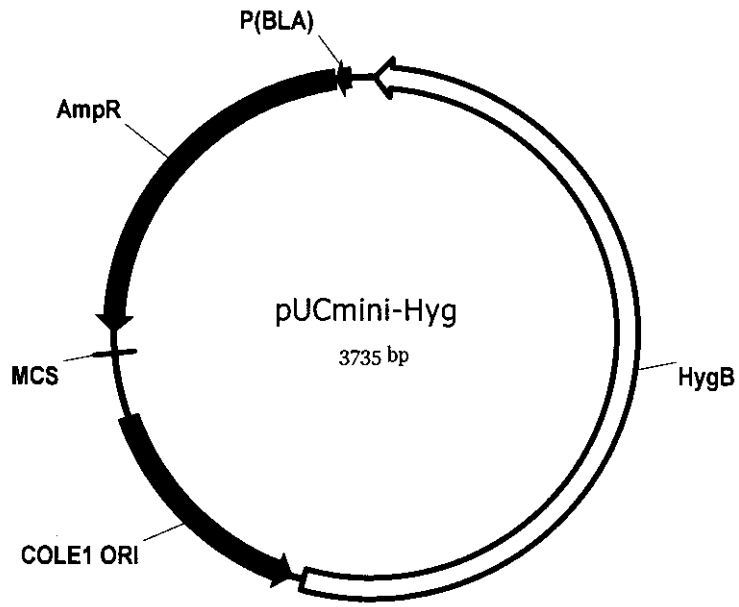
Figure 1



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<110> BASF Aktiengesellschaft

<120> Mevalonate kinase as a target for fungicides

<130> 20030038

<150> DE 10304754

<151> 2003-02-05

<160> 24

<170> PatentIn version 3.1

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Glu Gln Arg Asn Gln Pro Val Asn Gly Asp Ala Ser Glu Ala Val Asn
            20                  25                  30

gga aac ccc agc aat ggt ctc aga gtg acg att gaa gaa agc gcc agc      144
Gly Asn Pro Ser Asn Gly Leu Arg Val Thr Ile Glu Glu Ser Ala Ser
        35                  40                  45

agc gcc gtc aac ggg ggc tct cct acc aac agc atg tta aca ccc ata      192
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Ser Ala Val Asn Gly Gly Ser Pro Thr Asn Ser Met Leu Thr Pro Ile
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cga cag aga atg gaa cgc aaa aag tcc agt ccc atg atg ccg acg ttc      240
Arg Gln Arg Met Glu Arg Lys Lys Ser Ser Pro Met Met Pro Thr Phe
65                  70                  75                  80

atg gtt tcg gca ccg gga aaa gtc att gtg ttt gga gag cac gca gtc      288
Met Val Ser Ala Pro Gly Lys Val Ile Val Phe Gly Glu His Ala Val
                85                  90                  95

gtt cac ggc aag gct gcg att gct gcc gcc atc tcg ctg cga tct tac      336
Val His Gly Lys Ala Ala Ile Ala Ala Ala Ile Ser Leu Arg Ser Tyr
            100                 105                 110

ctg ctc gtc aac acg ctt tcc aag tcc aag aga act gtt acg ctg aaa      384
Leu Leu Val Asn Thr Leu Ser Lys Ser Lys Arg Thr Val Thr Leu Lys
        115                 120                 125

ttc cct gac atc gac ttc aat cat tcg tgg aat atc gac gag ctc cca      432
Phe Pro Asp Ile Asp Phe Asn His Ser Trp Asn Ile Asp Glu Leu Pro
    130                 135                 140

tgg aag atc ttc caa caa cca ggg aaa aag aag tac tac tac agt ctc      480
Trp Lys Ile Phe Gln Gln Pro Gly Lys Lys Lys Tyr Tyr Tyr Ser Leu
145                 150                 155                 160

gtc acc gag att gac caa gaa ctc gtt gac gcc gta caa cct ttc ctc      528
Val Thr Glu Ile Asp Gln Glu Leu Val Asp Ala Val Gln Pro Phe Leu
                165                 170                 175

gcc gat gtc tcg ata gac aag ccc gcc gac att cgc aag gtg cac cag      576
Ala Asp Val Ser Ile Asp Lys Pro Ala Asp Ile Arg Lys Val His Gln
            180                 185                 190

