Val Pro Pro Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe
    450                 455                 460

ctg agg aat aca aag aag ttt atc tcc ctg ggc aag cat gca aag ctc
1440
Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu
465                 470                 475                 480

agc ttg cag gag ctg aca tgg aag atg agc gtt aga gga tgc gca tgg
1488
Ser Leu Gln Glu Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp
                485                 490                 495

ctc agg cgg tca cct gga gtt gga tgc gtt cca gca gca gag cac agg
1536
Leu Arg Arg Ser Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg
            500                 505                 510

ctg cgc gaa gag att ctc gca aag ttc ctg cac tgg ctt atg agc gtc
1584
Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val
        515                 520                 525

tac gtg gtc gaa ctg ctg cgg tct ttc ttc tac gtg aca gag acc act
1632
Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr
    530                 535                 540

ttt cag aag aac aga ctg ttc ttc tac agg aag tcc gtc tgg agc aag
1680
Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys
545                 550                 555                 560

ctc cag agt att ggt att aga cag cac ctt aag aga gtt cag ctt aga
1728
Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg
                565                 570                 575

gag ctg tcc gaa gct gaa gtc cgc cag cac cgc gaa gct cgc ccc gcc
1776
Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala
            580                 585                 590
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ctc ctg acc tct cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt aga
1824
Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg
        595                 600                 605

cct atc gtg aat atg gat tac gtc gtg ggt gcc cgc act ttc aga agg
1872
Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg
    610                 615                 620

gag aag cgc gcc gag aga ctg aca tct cgc gtg aag gca ctt ttt tct
1920
Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser
625                 630                 635                 640

gtg ctt aat tat gaa aga gcc cgc aga cct ggt ctt ctc gga gcc agc
1968
Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser
                645                 650                 655

gtg ctc ggc ctg gat gat atc cat cgg gct tgg cgc acc ttt gtg ctt
2016
Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu
            660                 665                 670

cgg gtg agg gca cag gat cct cct cct gag ctt tat ttt gtg aaa gtt
2064
Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val
        675                 680                 685

gat gtt act ggt gct tac gat aca atc cct cag gac cgg ctc acc gag
2112
Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu
    690                 695                 700

gtg atc gcc tct att atc aaa ccc cag aac acc tac tgc gtg aga agg
2160
Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg
705                 710                 715                 720

tac gcc gtc gtt cag aaa gcc gca cac gga cac gtg cgc aaa gct ttc
2208
Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe
                725                 730                 735

aaa tcc cac gtg tct acc ttg aca gac ctc cag cct tat atg cgg cag
2256
Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln
            740                 745                 750

ttt gtc gca cac ctg cag gag act agc ccc ttg agg gac gct gtg gtc
2304
Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val
        755                 760                 765
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atc gaa cag tcc agc tct ctc aat gag gca tcc tca ggc ctg ttt gat
2352
Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
770 775 780

gtg ttc ctg cgc ttt atg tgc cac cac gcc gtg cgg att agg ggc aag
2400
Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys
785 790 795 800

tct tac gtg cag tgc cag ggc atc cca cag ggt agc atc ctg agc aca
2448
Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
805 810 815

ctg ctg tgt agc ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc
2496
Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala
820 825 830

ggt atc aga aga ttc ctg ctg gtt acc ccc cat ctg act cat gcc aaa
2544
Gly Ile Arg Arg Phe Leu Leu Val Thr Pro His Leu Thr His Ala Lys
835 840 845

aca ttt ttg cgg act ctg gtt agg ggc gtg cca gag tat ggc tgt gtt
2592
Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val
850 855 860

gtg aat ttg cgg aaa act gtg gtt aat ttc cca gtg gag gac gaa gct
2640
Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala
865 870 875 880

ctc gga ggc aca gct ttt gtt cag atg cct gcc cac ggc ctg ttc cca
2688
Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro
885 890 895

tgg tgc gga ctg ctg ctc gat acc cgg acc ctc gag gtg cag tcc gat
2736
Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp
900 905 910

tat agt tcc tat gca aga aca tca att cgg gct agc ctg act ttc aac
2784
Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn
915 920 925

agg ggc ttc aag gcc ggc cgg aat atg aga agg aaa ctg ttc gga gtg
2832
Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val
930 935 940

ttg aga ctt aag tgt cat agt ctt ttt ttg gac ttg cag gtc aat tct
2880

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Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser
945                 950                 955                 960

ctc cag aca gtg tgt acc aac att tat aaa atc ctc ttg ctg cag gct
2928
Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala
                965                 970                 975

tac aga ttc cat gcc tgc gtc ctg cag ctg cct ttc cac cag cag gtg
2976
Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val
            980                 985                 990

tgg aaa aac cct acc ttc ttc ctg  cgg gtg att agc gac  acc gcc agt
3024
Trp Lys Asn Pro Thr Phe Phe Leu  Arg Val Ile Ser Asp  Thr Ala Ser
        995                 1000                1005

ctt tgc  tac tcc atc ttg aaa  gca aaa aac gct ggc  atg agc ttg
3069
Leu Cys  Tyr Ser Ile Leu Lys  Ala Lys Asn Ala Gly  Met Ser Leu
    1010                1015                1020

gga gct  aag ggc gcc gct gga  cct ctg ccc agt gaa  gca gtc cag
3114
Gly Ala  Lys Gly Ala Ala Gly  Pro Leu Pro Ser Glu  Ala Val Gln
    1025                1030                1035

tgg ctg  tgt cat cag gct ttc  ctc ctt aaa ctg aca  cgc cac cgc
3159
Trp Leu  Cys His Gln Ala Phe  Leu Leu Lys Leu Thr  Arg His Arg
    1040                1045                1050

gtg act  tac gtc cca ctc ctg  ggc tcc ctg aga act  gct cag acc
3204
Val Thr  Tyr Val Pro Leu Leu  Gly Ser Leu Arg Thr  Ala Gln Thr
    1055                1060                1065

cag ctt  tcc cgg aag ctt cca  ggc act acc ctt acc  gca ctc gaa
3249
Gln Leu  Ser Arg Lys Leu Pro  Gly Thr Thr Leu Thr  Ala Leu Glu
    1070                1075                1080

gca gcc  gcc aac cct gcc ctg  ccc tcc gac ttt aag  act atc ctg
3294
Ala Ala  Ala Asn Pro Ala Leu  Pro Ser Asp Phe Lys  Thr Ile Leu
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gac
3297
Asp
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Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu
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Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe
        35                  40                  45

Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg
    50                  55                  60

Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu
65                  70                  75                  80

Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val
                85                  90                  95

Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly
            100                 105                 110

Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His
        115                 120                 125

Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala
    130                 135                 140

Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln
145                 150                 155                 160

Ala Arg Pro Pro Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys
                165                 170                 175

Glu Arg Ala Trp Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly
            180                 185                 190

Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser
        195                 200                 205

Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu
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    210                 215                 220

Arg Thr Pro Val Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg
225                 230                 235                 240

Gly Pro Ser Asp Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala
                245                 250                 255

Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser
            260                 265                 270

His Pro Ser Val Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser
        275                 280                 285

Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu
    290                 295                 300

Thr Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro
305                 310                 315                 320

Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg
                325                 330                 335

Leu Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr
            340                 345                 350

Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro
        355                 360                 365

Leu Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val
    370                 375                 380

Leu Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala
385                 390                 395                 400

Gly Val Cys Ala Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu
                405                 410                 415

Glu Glu Asp Thr Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His
            420                 425                 430

Ser Ser Pro Trp Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg
        435                 440                 445
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Leu Val Pro Pro Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe
450 455 460

Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu
465 470 475 480

Ser Leu Gln Glu Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp
485 490 495

Leu Arg Arg Ser Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg
500 505 510

Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val
515 520 525

Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr
530 535 540

Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys
545 550 555 560

Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg
565 570 575

Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala
580 585 590

Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg
595 600 605

Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg
610 615 620

Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser
625 630 635 640

Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser
645 650 655

Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu
660 665 670

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Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val
        675                 680                 685

Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu
    690                 695                 700

Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg
705                 710                 715                 720

Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe
                725                 730                 735

Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln
            740                 745                 750

Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val
        755                 760                 765

Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
    770                 775                 780

Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys
785                 790                 795                 800

Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
                805                 810                 815

Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala
            820                 825                 830

Gly Ile Arg Arg Phe Leu Leu Val Thr Pro His Leu Thr His Ala Lys
        835                 840                 845

Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val
    850                 855                 860

Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala
865                 870                 875                 880

Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro
                885                 890                 895
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Trp Cys Gly Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp
900 905 910

Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn
915 920 925

Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val
930 935 940

Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser
945 950 955 960

Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala
965 970 975

Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val
980 985 990

Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala Ser
995 1000 1005

Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu
1010 1015 1020

Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln
1025 1030 1035

Trp Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg
1040 1045 1050

Val Thr Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr
1055 1060 1065

Gln Leu Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu
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Ala Ala Ala Asn Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile Leu
1085 1090 1095

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cag cgc ggg gac cct gct gct ttc aga gct ctc gtc gcc cag tgt ctg
96
Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu
20 25 30

gtc tgc gtt cct tgg gac gca cgg ccc cca ccc gcc gcc ccc agt ttc
144
Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe
35 40 45

cgg cag gtg agt tgt ctc aaa gag ttg gtt gct cgg gtg ttg cag cgg
192
Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg
50 55 60

ctt tgt gaa agg gga gca aag aac gtc ctt gcc ttt ggc ttc gct ttg
240
Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu
65 70 75 80

ctc gat gga gca cgc gga ggc cct cct gag gca ttc act act agc gtc
288
Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val
85 90 95

cgg tcc tac ctg ccc aac aca gtg acc gac gct ctg aga ggt tca ggt
336
Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly
100 105 110

gcc tgg ggt ctg ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt cac
384
Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His
115 120 125

ctc ctg gcc cgg tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc gca
432
Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala
130 135 140

tac cag gtc tgc gga ccc cca ctt tat cag ctc ggc gct gct act cag
480

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Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln
145                 150                 155                 160

gcc cgc cca cca cca cac gcc tca ggt cca aga cgc cgg ctg ggc tgc
528
Ala Arg Pro Pro Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys
                165                 170                 175

gaa cgg gca tgg aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc
576
Glu Arg Ala Trp Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly
            180                 185                 190

ctg cca gcc ccc gga gca agg aga cgc ggt gga tcc gcc agt cgc tca
624
Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser
        195                 200                 205

ctc ccc ttg cct aag agg cca aga aga gga gcc gcc cct gaa ccc gag
672
Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu
    210                 215                 220

aga aca cct gtc ggc cag ggc tcc tgg gct cac ccc gga agg acc agg
720
Arg Thr Pro Val Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg
225                 230                 235                 240

ggc cca agc gat agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc
768
Gly Pro Ser Asp Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala
                245                 250                 255

gaa gag gct acc tcc ttg gaa gga gcc ctc agt ggc acc agg cat tct
816
Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser
            260                 265                 270

cat cca tct gtg ggt agg cag cat cat gcc ggc ccc ccc tct aca agc
864
His Pro Ser Val Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser
        275                 280                 285

aga cct ccc aga cct tgg gac aca ccc tgc cca cca gtg tat gcc gag
912
Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu
    290                 295                 300

acc aag cac ttt ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc
960
Thr Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro
305                 310                 315                 320

tct ttt ctg ctc tca agc ctc cgc ccc tct ctg acc gga gct cgc agg
1008
Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg
                325                 330                 335
```

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ctg gtg gag acc atc ttt ctg ggc tca aga cca tgg atg cca ggc acc
1056
Leu Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr
            340                 345                 350

ccc cgc aga ctg ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct
1104
Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro
        355                 360                 365

ctc ttt ctg gaa ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc
1152
Leu Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val
    370                 375                 380

ctg ctg aag acc cac tgt cct ctg agg gcc gcc gtg acc cca gcc gcc
1200
Leu Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala
385                 390                 395                 400

ggt gtg tgt gct aga gaa aaa ccc cag ggc tca gtg gct gca cct gaa
1248
Gly Val Cys Ala Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu
                405                 410                 415

gag gag gac act gac cct cgc cgc ctt gtc cag ttg ctc agg cag cat
1296
Glu Glu Asp Thr Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His
            420                 425                 430

tca tca cca tgg cag gtg tac ggc ttc gtg agg gct tgc ctg cgg aga
1344
Ser Ser Pro Trp Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg
        435                 440                 445

ctg gtc ccc ccc gga ttg tgg gga tct cgg cac aac gaa cgg cgc ttt
1392
Leu Val Pro Pro Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe
    450                 455                 460

ctg agg aat aca aag aag ttt atc tcc ctg ggc aag cat gca aag ctc
1440
Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu
465                 470                 475                 480

agc ttg cag gag ctg aca tgg aag atg agc gtt aga gga tgc gca tgg
1488
Ser Leu Gln Glu Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp
                485                 490                 495

ctc agg cgg tca cct gga gtt gga tgc gtt cca gca gca gag cac agg
1536
Leu Arg Arg Ser Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg
            500                 505                 510
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ctg cgc gaa gag att ctc gca aag ttc ctg cac tgg ctt atg agc gtc
1584
Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val
        515                 520                 525

tac gtg gtc gaa ctg ctg cgg tct ttc ttc tac gtg aca gag acc act
1632
Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr
    530                 535                 540

ttt cag aag aac aga ctg ttc ttc tac agg aag tcc gtc tgg agc aag
1680
Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys
545                 550                 555                 560

ctc cag agt att ggt att aga cag cac ctt aag aga gtt cag ctt aga
1728
Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg
                565                 570                 575

gag ctg tcc gaa gct gaa gtc cgc cag cac cgc gaa gct cgc ccc gcc
1776
Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala
            580                 585                 590

ctc ctg acc tct cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt aga
1824
Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg
        595                 600                 605

cct atc gtg aat atg gat tac gtc gtg ggt gcc cgc act ttc aga agg
1872
Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg
    610                 615                 620

gag aag cgc gcc gag aga ctg aca tct cgc gtg aag gca ctt ttt tct
1920
Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser
625                 630                 635                 640

gtg ctt aat tat gaa aga gcc cgc aga cct ggt ctt ctc gga gcc agc
1968
Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser
                645                 650                 655

gtg ctc ggc ctg gat gat atc cat cgg gct tgg cgc acc ttt gtg ctt
2016
Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu
            660                 665                 670

cgg gtg agg gca cag gat cct cct cct gag ctt tat ttt gtg aaa gtt
2064
Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val
        675                 680                 685

gat gtt act ggt gct tac gat aca atc cct cag gac cgg ctc acc gag
2112
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Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu
    690                 695                 700

gtg atc gcc tct att atc aaa ccc cag aac acc tac tgc gtg aga agg
2160
Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg
705                 710                 715                 720

tac gcc gtc gtt cag aaa gcc gca cac gga cac gtg cgc aaa gct ttc
2208
Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe
                725                 730                 735

aaa tcc cac gtg tct acc ttg aca gac ctc cag cct tat atg cgg cag
2256
Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln
            740                 745                 750

ttt gtc gca cac ctg cag gag act agc ccc ttg agg gac gct gtg gtc
2304
Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val
        755                 760                 765

atc gaa cag tcc agc tct ctc aat gag gca tcc tca ggc ctg ttt gat
2352
Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
    770                 775                 780

gtg ttc ctg cgc ttt atg tgc cac cac gcc gtg cgg att agg ggc aag
2400
Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys
785                 790                 795                 800

tct tac gtg cag tgc cag ggc atc cca cag ggt agc atc ctg agc aca
2448
Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
                805                 810                 815

ctg ctg tgt agc ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc
2496
Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala
            820                 825                 830

ggt atc aga aga gac ggt ttg ctc ctg agg ctg ctg act cat gcc aaa
2544
Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Leu Thr His Ala Lys
        835                 840                 845

aca ttt ttg cgg act ctg gtt agg ggc gtg cca gag tat ggc tgt gtt
2592
Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val
    850                 855                 860

gtg aat ttg cgg aaa act gtg gtt aat ttc cca gtg gag gac gaa gct
2640
Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala
865                 870                 875                 880
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ctc gga ggc aca gct ttt gtt cag atg cct gcc cac ggc ctg ttc cca
2688
Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro
                885                 890                 895

tgg tgc gga ctg ctg ctc gat acc cgg acc ctc gag gtg cag tcc gat
2736
Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp
            900                 905                 910

tat agt tcc tat gca aga aca tca att cgg gct agc ctg act ttc aac
2784
Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn
        915                 920                 925

agg ggc ttc aag gcc ggc cgg aat atg aga agg aaa ctg ttc gga gtg
2832
Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val
    930                 935                 940

ttg aga ctt aag tgt cat agt ctt ttt ttg gac ttg cag gtc aat tct
2880
Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser
945                 950                 955                 960

ctc cag aca gtg tgt acc aac att tat aaa atc ctc ttg ctg cag gct
2928
Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala
                965                 970                 975

tac aga ttc cat gcc tgc gtc ctg cag ctg cct ttc cac cag cag gtg
2976
Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val
            980                 985                 990

tgg aaa aac cct acc ttc ttc ctg  cgg gtg att agc gac  acc gcc agt
3024
Trp Lys Asn Pro Thr Phe Phe Leu  Arg Val Ile Ser Asp  Thr Ala Ser
        995                 1000                1005

ctt tgc  tac tcc atc ttg aaa  gca aaa aac gct ggc  atg agc ttg
3069
Leu Cys  Tyr Ser Ile Leu Lys  Ala Lys Asn Ala Gly  Met Ser Leu
    1010                1015                1020

gga gct  aag ggc gcc gct gga  cct ctg ccc agt gaa  gca gtc cag
3114
Gly Ala  Lys Gly Ala Ala Gly  Pro Leu Pro Ser Glu  Ala Val Gln
    1025                1030                1035

tgg ctg  tgt cat cag gct ttc  ctc ctt aaa ctg aca  cgc cac cgc
3159
Trp Leu  Cys His Gln Ala Phe  Leu Leu Lys Leu Thr  Arg His Arg
    1040                1045                1050
```

```
gtg act  tac gtc cca ctc ctg  ggc tcc ctg aga act  gct cag acc
3204
Val Thr  Tyr Val Pro Leu Leu  Gly Ser Leu Arg Thr  Ala Gln Thr
    1055                 1060                 1065

cag ctt  tcc cgg aag ctt cca  ggc act acc ctt acc  gca ctc gaa
3249
Gln Leu  Ser Arg Lys Leu Pro  Gly Thr Thr Leu Thr  Ala Leu Glu
    1070                 1075                 1080

gca gcc  gcc aac cct gcc ctg  ccc tcc gac ttt aag  act atc ctg
3294
Ala Ala  Ala Asn Pro Ala Leu  Pro Ser Asp Phe Lys  Thr Ile Leu
    1085                 1090                 1095

gac
3297
Asp
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<210> 8
<211> 1099
<212> PRT
<213> Homo sapiens

<400> 8

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Leu Ala Thr Phe Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val
1               5                  10                  15

Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu
            20                  25                  30

Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe
        35                  40                  45

Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg
    50                  55                  60

Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu
65                  70                  75                  80

Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val
                85                  90                  95

Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly
            100                 105                 110

Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His
```

```
        115                 120                 125

Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala
    130                 135                 140

Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln
145                 150                 155                 160

Ala Arg Pro Pro Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys
                165                 170                 175

Glu Arg Ala Trp Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly
            180                 185                 190

Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser
        195                 200                 205

Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu
    210                 215                 220

Arg Thr Pro Val Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg
225                 230                 235                 240

Gly Pro Ser Asp Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala
                245                 250                 255

Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser
            260                 265                 270

His Pro Ser Val Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser
        275                 280                 285

Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu
    290                 295                 300

Thr Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro
305                 310                 315                 320

Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg
                325                 330                 335

Leu Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr
            340                 345                 350
```

```
Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro
        355                 360                 365

Leu Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val
    370                 375                 380

Leu Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala
385                 390                 395                 400

Gly Val Cys Ala Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu
                405                 410                 415

Glu Glu Asp Thr Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His
            420                 425                 430

Ser Ser Pro Trp Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg
        435                 440                 445

Leu Val Pro Pro Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe
    450                 455                 460

Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu
465                 470                 475                 480

Ser Leu Gln Glu Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp
                485                 490                 495

Leu Arg Arg Ser Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg
            500                 505                 510

Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val
        515                 520                 525

Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr
    530                 535                 540

Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys
545                 550                 555                 560

Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg
                565                 570                 575
```

Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala
580 585 590

Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg
595 600 605

Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg
610 615 620

Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser
625 630 635 640

Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser
645 650 655

Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu
660 665 670

Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val
675 680 685

Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu
690 695 700

Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg
705 710 715 720

Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe
725 730 735

Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln
740 745 750

Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val
755 760 765

Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
770 775 780

Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys
785 790 795 800

Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
805 810 815

Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala
820 825 830

Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Leu Thr His Ala Lys
835 840 845

Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val
850 855 860

Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala
865 870 875 880

Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro
885 890 895

Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp
900 905 910

Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn
915 920 925

Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val
930 935 940

Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser
945 950 955 960

Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala
965 970 975

Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val
980 985 990

Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala Ser
995 1000 1005

Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu
1010 1015 1020

Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln

```
    1025                1030                1035

Trp Leu  Cys His Gln Ala Phe  Leu Leu Lys Leu Thr  Arg His Arg
    1040                1045                1050

Val Thr  Tyr Val Pro Leu Leu  Gly Ser Leu Arg Thr  Ala Gln Thr
    1055                1060                1065

Gln Leu  Ser Arg Lys Leu Pro  Gly Thr Thr Leu Thr  Ala Leu Glu
    1070                1075                1080

Ala Ala  Ala Asn Pro Ala Leu  Pro Ser Asp Phe Lys  Thr Ile Leu
    1085                1090                1095

Asp
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<210> 9
<211> 3258
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(3258)

<400> 9

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48
Leu Ala Thr Phe Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val
1               5                   10                  15

cag cgc ggg gac cct gct gct ttc aga gct ctc gtc gcc cag tgt ctg
96
Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu
            20                  25                  30

gtc tgc gtt cct tgg gac gca cgg ccc cca ccc gcc gcc ccc agt ttc
144
Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe
        35                  40                  45

cgg cag gtg agt tgt ctc aaa gag ttg gtt gct cgg gtg ttg cag cgg
192
Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg
    50                  55                  60

ctt tgt gaa agg gga gca aag aac gtc ctt gcc ttt ggc ttc gct ttg
240
Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu
```

```
65                  70                  75                  80

ctc gat gga gca cgc gga ggc cct cct gag gca ttc act act agc gtc
288
Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val
                85                  90                  95

cgg tcc tac ctg ccc aac aca gtg acc gac gct ctg aga ggt tca ggt
336
Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly
            100                 105                 110

gcc tgg ggt ctg ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt cac
384
Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His
        115                 120                 125

ctc ctg gcc cgg tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc gca
432
Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala
    130                 135                 140

tac cag gtc tgc gga ccc cca ctt tat cag ctc ggc gct gct act cag
480
Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln
145                 150                 155                 160

gcc cgc cca cca cca cac gcc tca ggt cca aga cgc cgg ctg ggc tgc
528
Ala Arg Pro Pro Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys
                165                 170                 175

gaa cgg gca tgg aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc
576
Glu Arg Ala Trp Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly
            180                 185                 190

ctg cca gcc ccc gga gca agg aga cgc ggt gga tcc gcc agt cgc tca
624
Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser
        195                 200                 205

ctc ccc ttg cct aag agg cca aga aga gga gcc gcc cct gaa ccc gag
672
Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu
    210                 215                 220

aga aca cct gtc ggc cag ggc tcc tgg gct cac ccc gga agg acc agg
720
Arg Thr Pro Val Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg
225                 230                 235                 240

ggc cca agc gat agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc
768
Gly Pro Ser Asp Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala
                245                 250                 255
```

```
gaa gag gct acc tcc ttg gaa gga gcc ctc agt ggc acc agg cat tct
816
Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser
            260                 265                 270

cat cca tct gtg ggt agg cag cat cat gcc ggc ccc ccc tct aca agc
864
His Pro Ser Val Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser
        275                 280                 285

aga cct ccc aga cct tgg gac aca ccc tgc cca cca gtg tat gcc gag
912
Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu
    290                 295                 300

acc aag cac ttt ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc
960
Thr Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro
305                 310                 315                 320

tct ttt ctg ctc tca agc ctc cgc ccc tct ctg acc gga gct cgc agg
1008
Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg
                325                 330                 335

ctg gtg gag acc atc ttt ctg ggc tca aga cca tgg atg cca ggc acc
1056
Leu Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr
            340                 345                 350

ccc cgc aga ctg ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct
1104
Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro
        355                 360                 365

ctc ttt ctg gaa ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc
1152
Leu Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val
    370                 375                 380

ctg ctg aag acc cac tgt cct ctg agg gcc gcc gtg acc cca gcc gcc
1200
Leu Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala
385                 390                 395                 400

ggt gtg tgt gct aga gaa aaa ccc cag ggc tca gtg gct gca cct gaa
1248
Gly Val Cys Ala Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu
                405                 410                 415

gag gag gac act gac cct cgc cgc ctt gtc cag ttg ctc agg cag cat
1296
Glu Glu Asp Thr Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His
            420                 425                 430

tca tca cca tgg cag gtg tac ggc ttc gtg agg gct tgc ctg cgg aga
1344
```

```
Ser Ser Pro Trp Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg
        435                 440                 445

ctg gtc ccc ccc gga ttg tgg gga tct cgg cac aac gaa cgg cgc ttt
1392
Leu Val Pro Pro Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe
    450                 455                 460

ctg agg aat aca aag aag ttt atc tcc ctg ggc aag cat gca aag ctc
1440
Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu
465                 470                 475                 480

agc ttg cag gag ctg aca tgg aag atg agc gtt aga gga tgc gca tgg
1488
Ser Leu Gln Glu Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp
                485                 490                 495

ctc agg cgg tca cct gga gtt gga tgc gtt cca gca gca gag cac agg
1536
Leu Arg Arg Ser Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg
            500                 505                 510

ctg cgc gaa gag att ctc gca aag ttc ctg cac tgg ctt atg agc gtc
1584
Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val
        515                 520                 525

tac gtg gtc gaa ctg ctg cgg tct ttc ttc tac gtg aca gag acc act
1632
Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr
    530                 535                 540

ttt cag aag aac aga ctg ttc ttc tac agg aag tcc gtc tgg agc aag
1680
Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys
545                 550                 555                 560

ctc cag agt att ggt att aga cag cac ctt aag aga gtt cag ctt aga
1728
Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg
                565                 570                 575

gag ctg tcc gaa gct gaa gtc cgc cag cac cgc gaa gct cgc ccc gcc
1776
Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala
            580                 585                 590

ctc ctg acc tct cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt aga
1824
Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg
        595                 600                 605

cct atc gtg aat atg gat tac gtc gtg ggt gcc cgc act ttc aga agg
1872
Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg
    610                 615                 620
```

```
gag aag cgc gcc gag aga ctg aca tct cgc gtg aag gca ctt ttt tct
1920
Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser
625                 630                 635                 640

gtg ctt aat tat gaa aga gcc cgc aga cct ggt ctt ctc gga gcc agc
1968
Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser
                645                 650                 655

gtg ctc ggc ctg gat gat atc cat cgg gct tgg cgc acc ttt gtg ctt
2016
Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu
            660                 665                 670

cgg gtg agg gca cag gat cct cct cct gag ctt tat ttt gtg aaa gtt
2064
Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val
        675                 680                 685

gat gtt act ggt gct tac gat aca atc cct cag gac cgg ctc acc gag
2112
Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu
    690                 695                 700

gtg atc gcc tct att atc aaa ccc cag aac acc tac tgc gtg aga agg
2160
Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg
705                 710                 715                 720

tac gcc gtc gtt cag aaa gcc gca cac gga cac gtg cgc aaa gct ttc
2208
Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe
                725                 730                 735

aaa tcc cac gtg tct acc ttg aca gac ctc cag cct tat atg cgg cag
2256
Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln
            740                 745                 750

ttt gtc gca cac ctg cag gag act agc ccc ttg agg gac gct gtg gtc
2304
Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val
        755                 760                 765

atc gaa cag tcc agc tct ctc aat gag gca tcc tca ggc ctg ttt gat
2352
Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
    770                 775                 780

gtg ttc ctg cgc ttt atg tgc cac cac gcc gtg cgg att agg ggc aag
2400
Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys
785                 790                 795                 800
```

```
tct tac gtg cag tgc cag ggc atc cca cag ggt agc atc ctg agc aca
2448
Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
                805                 810                 815

ctg ctg tgt agc ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc
2496
Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala
            820                 825                 830

ggt gcc aaa aca ttt ttg cgg act ctg gtt agg ggc gtg cca gag tat
2544
Gly Ala Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr
        835                 840                 845

ggc tgt gtt gtg aat ttg cgg aaa act gtg gtt aat ttc cca gtg gag
2592
Gly Cys Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu
    850                 855                 860

gac gaa gct ctc gga ggc aca gct ttt gtt cag atg cct gcc cac ggc
2640
Asp Glu Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly
865                 870                 875                 880

ctg ttc cca tgg tgc gga ctg ctg ctc gat acc cgg acc ctc gag gtg
2688
Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val
                885                 890                 895

cag tcc gat tat agt tcc tat gca aga aca tca att cgg gct agc ctg
2736
Gln Ser Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu
            900                 905                 910

act ttc aac agg ggc ttc aag gcc ggc cgg aat atg aga agg aaa ctg
2784
Thr Phe Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu
        915                 920                 925

ttc gga gtg ttg aga ctt aag tgt cat agt ctt ttt ttg gac ttg cag
2832
Phe Gly Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln
    930                 935                 940

gtc aat tct ctc cag aca gtg tgt acc aac att tat aaa atc ctc ttg
2880
Val Asn Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu
945                 950                 955                 960

ctg cag gct tac aga ttc cat gcc tgc gtc ctg cag ctg cct ttc cac
2928
Leu Gln Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His
                965                 970                 975

cag cag gtg tgg aaa aac cct acc ttc ttc ctg cgg gtg att agc gac
2976
```

```
Gln Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp
            980                 985                 990

acc gcc agt ctt tgc tac tcc atc  ttg aaa gca aaa aac  gct ggc atg
3024
Thr Ala Ser Leu Cys Tyr Ser Ile  Leu Lys Ala Lys Asn  Ala Gly Met
        995                 1000                1005

agc ttg  gga gct aag ggc gcc  gct gga cct ctg ccc  agt gaa gca
3069
Ser Leu  Gly Ala Lys Gly Ala  Ala Gly Pro Leu Pro  Ser Glu Ala
    1010                1015                1020

gtc cag  tgg ctg tgt cat cag  gct ttc ctc ctt aaa  ctg aca cgc
3114
Val Gln  Trp Leu Cys His Gln  Ala Phe Leu Leu Lys  Leu Thr Arg
    1025                1030                1035

cac cgc  gtg act tac gtc cca  ctc ctg ggc tcc ctg  aga act gct
3159
His Arg  Val Thr Tyr Val Pro  Leu Leu Gly Ser Leu  Arg Thr Ala
    1040                1045                1050

cag acc  cag ctt tcc cgg aag  ctt cca ggc act acc  ctt acc gca
3204
Gln Thr  Gln Leu Ser Arg Lys  Leu Pro Gly Thr Thr  Leu Thr Ala
    1055                1060                1065

ctc gaa  gca gcc gcc aac cct  gcc ctg ccc tcc gac  ttt aag act
3249
Leu Glu  Ala Ala Ala Asn Pro  Ala Leu Pro Ser Asp  Phe Lys Thr
    1070                1075                1080

atc ctg  gac
3258
Ile Leu  Asp
    1085


<210>  10
<211>  1086
<212>  PRT
<213>  Homo sapiens

<400>  10

Leu Ala Thr Phe Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val
1               5                   10                  15


Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu
            20                  25                  30


Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe
        35                  40                  45
```

```
Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg
    50                  55                  60

Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu
65                  70                  75                  80

Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val
                85                  90                  95

Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly
            100                 105                 110

Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His
        115                 120                 125

Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala
    130                 135                 140

Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln
145                 150                 155                 160

Ala Arg Pro Pro Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys
                165                 170                 175

Glu Arg Ala Trp Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly
            180                 185                 190

Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser
        195                 200                 205

Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu
    210                 215                 220

Arg Thr Pro Val Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg
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Gly Pro Ser Asp Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala
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Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser
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His Pro Ser Val Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser
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Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu
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Thr Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro
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Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg
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Leu Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr
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Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro
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Leu Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val
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Leu Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala
385                 390                 395                 400

Gly Val Cys Ala Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu
                405                 410                 415

Glu Glu Asp Thr Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His
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Ser Ser Pro Trp Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg
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Leu Val Pro Pro Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe
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Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu
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Ser Leu Gln Glu Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp
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Leu Arg Arg Ser Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg
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Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr
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Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys
545 550 555 560

Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg
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Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala
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Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg
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Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg
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Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser
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Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu
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Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val
675 680 685

Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu
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Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg
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Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe
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Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln
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Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val
755 760 765

Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
770 775 780

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785 790 795 800

Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
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Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala
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Gly Ala Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr
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Gly Cys Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu
850 855 860

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Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val
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Gln Ser Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu
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Thr Phe Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu
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Phe Gly Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln
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Val Asn Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu
945 950 955 960

Leu Gln Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His
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Gln Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp
980 985 990

Thr Ala Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met
995 1000 1005

Ser Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala
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Val Gln Trp Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg
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His Arg Val Thr Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala
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Gln Thr Gln Leu Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala
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Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr

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Leu Glu Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile
15                  20                  25                  30

caa gat aaa gaa ggc atc cca ccc gac cag cag agg ctc atc ttt gct
3625
Gln Asp Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala
                35                  40                  45

ggc aag cag ctg gaa gat ggc cgc act ctg tct gac tac aac atc cag
3673
Gly Lys Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln
            50                  55                  60

aaa gag tcg acc ctg cac ctg gtc ctg cgt ctg aga ggc ggc cgc gct
3721
Lys Glu Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Arg Ala
        65                  70                  75

ctg gtg gcc cag tgc ctg gtg tgc gtg ccc tgg gac gca cgg cca ccc
3769
Leu Val Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro Pro
    80                  85                  90

cct gcc gca ccc tca ttc cgc caa gtg tcc tgc ctg aag gag ctg gtg
3817
Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu Val
95                  100                 105                 110

gcc cga gtg ctg cag agg ctg tgc gag cgc ggc gcg aag aac gtg ctg
3865
Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val Leu
                115                 120                 125

gcc ttc ggc ttc gcg ctg ctg gac ggg gct cgc gga ggc cca ccc gag
3913
Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu
            130                 135                 140

gcc ttc acc acc agc gtg cgc agc tac ctg ccc aac acg gtg acc gac
3961
Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp
        145                 150                 155

gca ctg cgg ggg agc ggg gcg tgg ggg ctg ctg ttg cgc cgc gtg ggc
4009
Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val Gly
    160                 165                 170

gac gac gtg ctg gtt cac ctg ctg gca cgc tgc gcg ctc ttt gtg ctg
4057
Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val Leu
175                 180                 185                 190
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gtg gct ccc agc tgc gcc tac cag gtg tgc ggg ccg ccg ctg tac cag
4105
Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln
                195                 200                 205

ctc ggc gct gcc act cag gca cgg cct cca cct cac gct agt gga ccc
4153
Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly Pro
            210                 215                 220

cga agg cgt ctg gga tgc gaa cgg gcc tgg aac cat agc gtc agg gag
4201
Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg Glu
        225                 230                 235

gcc ggg gtc ccc ctg ggc ctg cca gcc ccg ggt gcg agg agg cgc ggg
4249
Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly
    240                 245                 250

ggc agt gcc agc cga agt ctg ccg ttg ccc aag agg ccc agg cgt ggc
4297
Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly
255                 260                 265                 270

gct gcc cct gag ccg gag cgg acg ccc gtt ggg cag ggg tcc tgg gcc
4345
Ala Ala Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser Trp Ala
                275                 280                 285

cac ccg ggc agg acg cgt gga ccg agt gac cgt ggt ttc tgt gtg gtg
4393
His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val Val
            290                 295                 300

tca cct gcc aga ccc gcc gaa gaa gcc acc tct ttg gag ggt gcg ctc
4441
Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu
        305                 310                 315

tct ggc acg cgc cac tcc cac cca tcc gtg ggc cgc cag cac cac gcg
4489
Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His Ala
    320                 325                 330

ggc ccc cca tcc aca tcg cgg cca cca cgt ccc tgg gac acg cct tgt
4537
Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys
335                 340                 345                 350

ccc ccg gtg tac gcc gag acc aag cac ttc ctc tac tcc tca ggc gac
4585
Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly Asp
                355                 360                 365

aag gag cag ctg cgg cca tcc ttc ctg ctg agc tct ctg agg ccc agc
4633
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Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser
            370                 375                 380

ctg act ggc gct cgg agg ctc gtg gag acc atc ttt ctg ggt tcc agg
4681
Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser Arg
        385                 390                 395

ccc tgg atg cca ggg act ccc cgc agg ttg ccc cgc ctg ccc cag cgc
4729
Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg
    400                 405                 410

tac tgg caa atg cgg ccc ctg ttt ctg gag ctg ctt ggg aac cac gcg
4777
Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His Ala
415                 420                 425                 430

cag tgc ccc tac ggg gtg ctc ctc aag acg cac tgc ccg ctg cga gct
4825
Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg Ala
                435                 440                 445

gcg gtc acc cca gca gcc ggt gtc tgt gcc cgg gag aag ccc cag ggc
4873
Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln Gly
            450                 455                 460

tct gtg gcg gcc ccc gag gag gag gac aca gac ccc cgt cgc ctg gtg
4921
Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu Val
        465                 470                 475

cag ctg ctc cgc cag cac agc agc ccc tgg cag gtg tac ggc ttc gtg
4969
Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe Val
    480                 485                 490

cgg gcc tgc ctg cgc cgg ctg gtg ccc cca ggc ctc tgg ggc tcc agg
5017
Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser Arg
495                 500                 505                 510

cac aac gaa cgc cgc ttc ctc agg aac acc aag aag ttc atc tcc ctg
5065
His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu
                515                 520                 525

ggg aag cat gcc aag ctc tcg ctg cag gag ctg acg tgg aag atg agc
5113
Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met Ser
            530                 535                 540

gtg cgg ggc tgc gct tgg ctg cgc agg agc cca ggg gtt ggc tgt gtt
5161
Val Arg Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys Val
        545                 550                 555
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Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu
    560                 565                 570

cac tgg ctg atg agt gtg tac gtc gtc gag ctg ctc agg tca ttc ttt
5257
His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe Phe
575                 580                 585                 590

tac gtg acg gag acc acg ttt caa aag aac agg ctg ttt ttc tac cgg
5305
Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg
                595                 600                 605

aag agt gtc tgg agc aag ttg caa agc att gga atc aga cag cac ttg
5353
Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His Leu
            610                 615                 620

aag agg gtg cag ctg cgg gag ctg tcg gaa gca gag gtc agg cag cat
5401
Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg Gln His
        625                 630                 635

cgg gaa gcc agg ccc gcc ctg ctg acg tcc aga ctc cgc ttc atc ccc
5449
Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro
    640                 645                 650

aag cct gac ggg ctg cgg ccg att gtg aac atg gac tac gtc gtg gga
5497
Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val Gly
655                 660                 665                 670

gcc aga acg ttc cgc aga gaa aag agg gcc gag cgt ctc acc tca cgg
5545
Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg
                675                 680                 685

gtg aag gca ctg ttc agc gtg ctc aac tac gag cgg gct cgg cgc cct
5593
Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro
            690                 695                 700

ggc ctc ctg ggc gcc tct gtg ctg ggc ctg gac gat atc cac agg gcc
5641
Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg Ala
        705                 710                 715

tgg cgc acc ttc gtg ctg cgt gtg cgg gcc cag gac ccg ccg cct gag
5689
Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro Glu
    720                 725                 730
```

```
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Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro
735                 740                 745                 750

cag gac agg ctc acg gag gtc atc gcc agc atc atc aaa ccc cag aac
5785
Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln Asn
                755                 760                 765

acg tac tgc gtg cgt cgg tat gcc gtg gtc cag aag gcc gcc cat ggg
5833
Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His Gly
            770                 775                 780

cac gtc cgc aag gcc ttc aag agc cac gtc tct acc ttg aca gac ctc
5881
His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp Leu
        785                 790                 795

cag ccg tac atg cga cag ttc gtg gct cac ctg cag gag acc agc ccg
5929
Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser Pro
    800                 805                 810

ctg agg gat gcc gtc gtc atc gag cag agc tcc tcc ctg aat gag gcc
5977
Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala
815                 820                 825                 830

agc agt ggc ctc ttc gac gtc ttc cta cgc ttc atg tgc cac cac gcc
6025
Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His Ala
                835                 840                 845

gtg cgc atc agg ggc aag tcc tac gtc cag tgc cag ggc atc ccg cag
6073
Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln
            850                 855                 860

ggc tcc atc ctc tcc acg ctg ctc tgc agc ctg tgc tac ggc gac atg
6121
Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met
        865                 870                 875

gag aac aag ctg ttt gcg ggg att cgg cgg gac ggg ctg ctc ctg cgt
6169
Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg
    880                 885                 890

ttg ttc ttg ttg gtg aca cct cac ctc acc cac gcg aaa acc ttc ctc
6217
Leu Phe Leu Leu Val Thr Pro His Leu Thr His Ala Lys Thr Phe Leu
895                 900                 905                 910

agg acc ctg gtc cga ggt gtc cct gag tat ggc tgc gtg gtg aac ttg
6265
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Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu
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6313
Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu Gly Gly
            930                 935                 940

acg gct ttt gtt cag atg ccg gcc cac ggc cta ttc ccc tgg tgc ggc
6361
Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly
        945                 950                 955

ctg ctg ctg gat acc cgg acc ctg gag gtg cag agc gac tac tcc agc
6409
Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser
    960                 965                 970

tat gcc cgg acc tcc atc aga gcc agt ctc acc ttc aac cgc ggc ttc
6457
Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg Gly Phe
975                 980                 985                 990

aag gct ggg agg aac atg cgt cgc aaa ctc  ttt ggg gtc ttg cgg  ctg
6505
Lys Ala Gly Arg Asn Met Arg Arg Lys Leu  Phe Gly Val Leu Arg  Leu
                995                 1000                1005

aag tgt cac agc  ctg ttt ctg gat ttg  cag gtg aac agc ctc  cag
6550
Lys Cys His Ser  Leu Phe Leu Asp Leu  Gln Val Asn Ser Leu  Gln
            1010                1015                1020

acg gtg tgc acc  aac atc tac aag atc  ctc ctg ctg cag gcg  tac
6595
Thr Val Cys Thr  Asn Ile Tyr Lys Ile  Leu Leu Leu Gln Ala  Tyr
            1025                1030                1035

agg ttt cac gca  tgt gtg ctg cag ctc  cca ttt cat cag caa  gtt
6640
Arg Phe His Ala  Cys Val Leu Gln Leu  Pro Phe His Gln Gln  Val
            1040                1045                1050

tgg aag aac ccc  aca ttt ttc ctg cgc  gtc atc tct gac acg  gcc
6685
Trp Lys Asn Pro  Thr Phe Phe Leu Arg  Val Ile Ser Asp Thr  Ala
            1055                1060                1065

tcc ctc tgc tac  tcc atc ctg aaa gcc  aag aac gca ggg atg  tcg
6730
Ser Leu Cys Tyr  Ser Ile Leu Lys Ala  Lys Asn Ala Gly Met  Ser
            1070                1075                1080

ctg ggg gcc aag  ggc gcc gcc ggc cct  ctg ccc tcc gag gcc  gtg
6775
Leu Gly Ala Lys  Gly Ala Ala Gly Pro  Leu Pro Ser Glu Ala  Val
            1085                1090                1095
```

```
cag tgg ctg tgc  cac caa gca ttc ctg  ctc aag ctg act cga  cac
6820
Gln Trp Leu Cys  His Gln Ala Phe Leu  Leu Lys Leu Thr Arg  His
            1100                1105                1110

cgt gtc acc tac  gtg cca ctc ctg ggg  tca ctc agg aca gcc  cag
6865
Arg Val Thr Tyr  Val Pro Leu Leu Gly  Ser Leu Arg Thr Ala  Gln
            1115                1120                1125

acg cag ctg agt  cgg aag ctc ccg ggg  acg acg ctg act gcc  ctg
6910
Thr Gln Leu Ser  Arg Lys Leu Pro Gly  Thr Thr Leu Thr Ala  Leu
            1130                1135                1140

gag gcc gca gcc  aac ccg gca ctg ccc  tca gac ttc aag acc  atc
6955
Glu Ala Ala Ala  Asn Pro Ala Leu Pro  Ser Asp Phe Lys Thr  Ile
            1145                1150                1155

ctg gac taataatcta gaagatcttt ttccctctgc caaaaattat ggggacatca
7011
Leu Asp


tgaagcccct tgagcatctg acttctggct aataaaggaa atttattttc attgcaatag
7071

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7120


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Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30


Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45


Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
    50                  55                  60
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Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Arg Ala Leu Val
65 70 75 80

Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala
85 90 95

Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg
100 105 110

Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe
115 120 125

Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro Glu Ala Phe
130 135 140

Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu
145 150 155 160

Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp
165 170 175

Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala
180 185 190

Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly
195 200 205

Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly Pro Arg Arg
210 215 220

Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg Glu Ala Gly
225 230 235 240

Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser
245 250 255

Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Ala
260 265 270

Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser Trp Ala His Pro
275 280 285

