

CEL65370PC-2009035726
SEQUENCE LISTING

<110> Cellzome AG
<120> Methods for the Identification of PARP Interacting Molecules and
for the Purification of PARP Proteins
<130> CEL65370PC
<160> 5
<170> PatentIn version 3.5
<210> 1
<211> 1014
<212> PRT
<213> Homo sapiens
<400> 1

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Phe Ala Ala Glu Tyr Ala Lys Ser Asn Arg Ser Thr Cys Lys Gly Cys
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Asp Pro Glu Lys Pro Gln Leu Gly Met Ile Asp Arg Trp Tyr His Pro
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Ser Ala Ser Gln Leu Lys Gly Phe Ser Leu Leu Ala Thr Glu Asp Lys
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Glu Ala Leu Lys Lys Gln Leu Pro Gly Val Lys Ser Glu Gly Lys Arg
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Lys Lys Glu Lys Asp Lys Asp Ser Lys Leu Glu Lys Ala Leu Lys Ala
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Gln Asn Asp Leu Ile Trp Asn Ile Lys Asp Glu Leu Lys Lys Val Cys
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Ser Thr Asn Asp Leu Lys Glu Leu Leu Ile Phe Asn Lys Gln Gln Val
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Pro Ser Gly Glu Ser Ala Ile Leu Asp Arg Val Ala Asp Gly Met Val
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Phe Gly Ala Leu Leu Pro Cys Glu Glu Cys Ser Gly Gln Leu Val Phe
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Lys Ser Asp Ala Tyr Tyr Cys Thr Gly Asp Val Thr Ala Trp Thr Lys
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Cys Met Val Lys Thr Gln Thr Pro Asn Arg Lys Glu Trp Val Thr Pro
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Gln Asp Arg Ile Phe Pro Pro Glu Thr Ser Ala Ser Val Ala Ala Thr
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Pro Pro Pro Ser Thr Ala Ser Ala Pro Ala Ala Val Asn Ser Ser Ala
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Ser Ala Asp Lys Pro Leu Ser Asn Met Lys Ile Leu Thr Leu Gly Lys
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Leu Ser Arg Asn Lys Asp Glu Val Lys Ala Met Ile Glu Lys Leu Gly
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Gly Lys Leu Thr Gly Thr Ala Asn Lys Ala Ser Leu Cys Ile Ser Thr
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Lys Lys Glu Val Glu Lys Met Asn Lys Lys Met Glu Glu Val Lys Glu
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Ala Asn Ile Arg Val Val Ser Glu Asp Phe Leu Gln Asp Val Ser Ala
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Ser Thr Lys Ser Leu Gln Glu Leu Phe Leu Ala His Ile Leu Ser Pro
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Trp Gly Ala Glu Val Lys Ala Glu Pro Val Glu Val Val Ala Pro Arg
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Gly Lys Ser Gly Ala Ala Leu Ser Lys Lys Ser Lys Gly Gln Val Lys
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Glu Glu Gly Ile Asn Lys Ser Glu Lys Arg Met Lys Leu Thr Leu Lys
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Gly Thr Val Ile Gly Ser Asn Lys Leu Glu Gln Met Pro Ser Lys Glu
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Asp Ala Ile Glu His Phe Met Lys Leu Tyr Glu Glu Lys Thr Gly Asn
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Ala Trp His Ser Lys Asn Phe Thr Lys Tyr Pro Lys Lys Phe Tyr Pro
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Leu Glu Ile Asp Tyr Gly Gln Asp Glu Glu Ala Val Lys Lys Leu Thr
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Val Asn Pro Gly Thr Lys Ser Lys Leu Pro Lys Pro Val Gln Asp Leu
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Pro Pro Glu Ala Pro Val Thr Gly Tyr Met Phe Gly Lys Gly Ile Tyr
885 890 895

Phe Ala Asp Met Val Ser Lys Ser Ala Asn Tyr Cys His Thr Ser Gln
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Met Tyr Glu Leu Lys His Ala Ser His Ile Ser Lys Leu Pro Lys Gly
930 935 940

Lys His Ser Val Lys Gly Leu Gly Lys Thr Thr Pro Asp Pro Ser Ala
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Ser Gly Val Asn Asp Thr Ser Leu Leu Tyr Asn Glu Tyr Ile Val Tyr
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<213> Homo sapiens

