

1

SEQUENCE LISTING

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<120> breast tumor markers and methos of use thereof

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<170> PatentIn version 3.3

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Ala Gly His Val Asp Ser Gln Glu Leu Phe Val Gly Leu Phe Ser Ser
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Thr Ser Thr Gly His Ala Glu Leu Asp Lys Lys Val Asn Gly Leu Tyr
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Tyr Asp Ser Val Phe Gln Leu Ser Leu Asp Arg Met Arg His Thr Arg
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Ser Met Ala Arg Val Glu Arg Leu Arg His Arg Lys Ala Ile Gln Lys
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Leu Gly Tyr Gly Thr Leu Leu Glu Arg Met Lys Gly Glu Ala Glu Asp
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Ile Leu Glu Thr Glu Lys Ser Lys Leu Gln Leu Pro Arg Gly Met Ile
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 35 40 45
 Glu Thr Thr Lys Gln Ala Leu Cys Glu Gln Gln Gly Cys Leu Phe His
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 Leu Gly Ala Asp Glu Leu Ser Pro Lys Arg Glu Ser Ala Gln Ser Ile

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70

75

80

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

Ser Tyr Tyr Gln Ser Phe Phe Asp Val Asp Thr Ser Gln Val Leu Asp
 85 90 95

Arg Ile Lys Gly Ser Leu Leu Pro Arg Pro Gly His Asn Phe Val Arg
 100 105 110

His His Leu Arg Asn Arg Pro Asp Leu Tyr Gly Pro Phe Trp Ile Cys
 115 120 125

Ala Thr Leu Ala Phe Val Leu Ala Val Thr Gly Asn Leu Thr Leu Val
 130 135 140

Leu Ala Gln Arg Arg Asp Pro Ser Ile His Tyr Ser Pro Gln Phe His
 145 150 155 160

Lys Val Thr Val Ala Gly Ile Ser Ile Tyr Cys Tyr Ala Trp Leu Val
 165 170 175

Pro Leu Ala Leu Trp Gly Phe Leu Arg Trp Arg Lys Gly Val Gln Glu
 180 185 190

Arg Met Gly Pro Tyr Thr Phe Leu Glu Thr Val Cys Ile Tyr Gly Tyr
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Ser Leu Phe Val Phe Ile Pro Met Val Val Leu Trp Leu Ile Pro Val

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 Ala Gly Leu Val Phe Thr Leu Trp Pro Val Val Arg Glu Asp Thr Arg
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 Gln Leu Thr Pro Gln Gly His Val Ala Val Ala Val Gly Ser Gly Gly
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 Ser Tyr Gly Ala Glu Asp Glu Val Glu Glu Glu Ser Asp Lys Ala Ala
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 Leu Leu Gln Glu Gln Gln Gln Gln Gln Pro Gly Phe Trp Thr Phe
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 Ser Tyr Tyr Gln Ser Phe Phe Asp Val Asp Thr Ser Gln Val Leu Asp
 85 90 95
 Arg Ile Lys Gly Ser Leu Leu Pro Arg Pro Gly His Asn Phe Val Arg
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8

His His Leu Arg Asn Arg Pro Asp Leu Tyr Gly Pro Phe Trp Ile Cys
 115 120 125

Ala Thr Leu Ala Phe Val Leu Ala Val Thr Gly Asn Leu Thr Leu Val
 130 135 140

Leu Ala Gln Arg Arg Asp Pro Ser Ile His Tyr Ser Pro Gln Phe His
 145 150 155 160

Lys Val Thr Val Ala Gly Ile Ser Ile Tyr Cys Tyr Ala Trp Leu Val
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Pro Leu Ala Leu Trp Gly Phe Leu Arg Trp Arg Lys Gly Val Gln Glu
 180 185 190

Arg Met Gly Pro Tyr Thr Phe Leu Glu Thr Val Cys Ile Tyr Gly Tyr
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Ser Leu Phe Val Phe Ile Pro Met Val Val Leu Trp Leu Ile Pro Val
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Pro Trp Leu Gln Trp Leu Phe Gly Ala Leu Ala Leu Gly Leu Ser Ala
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Ala Gly Leu Val Phe Thr Leu Trp Pro Val Val Arg Glu Asp Thr Arg
 245 250 255

Leu Val Ala Thr Val Leu Leu Ser Val Val Val Leu Leu His Ala Leu
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Leu Ala Met Gly Cys Lys Leu Tyr Phe Phe Gln Ser Leu Pro Pro Glu
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Leu Leu Ala Ala Cys Thr Ser Leu Pro Arg Gln Ala Ala Thr Met Leu
20           25           30

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Glu Glu Ala Ala Ser Pro Asn Glu Ala Val His Ala Ser Thr Ser Gly
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Ser Gly Ala Leu Thr Asp Gln Thr Phe Thr Asp Leu Ser Ala Ala Glu
50           55           60

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Ala Ser Ser Glu Glu Val Pro Asp Phe Met Glu Val Pro His Ser Val
65           70           75           80

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His His Lys Ile Asn Cys Phe Phe Tyr Leu Glu Lys Gln Leu Cys Gln
 85 90 95

Leu Pro Ser Pro Leu Cys Leu Ser Ser Leu Leu Thr Leu Lys Leu Lys
 100 105 110

Thr Thr Val Pro Ala Pro Gly Arg Trp Trp Ser Phe Gln Pro His Lys
 115 120 125

Ala Phe Pro Leu Leu Val Gly Thr Pro Gly Ser Trp Gln Ser Thr Ile
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Asp Pro Ala Trp Ala Ala Pro Ser Gln Pro Ser Pro Gly
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Tyr Leu Lys Ser Asp Tyr Leu Pro Cys Ala Gly Val Leu Ile His Pro
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Leu Trp Val Ile Thr Ala Ala His Cys Asn Leu Pro Lys Leu Arg Val
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Ile Leu Gly Val Thr Ile Pro Ala Asp Ser Asn Glu Lys His Leu Gln
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Val Ile Gly Tyr Glu Lys Met Ile His His Pro His Phe Ser Val Thr
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Ser Ile Asp His Asp Ile Met Leu Ile Lys Leu Lys Thr Glu Ala Glu
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Leu Asn Asp Tyr Val Lys Leu Ala Asn Leu Pro Tyr Gln Thr Ile Ser
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Glu Asn Thr Met Cys Ser Val Ser Thr Trp Ser Tyr Asn Val Cys Asp
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Ser Lys Pro Gln Cys Arg Asp Ala Tyr Lys Thr Tyr Asn Ile Thr Glu
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Asn Met Leu Cys Val Gly Ile Val Pro Gly Arg Arg Gln Pro Cys Lys
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Glu Val Ser Ala Ala Pro Ala Ile Cys Asn Gly Met Leu Gln Gly Ile
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<213> Homo sapiens

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<212> PRT
<213> Homo sapiens

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Met Leu Pro Ala Val Lys Ala Thr Trp Leu Tyr Gly Ile Gln Ile Thr
20           25           30

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Ser Leu Leu Leu Val Cys Ile Leu Gln Phe Phe Asn Ser Met Ile Leu
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Gly Ser Leu Leu Ile Ser Phe Asn Leu Ser Val Phe Ile Ala Arg Lys
50           55           60

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Leu Gln Lys Asn Leu Lys Thr Gly Ser Phe Leu Asn Arg Leu Gly Lys
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Leu Leu Leu His Leu Phe Met Val Leu Cys Leu Thr Leu Phe Leu Asn
85           90           95

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Asn Ile Ile Lys Lys Ile Leu Asn Leu Lys Ser Asp Glu His Ile Phe