aac tcg gcc ggc tcc ttc ctc tac atg ttc ctt tcc ctt ggc tca cag      624
Asn Ser Ala Gly Ser Phe Leu Tyr Met Phe Leu Ser Leu Gly Ser Gln
        195                 200                 205

tcg ttc ccc ggc tgc cag tac aca ttg cgc tcg acg att ccc atc gga      672
Ser Phe Pro Gly Cys Gln Tyr Thr Leu Arg Ser Thr Ile Pro Ile Gly
    210                 215                 220

gcc ggc ctg ggc agc agc gcg acc atc gca gta tgc ttg tcg gca gcg      720
Ala Gly Leu Gly Ser Ser Ala Thr Ile Ala Val Cys Leu Ser Ala Ala
225                 230                 235                 240

ctc ttg ctc cag ctt cgg aca ctg tcc ggt cct cac ccc gac caa cct      768
Leu Leu Leu Gln Leu Arg Thr Leu Ser Gly Pro His Pro Asp Gln Pro
                245                 250                 255

ccc gag gag gcc agg cta caa att gag cgc atc aac cgg tgg gca ttt      816
Pro Glu Glu Ala Arg Leu Gln Ile Glu Arg Ile Asn Arg Trp Ala Phe
            260                 265                 270

gtt tac gag atg ttc att cac ggc aac ccc tcg ggc gtg gac aac aca      864
Val Tyr Glu Met Phe Ile His Gly Asn Pro Ser Gly Val Asp Asn Thr
        275                 280                 285

gta tca aca cag ggc aag gcg gtc gtc ttc caa cgg aca gac tac aac      912
Val Ser Thr Gln Gly Lys Ala Val Val Phe Gln Arg Thr Asp Tyr Asn
    290                 295                 300

cag ccg ccc tct gtg cgc ccc ctg tgg gac ttc cct aag ctc ccg ctg      960
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Gln Pro Pro Ser Val Arg Pro Leu Trp Asp Phe Pro Lys Leu Pro Leu
305                 310                 315                 320

ctc ctc gtg gac acc agg acg gcc aag tca acg gcg cac gag gtt gcc     1008
Leu Leu Val Asp Thr Arg Thr Ala Lys Ser Thr Ala His Glu Val Ala
                325                 330                 335

aag gtg gcc acg ctg aag aag aag cac ccg cag ctg gtg ggc acc att     1056
Lys Val Ala Thr Leu Lys Lys Lys His Pro Gln Leu Val Gly Thr Ile
            340                 345                 350

ttg acg gcc atc gac cag gtc acg caa agc tct gca cag ctc att gag     1104
Leu Thr Ala Ile Asp Gln Val Thr Gln Ser Ser Ala Gln Leu Ile Glu
        355                 360                 365

gag caa ggg ttc aac acg gag gac gag gag agc ctg agc aag gtg ggc     1152
Glu Gln Gly Phe Asn Thr Glu Asp Glu Glu Ser Leu Ser Lys Val Gly
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gag atg atg acc atc aac cac ggc cta ctg gtg tca ctc ggc gtg tcg     1200
Glu Met Met Thr Ile Asn His Gly Leu Leu Val Ser Leu Gly Val Ser
385                 390                 395                 400

cac ccc cgt ctg gag cgc gtg cgc gag ctc gtg gac cat gag ggt atc     1248
His Pro Arg Leu Glu Arg Val Arg Glu Leu Val Asp His Glu Gly Ile
                405                 410                 415

ggg tgg acg aaa ctc act ggt gcg ggt ggt ggc gga tgc tcg atc acg     1296
Gly Trp Thr Lys Leu Thr Gly Ala Gly Gly Gly Gly Cys Ser Ile Thr
            420                 425                 430

ctg ctg cgg ccg gga gtg ccg cgc gag aag ctg gat aag ctg gag cag     1344
Leu Leu Arg Pro Gly Val Pro Arg Glu Lys Leu Asp Lys Leu Glu Gln
        435                 440                 445

cgc ctg gat gag gag ggg tac tcc aag ttc gag aca aca cta ggt agc     1392
Arg Leu Asp Glu Glu Gly Tyr Ser Lys Phe Glu Thr Thr Leu Gly Ser
    450                 455                 460