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Gly Cys Gly Gly Val Leu Thr Phe Arg Glu Pro Ala Asp Ala Glu Arg
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Val Leu Ala Gln Ala Asp His Glu Leu His Gly Ala Gln Leu Ser Leu
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Arg Pro Ala Pro Pro Arg Ala Pro Ala Arg Leu Leu Leu Gln Gly Leu
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Pro Pro Gly Thr Thr Pro Gln Arg Leu Glu Gln His Val Gln Ala Leu
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Pro Arg Pro Asp Arg Ala Leu Val Gln Leu Pro Lys Pro Leu Ser Glu
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Ala Asp Val Arg Val Leu Glu Glu Gln Ala Gln Asn Leu Gly Leu Glu
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Gly Thr Leu Val Ser Leu Ala Arg Val Pro Gln Ala Arg Ala Val Arg
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Val Val Gly Asp Gly Ala Ser Val Asp Leu Leu Leu Leu Glu Leu Tyr
180 185 190

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195 200 205

Arg Leu Pro Gly Pro Leu Gly Thr Val Ala Ser Phe Gln Gln Trp Gln
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Val Ala Glu Arg Val Leu Gln Gln Glu His Arg Leu Gln Gly Ser Glu

225 230 235 240
 Leu Ser Leu Val Pro His Tyr Asp Ile Leu Glu Pro Glu Glu Leu Ala
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 Glu Asn Thr Ser Gly Gly Asp His Pro Ser Thr Gln Gly Pro Arg Ala
 260 265 270
 Thr Lys His Ala Leu Leu Arg Thr Gly Gly Leu Val Thr Ala Leu Gln
 275 280 285
 Gly Ala Gly Thr Val Thr Met Gly Ser Gly Glu Glu Pro Gly Gln Ser
 290 295 300
 Gly Ala Ser Leu Arg Thr Gly Pro Met Val Gln Gly Arg Gly Ile Met
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 Thr Thr Gly Ser Gly Gln Glu Pro Gly Gln Ser Gly Thr Ser Leu Arg
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 Thr Gly Pro Met Gly Ser Leu Gly Gln Ala Glu Gln Val Ser Ser Met
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 Pro Met Gly Ser Leu Glu His Glu Gly Leu Val Ser Leu Arg Pro Val
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 Gly Leu Gln Glu Gln Glu Gly Pro Met Ser Leu Gly Pro Val Gly Ser
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 Met Glu Ile Thr Met Gly Ser Leu Glu Lys Ala Gly Pro Val Ser Pro
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 Leu Met Glu Pro Gly Ala Met Arg Phe Leu Gln Leu Tyr His Glu Asp
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 Ala Glu Glu Phe Leu Arg Ser Leu Leu Gly Ser Ile Ser Cys His Val
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Leu Cys Leu Glu His Pro Gly Ser Ala Arg Phe Leu Leu Gly Pro Glu
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 Gly Thr Glu Arg Leu Ala Thr Ala Thr Leu Asp Thr Gly Leu Glu Glu
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 580 585 590
 Glu Glu Val Arg Glu Leu Leu Ala Thr Leu Glu Gly Leu Asp Leu Asp
 595 600 605
 Gly Glu Asp Trp Leu Pro Arg Glu Leu Glu Glu Glu Gly Pro Gln Glu
 610 615 620
 Gln Pro Glu Glu Glu Val Thr Pro Gly His Glu Glu Glu Glu Pro Val
 625 630 635 640
 Ala Pro Ser Thr Val Ala Pro Arg Trp Leu Glu Glu Glu Ala Ala Leu
 645 650 655
 Gln Leu Ala Leu His Arg Ser Leu Glu Pro Gln Gly Gln Val Ala Glu
 660 665 670
 Gln Glu Glu Ala Ala Ala Leu Arg Gln Ala Leu Thr Leu Ser Leu Leu
 675 680 685
 Glu Gln Pro Pro Leu Glu Ala Glu Glu Pro Pro Asp Gly Gly Thr Asp
 690 695 700
 Gly Lys Ala Gln Leu Val Val His Ser Ala Phe Glu Gln Asp Val Glu
 705 710 715 720
 Glu Leu Asp Arg Ala Leu Arg Ala Ala Leu Glu Val His Val Gln Glu
 725 730 735
 Glu Thr Val Gly Pro Trp Arg Arg Thr Leu Pro Ala Glu Leu Arg Ala
 740 745 750
 Arg Leu Glu Arg Cys His Gly Val Ser Val Ala Leu Arg Gly Asp Cys
 755 760 765
 Thr Ile Leu Arg Gly Phe Gly Ala His Pro Ala Arg Ala Ala Arg His