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100

105

110

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

Thr Phe Gly Arg Leu Ser Asp Thr Leu Leu Phe Tyr Ala Tyr Ile Phe
 145 150 155 160

Val Leu Ser Ile Thr Val Ile Val Ala Phe Val Val Ala Phe His Asn
 165 170 175

Leu Ser Asp Ser Thr Asn Gln Gln Ser Val Gly Lys Met Glu Lys Gly
 180 185 190

Thr Val Asp Leu Lys Pro Glu Thr Ala Tyr Asn Leu Ile His Thr Ile
 195 200 205

Leu Phe Gly Phe Leu Ala Leu Ser Thr Met Arg Met Lys Tyr Leu Trp
 210 215 220

Thr Ser His Met Cys Val Phe Ala Ser Phe Gly Leu Cys Ser Pro Glu
 225 230 235 240

Ile Trp Glu Leu Leu Leu Lys Ser Val His Leu Tyr Asn Pro Lys Arg
 245 250 255

Ile Cys Ile Met Arg Tyr Ser Val Pro Ile Leu Ile Leu Leu Tyr Leu
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Cys Tyr Lys Asn Gln Lys Ser
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<210> 16

<211> 102

<212> PRT

<213> Homo sapiens

<400> 16

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15

Pro Ser Gly Cys Thr Ser Arg Arg Leu Trp Lys Ile Leu Ser Leu Thr
 35 40 45

Ile Gly Gly Thr Ile Ala Leu Cys Ile Gly Leu Leu Thr Ser Val Tyr
 50 55 60

Leu Ala Thr Leu His Glu Asn Asp Leu Trp Phe Ser Asn Ile Lys Val
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Trp Ser Phe Phe Asp His Cys Ile Ile His Ser Val Gly Ser Pro Val
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Val Ser His Val Asp Glu
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<210> 17
 <211> 716
 <212> PRT
 <213> Homo sapiens

<400> 17

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Glu Asp Phe Pro Ala Gln Glu Glu Asn Val Lys Leu Glu Asn Lys Leu
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Pro Ser Gly Cys Thr Ser Arg Arg Leu Trp Lys Ile Leu Ser Leu Thr
 35 40 45

Ile Gly Gly Thr Ile Ala Leu Cys Ile Gly Leu Leu Thr Ser Val Tyr
 50 55 60

Leu Ala Thr Leu His Glu Asn Asp Leu Trp Phe Ser Asn Ile Lys Glu
 65 70 75 80

Val Glu Arg Glu Ile Ser Phe Arg Thr Glu Cys Gly Leu Tyr Tyr Ser
 85 90 95

Tyr Tyr Lys Gln Met Leu Gln Ala Pro Thr Leu Val Gln Gly Phe His
 100 105 110

Gly Leu Ile Tyr Asp Asn Lys Thr Glu Ser Met Lys Thr Ile Asn Leu
 115 120 125

Leu Gln Arg Met Asn Ile Tyr Gln Glu Val Phe Leu Ser Ile Leu Tyr
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Arg Val Leu Pro Ile Gln Lys Tyr Leu Glu Pro Val Tyr Phe Tyr Ile
145 150 155 160

Tyr Thr Leu Phe Gly Leu Gln Ala Ile Tyr Val Thr Ala Leu Tyr Ile
165 170 175

Thr Ser Trp Leu Leu Ser Gly Thr Trp Leu Ser Gly Leu Leu Ala Ala
180 185 190

Phe Trp Tyr Val Thr Asn Arg Ile Asp Thr Thr Arg Val Glu Phe Thr
195 200 205

Ile Pro Leu Arg Glu Asn Trp Ala Leu Pro Phe Phe Ala Ile Gln Ile
210 215 220

Ala Ala Ile Thr Tyr Phe Leu Arg Pro Asn Leu Gln Pro Leu Ser Glu
225 230 235 240

Arg Leu Thr Leu Leu Ala Ile Phe Ile Ser Thr Phe Leu Phe Ser Leu
245 250 255

Thr Trp Gln Phe Asn Gln Phe Met Met Leu Met Gln Ala Leu Val Leu
260 265 270

Phe Thr Leu Asp Ser Leu Asp Met Leu Pro Ala Val Lys Ala Thr Trp
275 280 285

Leu Tyr Gly Ile Gln Ile Thr Ser Leu Leu Leu Val Cys Ile Leu Gln
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Phe Phe Asn Ser Met Ile Leu Gly Ser Leu Leu Ile Ser Phe Asn Leu
305 310 315 320

Ser Val Phe Ile Ala Arg Lys Leu Gln Lys Asn Leu Lys Thr Gly Ser
325 330 335

Phe Leu Asn Arg Leu Gly Lys Leu Leu Leu His Leu Phe Met Val Leu
340 345 350

Cys Leu Thr Leu Phe Leu Asn Asn Ile Ile Lys Lys Ile Leu Asn Leu
355 360 365

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

Gly Ala Thr Arg Asp Phe Asp Ala Asn Leu Tyr Leu Cys Glu Glu Ala

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Leu Phe Tyr Ala Tyr Ile Phe Val Leu Ser Ile Thr Val Ile Val Ala						
		420		425		430
Phe Val Val Ala Phe His Asn Leu Ser Asp Ser Thr Asn Gln Gln Ser						
		435		440		445
Val Gly Lys Met Glu Lys Gly Thr Val Asp Leu Lys Pro Glu Thr Ala						
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Tyr Asn Leu Ile His Thr Ile Leu Phe Gly Phe Leu Ala Leu Ser Thr						
465		470		475		480
Met Arg Met Lys Tyr Leu Trp Thr Ser His Met Cys Val Phe Ala Ser						
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Phe Gly Leu Cys Ser Pro Glu Ile Trp Glu Leu Leu Leu Lys Ser Val						
		500		505		510
His Leu Tyr Asn Pro Lys Arg Ile Cys Ile Met Arg Tyr Ser Val Pro						
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Ile Leu Ile Leu Leu Tyr Leu Cys Tyr Lys Phe Trp Pro Gly Met Met						
		530		535		540
Asp Glu Leu Ser Glu Leu Arg Glu Phe Tyr Asp Pro Asp Thr Val Glu						
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Leu Met Asn Trp Ile Asn Ser Asn Thr Pro Arg Lys Ala Val Phe Ala						
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Gly Ser Met Gln Leu Leu Ala Gly Val Lys Leu Cys Thr Gly Arg Thr						
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Leu Thr Asn His Pro His Tyr Glu Asp Ser Ser Leu Arg Glu Arg Thr						
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Arg Ala Val Tyr Gln Ile Tyr Ala Lys Arg Ala Pro Glu Glu Val His						
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Ala Leu Leu Arg Ser Phe Gly Thr Asp Tyr Val Ile Leu Glu Asp Ser						
625		630		635		640

18

Ile Cys Tyr Glu Arg Arg His Arg Arg Gly Cys Arg Leu Arg Asp Leu
645 650 655

Leu Asp Ile Ala Asn Gly His Met Met Asp Gly Pro Gly Glu Asn Asp
660 665 670

Pro Asp Leu Lys Pro Ala Asp His Pro Arg Phe Cys Glu Glu Ile Lys
675 680 685

Arg Asn Leu Pro Pro Tyr Val Ala Tyr Phe Thr Arg Val Phe Gln Asn
690 695 700

Lys Thr Phe His Val Tyr Lys Leu Ser Arg Asn Lys
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<210> 18
<211> 112
<212> PRT
<213> Homo sapiens

<400> 18

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Pro Ser Gly Cys Thr Ser Arg Arg Leu Trp Lys Ile Leu Ser Leu Thr
35 40 45

