SEQUENCE LISTING

<110> Kyushu University, Hiroshima University

<120> DNA binding proteins using PPR motifs and use thereof

<130> F15673HK

<150> JP 2013- 89840
<151> 2013-04-22

<160> 19

<170> PatentIn version 3.5

<210> 1
<211> 596
<212> PRT
<213> Arabidopsis thaliana

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20 25 30

Arg Ser Phe Asp Ser Asn Ser Ile Ala Ser Thr Lys Arg Glu Ala Val
35 40 45

Pro Arg Phe Tyr Glu Ile Ser Ser Leu Ser Asn Arg Ala Leu Ser Ser
50 55 60

Ser Ala Gly Thr Lys Ser Asp Gln Glu Glu Asp Asp Leu Glu Asp Gly
65 70 75 80

Phe Ser Glu Leu Glu Gly Ser Lys Ser Gly Gln Gly Ser Thr Ser Ser
85 90 95

Asp Glu Asp Glu Gly Lys Leu Ser Ala Asp Glu Glu Glu Glu Glu Glu
100 105 110

Leu Asp Leu Ile Glu Thr Asp Val Ser Arg Lys Thr Val Glu Lys Lys
115 120 125

Gln Ser Glu Leu Phe Lys Thr Ile Val Ser Ala Pro Gly Leu Ser Ile
130 135 140

Gly Ser Ala Leu Asp Lys Trp Val Glu Glu Gly Asn Glu Ile Thr Arg
145 150 155 160

Val Glu Ile Ala Lys Ala Met Leu Gln Leu Arg Arg Arg Arg Met Tyr
165 170 175

Gly Arg Ala Leu Gln Met Ser Glu Trp Leu Glu Ala Asn Lys Lys Ile
180 185 190

Glu Met Thr Glu Arg Asp Tyr Ala Ser Arg Leu Asp Leu Thr Val Lys
195 200 205

Ile Arg Gly Leu Glu Lys Gly Glu Ala Cys Met Gln Lys Ile Pro Lys
210 215 220

Ser Phe Lys Gly Glu Val Leu Tyr Arg Thr Leu Leu Ala Asn Cys Val
225 230 235 240

Ala Ala Gly Asn Val Lys Lys Ser Glu Leu Val Phe Asn Lys Met Lys
245 250 255

Asp Leu Gly Phe Pro Leu Ser Gly Phe Thr Cys Asp Gln Met Leu Leu
260 265 270

Leu His Lys Arg Ile Asp Arg Lys Lys Ile Ala Asp Val Leu Leu Leu
275 280 285

Met Glu Lys Glu Asn Ile Lys Pro Ser Leu Leu Thr Tyr Lys Ile Leu
290 295 300

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

Leu Glu Thr Met Lys Asp Glu Gly Val Glu Leu Asp Phe Gln Thr Gln
325 330 335

Ala Leu Thr Ala Arg His Tyr Ser Gly Ala Gly Leu Lys Asp Lys Ala
340 345 350

Glu Lys Val Leu Lys Glu Met Glu Gly Glu Ser Leu Glu Ala Asn Arg
355 360 365

Arg Ala Phe Lys Asp Leu Leu Ser Ile Tyr Ala Ser Leu Gly Arg Glu
370 375 380

Asp Glu Val Lys Arg Ile Trp Lys Ile Cys Glu Ser Lys Pro Tyr Phe
385 390 395 400

Glu Glu Ser Leu Ala Ala Ile Gln Ala Phe Gly Lys Leu Asn Lys Val
405 410 415

Gln Glu Ala Glu Ala Ile Phe Glu Lys Ile Val Lys Met Asp Arg Arg
420 425 430

Ala Ser Ser Ser Thr Tyr Ser Val Leu Leu Arg Val Tyr Val Asp His
435 440 445

Lys Met Leu Ser Lys Gly Lys Asp Leu Val Lys Arg Met Ala Glu Ser
450 455 460

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Gly Cys Arg Ile Glu Ala Thr Thr Trp Asp Ala Leu Ile Lys Leu Tyr
465                 470                 475                 480

Val Glu Ala Gly Glu Val Glu Lys Ala Asp Ser Leu Leu Asp Lys Ala
                485                 490                 495