770

775

Leu Val Ala Leu Leu Ala Gly Pro Trp Asp Gln Ser Leu Ala Phe Pro
785 790 795 800

Leu Ala Ala Ser Gly Pro Thr Leu Ala Gly Gln Thr Leu Lys Gly Pro
805 810 815

Trp Asn Asn Leu Glu Arg Leu Ala Glu Asn Thr Gly Glu Phe Gln Glu
820 825 830

Val Val Arg Ala Phe Tyr Asp Thr Leu Asp Ala Ala Arg Ser Ser Ile
835 840 845

Arg Val Val Arg Val Glu Arg Val Ser His Pro Leu Leu Gln Gln Gln
850 855 860

Tyr Glu Leu Tyr Arg Glu Arg Leu Leu Gln Arg Cys Glu Arg Arg Pro
865 870 875 880

Val Glu Gln Val Leu Tyr His Gly Thr Thr Ala Pro Ala Val Pro Asp
885 890 895

Ile Cys Ala His Gly Phe Asn Arg Ser Phe Cys Gly Arg Asn Ala Thr
900 905 910

Val Tyr Gly Lys Gly Val Tyr Phe Ala Arg Arg Ala Ser Leu Ser Val
915 920 925

Gln Asp Arg Tyr Ser Pro Pro Asn Ala Asp Gly His Lys Ala Val Phe
930 935 940

Val Ala Arg Val Leu Thr Gly Asp Tyr Gly Gln Gly Arg Arg Gly Leu
945 950 955 960

Arg Ala Pro Pro Leu Arg Gly Pro Gly His Val Leu Leu Arg Tyr Asp
965 970 975

Ser Ala Val Asp Cys Ile Cys Gln Pro Ser Ile Phe Val Ile Phe His
980 985 990

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

His Ser Ile Lys Gln Leu Gln Leu Ser Pro Arg Leu Leu Glu Val Thr
50 55 60

Asn Thr Ile Arg Val Glu Asn Leu Pro Pro Gly Ala Asp Asp Tyr Ser
65 70 75 80

Leu Lys Leu Phe Phe Glu Asn Pro Tyr Asn Gly Gly Gly Arg Val Ala
85 90 95

Asn Val Glu Tyr Phe Pro Glu Glu Ser Ser Ala Leu Ile Glu Phe Phe
100 105 110

Asp Arg Lys Val Leu Asp Thr Ile Met Ala Thr Lys Leu Asp Phe Asn
115 120 125

Lys Met Pro Leu Ser Val Phe Pro Tyr Tyr Ala Ser Leu Gly Thr Ala
130 135 140

Leu Tyr Gly Lys Glu Lys Pro Leu Ile Lys Leu Pro Ala Pro Phe Glu
145 150 155 160

Glu Ser Leu Asp Leu Pro Leu Trp Lys Phe Leu Gln Lys Lys Asn His
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Leu Ile Glu Glu Ile Asn Asp Glu Met Arg Arg Cys His Cys Glu Leu
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Thr Trp Ser Gln Leu Ser Gly Lys Val Thr Ile Arg Pro Ala Ala Thr
195 200 205

Leu Val Asn Glu Gly Arg Pro Arg Ile Lys Thr Trp Gln Ala Asp Thr
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Ser Thr Thr Leu Ser Ser Ile Arg Ser Lys Tyr Lys Val Asn Pro Ile
225 230 235 240

Lys Val Asp Pro Thr Met Trp Asp Thr Ile Lys Asn Asp Val Lys Asp
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Asp Arg Ile Leu Ile Glu Phe Asp Thr Leu Lys Glu Met Val Ile Leu
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Ala Gly Lys Ser Glu Asp Val Gln Ser Ile Glu Val Gln Val Arg Glu
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Leu Ile Glu Ser Thr Thr Gln Lys Ile Lys Arg Glu Glu Gln Ser Leu
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Lys Glu Lys Met Ile Ile Ser Pro Gly Arg Tyr Phe Leu Leu Cys His
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Ser Ser Leu Leu Asp His Leu Leu Thr Glu Cys Pro Glu Ile Glu Ile
325 330 335