Ile Gly Gly Thr Pro Phe Ala Leu Asp Phe Leu His Leu Ser Thr Leu
50 55 60

Pro Arg Tyr Met Lys Met Ile Tyr Gly Phe Leu Ile Leu Arg Lys Trp
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Ser Glu Lys Ser His Ser Glu Gln Ser Val Ala Cys Ile Thr Pro Thr
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Thr Ser Arg Cys Cys Arg Leu Gln Pro Ser Cys Lys Val Ile Thr Thr
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<210> 19
<211> 1841
<212> DNA
<213> Homo sapiens

<400> 19

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 <212> DNA
 <213> Homo sapiens

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<210> 21
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<212> DNA
<213> Homo sapiens

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

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

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Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe Pro Pro Asn His Asp 245 250 255		
Gln Gly Glu Gln Tyr Glu His Asn Arg Val His Lys Pro Asp Arg Val 260 265 270		
His Asn Pro Gly His Ser His Val His Leu Pro Glu Arg Asn Gly His 275 280 285		
Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro Asp Asn Glu Gly Glu 290 295 300		
Leu Arg His Thr Arg Lys Arg Glu Ala Pro His Val Lys Asn Asn Ala 305 310 315 320		
Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp Asp His His His Glu 325 330 335		
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Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu Cys Pro Ala Leu Leu 355 360 365		
Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His Phe Asp Lys Leu Leu 370 375 380		
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Ile Ser Leu Leu Ser Leu Leu Gly Val Ile Leu Val Pro Ile Ile Asn 420 425 430		

Gln Gly Cys Phe Lys Phe Leu Leu Thr Phe Leu Val Ala Leu Ala Val
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His Cys Ile Arg Met Phe Lys His Tyr Lys Gln Gln Arg Gly Lys Gln
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Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val Val Ser Glu Asp Arg
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Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys Ile Ile Asp His Ser
 595 600 605

His Ser Asp Gly Leu His Thr Ile His Glu His Asp Leu His Ala Ala
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His Gln Trp His His Lys His Ser His His Ser His Gly Pro Cys His
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 660 665 670

Val Ile Met Gly Asp Gly Ile His Asn Phe Ser Asp Gly Leu Ala Ile

675

680

685

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 740 745 750

Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile Phe Ala Val Thr Ala
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His Gly Asp Gly Asp Asn Glu Glu His Gly Phe Cys Pro Val Gly Gln
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Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly Phe Ala Ile Met Leu
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<212> PRT

<213> Homo sapiens

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 20 25 30

Pro Glu Ala Leu His Arg Gln His Arg Gly Met Thr Glu Leu Glu Pro
 35 40 45

Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu Lys Lys Tyr Tyr Ile
 50 55 60

28

Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly Arg Leu Ser Phe Phe
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Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu Gly Glu Arg Lys Val
85 90 95

Val Glu Ile Asn His Glu Asp Leu Gly His Asp His Val Ser His Leu
100 105 110

Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe His Ser His Asn His
115 120 125

Gln His Ser His Asn His Leu Asn Ser Glu Asn Gln Thr Val Thr Ser
130 135 140

Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro Glu Lys Glu Thr Val
145 150 155 160

Glu Val Ser Val Lys Ser Asp Asp Lys His Met His Asp His Asn His
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Arg Leu Arg His His His Arg Leu His His His Leu Asp His Asn Asn
180 185 190

Thr His His Phe His Asn Asp Ser Ile Thr Pro Ser Glu Arg Gly Glu
195 200 205

Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys Thr Gln Glu Gln Ser
210 215 220

Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys Lys Gly Arg Lys Ser
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Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe Pro Pro Asn His Asp
245 250 255

Gln Gly Glu Gln Tyr Glu His Asn Arg Val His Lys Pro Asp Arg Val
260 265 270

His Asn Pro Gly His Ser His Val His Leu Pro Glu Arg Asn Gly His
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Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro Asp Asn Glu Gly Glu
290 295 300

Leu Arg His Thr Arg Lys Arg Glu Ala Pro His Val Lys Asn Asn Ala
305 310 315 320

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His	Cys	Ile	Arg	Met	Phe	Lys	His	Tyr	Lys	Gln	Gln	Arg	Gly	Lys	Gln	515	520	525	
Lys	Trp	Phe	Met	Lys	Gln	Asn	Thr	Glu	Glu	Ser	Thr	Ile	Gly	Arg	Lys	530	535	540	
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Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly Gln Gln Glu Ser Pro
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Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys Ile Ile Asp His Ser
 595 600 605

His Ser Asp Gly Leu His Thr Ile His Glu His Asp Leu His Ala Ala
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Ala His Asn His His Gly Glu Asn Lys Thr Val Leu Arg Lys His Asn
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His Gln Trp His His Lys His Ser His His Ser His Gly Pro Cys His
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Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala Asn Ile Ala Trp Met
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Val Ile Met Gly Asp Gly Ile His Asn Phe Ser Asp Gly Leu Ala Ile
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Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val
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Leu Ser Ala Met Met Ala Tyr Ile Gly Met Leu Ile Gly Thr Ala Val
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Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile Phe Ala Val Thr Ala
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Gly Met Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Glu Met Leu
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<210> 27