```
Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val Val Ser Pro
    290                 295                 300

Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala Leu Ser Gly
305                 310                 315                 320

Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His Ala Gly Pro
                325                 330                 335

Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro Cys Pro Pro
            340                 345                 350

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

Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr
    370                 375                 380

Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp
385                 390                 395                 400

Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp
                405                 410                 415

Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys
            420                 425                 430

Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val
        435                 440                 445

Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln Gly Ser Val
    450                 455                 460

Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu Val Gln Leu
465                 470                 475                 480

Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe Val Arg Ala
                485                 490                 495

Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser Arg His Asn
            500                 505                 510
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Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu Gly Lys
515 520 525

His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met Ser Val Arg
530 535 540

Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys Val Pro Ala
545 550 555 560

Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His Trp
565 570 575

Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr Val
580 585 590

Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys Ser
595 600 605

Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys Arg
610 615 620

Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu
625 630 635 640

Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro
645 650 655

Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg
660 665 670

Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys
675 680 685

Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu
690 695 700

Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg
705 710 715 720

Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr
725 730 735

Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp

740 745 750

Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr
755 760 765

Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val
770 775 780

Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro
785 790 795 800

Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg
805 810 815

Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser
820 825 830

Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His Ala Val Arg
835 840 845

Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser
850 855 860

Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn
865 870 875 880

Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Phe
885 890 895

Leu Leu Val Thr Pro His Leu Thr His Ala Lys Thr Phe Leu Arg Thr
900 905 910

Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg Lys
915 920 925

Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu Gly Gly Thr Ala
930 935 940

Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu Leu
945 950 955 960

Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr Ala
965 970 975

Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg Gly Phe Lys Ala
980 985 990

Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val Leu Arg Leu Lys Cys
995 1000 1005

His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser Leu Gln Thr Val
1010 1015 1020

Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala Tyr Arg Phe
1025 1030 1035

His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val Trp Lys
1040 1045 1050

Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala Ser Leu
1055 1060 1065

Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu Gly
1070 1075 1080

Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln Trp
1085 1090 1095

Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg Val
1100 1105 1110

Thr Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr Gln
1115 1120 1125

Leu Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu Ala
1130 1135 1140

Ala Ala Asn Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile Leu Asp
1145 1150 1155

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1 5 10 15

gtg gag cca agc gac act att gag aac gtc aaa gcc aag att cag gac
96
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
20 25 30

aag gag ggc atc cca cca gac cag cag agg ctg att ttt gcc gga aag
144
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
35 40 45

cag ctg gag gac gga cgc aca ctc agt gac tac aat atc cag aag gaa
192
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
50 55 60

agt act ctg cat ctg gtc ctt cgc ctg cgc ggc gga ctg gcc acc ttc
240
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65 70 75 80

gtg cgg cgc ctg gga ccc cag ggc tgg cgg ctg gtg cag cgc ggg gac
288
Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
85 90 95

cct gct gct ttc aga gct ctc gtc gcc cag tgt ctg gtc tgc gtt cct
336
Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
100 105 110

tgg gac gca cgg ccc cca ccc gcc gcc ccc agt ttc cgg cag gtg agt
384
Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
115 120 125

tgt ctc aaa gag ttg gtt gct cgg gtg ttg cag cgg ctt tgt gaa agg
432
Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
130 135 140

gga gca aag aac gtc ctt gcc ttt ggc ttc gct ttg ctc gat gga gca
480
Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145 150 155 160

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cgc gga ggc cct cct gag gca ttc act act agc gtc cgg tcc tac ctg
528
Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
                165                 170                 175

ccc aac aca gtg acc gac gct ctg aga ggt tca ggt gcc tgg ggt ctg
576
Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
            180                 185                 190

ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt cac ctc ctg gcc cgg
624
Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
        195                 200                 205

tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc gca tac cag gtc tgc
672
Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
    210                 215                 220

gga ccc cca ctt tat cag ctc ggc gct gct act cag gcc cgc cca cca
720
Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro
225                 230                 235                 240

cca cac gcc tca ggt cca aga cgc cgg ctg ggc tgc gaa cgg gca tgg
768
Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
                245                 250                 255

aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc ctg cca gcc ccc
816
Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
            260                 265                 270

gga gca agg aga cgc ggt gga tcc gcc agt cgc tca ctc ccc ttg cct
864
Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
        275                 280                 285

aag agg cca aga aga gga gcc gcc cct gaa ccc gag aga aca cct gtc
912
Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
    290                 295                 300

ggc cag ggc tcc tgg gct cac ccc gga agg acc agg ggc cca agc gat
960
Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305                 310                 315                 320

agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc gaa gag gct acc
1008
Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
                325                 330                 335

tcc ttg gaa gga gcc ctc agt ggc acc agg cat tct cat cca tct gtg
1056
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```
Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
            340                 345                 350

ggt agg cag cat cat gcc ggc ccc ccc tct aca agc aga cct ccc aga
1104
Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
        355                 360                 365

cct tgg gac aca ccc tgc cca cca gtg tat gcc gag acc aag cac ttt
1152
Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
    370                 375                 380

ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc tct ttt ctg ctc
1200
Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu
385                 390                 395                 400

tca agc ctc cgc ccc tct ctg acc gga gct cgc agg ctg gtg gag acc
1248
Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
                405                 410                 415

atc ttt ctg ggc tca aga cca tgg atg cca ggc acc ccc cgc aga ctg
1296
Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
            420                 425                 430

ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct ctc ttt ctg gaa
1344
Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
        435                 440                 445

ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc ctg ctg aag acc
1392
Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
    450                 455                 460

cac tgt cct ctg agg gcc gcc gtg acc cca gcc gcc ggt gtg tgt gct
1440
His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala
465                 470                 475                 480

aga gaa aaa ccc cag ggc tca gtg gct gca cct gaa gag gag gac act
1488
Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
                485                 490                 495

gac cct cgc cgc ctt gtc cag ttg ctc agg cag cat tca tca cca tgg
1536
Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
            500                 505                 510

cag gtg tac ggc ttc gtg agg gct tgc ctg cgg aga ctg gtc ccc ccc
1584
Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
        515                 520                 525
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gga ttg tgg gga tct cgg cac aac gaa cgg cgc ttt ctg agg aat aca
1632
Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
    530                 535                 540

aag aag ttt atc tcc ctg ggc aag cat gca aag ctc agc ttg cag gag
1680
Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545                 550                 555                 560

ctg aca tgg aag atg agc gtt aga gga tgc gca tgg ctc agg cgg tca
1728
Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575

cct gga gtt gga tgc gtt cca gca gca gag cac agg ctg cgc gaa gag
1776
Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
            580                 585                 590

att ctc gca aag ttc ctg cac tgg ctt atg agc gtc tac gtg gtc gaa
1824
Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
        595                 600                 605

ctg ctg cgg tct ttc ttc tac gtg aca gag acc act ttt cag aag aac
1872
Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
    610                 615                 620

aga ctg ttc ttc tac agg aag tcc gtc tgg agc aag ctc cag agt att
1920
Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625                 630                 635                 640

ggt att aga cag cac ctt aag aga gtt cag ctt aga gag ctg tcc gaa
1968
Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
                645                 650                 655

gct gaa gtc cgc cag cac cgc gaa gct cgc ccc gcc ctc ctg acc tct
2016
Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
            660                 665                 670

cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt aga cct atc gtg aat
2064
Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
        675                 680                 685

atg gat tac gtc gtg ggt gcc cgc act ttc aga agg gag aag cgc gcc
2112
Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
    690                 695                 700
```