gac ggt gtt ggc gta ctc tgg ccg gct gta ctg aag aac ggg atg gac     1440
Asp Gly Val Gly Val Leu Trp Pro Ala Val Leu Lys Asn Gly Met Asp
465                 470                 475                 480

gag gat gag gag ggc ggt atg gag atc gac ctt gag aag ttc ctc agt     1488
Glu Asp Glu Glu Gly Gly Met Glu Ile Asp Leu Glu Lys Phe Leu Ser
                485                 490                 495

gcg gac agt aac gag gcg ctt gag aaa ctt gtc ggt gta cat ggc gac     1536
Ala Asp Ser Asn Glu Ala Leu Glu Lys Leu Val Gly Val His Gly Asp
            500                 505                 510

cgg ggc gag cgg gag ggc tgg aag ttc tgg cgg gtt gag aac cgg gac     1584
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            20                  25                  30

Gly Asn Pro Ser Asn Gly Leu Arg Val Thr Ile Glu Glu Ser Ala Ser
        35                  40                  45

Ser Ala Val Asn Gly Gly Ser Pro Thr Asn Ser Met Leu Thr Pro Ile
    50                  55                  60

Arg Gln Arg Met Glu Arg Lys Lys Ser Ser Pro Met Met Pro Thr Phe
65                  70                  75                  80

Met Val Ser Ala Pro Gly Lys Val Ile Val Phe Gly Glu His Ala Val
                85                  90                  95

Val His Gly Lys Ala Ala Ile Ala Ala Ala Ile Ser Leu Arg Ser Tyr
            100                 105                 110

Leu Leu Val Asn Thr Leu Ser Lys Ser Lys Arg Thr Val Thr Leu Lys
        115                 120                 125

Phe Pro Asp Ile Asp Phe Asn His Ser Trp Asn Ile Asp Glu Leu Pro
    130                 135                 140

Trp Lys Ile Phe Gln Gln Pro Gly Lys Lys Lys Tyr Tyr Tyr Ser Leu
145                 150                 155                 160

Val Thr Glu Ile Asp Gln Glu Leu Val Asp Ala Val Gln Pro Phe Leu
                165                 170                 175

Ala Asp Val Ser Ile Asp Lys Pro Ala Asp Ile Arg Lys Val His Gln
            180                 185                 190

Asn Ser Ala Gly Ser Phe Leu Tyr Met Phe Leu Ser Leu Gly Ser Gln
        195                 200                 205

Ser Phe Pro Gly Cys Gln Tyr Thr Leu Arg Ser Thr Ile Pro Ile Gly
    210                 215                 220

Ala Gly Leu Gly Ser Ser Ala Thr Ile Ala Val Cys Leu Ser Ala Ala
225                 230                 235                 240
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Leu Leu Leu Gln Leu Arg Thr Leu Ser Gly Pro His Pro Asp Gln Pro
                245                 250                 255

Pro Glu Glu Ala Arg Leu Gln Ile Glu Arg Ile Asn Arg Trp Ala Phe
            260                 265                 270

Val Tyr Glu Met Phe Ile His Gly Asn Pro Ser Gly Val Asp Asn Thr
        275                 280                 285

Val Ser Thr Gln Gly Lys Ala Val Val Phe Gln Arg Thr Asp Tyr Asn
    290                 295                 300

Gln Pro Pro Ser Val Arg Pro Leu Trp Asp Phe Pro Lys Leu Pro Leu
305                 310                 315                 320

Leu Leu Val Asp Thr Arg Thr Ala Lys Ser Thr Ala His Glu Val Ala
                325                 330                 335

Lys Val Ala Thr Leu Lys Lys Lys His Pro Gln Leu Val Gly Thr Ile
            340                 345                 350

Leu Thr Ala Ile Asp Gln Val Thr Gln Ser Ser Ala Gln Leu Ile Glu
        355                 360                 365

Glu Gln Gly Phe Asn Thr Glu Asp Glu Glu Ser Leu Ser Lys Val Gly
    370                 375                 380

Glu Met Met Thr Ile Asn His Gly Leu Leu Val Ser Leu Gly Val Ser
385                 390                 395                 400

His Pro Arg Leu Glu Arg Val Arg Glu Leu Val Asp His Glu Gly Ile
                405                 410                 415