<211> 543

<212> PRT

<213> Homo sapiens

<400> 27

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

Ser Leu Gly Leu Leu Leu Pro Gly Ser His Tyr Leu Gly Arg Phe Gln
20 25 30

Asp Arg Leu Met Trp Ile Met Ile Leu Glu Cys Gly Tyr Thr Tyr Cys
35 40 45

Ser Ile Asn Ile Lys Gly Leu Glu Leu Gln Glu Thr Ser Cys His Thr
50 55 60

Ala Glu Ala Arg Arg Val Asp Glu Val Phe Glu Asp Ala Phe Glu Gln
65 70 75 80

Glu Tyr Thr Arg Val Cys Ser Leu Asn Glu His Phe Gly Asn Val Leu
85 90 95

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

Val Leu Ser Gly Ile Ile Asp Ser His Glu Asn Leu Lys Glu Phe Lys
115 120 125

Gly Asp Leu Ile Lys Val Leu Val Trp Ile Leu Val Gln Tyr Cys Ser
130 135 140

Lys Arg Pro Gly Met Lys Glu Asn Val His Asn Thr Glu Asn Lys Gly
145 150 155 160

Lys Ala Pro Leu Met Leu Pro Ala Leu Asn Thr Leu Pro Pro Pro Lys
165 170 175

Ser Pro Glu Asp Ile Asp Ser Leu Asn Ser Glu Thr Phe Asn Asp Trp
180 185 190

Ser Asp Asp Asn Ile Phe Asp Asp Glu Pro Thr Ile Lys Lys Val Ile

195

200

205

Glu Glu Lys His Gln Leu Lys Asp Leu Pro Gly Thr Asn Leu Phe Ile
 210 215 220

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

Val Pro Glu Asn Asp Leu Tyr Lys Ala Val Leu Leu Gly Tyr Pro Ala
 245 250 255

Val Asp Lys Gly Lys Gln Glu Asp Met Pro Tyr Ile Pro Leu Met Glu
 260 265 270

Phe Ser Cys Ser His Ser His Leu Val Cys Leu Pro Ala Glu Trp Arg
 275 280 285

Thr Ser Cys Met Pro Ser Ser Lys Met Lys Glu Met Ser Ser Leu Phe
 290 295 300

Pro Glu Asp Trp Tyr Gln Phe Val Leu Arg Gln Leu Glu Cys Tyr His
 305 310 315 320

Ser Glu Glu Lys Ala Ser Asn Val Leu Glu Glu Ile Ala Lys Asp Lys
 325 330 335

Val Leu Lys Asp Phe Tyr Val His Thr Val Met Thr Cys Tyr Phe Ser
 340 345 350

Leu Phe Gly Ile Asp Asn Met Ala Pro Ser Pro Gly His Ile Leu Arg
 355 360 365

Val Tyr Gly Gly Val Leu Pro Trp Ser Val Ala Leu Asp Trp Leu Thr
 370 375 380

Glu Lys Pro Glu Leu Phe Gln Leu Ala Leu Lys Ala Phe Arg Tyr Thr
 385 390 395 400

Leu Lys Leu Met Ile Asp Lys Ala Ser Leu Gly Pro Ile Glu Asp Phe
 405 410 415

Arg Glu Leu Ile Lys Tyr Leu Glu Glu Tyr Glu Arg Asp Trp Tyr Ile
 420 425 430

Gly Leu Val Ser Asp Glu Lys Trp Lys Glu Ala Ile Leu Gln Glu Lys
 435 440 445

Pro Tyr Leu Phe Ser Leu Gly Tyr Asp Ser Asn Met Gly Ile Tyr Thr
 450 455 460

Gly Arg Val Leu Ser Leu Gln Glu Leu Leu Ile Gln Val Gly Lys Leu
 465 470 475 480

Asn Pro Glu Ala Val Arg Gly Gln Trp Ala Asn Leu Ser Trp Glu Leu
 485 490 495

Leu Tyr Ala Thr Asn Asp Asp Glu Glu Arg Tyr Ser Ile Gln Ala His
 500 505 510

Pro Leu Leu Leu Arg Asn Leu Thr Val Gln Ala Ala Glu Pro Pro Leu
 515 520 525

Gly Tyr Pro Ile Tyr Ser Ser Lys Pro Leu His Ile His Leu Tyr
 530 535 540

<210> 28
 <211> 938
 <212> PRT
 <213> Homo sapiens

<400> 28

Met Pro Ala Leu Glu His Met Asn Gln Ile Leu His Ile Leu Phe Val
 1 5 10 15

Phe Leu Pro Phe Leu Trp Ala Leu Gly Thr Leu Pro Pro Pro Asp Ala
 20 25 30

Leu Leu Leu Trp Ala Met Glu Gln Val Leu Glu Phe Gly Leu Gly Gly
 35 40 45

Ser Ser Met Ser Thr His Leu Arg Leu Leu Val Met Phe Ile Met Ser
 50 55 60

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

Val Leu Phe Met Thr Gly Phe Gly Phe Leu Leu Ser Leu Asn Leu Ser
 85 90 95

Asp Met Gly His Lys Ile Gly Thr Lys Ser Lys Asp Leu Pro Ser Gly
 100 105 110

Pro Glu Lys His Phe Ser Trp Lys Glu Cys Leu Phe Tyr Ile Ile Ile
 115 120 125

Leu Val Leu Ala Leu Leu Glu Thr Ser Leu Leu His His Phe Ala Gly
 130 135 140

Phe Ser Gln Ile Ser Lys Ser Asn Ser Gln Ala Ile Val Gly Tyr Gly
 145 150 155 160

Leu Met Ile Leu Leu Ile Ile Leu Trp Ile Leu Arg Glu Ile Gln Ser
 165 170 175

Val Tyr Ile Ile Gly Ile Phe Arg Asn Pro Phe Tyr Pro Lys Asp Val
 180 185 190

Gln Thr Val Thr Val Phe Phe Glu Lys Gln Thr Arg Leu Met Lys Ile
 195 200 205

Gly Ile Val Arg Arg Ile Leu Leu Thr Leu Val Ser Pro Phe Ala Met
 210 215 220

Ile Ala Phe Leu Ser Leu Asp Ser Ser Leu Gln Gly Leu His Ser Val
 225 230 235 240

Ser Val Cys Ile Gly Phe Thr Arg Ala Phe Arg Met Val Trp Gln Asn
 245 250 255

Thr Glu Asn Ala Leu Leu Glu Thr Val Ile Val Ser Thr Val His Leu
 260 265 270

Ile Ser Ser Thr Asp Ile Trp Trp Asn Arg Ser Leu Asp Thr Gly Leu
 275 280 285

Arg Leu Leu Leu Val Gly Ile Ile Arg Asp Arg Leu Ile Gln Phe Ile
 290 295 300

Ser Lys Leu Gln Phe Ala Val Thr Val Leu Leu Thr Ser Trp Thr Glu
 305 310 315 320

Lys Lys Gln Arg Arg Lys Thr Thr Ala Thr Leu Cys Ile Leu Asn Ile
 325 330 335

Val Phe Ser Pro Phe Val Leu Val Ile Ile Val Phe Ser Thr Leu Leu
 340 345 350

Ser Ser Pro Leu Leu Pro Leu Phe Thr Leu Pro Val Phe Leu Val Gly
 355 360 365

41

Phe	Pro	Arg	Pro	Ile	Gln	Ser	Trp	Pro	Gly	Ala	Ala	Gly	Thr	Thr	Ala		
	370					375						380					
Cys	Val	Cys	Ala	Asp	Thr	Val	Tyr	Tyr	Tyr	Gln	Met	Val	Pro	Arg	Leu		
385					390					395					400		
Thr	Ala	Val	Leu	Gln	Thr	Ala	Met	Ala	Ala	Gly	Ser	Leu	Gly	Leu	Leu		
				405					410					415			
Leu	Pro	Gly	Ser	His	Tyr	Leu	Gly	Arg	Phe	Gln	Asp	Arg	Leu	Met	Trp		
			420					425					430				
Ile	Met	Ile	Leu	Glu	Cys	Gly	Tyr	Thr	Tyr	Cys	Ser	Ile	Asn	Ile	Lys		
		435					440						445				
Gly	Leu	Glu	Leu	Gln	Glu	Thr	Ser	Cys	His	Thr	Ala	Glu	Ala	Arg	Arg		
	450					455					460						
Val	Asp	Glu	Val	Phe	Glu	Asp	Ala	Phe	Glu	Gln	Glu	Tyr	Thr	Arg	Val		
465					470					475					480		
Cys	Ser	Leu	Asn	Glu	His	Phe	Gly	Asn	Val	Leu	Thr	Pro	Cys	Thr	Val		
				485					490					495			
Leu	Pro	Val	Lys	Leu	Tyr	Ser	Asp	Ala	Arg	Asn	Val	Leu	Ser	Gly	Ile		
			500					505						510			
Ile	Asp	Ser	His	Glu	Asn	Leu	Lys	Glu	Phe	Lys	Gly	Asp	Leu	Ile	Lys		
		515					520					525					
Val	Leu	Val	Trp	Ile	Leu	Val	Gln	Tyr	Cys	Ser	Lys	Arg	Pro	Gly	Met		
	530					535					540						
Lys	Glu	Asn	Val	His	Asn	Thr	Glu	Asn	Lys	Gly	Lys	Ala	Pro	Leu	Met		
545					550					555					560		
Leu	Pro	Ala	Leu	Asn	Thr	Leu	Pro	Pro	Pro	Lys	Ser	Pro	Glu	Asp	Ile		
				565					570					575			
Asp	Ser	Leu	Asn	Ser	Glu	Thr	Phe	Asn	Asp	Trp	Ser	Asp	Asp	Asn	Ile		
			580					585					590				
Phe	Asp	Asp	Glu	Pro	Thr	Ile	Lys	Lys	Val	Ile	Glu	Glu	Lys	His	Gln		
		595					600					605					
Leu	Lys	Asp	Leu	Pro	Gly	Thr	Asn	Leu	Phe	Ile	Pro	Gly	Ser	Val	Glu		
	610					615					620						