Ser Lys Gln Ser His Thr Lys Leu Met Met Asn Ser Phe Met Tyr Ile
            500                 505                 510

Met Asp Glu Tyr Ser Lys Arg Gly Asp Val His Asn Thr Glu Lys Ile
        515                 520                 525

Phe Leu Lys Met Arg Glu Ala Gly Tyr Thr Ser Arg Leu Arg Gln Phe
    530                 535                 540

Gln Ala Leu Met Gln Ala Tyr Ile Asn Ala Lys Ser Pro Ala Tyr Gly
545                 550                 555                 560

Met Arg Asp Arg Leu Lys Ala Asp Asn Ile Phe Pro Asn Lys Ser Met
                565                 570                 575

Ala Ala Gln Leu Ala Gln Gly Asp Pro Phe Lys Lys Thr Ala Ile Ser
            580                 585                 590

Asp Ile Leu Asp
        595
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Pro Trp Leu Pro Gln Arg Pro Arg Pro Gly Arg Ser Val Thr Ser Ala
            20                  25                  30

Pro Pro Ser Ser Ser Ala Ser Val Ser Ser Ala His Leu Ser Gln Thr
        35                  40                  45

Thr Pro Asn Phe Ser Pro Leu Gln Thr Pro Lys Ser Asp Phe Ser Gly
    50                  55                  60

Arg Gln Ser Thr Arg Phe Val Ser Pro Ala Thr Asn Asn His Arg Gln
65                  70                  75                  80

Thr Arg Gln Asn Pro Asn Tyr Asn His Arg Pro Tyr Gly Ala Ser Ser
                85                  90                  95
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Ser Pro Arg Gly Ser Ala Pro Pro Pro Ser Ser Val Ala Thr Val Ala
100 105 110

Pro Ala Gln Leu Ser Gln Pro Pro Asn Phe Ser Pro Leu Gln Thr Pro
115 120 125

Lys Ser Asp Leu Ser Ser Asp Phe Ser Gly Arg Arg Ser Thr Arg Phe
130 135 140

Val Ser Lys Met His Phe Gly Arg Gln Lys Thr Thr Met Ala Thr Arg
145 150 155 160

His Ser Ser Ala Ala Glu Asp Ala Leu Gln Asn Ala Ile Asp Phe Ser
165 170 175

Gly Asp Asp Glu Met Phe His Ser Leu Met Leu Ser Phe Glu Ser Lys
180 185 190

Leu Cys Gly Ser Asp Asp Cys Thr Tyr Ile Ile Arg Glu Leu Gly Asn
195 200 205

Arg Asn Glu Cys Asp Lys Ala Val Gly Phe Tyr Glu Phe Ala Val Lys
210 215 220

Arg Glu Arg Arg Lys Asn Glu Gln Gly Lys Leu Ala Ser Ala Met Ile
225 230 235 240

Ser Thr Leu Gly Arg Tyr Gly Lys Val Thr Ile Ala Lys Arg Ile Phe
245 250 255

Glu Thr Ala Phe Ala Gly Gly Tyr Gly Asn Thr Val Tyr Ala Phe Ser
260 265 270

Ala Leu Ile Ser Ala Tyr Gly Arg Ser Gly Leu His Glu Glu Ala Ile
275 280 285

Ser Val Phe Asn Ser Met Lys Glu Tyr Gly Leu Arg Pro Asn Leu Val
290 295 300

Thr Tyr Asn Ala Val Ile Asp Ala Cys Gly Lys Gly Gly Met Glu Phe
305 310 315 320

Lys Gln Val Ala Lys Phe Phe Asp Glu Met Gln Arg Asn Gly Val Gln
325 330 335

Pro Asp Arg Ile Thr Phe Asn Ser Leu Leu Ala Val Cys Ser Arg Gly
340 345 350

Gly Leu Trp Glu Ala Ala Arg Asn Leu Phe Asp Glu Met Thr Asn Arg
355 360 365

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Arg Ile Glu Gln Asp Val Phe Ser Tyr Asn Thr Leu Leu Asp Ala Ile
    370                 375                 380

Cys Lys Gly Gly Gln Met Asp Leu Ala Phe Glu Ile Leu Ala Gln Met
385                 390                 395                 400