```
gag aga ctg aca tct cgc gtg aag gca ctt ttt tct gtg ctt aat tat
2160
Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705                 710                 715                 720

gaa aga gcc cgc aga cct ggt ctt ctc gga gcc agc gtg ctc ggc ctg
2208
Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
                725                 730                 735

gat gat atc cat cgg gct tgg cgc acc ttt gtg ctt cgg gtg agg gca
2256
Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
            740                 745                 750

cag gat cct cct cct gag ctt tat ttt gtg aaa gtt gat gtt act ggt
2304
Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
        755                 760                 765

gct tac gat aca atc cct cag gac cgg ctc acc gag gtg atc gcc tct
2352
Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
    770                 775                 780

att atc aaa ccc cag aac acc tac tgc gtg aga agg tac gcc gtc gtt
2400
Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785                 790                 795                 800

cag aaa gcc gca cac gga cac gtg cgc aaa gct ttc aaa tcc cac gtg
2448
Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val
                805                 810                 815

tct acc ttg aca gac ctc cag cct tat atg cgg cag ttt gtc gca cac
2496
Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
            820                 825                 830

ctg cag gag act agc ccc ttg agg gac gct gtg gtc atc gaa cag tcc
2544
Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
        835                 840                 845

agc tct ctc aat gag gca tcc tca ggc ctg ttt gat gtg ttc ctg cgc
2592
Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
    850                 855                 860

ttt atg tgc cac cac gcc gtg cgg att agg ggc aag tct tac gtg cag
2640
Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865                 870                 875                 880

tgc cag ggc atc cca cag ggt agc atc ctg agc aca ctg ctg tgt agc
2688
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Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
                885                 890                 895

ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc ggt atc aga aga
2736
Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg
            900                 905                 910

ttc ctg ctg gtt acc ccc cat ctg act cat gcc aaa aca ttt ttg cgg
2784
Phe Leu Leu Val Thr Pro His Leu Thr His Ala Lys Thr Phe Leu Arg
        915                 920                 925

act ctg gtt agg ggc gtg cca gag tat ggc tgt gtt gtg aat ttg cgg
2832
Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg
    930                 935                 940

aaa act gtg gtt aat ttc cca gtg gag gac gaa gct ctc gga ggc aca
2880
Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu Gly Gly Thr
945                 950                 955                 960

gct ttt gtt cag atg cct gcc cac ggc ctg ttc cca tgg tgc gga ctg
2928
Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu
                965                 970                 975

ctg ctc gat acc cgg acc ctc gag gtg cag tcc gat tat agt tcc tat
2976
Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr
            980                 985                 990

gca aga aca tca att cgg gct agc  ctg act ttc aac agg  ggc ttc aag
3024
Ala Arg Thr Ser Ile Arg Ala Ser  Leu Thr Phe Asn Arg  Gly Phe Lys
        995                 1000                1005

gcc ggc  cgg aat atg aga agg  aaa ctg ttc gga gtg  ttg aga ctt
3069
Ala Gly  Arg Asn Met Arg Arg  Lys Leu Phe Gly Val  Leu Arg Leu
    1010                1015                1020

aag tgt  cat agt ctt ttt ttg  gac ttg cag gtc aat  tct ctc cag
3114
Lys Cys  His Ser Leu Phe Leu  Asp Leu Gln Val Asn  Ser Leu Gln
    1025                1030                1035

aca gtg  tgt acc aac att tat  aaa atc ctc ttg ctg  cag gct tac
3159
Thr Val  Cys Thr Asn Ile Tyr  Lys Ile Leu Leu Leu  Gln Ala Tyr
    1040                1045                1050

aga ttc  cat gcc tgc gtc ctg  cag ctg cct ttc cac  cag cag gtg
3204
Arg Phe  His Ala Cys Val Leu  Gln Leu Pro Phe His  Gln Gln Val
    1055                1060                1065
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tgg aaa  aac cct acc ttc ttc  ctg cgg gtg att agc  gac acc gcc
3249
Trp Lys  Asn Pro Thr Phe Phe  Leu Arg Val Ile Ser  Asp Thr Ala
    1070                 1075                 1080

agt ctt  tgc tac tcc atc ttg  aaa gca aaa aac gct  ggc atg agc
3294
Ser Leu  Cys Tyr Ser Ile Leu  Lys Ala Lys Asn Ala  Gly Met Ser
    1085                 1090                 1095

ttg gga  gct aag ggc gcc gct  gga cct ctg ccc agt  gaa gca gtc
3339
Leu Gly  Ala Lys Gly Ala Ala  Gly Pro Leu Pro Ser  Glu Ala Val
    1100                 1105                 1110

cag tgg  ctg tgt cat cag gct  ttc ctc ctt aaa ctg  aca cgc cac
3384
Gln Trp  Leu Cys His Gln Ala  Phe Leu Leu Lys Leu  Thr Arg His
    1115                 1120                 1125

cgc gtg  act tac gtc cca ctc  ctg ggc tcc ctg aga  act gct cag
3429
Arg Val  Thr Tyr Val Pro Leu  Leu Gly Ser Leu Arg  Thr Ala Gln
    1130                 1135                 1140

acc cag  ctt tcc cgg aag ctt  cca ggc act acc ctt  acc gca ctc
3474
Thr Gln  Leu Ser Arg Lys Leu  Pro Gly Thr Thr Leu  Thr Ala Leu
    1145                 1150                 1155

gaa gca  gcc gcc aac cct gcc  ctg ccc tcc gac ttt  aag act atc
3519
Glu Ala  Ala Ala Asn Pro Ala  Leu Pro Ser Asp Phe  Lys Thr Ile
    1160                 1165                 1170

ctg gac  ggc aag cca att cct  aat cca ttg ctg ggc  ctg gac tca
3564
Leu Asp  Gly Lys Pro Ile Pro  Asn Pro Leu Leu Gly  Leu Asp Ser
    1175                 1180                 1185

act tga
3570
Thr
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<400> 14

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1 5 10 15

Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
20 25 30

Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
35 40 45

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

Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65 70 75 80

Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
85 90 95

Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
100 105 110

Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
115 120 125

Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
130 135 140

Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145 150 155 160

Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
165 170 175

Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
180 185 190

Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
195 200 205

Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
210 215 220

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

225 230 235 240

Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
245 250 255

Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
260 265 270

Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
275 280 285

Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
290 295 300

Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305 310 315 320

Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
325 330 335

Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
340 345 350

Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
355 360 365

Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
370 375 380

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

Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
405 410 415

Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
420 425 430

Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
435 440 445

Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
450 455 460

```
His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala
465                 470                 475                 480

Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
                485                 490                 495

Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
            500                 505                 510

Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
        515                 520                 525

Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
    530                 535                 540

Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545                 550                 555                 560

Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575

Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
            580                 585                 590

Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
        595                 600                 605

Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
    610                 615                 620

Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625                 630                 635                 640

Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
                645                 650                 655

Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
            660                 665                 670

Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
        675                 680                 685
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Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
690 695 700

Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705 710 715 720

Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
725 730 735

Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
740 745 750

Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
755 760 765

Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
770 775 780

Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785 790 795 800

Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val
805 810 815

Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
820 825 830

Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
835 840 845

Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
850 855 860

Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865 870 875 880

Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
885 890 895

Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg
900 905 910

Phe Leu Leu Val Thr Pro His Leu Thr His Ala Lys Thr Phe Leu Arg
915 920 925

Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg
930 935 940

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

Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu
965 970 975

Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr
980 985 990

Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg Gly Phe Lys
995 1000 1005

Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val Leu Arg Leu
1010 1015 1020

Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser Leu Gln
1025 1030 1035

Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala Tyr
1040 1045 1050

Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val
1055 1060 1065

Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala
1070 1075 1080

Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser
1085 1090 1095

Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val
1100 1105 1110

Gln Trp Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His
1115 1120 1125

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

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    1130                1135                1140

Thr Gln  Leu Ser Arg Lys Leu  Pro Gly Thr Thr Leu  Thr Ala Leu
    1145                1150                1155

Glu Ala  Ala Ala Asn Pro Ala  Leu Pro Ser Asp Phe  Lys Thr Ile
    1160                1165                1170

Leu Asp  Gly Lys Pro Ile Pro  Asn Pro Leu Leu Gly  Leu Asp Ser
    1175                1180                1185

Thr
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<213> Artificial

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<222> (1)..(3570)

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Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
1               5                   10                  15

gtg gag cca agc gac act att gag aac gtc aaa gcc aag att cag gac
96
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30

aag gag ggc atc cca cca gac cag cag agg ctg att ttt gcc gga aag
144
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45

cag ctg gag gac gga cgc aca ctc agt gac tac aat atc cag aag gaa
192
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
    50                  55                  60

agt act ctg cat ctg gtc ctt cgc ctg cgc ggc gga ctg gcc acc ttc
240
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65                  70                  75                  80
```

```
gtg cgg cgc ctg gga ccc cag ggc tgg cgg ctg gtg cag cgc ggg gac
288
Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
                85                  90                  95

cct gct gct ttc aga gct ctc gtc gcc cag tgt ctg gtc tgc gtt cct
336
Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
            100                 105                 110

tgg gac gca cgg ccc cca ccc gcc gcc ccc agt ttc cgg cag gtg agt
384
Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
        115                 120                 125

tgt ctc aaa gag ttg gtt gct cgg gtg ttg cag cgg ctt tgt gaa agg
432
Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
    130                 135                 140

gga gca aag aac gtc ctt gcc ttt ggc ttc gct ttg ctc gat gga gca
480
Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145                 150                 155                 160

cgc gga ggc cct cct gag gca ttc act act agc gtc cgg tcc tac ctg
528
Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
                165                 170                 175

ccc aac aca gtg acc gac gct ctg aga ggt tca ggt gcc tgg ggt ctg
576
Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
            180                 185                 190

ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt cac ctc ctg gcc cgg
624
Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
        195                 200                 205

tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc gca tac cag gtc tgc
672
Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
    210                 215                 220

gga ccc cca ctt tat cag ctc ggc gct gct act cag gcc cgc cca cca
720
Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro
225                 230                 235                 240

cca cac gcc tca ggt cca aga cgc cgg ctg ggc tgc gaa cgg gca tgg
768
Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
                245                 250                 255
```

```
aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc ctg cca gcc ccc
816
Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
            260                 265                 270

gga gca agg aga cgc ggt gga tcc gcc agt cgc tca ctc ccc ttg cct
864
Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
        275                 280                 285

aag agg cca aga aga gga gcc gcc cct gaa ccc gag aga aca cct gtc
912
Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
    290                 295                 300

ggc cag ggc tcc tgg gct cac ccc gga agg acc agg ggc cca agc gat
960
Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305                 310                 315                 320

agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc gaa gag gct acc
1008
Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
                325                 330                 335

tcc ttg gaa gga gcc ctc agt ggc acc agg cat tct cat cca tct gtg
1056
Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
            340                 345                 350

ggt agg cag cat cat gcc ggc ccc ccc tct aca agc aga cct ccc aga
1104
Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
        355                 360                 365

cct tgg gac aca ccc tgc cca cca gtg tat gcc gag acc aag cac ttt
1152
Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
    370                 375                 380

ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc tct ttt ctg ctc
1200
Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu
385                 390                 395                 400

tca agc ctc cgc ccc tct ctg acc gga gct cgc agg ctg gtg gag acc
1248
Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
                405                 410                 415

atc ttt ctg ggc tca aga cca tgg atg cca ggc acc ccc cgc aga ctg
1296
Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
            420                 425                 430

ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct ctc ttt ctg gaa
1344
```

```
Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
        435                 440                 445

ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc ctg ctg aag acc
1392
Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
    450                 455                 460

cac tgt cct ctg agg gcc gcc gtg acc cca gcc gcc ggt gtg tgt gct
1440
His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala
465                 470                 475                 480

aga gaa aaa ccc cag ggc tca gtg gct gca cct gaa gag gag gac act
1488
Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
                485                 490                 495

gac cct cgc cgc ctt gtc cag ttg ctc agg cag cat tca tca cca tgg
1536
Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
            500                 505                 510

cag gtg tac ggc ttc gtg agg gct tgc ctg cgg aga ctg gtc ccc ccc
1584
Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
        515                 520                 525

gga ttg tgg gga tct cgg cac aac gaa cgg cgc ttt ctg agg aat aca
1632
Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
    530                 535                 540

aag aag ttt atc tcc ctg ggc aag cat gca aag ctc agc ttg cag gag
1680
Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545                 550                 555                 560

ctg aca tgg aag atg agc gtt aga gga tgc gca tgg ctc agg cgg tca
1728
Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575

cct gga gtt gga tgc gtt cca gca gca gag cac agg ctg cgc gaa gag
1776
Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
            580                 585                 590

att ctc gca aag ttc ctg cac tgg ctt atg agc gtc tac gtg gtc gaa
1824
Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
        595                 600                 605

ctg ctg cgg tct ttc ttc tac gtg aca gag acc act ttt cag aag aac
1872
Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
    610                 615                 620
```

```
aga ctg ttc ttc tac agg aag tcc gtc tgg agc aag ctc cag agt att
1920
Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625                 630                 635                 640

ggt att aga cag cac ctt aag aga gtt cag ctt aga gag ctg tcc gaa
1968
Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
                645                 650                 655

gct gaa gtc cgc cag cac cgc gaa gct cgc ccc gcc ctc ctg acc tct
2016
Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
            660                 665                 670

cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt aga cct atc gtg aat
2064
Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
        675                 680                 685

atg gat tac gtc gtg ggt gcc cgc act ttc aga agg gag aag cgc gcc
2112
Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
    690                 695                 700

gag aga ctg aca tct cgc gtg aag gca ctt ttt tct gtg ctt aat tat
2160
Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705                 710                 715                 720

gaa aga gcc cgc aga cct ggt ctt ctc gga gcc agc gtg ctc ggc ctg
2208
Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
                725                 730                 735

gat gat atc cat cgg gct tgg cgc acc ttt gtg ctt cgg gtg agg gca
2256
Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
            740                 745                 750

cag gat cct cct cct gag ctt tat ttt gtg aaa gtt gat gtt act ggt
2304
Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
        755                 760                 765

gct tac gat aca atc cct cag gac cgg ctc acc gag gtg atc gcc tct
2352
Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
    770                 775                 780

att atc aaa ccc cag aac acc tac tgc gtg aga agg tac gcc gtc gtt
2400
Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785                 790                 795                 800
```

```
cag aaa gcc gca cac gga cac gtg cgc aaa gct ttc aaa tcc cac gtg
2448
Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val
                805                 810                 815

tct acc ttg aca gac ctc cag cct tat atg cgg cag ttt gtc gca cac
2496
Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
            820                 825                 830

ctg cag gag act agc ccc ttg agg gac gct gtg gtc atc gaa cag tcc
2544
Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
        835                 840                 845

agc tct ctc aat gag gca tcc tca ggc ctg ttt gat gtg ttc ctg cgc
2592
Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
    850                 855                 860

ttt atg tgc cac cac gcc gtg cgg att agg ggc aag tct tac gtg cag
2640
Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865                 870                 875                 880

tgc cag ggc atc cca cag ggt agc atc ctg agc aca ctg ctg tgt agc
2688
Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
                885                 890                 895

ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc ggt atc aga aga
2736
Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg
            900                 905                 910

gac ggt ttg ctc ctg agg ctg ctg act cat gcc aaa aca ttt ttg cgg
2784
Asp Gly Leu Leu Leu Arg Leu Leu Thr His Ala Lys Thr Phe Leu Arg
        915                 920                 925

act ctg gtt agg ggc gtg cca gag tat ggc tgt gtt gtg aat ttg cgg
2832
Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg
    930                 935                 940

aaa act gtg gtt aat ttc cca gtg gag gac gaa gct ctc gga ggc aca
2880
Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu Gly Gly Thr
945                 950                 955                 960

gct ttt gtt cag atg cct gcc cac ggc ctg ttc cca tgg tgc gga ctg
2928
Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu
                965                 970                 975

ctg ctc gat acc cgg acc ctc gag gtg cag tcc gat tat agt tcc tat
2976
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Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr
            980                 985                 990

gca aga aca tca att cgg gct agc  ctg act ttc aac agg  ggc ttc aag
3024
Ala Arg Thr Ser Ile Arg Ala Ser  Leu Thr Phe Asn Arg  Gly Phe Lys
        995                 1000                1005

gcc ggc  cgg aat atg aga agg  aaa ctg ttc gga gtg  ttg aga ctt
3069
Ala Gly  Arg Asn Met Arg Arg  Lys Leu Phe Gly Val  Leu Arg Leu
    1010                1015                1020

aag tgt  cat agt ctt ttt ttg  gac ttg cag gtc aat  tct ctc cag
3114
Lys Cys  His Ser Leu Phe Leu  Asp Leu Gln Val Asn  Ser Leu Gln
    1025                1030                1035

aca gtg  tgt acc aac att tat  aaa atc ctc ttg ctg  cag gct tac
3159
Thr Val  Cys Thr Asn Ile Tyr  Lys Ile Leu Leu Leu  Gln Ala Tyr
    1040                1045                1050

aga ttc  cat gcc tgc gtc ctg  cag ctg cct ttc cac  cag cag gtg
3204
Arg Phe  His Ala Cys Val Leu  Gln Leu Pro Phe His  Gln Gln Val
    1055                1060                1065

tgg aaa  aac cct acc ttc ttc  ctg cgg gtg att agc  gac acc gcc
3249
Trp Lys  Asn Pro Thr Phe Phe  Leu Arg Val Ile Ser  Asp Thr Ala
    1070                1075                1080

agt ctt  tgc tac tcc atc ttg  aaa gca aaa aac gct  ggc atg agc
3294
Ser Leu  Cys Tyr Ser Ile Leu  Lys Ala Lys Asn Ala  Gly Met Ser
    1085                1090                1095

ttg gga  gct aag ggc gcc gct  gga cct ctg ccc agt  gaa gca gtc
3339
Leu Gly  Ala Lys Gly Ala Ala  Gly Pro Leu Pro Ser  Glu Ala Val
    1100                1105                1110

cag tgg  ctg tgt cat cag gct  ttc ctc ctt aaa ctg  aca cgc cac
3384
Gln Trp  Leu Cys His Gln Ala  Phe Leu Leu Lys Leu  Thr Arg His
    1115                1120                1125

cgc gtg  act tac gtc cca ctc  ctg ggc tcc ctg aga  act gct cag
3429
Arg Val  Thr Tyr Val Pro Leu  Leu Gly Ser Leu Arg  Thr Ala Gln
    1130                1135                1140

acc cag  ctt tcc cgg aag ctt  cca ggc act acc ctt  acc gca ctc
3474
Thr Gln  Leu Ser Arg Lys Leu  Pro Gly Thr Thr Leu  Thr Ala Leu
    1145                1150                1155
```