Ser Gln Arg Val Gly Asp His Ser Thr Gly Thr Val Pro Glu Asn Asp
625 630 635 640

Leu Tyr Lys Ala Val Leu Leu Gly Tyr Pro Ala Val Asp Lys Gly Lys
645 650 655

Gln Glu Asp Met Pro Tyr Ile Pro Leu Met Glu Phe Ser Cys Ser His
660 665 670

Ser His Leu Val Cys Leu Pro Ala Glu Trp Arg Thr Ser Cys Met Pro
675 680 685

Ser Ser Lys Met Lys Glu Met Ser Ser Leu Phe Pro Glu Asp Trp Tyr
690 695 700

Gln Phe Val Leu Arg Gln Leu Glu Cys Tyr His Ser Glu Glu Lys Ala
705 710 715 720

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

Tyr Val His Thr Val Met Thr Cys Tyr Phe Ser Leu Phe Gly Ile Asp
740 745 750

Asn Met Ala Pro Ser Pro Gly His Ile Leu Arg Val Tyr Gly Gly Val
755 760 765

Leu Pro Trp Ser Val Ala Leu Asp Trp Leu Thr Glu Lys Pro Glu Leu
770 775 780

Phe Gln Leu Ala Leu Lys Ala Phe Arg Tyr Thr Leu Lys Leu Met Ile
785 790 795 800

Asp Lys Ala Ser Leu Gly Pro Ile Glu Asp Phe Arg Glu Leu Ile Lys
805 810 815

Tyr Leu Glu Glu Tyr Glu Arg Asp Trp Tyr Ile Gly Leu Val Ser Asp
820 825 830

Glu Lys Trp Lys Glu Ala Ile Leu Gln Glu Lys Pro Tyr Leu Phe Ser
835 840 845

Leu Gly Tyr Asp Ser Asn Met Gly Ile Tyr Thr Gly Arg Val Leu Ser
850 855 860

43

Leu Gln Glu Leu Leu Ile Gln Val Gly Lys Leu Asn Pro Glu Ala Val
 865 870 875 880

Arg Gly Gln Trp Ala Asn Leu Ser Trp Glu Leu Leu Tyr Ala Thr Asn
 885 890 895

Asp Asp Glu Glu Arg Tyr Ser Ile Gln Ala His Pro Leu Leu Leu Arg
 900 905 910

Asn Leu Thr Val Gln Ala Ala Glu Pro Pro Leu Gly Tyr Pro Ile Tyr
 915 920 925

Ser Ser Lys Pro Leu His Ile His Leu Tyr
 930 935

<210> 29
 <211> 230
 <212> PRT
 <213> Homo sapiens

<400> 29

Met Ser Pro Asp Val Pro Leu Leu Asn Asp Tyr Lys Gln Asp Phe Phe
 1 5 10 15

Leu Lys Arg Phe Pro Gln Thr Val Leu Gly Gly Pro Arg Phe Lys Leu
 20 25 30

Gly Tyr Cys Ala Pro Pro Tyr Ile Tyr Val Asn Gln Ile Ile Leu Phe
 35 40 45

Leu Met Pro Trp Val Trp Gly Gly Val Gly Thr Leu Leu Tyr Gln Leu
 50 55 60

Gly Ile Leu Lys Asp Tyr Tyr Thr Ala Ala Leu Ser Gly Gly Leu Met
 65 70 75 80

Leu Phe Thr Ala Phe Val Ile Gln Phe Thr Ser Leu Tyr Ala Lys Asn
 85 90 95

Lys Ser Thr Thr Val Glu Arg Ile Leu Thr Thr Asp Ile Leu Ala Glu
 100 105 110

Glu Asp Glu His Glu Phe Thr Ser Cys Thr Gly Ala Glu Thr Val Lys
 115 120 125

Phe Leu Ile Pro Gly Lys Lys Tyr Val Ala Asn Thr Val Phe His Ser
 130 135 140

Ile Leu Ala Gly Leu Ala Cys Gly Leu Gly Thr Trp Tyr Leu Leu Pro
 145 150 155 160

Asn Arg Ile Thr Leu Leu Tyr Gly Ser Thr Gly Gly Thr Ala Leu Leu
 165 170 175

Phe Phe Phe Gly Trp Met Thr Leu Cys Ile Ala Glu Tyr Ser Leu Ile
 180 185 190

Val Asn Thr Ala Thr Glu Thr Ala Thr Phe Gln Thr Gln Asp Thr Tyr
 195 200 205

Glu Ile Ile Pro Leu Met Arg Pro Leu Tyr Ile Phe Phe Phe Val Ser
 210 215 220

Val Asp Leu Ala His Arg
 225 230

<210> 30
 <211> 1172
 <212> PRT
 <213> Homo sapiens

<400> 30

Met Ser Pro Asp Val Pro Leu Leu Asn Asp Tyr Lys Gln Asp Phe Phe
 1 5 10 15

Leu Lys Arg Phe Pro Gln Thr Val Leu Gly Gly Pro Arg Phe Lys Leu
 20 25 30

Gly Tyr Cys Ala Pro Pro Tyr Ile Tyr Val Asn Gln Ile Ile Leu Phe
 35 40 45

Leu Met Pro Trp Val Trp Gly Gly Val Gly Thr Leu Leu Tyr Gln Leu
 50 55 60

Gly Ile Leu Lys Asp Tyr Tyr Thr Ala Ala Leu Ser Gly Gly Leu Met
 65 70 75 80

Leu Phe Thr Ala Phe Val Ile Gln Phe Thr Ser Leu Tyr Ala Lys Asn
 85 90 95

Lys Ser Thr Thr Val Glu Arg Ile Leu Thr Thr Asp Ile Leu Ala Glu
 100 105 110

Glu Asp Glu His Glu Phe Thr Ser Cys Thr Gly Ala Glu Thr Val Lys
 115 120 125

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

46

Glu Thr Ser Leu Leu His His Phe Ala Gly Phe Ser Gln Ile Ser Lys
 370 375 380

Ser Asn Ser Gln Ala Ile Val Gly Tyr Gly Leu Met Ile Leu Leu Ile
 385 390 395 400

Ile Leu Trp Ile Leu Arg Glu Ile Gln Ser Val Tyr Ile Ile Gly Ile
 405 410 415

Phe Arg Asn Pro Phe Tyr Pro Lys Asp Val Gln Thr Val Thr Val Phe
 420 425 430

Phe Glu Lys Gln Thr Arg Leu Met Lys Ile Gly Ile Val Arg Arg Ile
 435 440 445

Leu Leu Thr Leu Val Ser Pro Phe Ala Met Ile Ala Phe Leu Ser Leu
 450 455 460

Asp Ser Ser Leu Gln Gly Leu His Ser Val Ser Val Cys Ile Gly Phe
 465 470 475 480

Thr Arg Ala Phe Arg Met Val Trp Gln Asn Thr Glu Asn Ala Leu Leu
 485 490 495

Glu Thr Val Ile Val Ser Thr Val His Leu Ile Ser Ser Thr Asp Ile
 500 505 510

Trp Trp Asn Arg Ser Leu Asp Thr Gly Leu Arg Leu Leu Leu Val Gly
 515 520 525

Ile Ile Arg Asp Arg Leu Ile Gln Phe Ile Ser Lys Leu Gln Phe Ala
 530 535 540

Val Thr Val Leu Leu Thr Ser Trp Thr Glu Lys Lys Gln Arg Arg Lys
 545 550 555 560

Thr Thr Ala Thr Leu Cys Ile Leu Asn Ile Val Phe Ser Pro Phe Val
 565 570 575

Leu Val Ile Ile Val Phe Ser Thr Leu Leu Ser Ser Pro Leu Leu Pro
 580 585 590

Leu Phe Thr Leu Pro Val Phe Leu Val Gly Phe Pro Arg Pro Ile Gln
 595 600 605

Ser Trp Pro Gly Ala Ala Gly Thr Thr Ala Cys Val Cys Ala Asp Thr
 610 615 620

Val Tyr Tyr Tyr Gln Met Val Pro Arg Leu Thr Ala Val Leu Gln Thr
625 630 635 640

Ala Met Ala Ala Gly Ser Leu Gly Leu Leu Leu Pro Gly Ser His Tyr
645 650 655