Gly Trp Thr Lys Leu Thr Gly Ala Gly Gly Gly Gly Cys Ser Ile Thr
            420                 425                 430

Leu Leu Arg Pro Gly Val Pro Arg Glu Lys Leu Asp Lys Leu Glu Gln
        435                 440                 445

Arg Leu Asp Glu Glu Gly Tyr Ser Lys Phe Glu Thr Thr Leu Gly Ser
    450                 455                 460

Asp Gly Val Gly Val Leu Trp Pro Ala Val Leu Lys Asn Gly Met Asp
465                 470                 475                 480

Glu Asp Glu Glu Gly Gly Met Glu Ile Asp Leu Glu Lys Phe Leu Ser
                485                 490                 495
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Thr Gln Gly Lys Ala Val Val Phe Gln Arg Thr Asp Tyr Ser Lys Pro
20 25 30

ccc aac gtt cgc cca ctg tgg gac ttc ccc gaa ctg cct cta ttg ttg 144
Pro Asn Val Arg Pro Leu Trp Asp Phe Pro Glu Leu Pro Leu Leu Leu
35 40 45

gta gac act cgc cag gcc aag tcc act gca cac gag gtt gcc aag gtt 192
Val Asp Thr Arg Gln Ala Lys Ser Thr Ala His Glu Val Ala Lys Val
50 55 60

gca aag ctg aaa caa acc cac ccc aag ctt gtg aat agc att tta gat 240
Ala Lys Leu Lys Gln Thr His Pro Lys Leu Val Asn Ser Ile Leu Asp
65 70 75 80

gct atg gat aaa gtc aca gat gct gct tcc gaa tta atc gaa gag acc 288
Ala Met Asp Lys Val Thr Asp Ala Ala Ser Glu Leu Ile Glu Glu Thr
85 90 95

tct ttt gat aat gga tct gtg gag gac ctt agt aag gtt ggt gag ctg 336
Ser Phe Asp Asn Gly Ser Val Glu Asp Leu Ser Lys Val Gly Glu Leu
100 105 110

atg acc atc aac cat ggc ctg tta gta tcg cta gga gtt tcc cac ccg 384
Met Thr Ile Asn His Gly Leu Leu Val Ser Leu Gly Val Ser His Pro
115 120 125

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cgc ctg gaa cga gta cga gag ctg gta gac cac ggg ggt att gga tgg      432
Arg Leu Glu Arg Val Arg Glu Leu Val Asp His Gly Gly Ile Gly Trp
    130                 135                 140

acc aag ttg act ggc gcc ggt ggt ggc ggc tgc tcc att acc ctt ctc      480
Thr Lys Leu Thr Gly Ala Gly Gly Gly Gly Cys Ser Ile Thr Leu Leu
145                 150                 155                 160

cgc cct gat gtt cct gct gag aag ctt cag aag ctt gaa gaa cga ctc      528
Arg Pro Asp Val Pro Ala Glu Lys Leu Gln Lys Leu Glu Glu Arg Leu
                165                 170                 175

gaa acc gaa aat tac gcc aag ttt gag acg aca ctt gga ggt gat ggt      576
Glu Thr Glu Asn Tyr Ala Lys Phe Glu Thr Thr Leu Gly Gly Asp Gly
            180                 185                 190

att ggt gtc ctc tgg cca gct gtt ctt aag aac ggc acc gag gaa gac      624
Ile Gly Val Leu Trp Pro Ala Val Leu Lys Asn Gly Thr Glu Glu Asp
        195                 200                 205

gaa gag ggc ggc atg gag att gat tta gag aag ttc tta gag gct gaa      672
Glu Glu Gly Gly Met Glu Ile Asp Leu Glu Lys Phe Leu Glu Ala Glu
    210                 215                 220

ggc acg gag ggt gtc gag aag ctc gtt gga gta cat ggc gat act ggg      720
Gly Thr Glu Gly Val Glu Lys Leu Val Gly Val His Gly Asp Thr Gly
225                 230                 235                 240

gaa aga gaa ggc tgg aag ttc tgg aga gtg gaa agc cag                  759
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<213> Fusarium graminearum

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Pro Asn Val Arg Pro Leu Trp Asp Phe Pro Glu Leu Pro Leu Leu Leu
        35                  40                  45