Pro Val Lys Arg Ile Met Pro Asn Val Val Ser Tyr Ser Thr Val Ile
                405                 410                 415

Asp Gly Phe Ala Lys Ala Gly Arg Phe Asp Glu Ala Leu Asn Leu Phe
            420                 425                 430

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

Thr Leu Leu Ser Ile Tyr Thr Lys Val Gly Arg Ser Glu Glu Ala Leu
    450                 455                 460

Asp Ile Leu Arg Glu Met Ala Ser Val Gly Ile Lys Lys Asp Val Val
465                 470                 475                 480

Thr Tyr Asn Ala Leu Leu Gly Gly Tyr Gly Lys Gln Gly Lys Tyr Asp
                485                 490                 495

Glu Val Lys Lys Val Phe Thr Glu Met Lys Arg Glu His Val Leu Pro
            500                 505                 510

Asn Leu Leu Thr Tyr Ser Thr Leu Ile Asp Gly Tyr Ser Lys Gly Gly
        515                 520                 525

Leu Tyr Lys Glu Ala Met Glu Ile Phe Arg Glu Phe Lys Ser Ala Gly
    530                 535                 540

Leu Arg Ala Asp Val Val Leu Tyr Ser Ala Leu Ile Asp Ala Leu Cys
545                 550                 555                 560

Lys Asn Gly Leu Val Gly Ser Ala Val Ser Leu Ile Asp Glu Met Thr
                565                 570                 575

Lys Glu Gly Ile Ser Pro Asn Val Val Thr Tyr Asn Ser Ile Ile Asp
            580                 585                 590

Ala Phe Gly Arg Ser Ala Thr Met Asp Arg Ser Ala Asp Tyr Ser Asn
        595                 600                 605

Gly Gly Ser Leu Pro Phe Ser Ser Ser Ala Leu Ser Ala Leu Thr Glu
    610                 615                 620

Thr Glu Gly Asn Arg Val Ile Gln Leu Phe Gly Gln Leu Thr Thr Glu
625                 630                 635                 640
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Ser Asn Asn Arg Thr Thr Lys Asp Cys Glu Glu Gly Met Gln Glu Leu
645 650 655

Ser Cys Ile Leu Glu Val Phe Arg Lys Met His Gln Leu Glu Ile Lys
660 665 670

Pro Asn Val Val Thr Phe Ser Ala Ile Leu Asn Ala Cys Ser Arg Cys
675 680 685

Asn Ser Phe Glu Asp Ala Ser Met Leu Leu Glu Glu Leu Arg Leu Phe
690 695 700

Asp Asn Lys Val Tyr Gly Val Val His Gly Leu Leu Met Gly Gln Arg
705 710 715 720

Glu Asn Val Trp Leu Gln Ala Gln Ser Leu Phe Asp Lys Val Asn Glu
725 730 735

Met Asp Gly Ser Thr Ala Ser Ala Phe Tyr Asn Ala Leu Thr Asp Met
740 745 750

Leu Trp His Phe Gly Gln Lys Arg Gly Ala Glu Leu Val Ala Leu Glu
755 760 765

Gly Arg Ser Arg Gln Val Trp Glu Asn Val Trp Ser Asp Ser Cys Leu
770 775 780

Asp Leu His Leu Met Ser Ser Gly Ala Ala Arg Ala Met Val His Ala
785 790 795 800

Trp Leu Leu Asn Ile Arg Ser Ile Val Tyr Glu Gly His Glu Leu Pro
805 810 815

Lys Val Leu Ser Ile Leu Thr Gly Trp Gly Lys His Ser Lys Val Val
820 825 830

Gly Asp Gly Ala Leu Arg Arg Ala Val Glu Val Leu Leu Arg Gly Met
835 840 845

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

Ser Gly Ser Val Val Ala Thr Trp Leu Arg Glu Ser Ala Thr Leu Lys
865 870 875 880

Leu Leu Ile Leu His Asp His Ile Thr Thr Ala Thr Ala Thr Thr Thr
885 890 895

Thr Met Lys Ser Thr Asp Gln Gln Gln Arg Lys Gln Thr Ser Phe Ala
900 905 910

Leu Gln Pro Leu Leu Leu
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Arg Leu Arg Phe Leu Ser Gly Gly Asn Arg Lys Pro Cys Ser Phe Ser
35 40 45