Leu Gly Arg Phe Gln Asp Arg Leu Met Trp Ile Met Ile Leu Glu Cys
660 665 670

Gly Tyr Thr Tyr Cys Ser Ile Asn Ile Lys Gly Leu Glu Leu Gln Glu
675 680 685

Thr Ser Cys His Thr Ala Glu Ala Arg Arg Val Asp Glu Val Phe Glu
690 695 700

Asp Ala Phe Glu Gln Glu Tyr Thr Arg Val Cys Ser Leu Asn Glu His
705 710 715 720

Phe Gly Asn Val Leu Thr Pro Cys Thr Val Leu Pro Val Lys Leu Tyr
725 730 735

Ser Asp Ala Arg Asn Val Leu Ser Gly Ile Ile Asp Ser His Glu Asn
740 745 750

Leu Lys Glu Phe Lys Gly Asp Leu Ile Lys Val Leu Val Trp Ile Leu
755 760 765

Val Gln Tyr Cys Ser Lys Arg Pro Gly Met Lys Glu Asn Val His Asn
770 775 780

Thr Glu Asn Lys Gly Lys Ala Pro Leu Met Leu Pro Ala Leu Asn Thr
785 790 795 800

Leu Pro Pro Pro Lys Ser Pro Glu Asp Ile Asp Ser Leu Asn Ser Glu
805 810 815

Thr Phe Asn Asp Trp Ser Asp Asp Asn Ile Phe Asp Asp Glu Pro Thr
820 825 830

Ile Lys Lys Val Ile Glu Glu Lys His Gln Leu Lys Asp Leu Pro Gly
835 840 845

Thr Asn Leu Phe Ile Pro Gly Ser Val Glu Ser Gln Arg Val Gly Asp
850 855 860

His	Ser	Thr	Gly	Thr	Val	Pro	Glu	Asn	Asp	Leu	Tyr	Lys	Ala	Val	Leu	865	870	875	880
Leu	Gly	Tyr	Pro	Ala	Val	Asp	Lys	Gly	Lys	Gln	Glu	Asp	Met	Pro	Tyr	885	890	895	
Ile	Pro	Leu	Met	Glu	Phe	Ser	Cys	Ser	His	Ser	His	Leu	Val	Cys	Leu	900	905	910	
Pro	Ala	Glu	Trp	Arg	Thr	Ser	Cys	Met	Pro	Ser	Ser	Lys	Met	Lys	Glu	915	920	925	
Met	Ser	Ser	Leu	Phe	Pro	Glu	Asp	Trp	Tyr	Gln	Phe	Val	Leu	Arg	Gln	930	935	940	
Leu	Glu	Cys	Tyr	His	Ser	Glu	Glu	Lys	Ala	Ser	Asn	Val	Leu	Glu	Glu	945	950	955	960
Ile	Ala	Lys	Asp	Lys	Val	Leu	Lys	Asp	Phe	Tyr	Val	His	Thr	Val	Met	965	970	975	
Thr	Cys	Tyr	Phe	Ser	Leu	Phe	Gly	Ile	Asp	Asn	Met	Ala	Pro	Ser	Pro	980	985	990	
Gly	His	Ile	Leu	Arg	Val	Tyr	Gly	Gly	Val	Leu	Pro	Trp	Ser	Val	Ala	995	1000	1005	
Leu	Asp	Trp	Leu	Thr	Glu	Lys	Pro	Glu	Leu	Phe	Gln	Leu	Ala	Leu		1010	1015	1020	
Lys	Ala	Phe	Arg	Tyr	Thr	Leu	Lys	Leu	Met	Ile	Asp	Lys	Ala	Ser		1025	1030	1035	
Leu	Gly	Pro	Ile	Glu	Asp	Phe	Arg	Glu	Leu	Ile	Lys	Tyr	Leu	Glu		1040	1045	1050	
Glu	Tyr	Glu	Arg	Asp	Trp	Tyr	Ile	Gly	Leu	Val	Ser	Asp	Glu	Lys		1055	1060	1065	
Trp	Lys	Glu	Ala	Ile	Leu	Gln	Glu	Lys	Pro	Tyr	Leu	Phe	Ser	Leu		1070	1075	1080	
Gly	Tyr	Asp	Ser	Asn	Met	Gly	Ile	Tyr	Thr	Gly	Arg	Val	Leu	Ser		1085	1090	1095	
Leu	Gln	Glu	Leu	Leu	Ile	Gln	Val	Gly	Lys	Leu	Asn	Pro	Glu	Ala		1100	1105	1110	

Val Arg Gly Gln Trp Ala Asn Leu Ser Trp Glu Leu Leu Tyr Ala
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Thr Asn Asp Asp Glu Glu Arg Tyr Ser Ile Gln Ala His Pro Leu
 1130 1135 1140

Leu Leu Arg Asn Leu Thr Val Gln Ala Ala Glu Pro Pro Leu Gly
 1145 1150 1155

Tyr Pro Ile Tyr Ser Ser Lys Pro Leu His Ile His Leu Tyr
 1160 1165 1170

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<211> 873

<212> PRT

<213> Homo sapiens

<400> 31

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Leu Leu Leu Trp Ala Met Glu Gln Val Leu Glu Phe Gly Leu Gly Gly
 35 40 45

Ser Ser Met Ser Thr His Leu Arg Leu Leu Val Met Phe Ile Met Ser
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Ala Gly Thr Ala Ile Ala Ser Tyr Phe Ile Pro Ser Thr Val Gly Val
 65 70 75 80

Val Leu Phe Met Thr Gly Phe Gly Phe Leu Leu Ser Leu Asn Leu Ser
 85 90 95

Asp Met Gly His Lys Ile Gly Thr Lys Ser Lys Asp Leu Pro Ser Gly
 100 105 110

Pro Glu Lys His Phe Ser Trp Lys Glu Cys Leu Phe Tyr Ile Ile Ile
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Leu Val Leu Ala Leu Leu Glu Thr Ser Leu Leu His His Phe Ala Gly
 130 135 140

Phe Ser Gln Ile Ser Lys Ser Asn Ser Gln Ala Ile Val Gly Tyr Gly

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Val Tyr Ile Ile Gly Ile Phe Arg Asn Pro Phe Tyr Pro Lys Asp Val						
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Gln Thr Val Thr Val Phe Phe Glu Lys Gln Thr Arg Leu Met Lys Ile						
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Gly Ile Val Arg Arg Ile Leu Leu Thr Leu Val Ser Pro Phe Ala Met						
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Ile Ala Phe Leu Ser Leu Asp Ser Ser Leu Gln Gly Leu His Ser Val						
225		230		235		240
Ser Val Cys Ile Gly Phe Thr Arg Ala Phe Arg Met Val Trp Gln Asn						
		245		250		255
Thr Glu Asn Ala Leu Leu Glu Thr Val Ile Val Ser Thr Val His Leu						
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Ile Ser Ser Thr Asp Ile Trp Trp Asn Arg Ser Leu Asp Thr Gly Leu						
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Ser Lys Leu Gln Phe Ala Val Thr Val Leu Leu Thr Ser Trp Thr Glu						
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Lys Lys Gln Arg Arg Lys Thr Thr Ala Thr Leu Cys Ile Leu Asn Ile						
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Val Phe Ser Pro Phe Val Leu Val Ile Ile Val Phe Ser Thr Leu Leu						
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Ser Ser Pro Leu Leu Pro Leu Phe Thr Leu Pro Val Phe Leu Val Gly						
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Cys Val Cys Ala Asp Thr Val Tyr Tyr Tyr Gln Met Val Pro Arg Leu						
385		390		395		400