Cys Tyr Asp Arg Val Thr Gln His Leu Cys Leu Lys Gly Pro Ser Ala
340 345 350

Asp Val Tyr Lys Ala Lys Cys Glu Ile Gln Glu Lys Val Tyr Thr Met
355 360 365

Ala Gln Lys Asn Ile Gln Val Ser Pro Glu Ile Phe Gln Phe Leu Gln
370 375 380

Gln Val Asn Trp Lys Glu Phe Ser Lys Cys Leu Phe Ile Ala Gln Lys
385 390 395 400

Ile Leu Ala Leu Tyr Glu Leu Glu Gly Thr Thr Val Leu Leu Thr Ser
405 410 415

Cys Ser Ser Glu Ala Leu Leu Glu Ala Glu Lys Gln Met Leu Ser Ala
420 425 430

Leu Asn Tyr Lys Arg Ile Glu Val Glu Asn Lys Glu Val Leu His Gly
435 440 445

Lys Lys Trp Lys Gly Leu Thr His Asn Leu Leu Lys Lys Gln Asn Ser
450 455 460

Ser Pro Asn Thr Val Ile Ile Asn Glu Leu Thr Ser Glu Thr Thr Ala
465 470 475 480

Glu Val Ile Ile Thr Gly Cys Val Lys Glu Val Asn Glu Thr Tyr Lys
485 490 495

Leu Leu Phe Asn Phe Val Glu Gln Asn Met Lys Ile Glu Arg Leu Val
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Glu Val Lys Pro Ser Leu Val Ile Asp Tyr Leu Lys Thr Glu Lys Lys
515 520 525

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Leu Phe Trp Pro Lys Ile Lys Lys Val Asn Val Gln Val Ser Phe Asn
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 Pro Glu Asn Lys Gln Lys Gly Ile Leu Leu Thr Gly Ser Lys Thr Glu
 545 550 555
 Val Leu Lys Ala Val Asp Ile Val Lys Gln Val Trp Asp Ser Val Cys
 565 570 575
 Val Lys Ser Val His Thr Asp Lys Pro Gly Ala Lys Gln Phe Phe Gln
 580 585 590
 Asp Lys Ala Arg Phe Tyr Gln Ser Glu Ile Lys Arg Leu Phe Gly Cys
 595 600 605
 Tyr Ile Glu Leu Gln Glu Asn Glu Val Met Lys Glu Gly Gly Ser Pro
 610 615 620
 Ala Gly Gln Lys Cys Phe Ser Arg Thr Val Leu Ala Pro Gly Val Val
 625 630 635 640
 Leu Ile Val Gln Gln Gly Asp Leu Ala Arg Leu Pro Val Asp Val Val
 645 650 655
 Val Asn Ala Ser Asn Glu Asp Leu Lys His Tyr Gly Gly Leu Ala Ala
 660 665 670
 Ala Leu Ser Lys Ala Ala Gly Pro Glu Leu Gln Ala Asp Cys Asp Gln
 675 680 685
 Ile Val Lys Arg Glu Gly Arg Leu Leu Pro Gly Asn Ala Thr Ile Ser
 690 695 700
 Lys Ala Gly Lys Leu Pro Tyr His His Val Ile His Ala Val Gly Pro
 705 710 715 720
 Arg Trp Ser Gly Tyr Glu Ala Pro Arg Cys Val Tyr Leu Leu Arg Arg
 725 730 735
 Ala Val Gln Leu Ser Leu Cys Leu Ala Glu Lys Tyr Lys Tyr Arg Ser
 740 745 750
 Ile Ala Ile Pro Ala Ile Ser Ser Gly Val Phe Gly Phe Pro Leu Gly
 755 760 765
 Arg Cys Val Glu Thr Ile Val Ser Ala Ile Lys Glu Asn Phe Gln Phe
 770 775 780
 Lys Lys Asp Gly His Cys Leu Lys Glu Ile Tyr Leu Val Asp Val Ser
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Glu Lys Thr Val Glu Ala Phe Ala Glu Ala Val Lys Thr Val Phe Lys
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Ala Thr Leu Pro Asp Thr Ala Ala Pro Pro Gly Leu Pro Pro Ala Ala
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Ala Gly Pro Gly Lys Thr Ser Trp Glu Lys Gly Ser Leu Val Ser Pro
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Gly Gly Leu Gln Met Leu Leu Val Lys Glu Gly Val Gln Asn Ala Lys
850 855 860