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

Val Ser Val Glu Lys Gly Lys Tyr Ser Tyr Asp Val Glu Ser Leu Ile
65 70 75 80

Asn Lys Leu Ser Ser Leu Pro Pro Arg Gly Ser Ile Ala Arg Cys Leu
85 90 95

Asp Ile Phe Lys Asn Lys Leu Ser Leu Asn Asp Phe Ala Leu Val Phe
100 105 110

Lys Glu Phe Ala Gly Arg Gly Asp Trp Gln Arg Ser Leu Arg Leu Phe
115 120 125

Lys Tyr Met Gln Arg Gln Ile Trp Cys Lys Pro Asn Glu His Ile Tyr
130 135 140

Thr Ile Met Ile Ser Leu Leu Gly Arg Glu Gly Leu Leu Asp Lys Cys
145 150 155 160

Leu Glu Val Phe Asp Glu Met Pro Ser Gln Gly Val Ser Arg Ser Val
165 170 175

Phe Ser Tyr Thr Ala Leu Ile Asn Ala Tyr Gly Arg Asn Gly Arg Tyr
180 185 190

Glu Thr Ser Leu Glu Leu Leu Asp Arg Met Lys Asn Glu Lys Ile Ser
195 200 205

Pro Ser Ile Leu Thr Tyr Asn Thr Val Ile Asn Ala Cys Ala Arg Gly
210 215 220

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Gly Leu Asp Trp Glu Gly Leu Leu Gly Leu Phe Ala Glu Met Arg His
225                 230                 235                 240

Glu Gly Ile Gln Pro Asp Ile Val Thr Tyr Asn Thr Leu Leu Ser Ala
                245                 250                 255

Cys Ala Ile Arg Gly Leu Gly Asp Glu Ala Glu Met Val Phe Arg Thr
            260                 265                 270

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

Val Glu Thr Phe Gly Lys Leu Arg Arg Leu Glu Lys Val Cys Asp Leu
    290                 295                 300

Leu Gly Glu Met Ala Ser Gly Gly Ser Leu Pro Asp Ile Thr Ser Tyr
305                 310                 315                 320

Asn Val Leu Leu Glu Ala Tyr Ala Lys Ser Gly Ser Ile Lys Glu Ala
                325                 330                 335

Met Gly Val Phe His Gln Met Gln Ala Ala Gly Cys Thr Pro Asn Ala
            340                 345                 350

Asn Thr Tyr Ser Val Leu Leu Asn Leu Phe Gly Gln Ser Gly Arg Tyr
        355                 360                 365

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

Pro Asp Ala Ala Thr Tyr Asn Ile Leu Ile Glu Val Phe Gly Glu Gly
385                 390                 395                 400

Gly Tyr Phe Lys Glu Val Val Thr Leu Phe His Asp Met Val Glu Glu
                405                 410                 415

Asn Ile Glu Pro Asp Met Glu Thr Tyr Glu Gly Ile Ile Phe Ala Cys
            420                 425                 430

Gly Lys Gly Gly Leu His Glu Asp Ala Arg Lys Ile Leu Gln Tyr Met
        435                 440                 445

Thr Ala Asn Asp Ile Val Pro Ser Ser Lys Ala Tyr Thr Gly Val Ile
    450                 455                 460

Glu Ala Phe Gly Gln Ala Ala Leu Tyr Glu Glu Ala Leu Val Ala Phe
465                 470                 475                 480

Asn Thr Met His Glu Val Gly Ser Asn Pro Ser Ile Glu Thr Phe His
                485                 490                 495
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Ser Leu Leu Tyr Ser Phe Ala Arg Gly Gly Leu Val Lys Glu Ser Glu
500 505 510