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Gly Leu Glu Leu Gln Glu Thr Ser Cys His Thr Ala Glu Ala Arg Arg
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Val Asp Glu Val Phe Glu Asp Ala Phe Glu Gln Glu Tyr Thr Arg Val
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Cys Ser Leu Asn Glu His Phe Gly Asn Val Leu Thr Pro Cys Thr Val
 485 490 495

Leu Pro Val Lys Leu Tyr Ser Asp Ala Arg Asn Val Leu Ser Gly Ile
 500 505 510

Ile Asp Ser His Glu Asn Leu Lys Glu Phe Lys Gly Asp Leu Ile Lys
 515 520 525

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Phe Asp Asp Glu Pro Thr Ile Lys Lys Val Ile Glu Glu Lys His Gln
 595 600 605

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 610 615 620

Ser Gln Arg Val Gly Asp His Ser Thr Gly Thr Val Pro Glu Asn Asp
 625 630 635 640

Leu Tyr Lys Ala Val Leu Leu Gly Tyr Pro Ala Val Asp Lys Gly Lys

645

650

655

Gln Glu Asp Met Pro Tyr Ile Pro Leu Met Glu Phe Ser Cys Ser His
 660 665 670

Ser His Leu Val Cys Leu Pro Ala Glu Trp Arg Thr Ser Cys Met Pro
 675 680 685

Ser Ser Lys Met Lys Glu Met Ser Ser Leu Phe Pro Glu Asp Trp Tyr
 690 695 700

Gln Phe Val Leu Arg Gln Leu Glu Cys Tyr His Ser Glu Glu Lys Ala
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Ser Asn Val Leu Glu Glu Ile Ala Lys Asp Lys Val Leu Lys Asp Phe
 725 730 735

Tyr Val His Thr Val Met Thr Cys Tyr Phe Ser Leu Phe Gly Ile Asp
 740 745 750

Asn Met Ala Pro Ser Pro Gly His Ile Leu Arg Val Tyr Gly Gly Val
 755 760 765

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Phe Gln Leu Ala Leu Lys Ala Phe Arg Tyr Thr Leu Lys Leu Met Ile
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Asp Lys Ala Ser Leu Gly Pro Ile Glu Asp Phe Arg Glu Leu Ile Lys
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Tyr Leu Glu Glu Tyr Glu Arg Asp Trp Tyr Ile Gly Leu Val Ser Asp
 820 825 830

Glu Lys Trp Lys Glu Ala Ile Leu Gln Glu Lys Pro Tyr Leu Phe Ser
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<400> 32

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<213> Homo sapiens

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<212> PRT
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Trp Lys Phe Pro Glu Asp Phe Gly Asp Gln Glu Ile Leu Gln Ser Val
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Pro Lys Phe Cys Phe Pro Phe Asp Val Glu Arg Val Ser Gln Asn Gln
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Val Gly Gln His Phe Thr Phe Val Leu Thr Asp Ile Glu Ser Lys Gln
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Leu	Pro	Thr	Ile	Pro	Glu	Ser	Arg	Asn	Leu	Thr	Glu	Tyr	Phe	Val	Ala	165	170	175
Val	Asp	Val	Asn	Asn	Met	Leu	Gln	Leu	Tyr	Ala	Ser	Met	Leu	His	Glu	180	185	190
Arg	Arg	Ile	Val	Ile	Ile	Ser	Ser	Lys	Leu	Ser	Thr	Leu	Thr	Ala	Cys	195	200	205
Ile	His	Gly	Ser	Ala	Ala	Leu	Leu	Tyr	Pro	Met	Tyr	Trp	Gln	His	Ile	210	215	220
Tyr	Ile	Pro	Val	Leu	Pro	Pro	His	Leu	Leu	Asp	Tyr	Cys	Cys	Ala	Pro	225	230	235
Met	Pro	Tyr	Leu	Ile	Gly	Ile	His	Ser	Ser	Leu	Ile	Glu	Arg	Val	Lys	245	250	255
Asn	Lys	Ser	Leu	Glu	Asp	Val	Val	Met	Leu	Asn	Val	Asp	Thr	Asn	Thr	260	265	270
Leu	Glu	Ser	Pro	Phe	Ser	Asp	Leu	Asn	Asn	Leu	Pro	Ser	Asp	Val	Val	275	280	285
Ser	Ala	Leu	Lys	Asn	Lys	Leu	Lys	Lys	Gln	Ser	Thr	Ala	Thr	Gly	Asp	290	295	300
Gly	Val	Ala	Arg	Ala	Phe	Leu	Arg	Ala	Gln	Ala	Ala	Leu	Phe	Gly	Ser	305	310	315
Tyr	Arg	Asp	Ala	Leu	Arg	Tyr	Lys	Pro	Gly	Glu	Pro	Ile	Thr	Phe	Cys	325	330	335
Glu	Glu	Ser	Phe	Val	Lys	His	Arg	Ser	Ser	Val	Met	Lys	Gln	Phe	Leu	340	345	350
Glu	Thr	Ala	Ile	Asn	Leu	Gln	Leu	Phe	Lys	Gln	Phe	Ile	Asp	Gly	Arg	355	360	365
Leu	Ala	Lys	Leu	Asn	Ala	Gly	Arg	Gly	Phe	Ser	Asp	Val	Phe	Glu	Glu			

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 Asp Tyr Pro Phe Ser Gln
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 <212> PRT
 <213> Homo sapiens

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 35 40 45

 Pro Lys Phe Cys Phe Pro Phe Asp Val Glu Arg Val Ser Gln Asn Gln
 50 55 60

 Val Gly Gln His Phe Thr Phe Val Leu Thr Asp Ile Glu Ser Lys Gln
 65 70 75 80

 Arg Phe Gly Phe Cys Arg Leu Thr Ser Gly Gly Thr Ile Cys Leu Cys
 85 90 95

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

 Thr Leu Ala Asp Tyr Leu Ala Lys Glu Leu Glu Asn Asp Leu Asn Glu
 115 120 125

 Thr Leu Arg Ser Leu Tyr Asn His Pro Val Pro Lys Ala Asn Thr Pro
 130 135 140

 Val Asn Leu Ser Val Asn Gln Glu Ile Phe Ile Ala Cys Glu Gln Val
 145 150 155 160

 Leu Lys Asp Gln Pro Ala Leu Val Pro His Ser Tyr Phe Ile Ala Pro
 165 170 175

Asp Val Thr Gly Leu Pro Thr Ile Pro Glu Ser Arg Asn Leu Thr Glu
 180 185 190

Tyr Phe Val Ala Val Asp Val Asn Asn Met Leu Gln Leu Tyr Ala Ser
 195 200 205

Met Leu His Glu Arg Arg Ile Val Ile Ile Ser Ser Lys Leu Ser Thr
 210 215 220

Leu Thr Ala Cys Ile His Gly Ser Ala Ala Leu Leu Tyr Pro Met Tyr
 225 230 235 240

Trp Gln His Ile Tyr Ile Pro Val Leu Pro Pro His Leu Leu Asp Tyr
 245 250 255

Cys Cys Ala Pro Met Pro Tyr Leu Ile Gly Ile His Ser Ser Leu Ile
 260 265 270

Glu Arg Val Lys Asn Lys Ser Leu Glu Asp Val Val Met Leu Asn Val
 275 280 285

Asp Thr Asn Thr Leu Glu Ser Pro Phe Ser Asp Leu Asn Asn Leu Pro
 290 295 300

Ser Asp Val Val Ser Ala Leu Lys Asn Lys Leu Lys Lys Gln Ser Thr
 305 310 315 320

Ala Thr Gly Asp Gly Val Ala Arg Ala Phe Leu Arg Ala Gln Ala Ala
 325 330 335

Leu Phe Gly Ser Tyr Arg Asp Ala Leu Arg Tyr Lys Pro Gly Glu Pro
 340 345 350

Ile Thr Phe Cys Glu Glu Ser Phe Val Lys His Arg Ser Ser Val Met
 355 360 365

Lys Gln Phe Leu Glu Thr Ala Ile Asn Leu Gln Leu Phe Lys Gln Phe
 370 375 380

Ile Asp Gly Arg Leu Ala Lys Leu Asn Ala Gly Arg Gly Phe Ser Asp
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 35 40 45