Val Asp Thr Arg Gln Ala Lys Ser Thr Ala His Glu Val Ala Lys Val
    50                  55                  60

Ala Lys Leu Lys Gln Thr His Pro Lys Leu Val Asn Ser Ile Leu Asp
65                  70                  75                  80
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Ala Met Asp Lys Val Thr Asp Ala Ala Ser Glu Leu Ile Glu Glu Thr
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Ser Phe Asp Asn Gly Ser Val Glu Asp Leu Ser Lys Val Gly Glu Leu
100 105 110

Met Thr Ile Asn His Gly Leu Leu Val Ser Leu Gly Val Ser His Pro
115 120 125

Arg Leu Glu Arg Val Arg Glu Leu Val Asp His Gly Gly Ile Gly Trp
130 135 140

Thr Lys Leu Thr Gly Ala Gly Gly Gly Gly Cys Ser Ile Thr Leu Leu
145 150 155 160

Arg Pro Asp Val Pro Ala Glu Lys Leu Gln Lys Leu Glu Glu Arg Leu
165 170 175

Glu Thr Glu Asn Tyr Ala Lys Phe Glu Thr Thr Leu Gly Gly Asp Gly
180 185 190

Ile Gly Val Leu Trp Pro Ala Val Leu Lys Asn Gly Thr Glu Glu Asp
195 200 205

Glu Glu Gly Gly Met Glu Ile Asp Leu Glu Lys Phe Leu Glu Ala Glu
210 215 220

Gly Thr Glu Gly Val Glu Lys Leu Val Gly Val His Gly Asp Thr Gly
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1               5                  10                  15

gcc aac ggc aac ggc aat ggt cac aat cat ata tct gat tct ggt tcg       96
Ala Asn Gly Asn Gly Asn Gly His Asn His Ile Ser Asp Ser Gly Ser
            20                  25                  30

gaa aca tct ggt gaa tca agc aac ggc agc ggc cgt cgt cgc atg aaa      144
Glu Thr Ser Gly Glu Ser Ser Asn Gly Ser Gly Arg Arg Arg Met Lys
        35                  40                  45

ctg aac cgc aag atg tcc agc cct atg gca cct cct ttc atg gta tcg      192
Leu Asn Arg Lys Met Ser Ser Pro Met Ala Pro Pro Phe Met Val Ser
    50                  55                  60

gca cca gga aag gtc att gtt ttt gga gaa cac tct gtt gtt cat ggc      240
Ala Pro Gly Lys Val Ile Val Phe Gly Glu His Ser Val Val His Gly
65                  70                  75                  80

aag gca gcc atc gcc gca gcc att tct ctg cgg tca tac cta cac gtt      288
Lys Ala Ala Ile Ala Ala Ala Ile Ser Leu Arg Ser Tyr Leu His Val
                85                  90                  95

acc acc ctt tcc aag tcg aaa cga acc gtc tcg ctc cga ttc gcc gat      336
Thr Thr Leu Ser Lys Ser Lys Arg Thr Val Ser Leu Arg Phe Ala Asp
            100                 105                 110

att ggt ctc gtt cac acc tgg aac atc gaa gac cta ccg tgg gaa gcc      384
Ile Gly Leu Val His Thr Trp Asn Ile Glu Asp Leu Pro Trp Glu Ala
        115                 120                 125

ttt caa cag cca tcc aag aag aag tcg tac tat tct ctc gtg aca gag      432
Phe Gln Gln Pro Ser Lys Lys Lys Ser Tyr Tyr Ser Leu Val Thr Glu
    130                 135                 140

ctc gac ccc gat ctc gtc gcc gcc att caa cca cac atc gaa gtt gtc      480
Leu Asp Pro Asp Leu Val Ala Ala Ile Gln Pro His Ile Glu Val Val
145                 150                 155                 160

tcc ccc aac cac ccc gag gaa atc cga aga gtg cgc cac agc tcc gtc      528
Ser Pro Asn His Pro Glu Glu Ile Arg Arg Val Arg His Ser Ser Val
                165                 170                 175

tcc gcc ttc cta tat ctt ttc tta tcc ctg gga tct cct tcg ttc cct      576
Ser Ala Phe Leu Tyr Leu Phe Leu Ser Leu Gly Ser Pro Ser Phe Pro
            180                 185                 190