Ala Ile Leu Ser Arg Leu Val Asp Ser Gly Ile Pro Arg Asn Arg Asp
515 520 525

Thr Phe Asn Ala Gln Ile Glu Ala Tyr Lys Gln Gly Gly Lys Phe Glu
530 535 540

Glu Ala Val Lys Thr Tyr Val Asp Met Glu Lys Ser Arg Cys Asp Pro
545 550 555 560

Asp Glu Arg Thr Leu Glu Ala Val Leu Ser Val Tyr Ser Phe Ala Arg
565 570 575

Leu Val Asp Glu Cys Arg Glu Gln Phe Glu Glu Met Lys Ala Ser Asp
580 585 590

Ile Leu Pro Ser Ile Met Cys Tyr Cys Met Met Leu Ala Val Tyr Gly
595 600 605

Lys Thr Glu Arg Trp Asp Asp Val Asn Glu Leu Leu Glu Glu Met Leu
610 615 620

Ser Asn Arg Val Ser Asn Ile His Gln Val Ile Gly Gln Met Ile Lys
625 630 635 640

Gly Asp Tyr Asp Asp Asp Ser Asn Trp Gln Ile Val Glu Tyr Val Leu
645 650 655

Asp Lys Leu Asn Ser Glu Gly Cys Gly Leu Gly Ile Arg Phe Tyr Asn
660 665 670

Ala Leu Leu Asp Ala Leu Trp Trp Leu Gly Gln Lys Glu Arg Ala Ala
675 680 685

Arg Val Leu Asn Glu Ala Thr Lys Arg Gly Leu Phe Pro Glu Leu Phe
690 695 700

Arg Lys Asn Lys Leu Val Trp Ser Val Asp Val His Arg Met Ser Glu
705 710 715 720

Gly Gly Met Tyr Thr Ala Leu Ser Val Trp Leu Asn Asp Ile Asn Asp
725 730 735

Met Leu Leu Lys Gly Asp Leu Pro Gln Leu Ala Val Val Val Ser Val
740 745 750

Arg Gly Gln Leu Glu Lys Ser Ser Ala Ala Arg Glu Ser Pro Ile Ala
755 760 765

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Lys Ala Ala Phe Ser Phe Leu Gln Asp His Val Ser Ser Ser Phe Ser
    770                 775                 780

Phe Thr Gly Trp Asn Gly Gly Arg Ile Met Cys Gln Arg Ser Gln Leu
785                 790                 795                 800

Lys Gln Leu Leu Ser Thr Lys Glu Pro Thr Ser Glu Glu Ser Glu Asn
                805                 810                 815

Lys Asn Leu Val Ala Leu Ala Asn Ser Pro Ile Phe Ala Ala Gly Thr
            820                 825                 830

Arg Ala Ser Thr Ser Ser Asp Thr Asn His Ser Gly Asn Pro Thr Gln
        835                 840                 845

Arg Arg Thr Arg Thr Lys Lys Glu Leu Ala Gly Ser Thr Ala
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            20                  25                  30

Tyr Gly Val Asp Pro Thr Pro Lys Ile Leu Asn Asn Leu Arg Lys Lys
        35                  40                  45

Glu Ile Gln Lys His Asn Arg Arg Thr Lys Arg Glu Thr Glu Ser Glu
    50                  55                  60

Ala Glu Val Tyr Thr Glu Ala Gln Lys Gln Ser Met Glu Glu Glu Ala
65                  70                  75                  80

Arg Phe Gln Thr Leu Arg Arg Glu Tyr Lys Gln Phe Thr Arg Ser Ile
                85                  90                  95

Ser Gly Lys Arg Gly Gly Asp Val Gly Leu Met Val Gly Asn Pro Trp
            100                 105                 110

Glu Gly Ile Glu Arg Val Lys Leu Lys Glu Leu Val Ser Gly Val Arg
        115                 120                 125

Arg Glu Glu Val Ser Ala Gly Glu Leu Lys Lys Glu Asn Leu Lys Glu
    130                 135                 140

Leu Lys Lys Ile Leu Glu Lys Asp Leu Arg Trp Val Leu Asp Asp Asp
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145 150 155 160