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gaa gca  gcc gcc aac cct gcc  ctg ccc tcc gac ttt  aag act atc
3519
Glu Ala  Ala Ala Asn Pro Ala  Leu Pro Ser Asp Phe  Lys Thr Ile
    1160                 1165                 1170

ctg gac  ggc aag cca att cct  aat cca ttg ctg ggc  ctg gac tca
3564
Leu Asp  Gly Lys Pro Ile Pro  Asn Pro Leu Leu Gly  Leu Asp Ser
    1175                 1180                 1185

act tga
3570
Thr
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<211> 1189
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<220>
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<400> 16

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Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30

Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45

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

Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65                  70                  75                  80

Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
                85                  90                  95

Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
            100                 105                 110

Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
        115                 120                 125
```

```
Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
    130                 135                 140

Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145                 150                 155                 160

Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
                165                 170                 175

Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
            180                 185                 190

Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
        195                 200                 205

Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
    210                 215                 220

Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro
225                 230                 235                 240

Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
                245                 250                 255

Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
            260                 265                 270

Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
        275                 280                 285

Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
    290                 295                 300

Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305                 310                 315                 320

Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
                325                 330                 335

Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
            340                 345                 350
```

```
Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
        355                 360                 365

Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
    370                 375                 380

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

Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
                405                 410                 415

Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
            420                 425                 430

Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
        435                 440                 445

Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
    450                 455                 460

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

Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
                485                 490                 495

Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
            500                 505                 510

Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
        515                 520                 525

Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
    530                 535                 540

Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545                 550                 555                 560

Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575
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Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
580 585 590

Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
595 600 605

Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
610 615 620

Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625 630 635 640

Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
645 650 655

Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
660 665 670

Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
675 680 685

Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
690 695 700

Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705 710 715 720

Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
725 730 735

Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
740 745 750

Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
755 760 765

Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
770 775 780

Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785 790 795 800

Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val

805 810 815

Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
820 825 830

Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
835 840 845

Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
850 855 860

Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865 870 875 880

Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
885 890 895

Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg
900 905 910

Asp Gly Leu Leu Leu Arg Leu Leu Thr His Ala Lys Thr Phe Leu Arg
915 920 925

Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg
930 935 940

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

Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu
965 970 975

Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr
980 985 990

Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg Gly Phe Lys
995 1000 1005

Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val Leu Arg Leu
1010 1015 1020

Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser Leu Gln
1025 1030 1035

Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln Ala Tyr
1040 1045 1050

Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln Val
1055 1060 1065

Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala
1070 1075 1080

Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser
1085 1090 1095

Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val
1100 1105 1110

Gln Trp Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His
1115 1120 1125

Arg Val Thr Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln
1130 1135 1140

Thr Gln Leu Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu
1145 1150 1155

Glu Ala Ala Ala Asn Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile
1160 1165 1170

Leu Asp Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser
1175 1180 1185

Thr

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gtg gag cca agc gac act att gag aac gtc aaa gcc aag att cag gac
96
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
20 25 30

aag gag ggc atc cca cca gac cag cag agg ctg att ttt gcc gga aag
144
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
35 40 45

cag ctg gag gac gga cgc aca ctc agt gac tac aat atc cag aag gaa
192
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
50 55 60

agt act ctg cat ctg gtc ctt cgc ctg cgc ggc gga ctg gcc acc ttc
240
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65 70 75 80

gtg cgg cgc ctg gga ccc cag ggc tgg cgg ctg gtg cag cgc ggg gac
288
Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
85 90 95

cct gct gct ttc aga gct ctc gtc gcc cag tgt ctg gtc tgc gtt cct
336
Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
100 105 110

tgg gac gca cgg ccc cca ccc gcc gcc ccc agt ttc cgg cag gtg agt
384
Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
115 120 125

tgt ctc aaa gag ttg gtt gct cgg gtg ttg cag cgg ctt tgt gaa agg
432
Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
130 135 140

gga gca aag aac gtc ctt gcc ttt ggc ttc gct ttg ctc gat gga gca
480
Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145 150 155 160

cgc gga ggc cct cct gag gca ttc act act agc gtc cgg tcc tac ctg
528
Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
165 170 175

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ccc aac aca gtg acc gac gct ctg aga ggt tca ggt gcc tgg ggt ctg
576
Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
            180                 185                 190

ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt cac ctc ctg gcc cgg
624
Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
        195                 200                 205

tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc gca tac cag gtc tgc
672
Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
    210                 215                 220

gga ccc cca ctt tat cag ctc ggc gct gct act cag gcc cgc cca cca
720
Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro
225                 230                 235                 240

cca cac gcc tca ggt cca aga cgc cgg ctg ggc tgc gaa cgg gca tgg
768
Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
                245                 250                 255

aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc ctg cca gcc ccc
816
Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
            260                 265                 270

gga gca agg aga cgc ggt gga tcc gcc agt cgc tca ctc ccc ttg cct
864
Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
        275                 280                 285

aag agg cca aga aga gga gcc gcc cct gaa ccc gag aga aca cct gtc
912
Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
    290                 295                 300

ggc cag ggc tcc tgg gct cac ccc gga agg acc agg ggc cca agc gat
960
Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305                 310                 315                 320

agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc gaa gag gct acc
1008
Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
                325                 330                 335

tcc ttg gaa gga gcc ctc agt ggc acc agg cat tct cat cca tct gtg
1056
Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
            340                 345                 350
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ggt agg cag cat cat gcc ggc ccc ccc tct aca agc aga cct ccc aga
1104
Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
        355                 360                 365

cct tgg gac aca ccc tgc cca cca gtg tat gcc gag acc aag cac ttt
1152
Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
    370                 375                 380

ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc tct ttt ctg ctc
1200
Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu
385                 390                 395                 400

tca agc ctc cgc ccc tct ctg acc gga gct cgc agg ctg gtg gag acc
1248
Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
                405                 410                 415

atc ttt ctg ggc tca aga cca tgg atg cca ggc acc ccc cgc aga ctg
1296
Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
            420                 425                 430

ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct ctc ttt ctg gaa
1344
Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
        435                 440                 445

ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc ctg ctg aag acc
1392
Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
    450                 455                 460

cac tgt cct ctg agg gcc gcc gtg acc cca gcc gcc ggt gtg tgt gct
1440
His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala
465                 470                 475                 480

aga gaa aaa ccc cag ggc tca gtg gct gca cct gaa gag gag gac act
1488
Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
                485                 490                 495

gac cct cgc cgc ctt gtc cag ttg ctc agg cag cat tca tca cca tgg
1536
Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
            500                 505                 510

cag gtg tac ggc ttc gtg agg gct tgc ctg cgg aga ctg gtc ccc ccc
1584
Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
        515                 520                 525

gga ttg tgg gga tct cgg cac aac gaa cgg cgc ttt ctg agg aat aca
1632
```

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Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
    530                 535                 540

aag aag ttt atc tcc ctg ggc aag cat gca aag ctc agc ttg cag gag
1680
Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545                 550                 555                 560

ctg aca tgg aag atg agc gtt aga gga tgc gca tgg ctc agg cgg tca
1728
Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575

cct gga gtt gga tgc gtt cca gca gca gag cac agg ctg cgc gaa gag
1776
Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
            580                 585                 590

att ctc gca aag ttc ctg cac tgg ctt atg agc gtc tac gtg gtc gaa
1824
Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
        595                 600                 605

ctg ctg cgg tct ttc ttc tac gtg aca gag acc act ttt cag aag aac
1872
Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
    610                 615                 620

aga ctg ttc ttc tac agg aag tcc gtc tgg agc aag ctc cag agt att
1920
Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625                 630                 635                 640

ggt att aga cag cac ctt aag aga gtt cag ctt aga gag ctg tcc gaa
1968
Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
                645                 650                 655

gct gaa gtc cgc cag cac cgc gaa gct cgc ccc gcc ctc ctg acc tct
2016
Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
            660                 665                 670

cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt aga cct atc gtg aat
2064
Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
        675                 680                 685

atg gat tac gtc gtg ggt gcc cgc act ttc aga agg gag aag cgc gcc
2112
Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
    690                 695                 700

gag aga ctg aca tct cgc gtg aag gca ctt ttt tct gtg ctt aat tat
2160
Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705                 710                 715                 720
```

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gaa aga gcc cgc aga cct ggt ctt ctc gga gcc agc gtg ctc ggc ctg
2208
Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
                725                 730                 735

gat gat atc cat cgg gct tgg cgc acc ttt gtg ctt cgg gtg agg gca
2256
Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
            740                 745                 750

cag gat cct cct cct gag ctt tat ttt gtg aaa gtt gat gtt act ggt
2304
Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
        755                 760                 765

gct tac gat aca atc cct cag gac cgg ctc acc gag gtg atc gcc tct
2352
Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
    770                 775                 780

att atc aaa ccc cag aac acc tac tgc gtg aga agg tac gcc gtc gtt
2400
Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785                 790                 795                 800

cag aaa gcc gca cac gga cac gtg cgc aaa gct ttc aaa tcc cac gtg
2448
Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val
                805                 810                 815

tct acc ttg aca gac ctc cag cct tat atg cgg cag ttt gtc gca cac
2496
Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
            820                 825                 830

ctg cag gag act agc ccc ttg agg gac gct gtg gtc atc gaa cag tcc
2544
Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
        835                 840                 845

agc tct ctc aat gag gca tcc tca ggc ctg ttt gat gtg ttc ctg cgc
2592
Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
    850                 855                 860

ttt atg tgc cac cac gcc gtg cgg att agg ggc aag tct tac gtg cag
2640
Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865                 870                 875                 880

tgc cag ggc atc cca cag ggt agc atc ctg agc aca ctg ctg tgt agc
2688
Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
                885                 890                 895
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ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc ggt gcc aaa aca
2736
Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ala Lys Thr
            900                 905                 910

ttt ttg cgg act ctg gtt agg ggc gtg cca gag tat ggc tgt gtt gtg
2784
Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val
        915                 920                 925

aat ttg cgg aaa act gtg gtt aat ttc cca gtg gag gac gaa gct ctc
2832
Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu
    930                 935                 940

gga ggc aca gct ttt gtt cag atg cct gcc cac ggc ctg ttc cca tgg
2880
Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp
945                 950                 955                 960

tgc gga ctg ctg ctc gat acc cgg acc ctc gag gtg cag tcc gat tat
2928
Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr
                965                 970                 975

agt tcc tat gca aga aca tca att cgg gct agc ctg act ttc aac agg
2976
Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg
            980                 985                 990

ggc ttc aag gcc ggc cgg aat atg  aga agg aaa ctg ttc  gga gtg ttg
3024
Gly Phe Lys Ala Gly Arg Asn Met  Arg Arg Lys Leu Phe  Gly Val Leu
        995                 1000                1005

aga ctt  aag tgt cat agt ctt  ttt ttg gac ttg cag  gtc aat tct
3069
Arg Leu  Lys Cys His Ser Leu  Phe Leu Asp Leu Gln  Val Asn Ser
    1010                1015                1020

ctc cag  aca gtg tgt acc aac  att tat aaa atc ctc  ttg ctg cag
3114
Leu Gln  Thr Val Cys Thr Asn  Ile Tyr Lys Ile Leu  Leu Leu Gln
    1025                1030                1035

gct tac  aga ttc cat gcc tgc  gtc ctg cag ctg cct  ttc cac cag
3159
Ala Tyr  Arg Phe His Ala Cys  Val Leu Gln Leu Pro  Phe His Gln
    1040                1045                1050

cag gtg  tgg aaa aac cct acc  ttc ttc ctg cgg gtg  att agc gac
3204
Gln Val  Trp Lys Asn Pro Thr  Phe Phe Leu Arg Val  Ile Ser Asp
    1055                1060                1065

acc gcc  agt ctt tgc tac tcc  atc ttg aaa gca aaa  aac gct ggc
3249
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Thr Ala  Ser Leu Cys Tyr Ser  Ile Leu Lys Ala Lys  Asn Ala Gly
    1070                 1075                 1080

atg agc  ttg gga gct aag ggc  gcc gct gga cct ctg  ccc agt gaa
3294
Met Ser  Leu Gly Ala Lys Gly  Ala Ala Gly Pro Leu  Pro Ser Glu
    1085                 1090                 1095

gca gtc  cag tgg ctg tgt cat  cag gct ttc ctc ctt  aaa ctg aca
3339
Ala Val  Gln Trp Leu Cys His  Gln Ala Phe Leu Leu  Lys Leu Thr
    1100                 1105                 1110

cgc cac  cgc gtg act tac gtc  cca ctc ctg ggc tcc  ctg aga act
3384
Arg His  Arg Val Thr Tyr Val  Pro Leu Leu Gly Ser  Leu Arg Thr
    1115                 1120                 1125

gct cag  acc cag ctt tcc cgg  aag ctt cca ggc act  acc ctt acc
3429
Ala Gln  Thr Gln Leu Ser Arg  Lys Leu Pro Gly Thr  Thr Leu Thr
    1130                 1135                 1140

gca ctc  gaa gca gcc gcc aac  cct gcc ctg ccc tcc  gac ttt aag
3474
Ala Leu  Glu Ala Ala Ala Asn  Pro Ala Leu Pro Ser  Asp Phe Lys
    1145                 1150                 1155

act atc  ctg gac ggc aag cca  att cct aat cca ttg  ctg ggc ctg
3519
Thr Ile  Leu Asp Gly Lys Pro  Ile Pro Asn Pro Leu  Leu Gly Leu
    1160                 1165                 1170

gac tca  act tga
3531
Asp Ser  Thr
    1175
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```

Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
35 40 45

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

Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65 70 75 80

Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
85 90 95

Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
100 105 110

Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
115 120 125

Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
130 135 140

Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145 150 155 160

Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
165 170 175

Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
180 185 190

Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
195 200 205

Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
210 215 220

Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro
225 230 235 240

Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
245 250 255

Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro

260 265 270

Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
275 280 285

Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
290 295 300

Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305 310 315 320

Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
325 330 335

Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
340 345 350

Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
355 360 365

Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
370 375 380

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

Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
405 410 415

Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
420 425 430

Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
435 440 445

Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
450 455 460

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

Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
485 490 495

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Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
            500                 505                 510

Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
        515                 520                 525

Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
    530                 535                 540

Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545                 550                 555                 560

Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575

Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
            580                 585                 590

Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
        595                 600                 605

Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
    610                 615                 620

Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625                 630                 635                 640

Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
                645                 650                 655

Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
            660                 665                 670

Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
        675                 680                 685

Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
    690                 695                 700

Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705                 710                 715                 720
```

Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
725 730 735

Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
740 745 750

Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
755 760 765

Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
770 775 780

Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785 790 795 800

Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val
805 810 815

Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
820 825 830

Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
835 840 845

Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
850 855 860

Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865 870 875 880

Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
885 890 895

Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ala Lys Thr
900 905 910

Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys Val Val
915 920 925

Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu Ala Leu
930 935 940

Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp
945 950 955 960

Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr
965 970 975

Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe Asn Arg
980 985 990

Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly Val Leu
995 1000 1005

Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn Ser
1010 1015 1020

Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln
1025 1030 1035

Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln
1040 1045 1050

Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp
1055 1060 1065

Thr Ala Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly
1070 1075 1080

Met Ser Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu
1085 1090 1095

Ala Val Gln Trp Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr
1100 1105 1110

Arg His Arg Val Thr Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr
1115 1120 1125

Ala Gln Thr Gln Leu Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr
1130 1135 1140

Ala Leu Glu Ala Ala Ala Asn Pro Ala Leu Pro Ser Asp Phe Lys
1145 1150 1155

Thr Ile Leu Asp Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu

1160 1165 1170

Asp Ser Thr
1175

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Asp Gly Leu Leu Leu Arg Leu
1 5

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Phe Leu Leu Val Thr Pro His
1 5

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Asp Gly Leu Leu Leu Arg Leu Val Asp Asp
1 5 10

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Val Asp Asp Phe Leu Leu Val Thr Pro His
1 5 10

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gtcgacaagc ttcccgggtc tagaagatct
30

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gcttttctgc caggtgctga
20

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gccagaagtc agatgctcaa
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Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Val Asp Asp Phe Leu Leu
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Val Thr Pro His Leu Thr His
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cggtgggagg tctatataag
20

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18

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Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu
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Arg Pro Ala Glu Glu Ala Thr Ser Leu
1 5

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Leu Pro Ser Asp Phe Lys Thr Ile Leu
1 5

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Ile Leu Ala Lys Phe Leu His Trp Leu
1 5

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Tyr Leu Phe Phe Tyr Arg Lys Ser Val
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Tyr Leu Gln Val Asn Ser Leu Gln Thr Val
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Ser Val Trp Ser Lys Leu Gln Ser Ile
1 5

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Ser Leu Cys Tyr Ser Ile Leu Lys Ala
1 5

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Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His
1 5 10 15

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Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe Pro Trp
1 5 10 15

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Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser
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Arg Pro Ile Val Asn Met Asp Tyr Val
1 5

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His Ala Gln Cys Pro Tyr Gly Val Leu
1 5

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Gln Ala Tyr Arg Phe His Ala Cys Val Leu
1 5 10

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Gln Thr Val Cys Thr Ile Asn Ile Tyr Lys Ile
1 5 10

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<220>
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Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
1 5 10 15

gtg gag cca agc gac act att gag aac gtc aaa gcc aag att cag gac
96
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
20 25 30

aag gag ggc atc cca cca gac cag cag agg ctg att ttt gcc gga aag
144
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
35 40 45

cag ctg gag gac gga cgc aca ctc agt gac tac aat atc cag aag gaa
192
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
50 55 60

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agt act ctg cat ctg gtc ctt cgc ctg cgc ggc gga ctg gcc acc ttc
240
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65                  70                  75                  80

gtg cgg cgc ctg gga ccc cag ggc tgg cgg ctg gtg cag cgc ggg gac
288
Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
                85                  90                  95

cct gct gct ttc aga gct ctc gtc gcc cag tgt ctg gtc tgc gtt cct
336
Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
            100                 105                 110

tgg gac gca cgg ccc cca ccc gcc gcc ccc agt ttc cgg cag gtg agt
384
Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
        115                 120                 125

tgt ctc aaa gag ttg gtt gct cgg gtg ttg cag cgg ctt tgt gaa agg
432
Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
    130                 135                 140

gga gca aag aac gtc ctt gcc ttt ggc ttc gct ttg ctc gat gga gca
480
Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145                 150                 155                 160

cgc gga ggc cct cct gag gca ttc act act agc gtc cgg tcc tac ctg
528
Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
                165                 170                 175

ccc aac aca gtg acc gac gct ctg aga ggt tca ggt gcc tgg ggt ctg
576
Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
            180                 185                 190

ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt cac ctc ctg gcc cgg
624
Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
        195                 200                 205

tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc gca tac cag gtc tgc
672
Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
    210                 215                 220

gga ccc cca ctt tat cag ctc ggc gct gct act cag gcc cgc cca cca
720
Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro
225                 230                 235                 240
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cca cac gcc tca ggt cca aga cgc cgg ctg ggc tgc gaa cgg gca tgg
768
Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
                245                 250                 255

aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc ctg cca gcc ccc
816
Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
            260                 265                 270

gga gca agg aga cgc ggt gga tcc gcc agt cgc tca ctc ccc ttg cct
864
Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
        275                 280                 285

aag agg cca aga aga gga gcc gcc cct gaa ccc gag aga aca cct gtc
912
Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
    290                 295                 300

ggc cag ggc tcc tgg gct cac ccc gga agg acc agg ggc cca agc gat
960
Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305                 310                 315                 320

agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc gaa gag gct acc
1008
Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
                325                 330                 335

tcc ttg gaa gga gcc ctc agt ggc acc agg cat tct cat cca tct gtg
1056
Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
            340                 345                 350

ggt agg cag cat cat gcc ggc ccc ccc tct aca agc aga cct ccc aga
1104
Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
        355                 360                 365

cct tgg gac aca ccc tgc cca cca gtg tat gcc gag acc aag cac ttt
1152
Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
    370                 375                 380

ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc tct ttt ctg ctc
1200
Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu
385                 390                 395                 400

tca agc ctc cgc ccc tct ctg acc gga gct cgc agg ctg gtg gag acc
1248
Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
                405                 410                 415

atc ttt ctg ggc tca aga cca tgg atg cca ggc acc ccc cgc aga ctg
1296
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Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
            420                 425                 430

ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct ctc ttt ctg gaa
1344
Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
        435                 440                 445

ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc ctg ctg aag acc
1392
Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
    450                 455                 460

cac tgt cct ctg agg gcc gcc gtg acc cca gcc gcc ggt gtg tgt gct
1440
His Cys Pro Leu Arg Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala
465                 470                 475                 480

aga gaa aaa ccc cag ggc tca gtg gct gca cct gaa gag gag gac act
1488
Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
                485                 490                 495

gac cct cgc cgc ctt gtc cag ttg ctc agg cag cat tca tca cca tgg
1536
Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
            500                 505                 510

cag gtg tac ggc ttc gtg agg gct tgc ctg cgg aga ctg gtc ccc ccc
1584
Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
        515                 520                 525

gga ttg tgg gga tct cgg cac aac gaa cgg cgc ttt ctg agg aat aca
1632
Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
    530                 535                 540

aag aag ttt atc tcc ctg ggc aag cat gca aag ctc agc ttg cag gag
1680
Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545                 550                 555                 560

ctg aca tgg aag atg agc gtt aga gga tgc gca tgg ctc agg cgg tca
1728
Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575

cct gga gtt gga tgc gtt cca gca gca gag cac agg ctg cgc gaa gag
1776
Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
            580                 585                 590

att ctc gca aag ttc ctg cac tgg ctt atg agc gtc tac gtg gtc gaa
1824
Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
        595                 600                 605
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ctg ctg cgg tct ttc ttc tac gtg aca gag acc act ttt cag aag aac
1872
Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
    610                 615                 620

aga ctg ttc ttc tac agg aag tcc gtc tgg agc aag ctc cag agt att
1920
Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625                 630                 635                 640

ggt att aga cag cac ctt aag aga gtt cag ctt aga gag ctg tcc gaa
1968
Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
                645                 650                 655

gct gaa gtc cgc cag cac cgc gaa gct cgc ccc gcc ctc ctg acc tct
2016
Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
            660                 665                 670

cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt aga cct atc gtg aat
2064
Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
        675                 680                 685

atg gat tac gtc gtg ggt gcc cgc act ttc aga agg gag aag cgc gcc
2112
Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
    690                 695                 700

gag aga ctg aca tct cgc gtg aag gca ctt ttt tct gtg ctt aat tat
2160
Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705                 710                 715                 720

gaa aga gcc cgc aga cct ggt ctt ctc gga gcc agc gtg ctc ggc ctg
2208
Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
                725                 730                 735

gat gat atc cat cgg gct tgg cgc acc ttt gtg ctt cgg gtg agg gca
2256
Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
            740                 745                 750

cag gat cct cct cct gag ctt tat ttt gtg aaa gtt gat gtt act ggt
2304
Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
        755                 760                 765

gct tac gat aca atc cct cag gac cgg ctc acc gag gtg atc gcc tct
2352
Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
    770                 775                 780
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att atc aaa ccc cag aac acc tac tgc gtg aga agg tac gcc gtc gtt
2400
Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785                 790                 795                 800

cag aaa gcc gca cac gga cac gtg cgc aaa gct ttc aaa tcc cac gtg
2448
Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val
                805                 810                 815

tct acc ttg aca gac ctc cag cct tat atg cgg cag ttt gtc gca cac
2496
Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
            820                 825                 830

ctg cag gag act agc ccc ttg agg gac gct gtg gtc atc gaa cag tcc
2544
Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
        835                 840                 845

agc tct ctc aat gag gca tcc tca ggc ctg ttt gat gtg ttc ctg cgc
2592
Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
    850                 855                 860

ttt atg tgc cac cac gcc gtg cgg att agg ggc aag tct tac gtg cag
2640
Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865                 870                 875                 880

tgc cag ggc atc cca cag ggt agc atc ctg agc aca ctg ctg tgt agc
2688
Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
                885                 890                 895

ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc ggt atc aga aga
2736
Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg
            900                 905                 910

gac ggt ttg ctc ctg agg ctg ttc ctg ctg gtt acc ccc cat ctg act
2784
Asp Gly Leu Leu Leu Arg Leu Phe Leu Leu Val Thr Pro His Leu Thr
        915                 920                 925

cat gcc aaa aca ttt ttg cgg act ctg gtt agg ggc gtg cca gag tat
2832
His Ala Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr
    930                 935                 940

ggc tgt gtt gtg aat ttg cgg aaa act gtg gtt aat ttc cca gtg gag
2880
Gly Cys Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu
945                 950                 955                 960

gac gaa gct ctc gga ggc aca gct ttt gtt cag atg cct gcc cac ggc
2928
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Asp Glu Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly
                965                 970                 975

ctg ttc cca tgg tgc gga ctg ctg ctc gat acc cgg acc ctc gag gtg
2976
Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val
            980                 985                 990

cag tcc gat tat agt tcc tat gca  aga aca tca att cgg  gct agc ctg
3024
Gln Ser Asp Tyr Ser Ser Tyr Ala  Arg Thr Ser Ile Arg  Ala Ser Leu
        995                 1000                1005

act ttc  aac agg ggc ttc aag  gcc ggc cgg aat atg  aga agg aaa
3069
Thr Phe  Asn Arg Gly Phe Lys  Ala Gly Arg Asn Met  Arg Arg Lys
    1010                1015                1020

ctg ttc  gga gtg ttg aga ctt  aag tgt cat agt ctt  ttt ttg gac
3114
Leu Phe  Gly Val Leu Arg Leu  Lys Cys His Ser Leu  Phe Leu Asp
    1025                1030                1035

ttg cag  gtc aat tct ctc cag  aca gtg tgt acc aac  att tat aaa
3159
Leu Gln  Val Asn Ser Leu Gln  Thr Val Cys Thr Asn  Ile Tyr Lys
    1040                1045                1050

atc ctc  ttg ctg cag gct tac  aga ttc cat gcc tgc  gtc ctg cag
3204
Ile Leu  Leu Leu Gln Ala Tyr  Arg Phe His Ala Cys  Val Leu Gln
    1055                1060                1065

ctg cct  ttc cac cag cag gtg  tgg aaa aac cct acc  ttc ttc ctg
3249
Leu Pro  Phe His Gln Gln Val  Trp Lys Asn Pro Thr  Phe Phe Leu
    1070                1075                1080

cgg gtg  att agc gac acc gcc  agt ctt tgc tac tcc  atc ttg aaa
3294
Arg Val  Ile Ser Asp Thr Ala  Ser Leu Cys Tyr Ser  Ile Leu Lys
    1085                1090                1095

gca aaa  aac gct ggc atg agc  ttg gga gct aag ggc  gcc gct gga
3339
Ala Lys  Asn Ala Gly Met Ser  Leu Gly Ala Lys Gly  Ala Ala Gly
    1100                1105                1110

cct ctg  ccc agt gaa gca gtc  cag tgg ctg tgt cat  cag gct ttc
3384
Pro Leu  Pro Ser Glu Ala Val  Gln Trp Leu Cys His  Gln Ala Phe
    1115                1120                1125

ctc ctt  aaa ctg aca cgc cac  cgc gtg act tac gtc  cca ctc ctg
3429
Leu Leu  Lys Leu Thr Arg His  Arg Val Thr Tyr Val  Pro Leu Leu
    1130                1135                1140
```

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ggc tcc  ctg aga act gct cag  acc cag ctt tcc cgg  aag ctt cca
3474
Gly Ser  Leu Arg Thr Ala Gln  Thr Gln Leu Ser Arg  Lys Leu Pro
    1145                 1150                 1155

ggc act  acc ctt acc gca ctc  gaa gca gcc gcc aac  cct gcc ctg
3519
Gly Thr  Thr Leu Thr Ala Leu  Glu Ala Ala Ala Asn  Pro Ala Leu
    1160                 1165                 1170

ccc tcc  gac ttt aag act atc  ctg gac ggc aag cca  att cct aat
3564
Pro Ser  Asp Phe Lys Thr Ile  Leu Asp Gly Lys Pro  Ile Pro Asn
    1175                 1180                 1185

cca ttg  ctg ggc ctg gac tca  act tga
3591
Pro Leu  Leu Gly Leu Asp Ser  Thr
    1190                 1195
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<400> 46

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Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30

Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45

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

Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Leu Ala Thr Phe
65                  70                  75                  80

Val Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
                85                  90                  95

Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro
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100 105 110

Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser
115 120 125

Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg
130 135 140

Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala
145 150 155 160

Arg Gly Gly Pro Pro Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu
165 170 175

Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu
180 185 190

Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val His Leu Leu Ala Arg
195 200 205

Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys
210 215 220

Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro
225 230 235 240

Pro His Ala Ser Gly Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp
245 250 255

Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
260 265 270

Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
275 280 285

Lys Arg Pro Arg Arg Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val
290 295 300

Gly Gln Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
305 310 315 320

Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
325 330 335

Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg His Ser His Pro Ser Val
340 345 350

Gly Arg Gln His His Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg
355 360 365

Pro Trp Asp Thr Pro Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe
370 375 380

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

Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr
405 410 415

Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu
420 425 430

Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu
435 440 445

Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr
450 455 460

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

Arg Glu Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr
485 490 495

Asp Pro Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp
500 505 510

Gln Val Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro
515 520 525

Gly Leu Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr
530 535 540

Lys Lys Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu
545 550 555 560

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Leu Thr Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser
                565                 570                 575

Pro Gly Val Gly Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu
            580                 585                 590

Ile Leu Ala Lys Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu
        595                 600                 605

Leu Leu Arg Ser Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn
    610                 615                 620

Arg Leu Phe Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile
625                 630                 635                 640

Gly Ile Arg Gln His Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu
                645                 650                 655

Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser
            660                 665                 670

Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn
        675                 680                 685

Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala
    690                 695                 700

Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr
705                 710                 715                 720

Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu
                725                 730                 735

Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala
            740                 745                 750

Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly
        755                 760                 765

Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser
    770                 775                 780
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Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val
785                 790                 795                 800

Gln Lys Ala Ala His Gly His Val Arg Lys Ala Phe Lys Ser His Val
                805                 810                 815

Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His
            820                 825                 830

Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser
        835                 840                 845

Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg
    850                 855                 860

Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln
865                 870                 875                 880

Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser
                885                 890                 895

Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg
            900                 905                 910

Asp Gly Leu Leu Leu Arg Leu Phe Leu Leu Val Thr Pro His Leu Thr
        915                 920                 925

His Ala Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr
    930                 935                 940

Gly Cys Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu
945                 950                 955                 960

Asp Glu Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly
                965                 970                 975

Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val
            980                 985                 990

Gln Ser Asp Tyr Ser Ser Tyr Ala  Arg Thr Ser Ile Arg  Ala Ser Leu
        995                 1000                1005

Thr Phe  Asn Arg Gly Phe Lys  Ala Gly Arg Asn Met  Arg Arg Lys
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1010 1015 1020

Leu Phe Gly Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp
1025 1030 1035

Leu Gln Val Asn Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys
1040 1045 1050

Ile Leu Leu Leu Gln Ala Tyr Arg Phe His Ala Cys Val Leu Gln
1055 1060 1065

Leu Pro Phe His Gln Gln Val Trp Lys Asn Pro Thr Phe Phe Leu
1070 1075 1080

Arg Val Ile Ser Asp Thr Ala Ser Leu Cys Tyr Ser Ile Leu Lys
1085 1090 1095

Ala Lys Asn Ala Gly Met Ser Leu Gly Ala Lys Gly Ala Ala Gly
1100 1105 1110

Pro Leu Pro Ser Glu Ala Val Gln Trp Leu Cys His Gln Ala Phe
1115 1120 1125

Leu Leu Lys Leu Thr Arg His Arg Val Thr Tyr Val Pro Leu Leu
1130 1135 1140

Gly Ser Leu Arg Thr Ala Gln Thr Gln Leu Ser Arg Lys Leu Pro
1145 1150 1155

Gly Thr Thr Leu Thr Ala Leu Glu Ala Ala Ala Asn Pro Ala Leu
1160 1165 1170

Pro Ser Asp Phe Lys Thr Ile Leu Asp Gly Lys Pro Ile Pro Asn
1175 1180 1185

Pro Leu Leu Gly Leu Asp Ser Thr
1190 1195

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Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
1 5 10 15

gtg gag cca agc gac act att gag aac gtc aaa gcc aag att cag gac
96
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
20 25 30

aag gag ggc atc cca cca gac cag cag agg ctg att ttt gcc gga aag
144
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
35 40 45

cag ctg gag gac gga cgc aca ctc agt gac tac aat atc cag aag gaa
192
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
50 55 60

agt act ctg cat ctg gtc ctt cgc ctg cgc ggc gga ggt gga ggt gga
240
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Gly Gly Gly Gly
65 70 75 80

tgc gtt cca gca gca gag cac agg ctg cgc gaa gag att ctc gca aag
288
Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys
85 90 95

ttc ctg cac tgg ctt atg agc gtc tac gtg gtc gaa ctg ctg cgg tct
336
Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser
100 105 110

ttc ttc tac gtg aca gag acc act ttt cag aag aac aga ctg ttc ttc
384
Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe
115 120 125

tac agg aag tcc gtc tgg agc aag ctc cag agt att ggt att aga cag
432
Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln
130 135 140

cac ctt aag aga gtt cag gga ggt ggt gga ggt gga ttc act act agc
480
His Leu Lys Arg Val Gln Gly Gly Gly Gly Gly Gly Phe Thr Thr Ser
145 150 155 160