ccc tgt cta tac act ctc cgc tcg act ata ccc att ggt gct ggc ttg      624
Pro Cys Leu Tyr Thr Leu Arg Ser Thr Ile Pro Ile Gly Ala Gly Leu
        195                 200                 205

ggc agc agc gca tcg gtt tca gta tgc ctc gcg tcc gcc ctt ctt cta      672
Gly Ser Ser Ala Ser Val Ser Val Cys Leu Ala Ser Ala Leu Leu Leu
    210                 215                 220

cag cta cgg acg ttg tcc ggc ccc cac cca gat caa cct gca gac gag      720
Gln Leu Arg Thr Leu Ser Gly Pro His Pro Asp Gln Pro Ala Asp Glu
225                 230                 235                 240

gct cga ctt caa gtt gaa agg att aac aga tgg gcg ttt gtg tct gag      768
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Ala Arg Leu Gln Val Glu Arg Ile Asn Arg Trp Ala Phe Val Ser Glu
                245                 250                 255

atg tgt att cat gac aac cct tca ggc gtc gac aat acc gtt gcg aca      816
Met Cys Ile His Asp Asn Pro Ser Gly Val Asp Asn Thr Val Ala Thr
            260                 265                 270

caa gga aag gct gtg gtg ttt caa cga aca gat tac tcc aaa cca ccc      864
Gln Gly Lys Ala Val Val Phe Gln Arg Thr Asp Tyr Ser Lys Pro Pro
        275                 280                 285

aac gtt cgc cca ctg tgg gac ttc ccc gaa ctg cct cta ttg ttg gta      912
Asn Val Arg Pro Leu Trp Asp Phe Pro Glu Leu Pro Leu Leu Leu Val
    290                 295                 300

gac act cgc cag gcc aag tcc act gca cac gag gtt gcc aag gtt gca      960
Asp Thr Arg Gln Ala Lys Ser Thr Ala His Glu Val Ala Lys Val Ala
305                 310                 315                 320

aag ctg aaa caa acc cac ccc aag ctt gtg aat agc att tta gat gct     1008
Lys Leu Lys Gln Thr His Pro Lys Leu Val Asn Ser Ile Leu Asp Ala
                325                 330                 335

atg gat aaa gtc aca gat gct gct tcc gaa tta atc gaa gag acc tct     1056
Met Asp Lys Val Thr Asp Ala Ala Ser Glu Leu Ile Glu Glu Thr Ser
            340                 345                 350

ttt gat aat gga tct gtg gag gac ctt agt aag gtt ggt gag ctg atg     1104
Phe Asp Asn Gly Ser Val Glu Asp Leu Ser Lys Val Gly Glu Leu Met
        355                 360                 365

acc atc aac cat ggc ctg tta gta tcg cta gga gtt tcc cac ccg cgc     1152
Thr Ile Asn His Gly Leu Leu Val Ser Leu Gly Val Ser His Pro Arg
    370                 375                 380

ctg gaa cga gta cga gag ctg gta gac cac ggg ggt att gga tgg acc     1200
Leu Glu Arg Val Arg Glu Leu Val Asp His Gly Gly Ile Gly Trp Thr
385                 390                 395                 400

aag ttg act ggc gcc ggt ggt ggc ggc tgc tcc att acc ctt ctc cgc     1248
Lys Leu Thr Gly Ala Gly Gly Gly Gly Cys Ser Ile Thr Leu Leu Arg
                405                 410                 415

cct gat gtt cct gct gag aag ctt cag aag ctt gaa gaa cga ctc gaa     1296
Pro Asp Val Pro Ala Glu Lys Leu Gln Lys Leu Glu Glu Arg Leu Glu
            420                 425                 430

acc gaa aat tac gcc aag ttt gag acg aca ctt gga ggt gat ggt att     1344
Thr Glu Asn Tyr Ala Lys Phe Glu Thr Thr Leu Gly Gly Asp Gly Ile
        435                 440                 445

ggt gtc ctc tgg cca gct gtt ctt aag aac ggc acc gag gaa gac gaa     1392
Gly Val Leu Trp Pro Ala Val Leu Lys Asn Gly Thr Glu Glu Asp Glu
    450                 455                 460

gag ggc ggc atg gag att gat tta gag aag ttc tta gag gct gaa ggc     1440
Glu Gly Gly Met Glu Ile Asp Leu Glu Lys Phe Leu Glu Ala Glu Gly
465                 470                 475                 480

acg gag ggt gtc gag aag ctc gtt gga gta cat ggc gat act ggg gaa     1488
Thr Glu Gly Val Glu Lys Leu Val Gly Val His Gly Asp Thr Gly Glu
                485                 490                 495

aga gaa ggc tgg aag ttc tgg aga gtg gaa agc cag tga                 1527
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20 25 30