Val Asp Val Glu Glu Phe Asp Leu Asp Lys Glu Phe Asp Pro Ala Lys
165 170 175

Arg Trp Arg Asn Glu Gly Glu Ala Val Arg Val Leu Val Asp Arg Leu
180 185 190

Ser Gly Arg Glu Ile Asn Glu Lys His Trp Lys Phe Val Arg Met Met
195 200 205

Asn Gln Ser Gly Leu Gln Phe Thr Glu Asp Gln Met Leu Lys Ile Val
210 215 220

Asp Arg Leu Gly Arg Lys Gln Ser Trp Lys Gln Ala Ser Ala Val Val
225 230 235 240

His Trp Val Tyr Ser Asp Lys Lys Arg Lys His Leu Arg Ser Arg Phe
245 250 255

Val Tyr Thr Lys Leu Leu Ser Val Leu Gly Phe Ala Arg Arg Pro Gln
260 265 270

Glu Ala Leu Gln Ile Phe Asn Gln Met Leu Gly Asp Arg Gln Leu Tyr
275 280 285

Pro Asp Met Ala Ala Tyr His Cys Ile Ala Val Thr Leu Gly Gln Ala
290 295 300

Gly Leu Leu Lys Glu Leu Leu Lys Val Ile Glu Arg Met Arg Gln Lys
305 310 315 320

Pro Thr Lys Leu Thr Lys Asn Leu Arg Gln Lys Asn Trp Asp Pro Val
325 330 335

Leu Glu Pro Asp Leu Val Val Tyr Asn Ala Ile Leu Asn Ala Cys Val
340 345 350

Pro Thr Leu Gln Trp Lys Ala Val Ser Trp Val Phe Val Glu Leu Arg
355 360 365

Lys Asn Gly Leu Arg Pro Asn Gly Ala Thr Tyr Gly Leu Ala Met Glu
370 375 380

Val Met Leu Glu Ser Gly Lys Phe Asp Arg Val His Asp Phe Phe Arg
385 390 395 400

Lys Met Lys Ser Ser Gly Glu Ala Pro Lys Ala Ile Thr Tyr Lys Val
405 410 415

Leu Val Arg Ala Leu Trp Arg Glu Gly Lys Ile Glu Glu Ala Val Glu

420 425 430

Ala Val Arg Asp Met Glu Gln Lys Gly Val Ile Gly Thr Gly Ser Val
435 440 445

Tyr Tyr Glu Leu Ala Cys Cys Leu Cys Asn Asn Gly Arg Trp Cys Asp
450 455 460

Ala Met Leu Glu Val Gly Arg Met Lys Arg Leu Glu Asn Cys Arg Pro
465 470 475 480

Leu Glu Ile Thr Phe Thr Gly Leu Ile Ala Ala Ser Leu Asn Gly Gly
485 490 495

His Val Asp Asp Cys Met Ala Ile Phe Gln Tyr Met Lys Asp Lys Cys
500 505 510

Asp Pro Asn Ile Gly Thr Ala Asn Met Met Leu Lys Val Tyr Gly Arg
515 520 525

Asn Asp Met Phe Ser Glu Ala Lys Glu Leu Phe Glu Glu Ile Val Ser
530 535 540

Arg Lys Glu Thr His Leu Val Pro Asn Glu Tyr Thr Tyr Ser Phe Met
545 550 555 560

Leu Glu Ala Ser Ala Arg Ser Leu Gln Trp Glu Tyr Phe Glu His Val
565 570 575

Tyr Gln Thr Met Val Leu Ser Gly Tyr Gln Met Asp Gln Thr Lys His
580 585 590

Ala Ser Met Leu Ile Glu Ala Ser Arg Ala Gly Lys Trp Ser Leu Leu
595 600 605

Glu His Ala Phe Asp Ala Val Leu Glu Asp Gly Glu Ile Pro His Pro
610 615 620

Leu Phe Phe Thr Glu Leu Leu Cys His Ala Thr Ala Lys Gly Asp Phe
625 630 635 640

Gln Arg Ala Ile Thr Leu Ile Asn Thr Val Ala Leu Ala Ser Phe Gln
645 650 655

Ile Ser Glu Glu Glu Trp Thr Asp Leu Phe Glu Glu His Gln Asp Trp
660 665 670

Leu Thr Gln Asp Asn Leu His Lys Leu Ser Asp His Leu Ile Glu Cys
675 680 685

Asp Tyr Val Ser Glu Pro Thr Val Ser Asn Leu Ser Lys Ser Leu Lys

690 695 700

Ser Arg Cys Gly Ser Ser Ser Ser Ala Gln Pro Leu Leu Ala Val
705 710 715 720

Asp Val Thr Thr Gln Ser Gln Gly Glu Lys Pro Glu Glu Asp Leu Leu
725 730 735

Leu Gln Asp Thr Thr Met Glu Asp Asp Asn Ser Ala Asn Gly Glu Ala
740 745 750

Trp Glu Phe Thr Glu Thr Glu Leu Glu Thr Leu Gly Leu Glu Glu Leu
755 760 765

Glu Ile Asp Asp Asp Glu Glu Ser Ser Asp Ser Asp Ser Leu Ser Val
770 775 780

Tyr Asp Ile Leu Lys Glu Trp Glu Glu Ser Ser Lys Lys Glu
785 790 795

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Thr Arg Ser Pro Leu Ser Ile Ser Phe Leu His Gln Arg Ile His Asn
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Ile Ser Leu Ser Pro Ala Asn Glu Asp Pro Glu Thr Thr Thr Gly Asn
35 40 45