Thr Asp Val Val Val Asn Ser Val Pro Leu Asp Leu Val Leu Ser Arg
865 870 875 880

Gly Pro Leu Ser Lys Ser Leu Leu Glu Lys Ala Gly Pro Glu Leu Gln
885 890 895

Glu Glu Leu Asp Thr Val Gly Gln Gly Val Ala Val Ser Met Gly Thr
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Val Leu Lys Thr Ser Ser Trp Asn Leu Asp Cys Arg Tyr Val Leu His
915 920 925

Val Val Ala Pro Glu Trp Arg Asn Gly Ser Thr Ser Ser Leu Lys Ile
930 935 940

Met Glu Asp Ile Ile Arg Glu Cys Met Glu Ile Thr Glu Ser Leu Ser
945 950 955 960

Leu Lys Ser Ile Ala Phe Pro Ala Ile Gly Thr Gly Asn Leu Gly Phe
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Pro Lys Asn Ile Phe Ala Glu Leu Ile Ile Ser Glu Val Phe Lys Phe
980 985 990

Ser Ser Lys Asn Gln Leu Lys Thr Leu Gln Glu Val His Phe Leu Leu
995 1000 1005

His Pro Ser Asp His Glu Asn Ile Gln Ala Phe Ser Asp Glu Phe
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Ala Arg Arg Ala Asn Gly Asn Leu Val Ser Asp Lys Ile Pro Lys
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Ala Lys Asp Thr Gln Gly Phe Tyr Gly Thr Val Ser Ser Pro Asp
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Ser Gly Val Tyr Glu Met Lys Ile Gly Ser Ile Ile Phe Gln Val
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Asn	Tyr	Ser	Ser	Ile	Cys	Leu	Pro	Ala	Ile	Gly	Thr	Gly	Asn	Ala
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Lys	Gln	His	Pro	Asp	Lys	Val	Ala	Glu	Ala	Ile	Ile	Asp	Ala	Ile
	1175					1180					1185			
Glu	Asp	Phe	Val	Gln	Lys	Gly	Ser	Ala	Gln	Ser	Val	Lys	Lys	Val
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Val	Met	Ser	Lys	Leu	Ala	Ser	Phe	Leu	Gly	Phe	Ser	Lys	Gln	Ser
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Pro	Gln	Lys	Lys	Asn	His	Leu	Val	Leu	Glu	Lys	Lys	Thr	Glu	Ser
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Tyr	Thr	Ser	Glu	Asp	Glu	Cys	Ile	Lys	Asp	Phe	Asp	Glu	Lys	Glu
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Arg Asp Val Met Gln Ala Arg Asp Glu Ile Glu Ala Met Ile Lys
1340 1345 1350

Arg Val Arg Leu Ala Lys Glu Gln Glu Ser Arg Ala Asp Cys Ile
1355 1360 1365

Ser Glu Phe Ile Glu Trp Gln Tyr Asn Asp Asn Asn Thr Ser His
1370 1375 1380

Cys Phe Asn Lys Met Thr Asn Leu Lys Leu Glu Asp Ala Arg Arg
1385 1390 1395

Glu Lys Lys Lys Thr Val Asp Val Lys Ile Asn His Arg His Tyr
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Thr Val Asn Leu Asn Thr Tyr Thr Ala Thr Asp Thr Lys Gly His
1415 1420 1425

Ser Leu Ser Val Gln Arg Leu Thr Lys Ser Lys Val Asp Ile Pro
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Ala His Trp Ser Asp Met Lys Gln Gln Asn Phe Cys Val Val Glu
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Leu Leu Pro Ser Asp Pro Glu Tyr Asn Thr Val Ala Ser Lys Phe
1460 1465 1470