Glu Thr Ser Gly Glu Ser Ser Asn Gly Ser Gly Arg Arg Arg Met Lys
35 40 45

Leu Asn Arg Lys Met Ser Ser Pro Met Ala Pro Pro Phe Met Val Ser
50 55 60

Ala Pro Gly Lys Val Ile Val Phe Gly Glu His Ser Val Val His Gly
65 70 75 80

Lys Ala Ala Ile Ala Ala Ala Ile Ser Leu Arg Ser Tyr Leu His Val
85 90 95

Thr Thr Leu Ser Lys Ser Lys Arg Thr Val Ser Leu Arg Phe Ala Asp
100 105 110

Ile Gly Leu Val His Thr Trp Asn Ile Glu Asp Leu Pro Trp Glu Ala
115 120 125

Phe Gln Gln Pro Ser Lys Lys Lys Ser Tyr Tyr Ser Leu Val Thr Glu
130 135 140

Leu Asp Pro Asp Leu Val Ala Ala Ile Gln Pro His Ile Glu Val Val
145 150 155 160

Ser Pro Asn His Pro Glu Glu Ile Arg Arg Val Arg His Ser Ser Val
165 170 175

Ser Ala Phe Leu Tyr Leu Phe Leu Ser Leu Gly Ser Pro Ser Phe Pro
180 185 190

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Pro Cys Leu Tyr Thr Leu Arg Ser Thr Ile Pro Ile Gly Ala Gly Leu
        195                 200                 205

Gly Ser Ser Ala Ser Val Ser Val Cys Leu Ala Ser Ala Leu Leu Leu
    210                 215                 220

Gln Leu Arg Thr Leu Ser Gly Pro His Pro Asp Gln Pro Ala Asp Glu
225                 230                 235                 240

Ala Arg Leu Gln Val Glu Arg Ile Asn Arg Trp Ala Phe Val Ser Glu
                245                 250                 255

Met Cys Ile His Asp Asn Pro Ser Gly Val Asp Asn Thr Val Ala Thr
            260                 265                 270

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

Asn Val Arg Pro Leu Trp Asp Phe Pro Glu Leu Pro Leu Leu Leu Val
    290                 295                 300

Asp Thr Arg Gln Ala Lys Ser Thr Ala His Glu Val Ala Lys Val Ala
305                 310                 315                 320

Lys Leu Lys Gln Thr His Pro Lys Leu Val Asn Ser Ile Leu Asp Ala
                325                 330                 335

Met Asp Lys Val Thr Asp Ala Ala Ser Glu Leu Ile Glu Glu Thr Ser
            340                 345                 350

Phe Asp Asn Gly Ser Val Glu Asp Leu Ser Lys Val Gly Glu Leu Met
        355                 360                 365

Thr Ile Asn His Gly Leu Leu Val Ser Leu Gly Val Ser His Pro Arg
    370                 375                 380

Leu Glu Arg Val Arg Glu Leu Val Asp His Gly Gly Ile Gly Trp Thr
385                 390                 395                 400

Lys Leu Thr Gly Ala Gly Gly Gly Gly Cys Ser Ile Thr Leu Leu Arg
                405                 410                 415

Pro Asp Val Pro Ala Glu Lys Leu Gln Lys Leu Glu Glu Arg Leu Glu
            420                 425                 430

Thr Glu Asn Tyr Ala Lys Phe Glu Thr Thr Leu Gly Gly Asp Gly Ile
        435                 440                 445
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Gly Val Leu Trp Pro Ala Val Leu Lys Asn Gly Thr Glu Glu Asp Glu
450 455 460

Glu Gly Gly Met Glu Ile Asp Leu Glu Lys Phe Leu Glu Ala Glu Gly
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