Asn Gln Asp Ser Glu Lys Tyr Pro Asn Leu Asn Pro Ile Pro Asn Asp
50 55 60

Pro Ser Gln Phe Gln Ile Pro Gln Asn His Thr Pro Pro Ile Pro Tyr
65 70 75 80

Pro Pro Ile Pro His Arg Thr Met Ala Phe Ser Ser Ala Glu Glu Ala
85 90 95

Ala Ala Glu Arg Arg Arg Arg Lys Arg Arg Leu Arg Ile Glu Pro Pro
100 105 110

Leu His Ala Leu Arg Arg Asp Pro Ser Ala Pro Pro Pro Lys Arg Asp
115 120 125

Pro Asn Ala Pro Arg Leu Pro Asp Ser Thr Ser Ala Leu Val Gly Gln
130 135 140

Arg Leu Asn Leu His Asn Arg Val Gln Ser Leu Ile Arg Ala Ser Asp
145 150 155 160

Leu Asp Ala Ala Ser Lys Leu Ala Arg Gln Ser Val Phe Ser Asn Thr
165 170 175

Arg Pro Thr Val Phe Thr Cys Asn Ala Ile Ile Ala Ala Met Tyr Arg
180 185 190

Ala Lys Arg Tyr Ser Glu Ser Ile Ser Leu Phe Gln Tyr Phe Phe Lys
195 200 205

Gln Ser Asn Ile Val Pro Asn Val Val Ser Tyr Asn Gln Ile Ile Asn
210 215 220

Ala His Cys Asp Glu Gly Asn Val Asp Glu Ala Leu Glu Val Tyr Arg
225 230 235 240

His Ile Leu Ala Asn Ala Pro Phe Ala Pro Ser Ser Val Thr Tyr Arg
245 250 255

His Leu Thr Lys Gly Leu Val Gln Ala Gly Arg Ile Gly Asp Ala Ala
260 265 270

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

Val Tyr Asn Asn Leu Ile Arg Gly Tyr Leu Asp Leu Gly Asp Phe Asp
290 295 300

Lys Ala Val Glu Phe Phe Asp Glu Leu Lys Ser Lys Cys Thr Val Tyr
305 310 315 320

Asp Gly Ile Val Asn Ala Thr Phe Met Glu Tyr Trp Phe Glu Lys Gly
325 330 335

Asn Asp Lys Glu Ala Met Glu Ser Tyr Arg Ser Leu Leu Asp Lys Lys
340 345 350

Phe Arg Met His Pro Pro Thr Gly Asn Val Leu Leu Glu Val Phe Leu
355 360 365

Lys Phe Gly Lys Lys Asp Glu Ala Trp Ala Leu Phe Asn Glu Met Leu
370 375 380

Asp Asn His Ala Pro Pro Asn Ile Leu Ser Val Asn Ser Asp Thr Val
385 390 395 400

Gly Ile Met Val Asn Glu Cys Phe Lys Met Gly Glu Phe Ser Glu Ala
405 410 415

Ile Asn Thr Phe Lys Lys Val Gly Ser Lys Val Thr Ser Lys Pro Phe
420 425 430

Val Met Asp Tyr Leu Gly Tyr Cys Asn Ile Val Thr Arg Phe Cys Glu
435 440 445

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

Arg Ser Leu Pro Ala Asp Ala Pro Ser His Arg Ala Met Ile Asp Ala
465 470 475 480

Tyr Leu Lys Ala Glu Arg Ile Asp Asp Ala Val Lys Met Leu Asp Arg
485 490 495

Met Val Asp Val Asn Leu Arg Val Val Ala Asp Phe Gly Ala Arg Val
500 505 510

Phe Gly Glu Leu Ile Lys Asn Gly Lys Leu Thr Glu Ser Ala Glu Val
515 520 525

Leu Thr Lys Met Gly Glu Arg Glu Pro Lys Pro Asp Pro Ser Ile Tyr
530 535 540

Asp Val Val Val Arg Gly Leu Cys Asp Gly Asp Ala Leu Asp Gln Ala
545 550 555 560

Lys Asp Ile Val Gly Glu Met Ile Arg His Asn Val Gly Val Thr Thr
565 570 575

Val Leu Arg Glu Phe Ile Ile Glu Val Phe Glu Lys Ala Gly Arg Arg
580 585 590

Glu Glu Ile Glu Lys Ile Leu Asn Ser Val Ala Arg Pro Val Arg Asn