Asn Gln Thr Cys Ser His Phe Arg Ile Glu Lys Ile Glu Arg Ile
1475 1480 1485

Gln Asn Pro Asp Leu Trp Asn Ser Tyr Gln Ala Lys Lys Lys Thr
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Met Asp Ala Lys Asn Gly Gln Thr Met Asn Glu Lys Gln Leu Phe
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His Gly Thr Asp Ala Gly Ser Val Pro His Val Asn Arg Asn Gly
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Phe Asn Arg Ser Tyr Ala Gly Lys Asn Ala Val Ala Tyr Gly Lys
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Gly Thr Tyr Phe Ala Val Asn Ala Asn Tyr Ser Ala Asn Asp Thr
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Tyr Ser Arg Pro Asp Ala Asn Gly Arg Lys His Val Tyr Tyr Val
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Arg Val Leu Thr Gly Ile Tyr Thr His Gly Asn His Ser Leu Ile
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Val Pro Pro Ser Lys Asn Pro Gln Asn Pro Thr Asp Leu Tyr Asp
1595 1600 1605

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35 40 45

Lys Asp Cys Leu Ser Ile Arg Asn Val Val Ala Ser Ile Gln Thr Lys
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Glu Gly Leu Asn Leu Lys Leu Ile Ser Gly Asp Val Leu Tyr Ile Trp
65 70 75 80

Ala Asp Val Ile Val Asn Ser Val Pro Met Asn Leu Gln Leu Gly Gly
85 90 95

Gly Pro Leu Ser Arg Ala Phe Leu Gln Lys Ala Gly Pro Met Leu Gln
100 105 110

Lys Glu Leu Asp Asp Arg Arg Arg Glu Thr Glu Glu Lys Val Gly Asn
115 120 125

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

Ala Val Ala Pro Tyr Trp Asn Asn Gly Ala Glu Thr Ser Trp Gln Ile
145 150 155 160

Met Ala Asn Ile Ile Lys Lys Cys Leu Thr Thr Val Glu Val Leu Ser
165 170 175

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Phe Ser Ser Ile Thr Phe Pro Met Ile Gly Thr Gly Ser Leu Gln Phe
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 Pro Lys Ala Val Phe Ala Lys Leu Ile Leu Ser Glu Val Phe Glu Tyr
 195 200 205
 Ser Ser Ser Thr Arg Pro Ile Thr Ser Pro Leu Gln Glu Val His Phe
 210 215 220
 Leu Val Tyr Thr Asn Asp Asp Glu Gly Cys Gln Ala Phe Leu Asp Glu
 225 230 235 240
 Phe Thr Asn Trp Ser Arg Ile Asn Pro Asn Lys Ala Arg Ile Pro Met
 245 250 255
 Ala Gly Asp Thr Gln Gly Val Val Gly Thr Val Ser Lys Pro Cys Phe
 260 265 270
 Thr Ala Tyr Glu Met Lys Ile Gly Ala Ile Thr Phe Gln Val Ala Thr
 275 280 285
 Gly Asp Ile Ala Thr Glu Gln Val Asp Val Ile Val Asn Ser Thr Ala
 290 295 300
 Arg Thr Phe Asn Arg Lys Ser Gly Val Ser Arg Ala Ile Leu Glu Gly
 305 310 315 320
 Ala Gly Gln Ala Val Glu Ser Glu Cys Ala Val Leu Ala Ala Gln Pro
 325 330 335
 His Arg Asp Phe Ile Ile Thr Pro Gly Gly Cys Leu Lys Cys Lys Ile
 340 345 350
 Ile Ile His Val Pro Gly Gly Lys Asp Val Arg Lys Thr Val Thr Ser
 355 360 365
 Val Leu Glu Glu Cys Glu Gln Arg Lys Tyr Thr Ser Val Ser Leu Pro
 370 375 380
 Ala Ile Gly Thr Gly Asn Ala Gly Lys Asn Pro Ile Thr Val Ala Asp
 385 390 395 400
 Asn Ile Ile Asp Ala Ile Val Asp Phe Ser Ser Gln His Ser Thr Pro
 405 410 415
 Ser Leu Lys Thr Val Lys Val Val Ile Phe Gln Pro Glu Leu Leu Asn
 420 425 430
 Ile Phe Tyr Asp Ser Met Lys Lys Arg Asp Leu Ser Ala Ser Leu Asn
 435 440 445

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Phe Gln Ser Thr Phe Ser Met Thr Thr Cys Asn Leu Pro Glu His Trp
450 455 460