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gtc cgg tcc tac ctg ccc aac aca gtg acc gac gct ctg aga ggt tca
528
Val Arg Ser Tyr Leu Pro Asn Thr Val Thr Asp Ala Leu Arg Gly Ser
                165                 170                 175

ggt gcc tgg ggt ctg ctg ctg cgg agg gtg ggt gat gat gtt ctg gtt
576
Gly Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val
            180                 185                 190

cac ctc ctg gcc cgg tgt gcc ctg ttc gtg ctg gtg gct ccc tcc tgc
624
His Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys
        195                 200                 205

gca tac cag gtc tgc gga ccc cca ctt tat cag ctc ggc gct gct ggt
672
Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Gly
    210                 215                 220

gga ggt ggt gga ggt gcc ggt gtg tgt gct aga gaa aaa ccc cag ggc
720
Gly Gly Gly Gly Gly Ala Gly Val Cys Ala Arg Glu Lys Pro Gln Gly
225                 230                 235                 240

tca gtg gct gca cct gaa gag gag gac act gac cct cgc cgc ctt gtc
768
Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu Val
                245                 250                 255

cag ttg ctc agg cag cat tca tca cca tgg cag gtg tac ggc ttc gtg
816
Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe Val
            260                 265                 270

agg gct tgc ctg cgg aga ctg gtc ccc ccc gga ttg tgg gga tct cgg
864
Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser Arg
        275                 280                 285

cac aac gaa cgg cgc ttt ctg agg aat aca aag aag ttt atc tcc ctg
912
His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu
    290                 295                 300

ggc aag cat gca aag ctc agc ttg cag gag ctg aca tgg aag atg agc
960
Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met Ser
305                 310                 315                 320

gtt aga gga tgc gca tgg ctc agg cgg tca cct gga gtt gga ggt gga
1008
Val Arg Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Gly Gly
                325                 330                 335
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ggt gga gga tcc tgg gct cac ccc gga agg acc agg ggc cca agc gat
1056
Gly Gly Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
340 345 350

agg ggc ttc tgt gtt gtg tca cca gcc agg cct gcc gaa gag gct acc
1104
Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
355 360 365

tcc ttg gaa gga gcc ctc agt ggc acc agg ggt ggt gga ggt gga gga
1152
Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg Gly Gly Gly Gly Gly Gly
370 375 380

aaa tcc cac gtg tct acc ttg aca gac ctc cag cct tat atg cgg cag
1200
Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met Arg Gln
385 390 395 400

ttt gtc gca cac ctg cag gag act agc ccc ttg agg gac gct gtg gtc
1248
Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala Val Val
405 410 415

atc gaa cag tcc agc tct ctc aat gag gca tcc tca ggc ctg ttt gat
1296
Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
420 425 430

gtg ttc ctg cgc ttt atg tgc cac cac gcc gtg cgg att agg ggc aag
1344
Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys
435 440 445

tct tac gtg cag tgc cag ggc atc cca cag ggt agc atc ctg agc aca
1392
Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
450 455 460

ctg ctg tgt agc ctg tgc tat ggc gat atg gag aat aaa ttg ttc gcc
1440
Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala
465 470 475 480

ggt atc aga aga gac ggt ttg ctc ctg agg ctg ttc ctg ctg gtt acc
1488
Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Phe Leu Leu Val Thr
485 490 495

ccc cat ctg act cat gcc aaa aca ttt ttg cgg act ctg gtt agg ggc
1536
Pro His Leu Thr His Ala Lys Thr Phe Leu Arg Thr Leu Val Arg Gly
500 505 510

gtg cca gag tat ggc tgt gtt gtg aat ttg cgg aaa act gtg gtt aat
1584

```
Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg Lys Thr Val Val Asn
        515                 520                 525

ttc cca gtg gag gac gaa gct ctc gga ggc aca gct ttt gtt cag atg
1632
Phe Pro Val Glu Asp Glu Ala Leu Gly Gly Thr Ala Phe Val Gln Met
    530                 535                 540

cct gcc cac ggc ctg ttc cca tgg tgc gga ctg ctg ctc gat acc cgg
1680
Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg
545                 550                 555                 560

acc ctc gag gtg cag tcc gat tat agt tcc tat gca aga aca tca att
1728
Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile
                565                 570                 575

gga gga ggt ggt gga ggt tgg aat cat agc gtg cgg gag gca ggt gtg
1776
Gly Gly Gly Gly Gly Gly Trp Asn His Ser Val Arg Glu Ala Gly Val
            580                 585                 590

cct ctc ggc ctg cca gcc ccc gga gca agg aga cgc ggt gga tcc gcc
1824
Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala
        595                 600                 605

agt cgc tca ctc ccc ttg cct aag agg cca aga aga gga gcc ggt gga
1872
Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Gly Gly
    610                 615                 620

gga ggt ggt gga ctg gcc acc ttc gtg cgg cgc ctg gga ccc cag ggc
1920
Gly Gly Gly Gly Leu Ala Thr Phe Val Arg Arg Leu Gly Pro Gln Gly
625                 630                 635                 640

tgg cgg ctg gtg cag cgc ggg gac cct gct gct ttc aga gct ctc gtc
1968
Trp Arg Leu Val Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val
                645                 650                 655

gcc cag tgt ctg gtc tgc gtt cct tgg gac gca cgg ccc cca ccc gcc
2016
Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala
            660                 665                 670

gcc ccc agt ttc cgg cag gtg agt tgt ctc aaa gag ttg gtt gct cgg
2064
Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg
        675                 680                 685

gtg ttg cag cgg ctt tgt gaa agg gga gca aag aac gtc ctt gcc ttt
2112
Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe
    690                 695                 700
```

```
ggc ttc gct ttg ctc gat gga gca cgc gga gga ggt ggt gga ggt gga
2160
Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Gly Gly Gly Gly Gly
705                 710                 715                 720

aga gag ctg tcc gaa gct gaa gtc cgc cag cac cgc gaa gct cgc ccc
2208
Arg Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro
                725                 730                 735

gcc ctc ctg acc tct cgg ctg cgg ttt att ccc aaa ccc gat ggc ctt
2256
Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu
            740                 745                 750

aga cct atc gtg aat atg gat tac gtc gtg ggt gcc cgc act ttc aga
2304
Arg Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg
        755                 760                 765

agg gag aag cgc gcc gag aga ctg aca tct cgc gtg aag gca ctt ttt
2352
Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe
    770                 775                 780

tct gtg ctt aat tat gaa aga gcc cgc aga cct ggt ctt ctc gga gcc
2400
Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala
785                 790                 795                 800

agc gtg ctc ggc ctg gat gat atc cat cgg gct tgg cgc acc ttt gtg
2448
Ser Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val
                805                 810                 815

ctt cgg gtg agg gca cag gat cct cct cct gag ctt tat ttt gtg aaa
2496
Leu Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys
            820                 825                 830

gtt gat gtt act ggt gct tac gat aca atc cct cag gac cgg ctc acc
2544
Val Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr
        835                 840                 845

gag gtg atc gcc tct att atc aaa ccc cag aac acc tac tgc gtg aga
2592
Glu Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg
    850                 855                 860

agg tac gcc gtc gtt cag aaa gcc gca cac gga cac gtg cgc aaa ggt
2640
Arg Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Gly
865                 870                 875                 880
```

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gga gga ggt ggt gga aac agg ggc ttc aag gcc ggc cgg aat atg aga
2688
Gly Gly Gly Gly Gly Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg
                885                 890                 895

agg aaa ctg ttc gga gtg ttg aga ctt aag tgt cat agt ctt ttt ttg
2736
Arg Lys Leu Phe Gly Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu
            900                 905                 910

gac ttg cag gtc aat tct ctc cag aca gtg tgt acc aac att tat aaa
2784
Asp Leu Gln Val Asn Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys
        915                 920                 925

atc ctc ttg ctg cag gct tac aga ttc cat gcc tgc gtc ctg cag ctg
2832
Ile Leu Leu Leu Gln Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu
    930                 935                 940

cct ttc cac cag cag gtg tgg aaa aac cct acc ttc ttc ctg cgg gtg
2880
Pro Phe His Gln Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val
945                 950                 955                 960

att agc gac acc gcc agt ctt tgc tac tcc atc ttg aaa gca aaa aac
2928
Ile Ser Asp Thr Ala Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn
                965                 970                 975

gct ggc atg agc ttg gga gct aag ggc gcc gct gga cct ctg ccc agt
2976
Ala Gly Met Ser Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser
            980                 985                 990

gaa gca gtc cag tgg ctg tgt cat  cag gct ttc ctc ctt  aaa ctg aca
3024
Glu Ala Val Gln Trp Leu Cys His  Gln Ala Phe Leu Leu  Lys Leu Thr
        995                 1000                1005

cgc cac  cgc gtg act tac gtc  cca ctc ctg ggc tcc  ctg aga act
3069
Arg His  Arg Val Thr Tyr Val  Pro Leu Leu Gly Ser  Leu Arg Thr
    1010                1015                1020

gct cag  acc cag ctt tcc cgg  aaa ctt cca ggc act  acc ctt acc
3114
Ala Gln  Thr Gln Leu Ser Arg  Lys Leu Pro Gly Thr  Thr Leu Thr
    1025                1030                1035

gca ctc  gaa gca gcc gcc aac  cct gcc ctg ccc tcc  gac ttt aag
3159
Ala Leu  Glu Ala Ala Ala Asn  Pro Ala Leu Pro Ser  Asp Phe Lys
    1040                1045                1050

act atc  ctg gac gga ggt gga  ggt gga ggt ccc tgc  cca cca gtg
3204
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Thr Ile  Leu Asp Gly Gly Gly  Gly Gly Gly Pro Cys  Pro Pro Val
    1055                 1060                 1065

tat gcc  gag acc aag cac ttt  ttg tat tcc agt ggc  gat aaa gag
3249
Tyr Ala  Glu Thr Lys His Phe  Leu Tyr Ser Ser Gly  Asp Lys Glu
    1070                 1075                 1080

cag ctc  cgg ccc tct ttt ctg  ctc tca agc ctc cgc  ccc tct ctg
3294
Gln Leu  Arg Pro Ser Phe Leu  Leu Ser Ser Leu Arg  Pro Ser Leu
    1085                 1090                 1095

acc gga  gct cgc agg ctg gtg  gag acc atc ttt ctg  ggc tca aga
3339
Thr Gly  Ala Arg Arg Leu Val  Glu Thr Ile Phe Leu  Gly Ser Arg
    1100                 1105                 1110

cca tgg  atg cca ggc acc ccc  cgc aga ctg ccc agg  ctc ccc cag
3384
Pro Trp  Met Pro Gly Thr Pro  Arg Arg Leu Pro Arg  Leu Pro Gln
    1115                 1120                 1125

cgg tac  tgg cag atg cgc cct  ctc ttt ctg gaa ctt  ctg ggt aac
3429
Arg Tyr  Trp Gln Met Arg Pro  Leu Phe Leu Glu Leu  Leu Gly Asn
    1130                 1135                 1140

cac gcc  cag tgc cca tat ggc  gtc ctg ctg aag acc  cac tgt cct
3474
His Ala  Gln Cys Pro Tyr Gly  Val Leu Leu Lys Thr  His Cys Pro
    1145                 1150                 1155

ctg agg  gcc gcc gtg acc gga  ggt ggt gga gga ggt  ggc aag cca
3519
Leu Arg  Ala Ala Val Thr Gly  Gly Gly Gly Gly Gly  Gly Lys Pro
    1160                 1165                 1170

att cct  aat cca ttg ctg ggc  ctg gac tca act tga
3555
Ile Pro  Asn Pro Leu Leu Gly  Leu Asp Ser Thr
    1175                 1180
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Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30

Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45

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

Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Gly Gly Gly Gly
65                  70                  75                  80

Cys Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys
                85                  90                  95

Phe Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser
            100                 105                 110

Phe Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe
        115                 120                 125

Tyr Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln
    130                 135                 140

His Leu Lys Arg Val Gln Gly Gly Gly Gly Gly Gly Phe Thr Thr Ser
145                 150                 155                 160

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

Gly Ala Trp Gly Leu Leu Leu Arg Arg Val Gly Asp Asp Val Leu Val
            180                 185                 190

His Leu Leu Ala Arg Cys Ala Leu Phe Val Leu Val Ala Pro Ser Cys
        195                 200                 205

Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr Gln Leu Gly Ala Ala Gly
    210                 215                 220

Gly Gly Gly Gly Gly Ala Gly Val Cys Ala Arg Glu Lys Pro Gln Gly
225                 230                 235                 240
```

Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu Val
245 250 255

Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe Val
260 265 270

Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser Arg
275 280 285

His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser Leu
290 295 300

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

Val Arg Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Gly Gly
325 330 335

Gly Gly Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp
340 345 350

Arg Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr
355 360 365

Ser Leu Glu Gly Ala Leu Ser Gly Thr Arg Gly Gly Gly Gly Gly Gly
370 375 380

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

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

Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu Phe Asp
420 425 430

Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg Gly Lys
435 440 445

Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu Ser Thr
450 455 460

Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu Phe Ala

465 470 475 480

Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Phe Leu Leu Val Thr
485 490 495

Pro His Leu Thr His Ala Lys Thr Phe Leu Arg Thr Leu Val Arg Gly
500 505 510

Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg Lys Thr Val Val Asn
515 520 525

Phe Pro Val Glu Asp Glu Ala Leu Gly Gly Thr Ala Phe Val Gln Met
530 535 540

Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg
545 550 555 560

Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile
565 570 575

Gly Gly Gly Gly Gly Gly Trp Asn His Ser Val Arg Glu Ala Gly Val
580 585 590

Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg Gly Gly Ser Ala
595 600 605

Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg Gly Ala Gly Gly
610 615 620

Gly Gly Gly Gly Leu Ala Thr Phe Val Arg Arg Leu Gly Pro Gln Gly
625 630 635 640

Trp Arg Leu Val Gln Arg Gly Asp Pro Ala Ala Phe Arg Ala Leu Val
645 650 655

Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro Pro Pro Ala
660 665 670

Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu Val Ala Arg
675 680 685

Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe
690 695 700

```
Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Gly Gly Gly Gly Gly
705                 710                 715                 720

Arg Glu Leu Ser Glu Ala Glu Val Arg Gln His Arg Glu Ala Arg Pro
                725                 730                 735

Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile Pro Lys Pro Asp Gly Leu
            740                 745                 750

Arg Pro Ile Val Asn Met Asp Tyr Val Val Gly Ala Arg Thr Phe Arg
        755                 760                 765

Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser Arg Val Lys Ala Leu Phe
    770                 775                 780

Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg Pro Gly Leu Leu Gly Ala
785                 790                 795                 800

Ser Val Leu Gly Leu Asp Asp Ile His Arg Ala Trp Arg Thr Phe Val
                805                 810                 815

Leu Arg Val Arg Ala Gln Asp Pro Pro Pro Glu Leu Tyr Phe Val Lys
            820                 825                 830

Val Asp Val Thr Gly Ala Tyr Asp Thr Ile Pro Gln Asp Arg Leu Thr
        835                 840                 845

Glu Val Ile Ala Ser Ile Ile Lys Pro Gln Asn Thr Tyr Cys Val Arg
    850                 855                 860

Arg Tyr Ala Val Val Gln Lys Ala Ala His Gly His Val Arg Lys Gly
865                 870                 875                 880

Gly Gly Gly Gly Gly Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg
                885                 890                 895

Arg Lys Leu Phe Gly Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu
            900                 905                 910

Asp Leu Gln Val Asn Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys
        915                 920                 925
```

```
Ile Leu Leu Leu Gln Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu
    930                 935                 940

Pro Phe His Gln Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val
945                 950                 955                 960

Ile Ser Asp Thr Ala Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn
                965                 970                 975

Ala Gly Met Ser Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser
            980                 985                 990

Glu Ala Val Gln Trp Leu Cys His  Gln Ala Phe Leu Leu  Lys Leu Thr
        995                 1000                1005

Arg His  Arg Val Thr Tyr Val  Pro Leu Leu Gly Ser  Leu Arg Thr
    1010                1015                1020

Ala Gln  Thr Gln Leu Ser Arg  Lys Leu Pro Gly Thr  Thr Leu Thr
    1025                1030                1035

Ala Leu  Glu Ala Ala Ala Asn  Pro Ala Leu Pro Ser  Asp Phe Lys
    1040                1045                1050

Thr Ile  Leu Asp Gly Gly Gly  Gly Gly Gly Pro Cys  Pro Pro Val
    1055                1060                1065

Tyr Ala  Glu Thr Lys His Phe  Leu Tyr Ser Ser Gly  Asp Lys Glu
    1070                1075                1080

Gln Leu  Arg Pro Ser Phe Leu  Leu Ser Ser Leu Arg  Pro Ser Leu
    1085                1090                1095

Thr Gly  Ala Arg Arg Leu Val  Glu Thr Ile Phe Leu  Gly Ser Arg
    1100                1105                1110

Pro Trp  Met Pro Gly Thr Pro  Arg Arg Leu Pro Arg  Leu Pro Gln
    1115                1120                1125

Arg Tyr  Trp Gln Met Arg Pro  Leu Phe Leu Glu Leu  Leu Gly Asn
    1130                1135                1140
```

```
His Ala  Gln Cys Pro Tyr Gly  Val Leu Leu Lys Thr  His Cys Pro
    1145                1150                1155

Leu Arg  Ala Ala Val Thr Gly  Gly Gly Gly Gly Gly  Gly Lys Pro
    1160                1165                1170

Ile Pro  Asn Pro Leu Leu Gly  Leu Asp Ser Thr
    1175                1180
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<212> DNA
<213> Artificial Sequence

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<223> pUTInv insert

<220>
<221> CDS
<222> (1)..(3555)

<400> 49

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48
Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
1               5                   10                  15

gtg gag cca agc gac act att gag aac gtc aaa gcc aag att cag gac
96
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30

aag gag ggc atc cca cca gac cag cag agg ctg att ttt gcc gga aag
144
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45

cag ctg gag gac gga cgc aca ctc agt gac tac aat atc cag aag gaa
192
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
    50                  55                  60

agt act ctg cat ctg gtc ctt cgc ctg cgc ggc gga ggt gga ggt gga
240
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Gly Gly Gly Gly
65                  70                  75                  80

aac agg ggc ttc aag gcc ggc cgg aat atg aga agg aaa ctg ttc gga
288
Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly
                85                  90                  95
```