595 600 605

Ala Gly Gln Ser Gly Asn Thr Pro Pro Arg Val Pro Ala Val Phe Gly
610 615 620

Thr Thr Pro Ala Ala Pro Gln Gln Pro Arg Asp Arg Ala Pro Trp Thr
625 630 635 640

Ser Gln Gly Val Val His Ser Asn Ser Gly Trp Ala Asn Gly Thr Ala
645 650 655

Gly Gln Thr Ala Gly Gly Ala Tyr Lys Ala Asn Asn Gly Gln Asn Pro
660 665 670

Ser Trp Ser Asn Thr Ser Asp Asn Gln Gln Gln Gln Ser Trp Ser Asn
675 680 685

Gln Thr Ala Gly Gln Gln Pro Pro Ser Trp Ser Arg Gln Ala Pro Gly
690 695 700

Tyr Gln Gln Gln Gln Ser Trp Ser Gln Gln Ser Gly Trp Ser Ser Pro
705 710 715 720

Ser Gly His Gln Gln Ser Trp Thr Asn Gln Thr Ala Gly Gln Gln Gln
725 730 735

Pro Trp Ala Asn Gln Thr Pro Gly Gln Gln Gln Gln Trp Ala Asn Gln
740 745 750

Thr Pro Gly Gln Gln Gln Gln Leu Ala Asn Gln Thr Pro Gly Gln Gln
755 760 765

Gln Gln Trp Ala Asn Gln Thr Pro Gly Gln Gln Gln Gln Trp Ala Asn
770 775 780

Gln Asn Asn Gly His Gln Gln Pro Trp Ala Asn Gln Asn Thr Gly His
785 790 795 800

Gln Gln Ser Trp Ala Asn Gln Thr Pro Ser Gln Gln Gln Pro Trp Ala
805 810 815

Asn Gln Thr Thr Gly Gln Gln Gln Gly Trp Gly Asn Gln Thr Thr Gly
820 825 830

Gln Gln Gln Gln Trp Ala Asn Gln Thr Ala Gly Gln Gln Ser Gly Trp
835 840 845

Thr Ala Gln Gln Gln Trp Ser Asn Gln Thr Ala Ser His Gln Gln Ser
850 855 860

Gln Trp Leu Asn Pro Val Pro Gly Glu Val Ala Asn Gln Thr Pro Trp
865 870 875 880

Ser Asn Ser Val Asp Ser His Leu Pro Gln Gln Gln Glu Pro Gly Pro
885 890 895

Ser His Glu Cys Gln Glu Thr Gln Glu Lys Lys Val Val Glu Leu Arg
900 905 910

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<400> 6

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1 5 10 15

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20 25 30

Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val Met Glu Phe
35 40 45

Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly Gly Ser Arg
50 55 60

Lys Pro Asp Gly Ala Ile Tyr Thr Val Gly Ser Pro Ile Asp Tyr Gly
65 70 75 80

Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn Leu Pro Ile
85 90 95

Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn Gln Thr Arg
100 105 110

Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr Pro Ser Ser
115 120 125

Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe Lys Gly Asn
130 135 140

Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn Cys Asn Gly
145 150 155 160

Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu Met Ile Lys
165 170 175

Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe Asn Asn Gly
180 185 190

Glu Ile Asn Phe
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<212> DNA
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tatcgata 5288