Thr Asp Met Asn His Gln Leu Phe Cys Met Val Gln Leu Glu Pro Gly
465 470 475 480

Gln Ser Glu Tyr Asn Thr Ile Lys Asp Lys Phe Thr Arg Thr Cys Ser
485 490 495

Ser Tyr Ala Ile Glu Lys Ile Glu Arg Ile Gln Asn Ala Phe Leu Trp
500 505 510

Gln Ser Tyr Gln Val Lys Lys Arg Gln Met Asp Ile Lys Asn Asp His
515 520 525

Lys Asn Asn Glu Arg Leu Leu Phe His Gly Thr Asp Ala Asp Ser Val
530 535 540

Pro Tyr Val Asn Gln His Gly Phe Asn Arg Ser Cys Ala Gly Lys Asn
545 550 555 560

Ala Val Ser Tyr Gly Lys Gly Thr Tyr Phe Ala Val Asp Ala Ser Tyr
565 570 575

Ser Ala Lys Asp Thr Tyr Ser Lys Pro Asp Ser Asn Gly Arg Lys His
580 585 590

Met Tyr Val Val Arg Val Leu Thr Gly Val Phe Thr Lys Gly Arg Ala
595 600 605

Gly Leu Val Thr Pro Pro Pro Lys Asn Pro His Asn Pro Thr Asp Leu
610 615 620

Phe Asp Ser Val Thr Asn Asn Thr Arg Ser Pro Lys Leu Phe Val Val
625 630 635 640

Phe Phe Asp Asn Gln Ala Tyr Pro Glu Tyr Leu Ile Thr Phe Thr Ala
645 650 655

<210> 5
<211> 323
<212> PRT
<213> Homo sapiens

<400> 5

Met Gln Pro Ser Gly Trp Ala Ala Ala Arg Glu Ala Ala Gly Arg Asp
1 5 10 15

Met Leu Ala Ala Asp Leu Arg Cys Ser Leu Phe Ala Ser Ala Leu Gln
20 25 30

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Ser Tyr Lys Arg Asp Ser Val Leu Arg Pro Phe Pro Ala Ser Tyr Ala
35 40 45

Arg Gly Asp Cys Lys Asp Phe Glu Ala Leu Leu Ala Asp Ala Ser Lys
50 55 60

Leu Pro Asn Leu Lys Glu Leu Leu Gln Ser Ser Gly Asp Asn His Lys
65 70 75 80

Arg Ala Trp Asp Leu Val Ser Trp Ile Leu Ser Ser Lys Val Leu Thr
85 90 95

Ile His Ser Ala Gly Lys Ala Glu Phe Glu Lys Ile Gln Lys Leu Thr
100 105 110

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

Glu Tyr Phe Asp Pro Ala Asn Ala Lys Phe Tyr Glu Thr Lys Gly Glu
130 135 140

Arg Asp Leu Ile Tyr Ala Phe His Gly Ser Arg Leu Glu Asn Phe His
145 150 155 160

Ser Ile Ile His Asn Gly Leu His Cys His Leu Asn Lys Thr Ser Leu
165 170 175

Phe Gly Glu Gly Thr Tyr Leu Thr Ser Asp Leu Ser Leu Ala Leu Ile
180 185 190

Tyr Ser Pro His Gly His Gly Trp Gln His Ser Leu Leu Gly Pro Ile
195 200 205

Leu Ser Cys Val Ala Val Cys Glu Val Ile Asp His Pro Asp Val Lys
210 215 220

Cys Gln Thr Lys Lys Lys Asp Ser Lys Glu Ile Asp Arg Arg Arg Ala
225 230 235 240

Arg Ile Lys His Ser Glu Gly Gly Asp Ile Pro Pro Lys Tyr Phe Val
245 250 255

Val Thr Asn Asn Gln Leu Leu Arg Val Lys Tyr Leu Leu Val Tyr Ser
260 265 270

Gln Lys Pro Pro Lys Ser Arg Ala Ser Ser Gln Leu Ser Trp Phe Ser
275 280 285

Ser His Trp Phe Thr Val Met Ile Ser Leu Tyr Leu Leu Leu Leu
290 295 300

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Ile Val Ser Val Ile Asn Ser Ser Ala Phe Gln His Phe Trp Asn Arg
305 310 315 320

Ala Lys Arg