```
gtg ttg aga ctt aag tgt cat agt ctt ttt ttg gac ttg cag gtc aat
336
Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn
            100                 105                 110

tct ctc cag aca gtg tgt acc aac att tat aaa atc ctc ttg ctg cag
384
Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln
        115                 120                 125

gct tac aga ttc cat gcc tgc gtc ctg cag ctg cct ttc cac cag cag
432
Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln
    130                 135                 140

gtg tgg aaa aac cct acc ttc ttc ctg cgg gtg att agc gac acc gcc
480
Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala
145                 150                 155                 160

agt ctt tgc tac tcc atc ttg aaa gca aaa aac gct ggc atg agc ttg
528
Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu
                165                 170                 175

gga gct aag ggc gcc gct gga cct ctg ccc agt gaa gca gtc cag tgg
576
Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln Trp
            180                 185                 190

ctg tgt cat cag gct ttc ctc ctt aaa ctg aca cgc cac cgc gtg act
624
Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg Val Thr
        195                 200                 205

tac gtc cca ctc ctg ggc tcc ctg aga act gct cag acc cag ctt tcc
672
Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr Gln Leu Ser
    210                 215                 220

cgg aaa ctt cca ggc act acc ctt acc gca ctc gaa gca gcc gcc aac
720
Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu Ala Ala Ala Asn
225                 230                 235                 240

cct gcc ctg ccc tcc gac ttt aag act atc ctg gac gga ggt ggt gga
768
Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile Leu Asp Gly Gly Gly Gly
                245                 250                 255

ggt gga aaa tcc cac gtg tct acc ttg aca gac ctc cag cct tat atg
816
Gly Gly Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met
            260                 265                 270

cgg cag ttt gtc gca cac ctg cag gag act agc ccc ttg agg gac gct
864
```

```
Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser Pro Leu Arg Asp Ala
        275                 280                 285

gtg gtc atc gaa cag tcc agc tct ctc aat gag gca tcc tca ggc ctg
912
Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu
    290                 295                 300

ttt gat gtg ttc ctg cgc ttt atg tgc cac cac gcc gtg cgg att agg
960
Phe Asp Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg
305                 310                 315                 320

ggc aag tct tac gtg cag tgc cag ggc atc cca cag ggt agc atc ctg
1008
Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro Gln Gly Ser Ile Leu
                325                 330                 335

agc aca ctg ctg tgt agc ctg tgc tat ggc gat atg gag aat aaa ttg
1056
Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu
            340                 345                 350

ttc gcc ggt atc aga aga gac ggt ttg ctc ctg agg ctg ttc ctg ctg
1104
Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Phe Leu Leu
        355                 360                 365

gtt acc ccc cat ctg act cat gcc aaa aca ttt ttg cgg act ctg gtt
1152
Val Thr Pro His Leu Thr His Ala Lys Thr Phe Leu Arg Thr Leu Val
    370                 375                 380

agg ggc gtg cca gag tat ggc tgt gtt gtg aat ttg cgg aaa act gtg
1200
Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg Lys Thr Val
385                 390                 395                 400

gtt aat ttc cca gtg gag gac gaa gct ctc gga ggc aca gct ttt gtt
1248
Val Asn Phe Pro Val Glu Asp Glu Ala Leu Gly Gly Thr Ala Phe Val
                405                 410                 415

cag atg cct gcc cac ggc ctg ttc cca tgg tgc gga ctg ctg ctc gat
1296
Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp
            420                 425                 430

acc cgg acc ctc gag gtg cag tcc gat tat agt tcc tat gca aga aca
1344
Thr Arg Thr Leu Glu Val Gln Ser Asp Tyr Ser Ser Tyr Ala Arg Thr
        435                 440                 445

tca att ggt gga ggt ggt gga ggt aga gag ctg tcc gaa gct gaa gtc
1392
Ser Ile Gly Gly Gly Gly Gly Gly Arg Glu Leu Ser Glu Ala Glu Val
    450                 455                 460
```

```
cgc cag cac cgc gaa gct cgc ccc gcc ctc ctg acc tct cgg ctg cgg
1440
Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg
465                 470                 475                 480

ttt att ccc aaa ccc gat ggc ctt aga cct atc gtg aat atg gat tac
1488
Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr
                485                 490                 495

gtc gtg ggt gcc cgc act ttc aga agg gag aag cgc gcc gag aga ctg
1536
Val Val Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu
            500                 505                 510

aca tct cgc gtg aag gca ctt ttt tct gtg ctt aat tat gaa aga gcc
1584
Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala
        515                 520                 525

cgc aga cct ggt ctt ctc gga gcc agc gtg ctc ggc ctg gat gat atc
1632
Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile
    530                 535                 540

cat cgg gct tgg cgc acc ttt gtg ctt cgg gtg agg gca cag gat cct
1680
His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro
545                 550                 555                 560

cct cct gag ctt tat ttt gtg aaa gtt gat gtt act ggt gct tac gat
1728
Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp
                565                 570                 575

aca atc cct cag gac cgg ctc acc gag gtg atc gcc tct att atc aaa
1776
Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys
            580                 585                 590

ccc cag aac acc tac tgc gtg aga agg tac gcc gtc gtt cag aaa gcc
1824
Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala
        595                 600                 605

gca cac gga cac gtg cgc aaa gga ggt gga ggt gga gga tgc gtt cca
1872
Ala His Gly His Val Arg Lys Gly Gly Gly Gly Gly Gly Cys Val Pro
    610                 615                 620

gca gca gag cac agg ctg cgc gaa gag att ctc gca aag ttc ctg cac
1920
Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His
625                 630                 635                 640
```

```
tgg ctt atg agc gtc tac gtg gtc gaa ctg ctg cgg tct ttc ttc tac
1968
Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr
                645                 650                 655

gtg aca gag acc act ttt cag aag aac aga ctg ttc ttc tac agg aag
2016
Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys
            660                 665                 670

tcc gtc tgg agc aag ctc cag agt att ggt att aga cag cac ctt aag
2064
Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys
        675                 680                 685

aga gtt cag ggt ggt gga ggt gga gga gcc ggt gtg tgt gct aga gaa
2112
Arg Val Gln Gly Gly Gly Gly Gly Gly Ala Gly Val Cys Ala Arg Glu
    690                 695                 700

aaa ccc cag ggc tca gtg gct gca cct gaa gag gag gac act gac cct
2160
Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro
705                 710                 715                 720

cgc cgc ctt gtc cag ttg ctc agg cag cat tca tca cca tgg cag gtg
2208
Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val
                725                 730                 735

tac ggc ttc gtg agg gct tgc ctg cgg aga ctg gtc ccc ccc gga ttg
2256
Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu
            740                 745                 750

tgg gga tct cgg cac aac gaa cgg cgc ttt ctg agg aat aca aag aag
2304
Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys
        755                 760                 765

ttt atc tcc ctg ggc aag cat gca aag ctc agc ttg cag gag ctg aca
2352
Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr
    770                 775                 780

tgg aag atg agc gtt aga gga tgc gca tgg ctc agg cgg tca cct gga
2400
Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly
785                 790                 795                 800

gtt gga gga ggt ggt gga ggt ccc tgc cca cca gtg tat gcc gag acc
2448
Val Gly Gly Gly Gly Gly Gly Pro Cys Pro Pro Val Tyr Ala Glu Thr
                805                 810                 815

aag cac ttt ttg tat tcc agt ggc gat aaa gag cag ctc cgg ccc tct
2496
```

```
Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro Ser
            820                 825                 830

ttt ctg ctc tca agc ctc cgc ccc tct ctg acc gga gct cgc agg ctg
2544
Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu
        835                 840                 845

gtg gag acc atc ttt ctg ggc tca aga cca tgg atg cca ggc acc ccc
2592
Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro
    850                 855                 860

cgc aga ctg ccc agg ctc ccc cag cgg tac tgg cag atg cgc cct ctc
2640
Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu
865                 870                 875                 880

ttt ctg gaa ctt ctg ggt aac cac gcc cag tgc cca tat ggc gtc ctg
2688
Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu
                885                 890                 895

ctg aag acc cac tgt cct ctg agg gcc gcc gtg acc ggt gga gga ggt
2736
Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Gly Gly Gly Gly
            900                 905                 910

ggt gga tcc tgg gct cac ccc gga agg acc agg ggc cca agc gat agg
2784
Gly Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg
        915                 920                 925

ggc ttc tgt gtt gtg tca cca gcc agg cct gcc gaa gag gct acc tcc
2832
Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser
    930                 935                 940

ttg gaa gga gcc ctc agt ggc acc agg gga ggt ggt gga ggt gga tgg
2880
Leu Glu Gly Ala Leu Ser Gly Thr Arg Gly Gly Gly Gly Gly Gly Trp
945                 950                 955                 960

aat cat agc gtg cgg gag gca ggt gtg cct ctc ggc ctg cca gcc ccc
2928
Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
                965                 970                 975

gga gca agg aga cgc ggt gga tcc gcc agt cgc tca ctc ccc ttg cct
2976
Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
            980                 985                 990

aag agg cca aga aga gga gcc ggt  gga gga ggt ggt gga  ttc act act
3024
Lys Arg Pro Arg Arg Gly Ala Gly  Gly Gly Gly Gly Gly  Phe Thr Thr
        995                 1000                1005
```

```
agc gtc  cgg tcc tac ctg ccc  aac aca gtg acc gac  gct ctg aga
3069
Ser Val  Arg Ser Tyr Leu Pro  Asn Thr Val Thr Asp  Ala Leu Arg
    1010                 1015                 1020

ggt tca  ggt gcc tgg ggt ctg  ctg ctg cgg agg gtg  ggt gat gat
3114
Gly Ser  Gly Ala Trp Gly Leu  Leu Leu Arg Arg Val  Gly Asp Asp
    1025                 1030                 1035

gtt ctg  gtt cac ctc ctg gcc  cgg tgt gcc ctg ttc  gtg ctg gtg
3159
Val Leu  Val His Leu Leu Ala  Arg Cys Ala Leu Phe  Val Leu Val
    1040                 1045                 1050

gct ccc  tcc tgc gca tac cag  gtc tgc gga ccc cca  ctt tat cag
3204
Ala Pro  Ser Cys Ala Tyr Gln  Val Cys Gly Pro Pro  Leu Tyr Gln
    1055                 1060                 1065

ctc ggc  gct gct gga ggt gga  ggt gga ggt ctg gcc  acc ttc gtg
3249
Leu Gly  Ala Ala Gly Gly Gly  Gly Gly Gly Leu Ala  Thr Phe Val
    1070                 1075                 1080

cgg cgc  ctg gga ccc cag ggc  tgg cgg ctg gtg cag  cgc ggg gac
3294
Arg Arg  Leu Gly Pro Gln Gly  Trp Arg Leu Val Gln  Arg Gly Asp
    1085                 1090                 1095

cct gct  gct ttc aga gct ctc  gtc gcc cag tgt ctg  gtc tgc gtt
3339
Pro Ala  Ala Phe Arg Ala Leu  Val Ala Gln Cys Leu  Val Cys Val
    1100                 1105                 1110

cct tgg  gac gca cgg ccc cca  ccc gcc gcc ccc agt  ttc cgg cag
3384
Pro Trp  Asp Ala Arg Pro Pro  Pro Ala Ala Pro Ser  Phe Arg Gln
    1115                 1120                 1125

gtg agt  tgt ctc aaa gag ttg  gtt gct cgg gtg ttg  cag cgg ctt
3429
Val Ser  Cys Leu Lys Glu Leu  Val Ala Arg Val Leu  Gln Arg Leu
    1130                 1135                 1140

tgt gaa  agg gga gca aag aac  gtc ctt gcc ttt ggc  ttc gct ttg
3474
Cys Glu  Arg Gly Ala Lys Asn  Val Leu Ala Phe Gly  Phe Ala Leu
    1145                 1150                 1155

ctc gat  gga gca cgc gga gga  ggt ggt gga gga ggt  ggc aag cca
3519
Leu Asp  Gly Ala Arg Gly Gly  Gly Gly Gly Gly Gly  Gly Lys Pro
    1160                 1165                 1170
```

```
att cct  aat cca ttg ctg ggc  ctg gac tca act tga
3555
Ile Pro  Asn Pro Leu Leu Gly  Leu Asp Ser Thr
    1175                1180


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<211>  1184
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic Construct

<400>  50

Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
1               5                  10                  15


Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
            20                  25                  30


Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
        35                  40                  45


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


Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Gly Gly Gly Gly
65                  70                  75                  80


Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly
                85                  90                  95


Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn
            100                 105                 110


Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln
        115                 120                 125


Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln
    130                 135                 140


Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala
145                 150                 155                 160


Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu
```

165 170 175

Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln Trp
180 185 190

Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg Val Thr
195 200 205

Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr Gln Leu Ser
210 215 220

Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu Ala Ala Ala Asn
225 230 235 240

Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile Leu Asp Gly Gly Gly Gly
245 250 255

Gly Gly Lys Ser His Val Ser Thr Leu Thr Asp Leu Gln Pro Tyr Met
260 265 270

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

Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu Ala Ser Ser Gly Leu
290 295 300

Phe Asp Val Phe Leu Arg Phe Met Cys His His Ala Val Arg Ile Arg
305 310 315 320

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

Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp Met Glu Asn Lys Leu
340 345 350

Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu Arg Leu Phe Leu Leu
355 360 365

Val Thr Pro His Leu Thr His Ala Lys Thr Phe Leu Arg Thr Leu Val
370 375 380

Arg Gly Val Pro Glu Tyr Gly Cys Val Val Asn Leu Arg Lys Thr Val
385 390 395 400

Val Asn Phe Pro Val Glu Asp Glu Ala Leu Gly Gly Thr Ala Phe Val
405 410 415

Gln Met Pro Ala His Gly Leu Phe Pro Trp Cys Gly Leu Leu Leu Asp
420 425 430

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

Ser Ile Gly Gly Gly Gly Gly Gly Arg Glu Leu Ser Glu Ala Glu Val
450 455 460

Arg Gln His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg
465 470 475 480

Phe Ile Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr
485 490 495

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

Thr Ser Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala
515 520 525

Arg Arg Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile
530 535 540

His Arg Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro
545 550 555 560

Pro Pro Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp
565 570 575

Thr Ile Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys
580 585 590

Pro Gln Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala
595 600 605

Ala His Gly His Val Arg Lys Gly Gly Gly Gly Gly Gly Cys Val Pro
610 615 620

Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe Leu His
625 630 635 640

Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe Phe Tyr
645 650 655

Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr Arg Lys
660 665 670

Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His Leu Lys
675 680 685

Arg Val Gln Gly Gly Gly Gly Gly Gly Ala Gly Val Cys Ala Arg Glu
690 695 700

Lys Pro Gln Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro
705 710 715 720

Arg Arg Leu Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val
725 730 735

Tyr Gly Phe Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu
740 745 750

Trp Gly Ser Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys
755 760 765

Phe Ile Ser Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr
770 775 780

Trp Lys Met Ser Val Arg Gly Cys Ala Trp Leu Arg Arg Ser Pro Gly
785 790 795 800

Val Gly Gly Gly Gly Gly Gly Pro Cys Pro Pro Val Tyr Ala Glu Thr
805 810 815

Lys His Phe Leu Tyr Ser Ser Gly Asp Lys Glu Gln Leu Arg Pro Ser
820 825 830

Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu Thr Gly Ala Arg Arg Leu
835 840 845

```
Val Glu Thr Ile Phe Leu Gly Ser Arg Pro Trp Met Pro Gly Thr Pro
    850                 855                 860

Arg Arg Leu Pro Arg Leu Pro Gln Arg Tyr Trp Gln Met Arg Pro Leu
865                 870                 875                 880

Phe Leu Glu Leu Leu Gly Asn His Ala Gln Cys Pro Tyr Gly Val Leu
                885                 890                 895

Leu Lys Thr His Cys Pro Leu Arg Ala Ala Val Thr Gly Gly Gly Gly
            900                 905                 910

Gly Gly Ser Trp Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg
        915                 920                 925

Gly Phe Cys Val Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser
    930                 935                 940

Leu Glu Gly Ala Leu Ser Gly Thr Arg Gly Gly Gly Gly Gly Gly Trp
945                 950                 955                 960

Asn His Ser Val Arg Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro
                965                 970                 975

Gly Ala Arg Arg Arg Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro
            980                 985                 990

Lys Arg Pro Arg Arg Gly Ala Gly  Gly Gly Gly Gly Gly  Phe Thr Thr
        995                 1000                1005

Ser Val  Arg Ser Tyr Leu Pro  Asn Thr Val Thr Asp  Ala Leu Arg
    1010                1015                1020

Gly Ser  Gly Ala Trp Gly Leu  Leu Leu Arg Arg Val  Gly Asp Asp
    1025                1030                1035

Val Leu  Val His Leu Leu Ala  Arg Cys Ala Leu Phe  Val Leu Val
    1040                1045                1050

Ala Pro  Ser Cys Ala Tyr Gln  Val Cys Gly Pro Pro  Leu Tyr Gln
    1055                1060                1065

Leu Gly  Ala Ala Gly Gly Gly  Gly Gly Gly Leu Ala  Thr Phe Val
```

1070 1075 1080

Arg Arg Leu Gly Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp
1085 1090 1095

Pro Ala Ala Phe Arg Ala Leu Val Ala Gln Cys Leu Val Cys Val
1100 1105 1110

Pro Trp Asp Ala Arg Pro Pro Pro Ala Ala Pro Ser Phe Arg Gln
1115 1120 1125

Val Ser Cys Leu Lys Glu Leu Val Ala Arg Val Leu Gln Arg Leu
1130 1135 1140

Cys Glu Arg Gly Ala Lys Asn Val Leu Ala Phe Gly Phe Ala Leu
1145 1150 1155

Leu Asp Gly Ala Arg Gly Gly Gly Gly Gly Gly Gly Gly Lys Pro
1160 1165 1170

Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr
1175 1180