Pro Lys Phe Cys Phe Pro Phe Asp Val Glu Arg Val Ser Gln Asn Gln
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Val Gly Gln His Phe Thr Phe Val Leu Thr Asp Ile Glu Ser Lys Gln
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Arg Phe Gly Phe Cys Arg Leu Thr Ser Gly Gly Thr Ile Cys Leu Cys
 85 90 95

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

Thr Leu Ala Asp Tyr Leu Ala Lys Glu Leu Glu Asn Asp Leu Asn Glu
 115 120 125

Thr Leu Arg Ser Leu Tyr Asn His Pro Val Pro Lys Ala Asn Thr Pro
 130 135 140

Val Asn Leu Ser Val Asn Gln Glu Ile Phe Ile Ala Cys Glu Gln Val
 145 150 155 160

Leu Lys Asp Gln Pro Ala Leu Val Pro His Ser Tyr Phe Ile Ala Pro
 165 170 175

Asp Val Thr Gly Leu Pro Thr Ile Pro Glu Ser Arg Asn Leu Thr Glu
 180 185 190

Tyr Phe Val Ala Val Asp Val Asn Asn Met Leu Gln Leu Tyr Ala Ser
 195 200 205

Met Leu His Glu Arg Arg Ile Val Ile Ile Ser Ser Lys Leu Ser Thr

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Leu Thr Ala Cys Ile His Gly Ser Ala Ala Leu Leu Tyr Pro Met Tyr				
225		230		235 240
Trp Gln His Ile Tyr Ile Pro Val Leu Pro Pro His Leu Leu Asp Tyr				
	245		250	255
Cys Cys Ala Pro Met Pro Tyr Leu Ile Gly Ile His Ser Ser Leu Ile				
	260		265	270
Glu Arg Val Lys Asn Lys Ser Leu Glu Asp Val Val Met Leu Asn Val				
	275		280	285
Asp Thr Asn Thr Leu Glu Ser Pro Phe Ser Asp Leu Asn Asn Leu Pro				
	290		295	300
Ser Asp Val Val Ser Ala Leu Lys Asn Lys Leu Lys Lys Gln Ser Thr				
305		310		315 320
Ala Thr Gly Asp Gly Val Ala Arg Ala Phe Leu Arg Ala Gln Ala Ala				
	325		330	335
Leu Phe Gly Ser Tyr Arg Asp Ala Leu Arg Tyr Lys Pro Gly Glu Pro				
	340		345	350
Ile Thr Phe Cys Glu Glu Ser Phe Val Lys His Arg Ser Ser Val Met				
	355		360	365
Lys Gln Phe Leu Glu Thr Ala Ile Asn Leu Gln Leu Phe Lys Gln Phe				
	370		375	380
Ile Asp Gly Arg Leu Ala Lys Leu Asn Ala Gly Arg Gly Phe Ser Asp				
385		390		395 400
Val Phe Glu Glu Glu Ile Thr Ser Gly Gly Phe Cys Gly Gly Lys Asp				
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Lys Leu Gln Tyr Asp Tyr Pro Phe Ser Gln				
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 <400> 40

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Glu	Ile	Leu	Gln	Ser	Val	Pro	Lys	Phe	Cys	Phe	Pro	Phe	Asp	Val	Glu
		35					40					45			
Arg	Val	Ser	Gln	Asn	Gln	Val	Gly	Gln	His	Phe	Thr	Phe	Val	Leu	Thr
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Asp	Ile	Glu	Ser	Lys	Gln	Arg	Phe	Gly	Phe	Cys	Arg	Leu	Thr	Ser	Gly
65					70					75					80
Gly	Thr	Ile	Cys	Leu	Cys	Ile	Leu	Ser	Tyr	Leu	Pro	Trp	Phe	Glu	Val
				85					90					95	
Tyr	Tyr	Lys	Leu	Leu	Asn	Thr	Leu	Ala	Asp	Tyr	Leu	Ala	Lys	Glu	Leu
			100					105					110		
Glu	Asn	Asp	Leu	Asn	Glu	Thr	Leu	Arg	Ser	Leu	Tyr	Asn	His	Pro	Val
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Pro	Lys	Ala	Asn	Thr	Pro	Val	Asn	Leu	Ser	Val	His	Ser	Tyr	Phe	Ile
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Ala	Pro	Asp	Val	Thr	Gly	Leu	Pro	Thr	Ile	Pro	Glu	Ser	Arg	Asn	Leu
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Thr	Glu	Tyr	Phe	Val	Ala	Val	Asp	Val	Asn	Asn	Met	Leu	Gln	Leu	Tyr
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Ala	Ser	Met	Leu	His	Glu	Arg	Arg	Ile	Val	Ile	Ile	Ser	Ser	Lys	Leu
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Ser	Thr	Leu	Thr	Ala	Cys	Ile	His	Gly	Ser	Ala	Ala	Leu	Leu	Tyr	Pro
		195					200					205			
Met	Tyr	Trp	Gln	His	Ile	Tyr	Ile	Pro	Val	Leu	Pro	Pro	His	Leu	Leu
	210					215					220				
Asp	Tyr	Cys	Cys	Ala	Pro	Met	Pro	Tyr	Leu	Ile	Gly	Ile	His	Ser	Ser
225					230					235					240
Leu	Ile	Glu	Arg	Val	Lys	Asn	Lys	Ser	Leu	Glu	Asp	Val	Val	Met	Leu
				245					250					255	

Asn Val Asp Thr Asn Thr Leu Glu Ser Pro Phe Ser Asp Leu Asn Asn
 260 265 270

Leu Pro Ser Asp Val Val Ser Ala Leu Lys Asn Lys Leu Lys Lys Gln
 275 280 285

Ser Thr Ala Thr Gly Asp Gly Val Ala Arg Ala Phe Leu Arg Ala Gln
 290 295 300

Ala Ala Leu Phe Gly Ser Tyr Arg Asp Ala Leu Arg Tyr Lys Pro Gly
 305 310 315 320

Glu Pro Ile Thr Phe Cys Glu Glu Ser Phe Val Lys His Arg Ser Ser
 325 330 335

Val Met Lys Gln Phe Leu Glu Thr Ala Ile Asn Leu Gln Leu Phe Lys
 340 345 350

Gln Phe Ile Asp Gly Arg Leu Ala Lys Leu Asn Ala Gly Arg Gly Phe
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<211> 2117

<212> DNA

<213> Homo sapiens

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<210> 42

<211> 2177

<212> DNA

<213> Homo sapiens

<400> 42

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ctgtgcccc atgccatacc tgattggaat acactccagc ctcatagaga gagtgaaaaa 1020
caaatcattg gaagatgttg ttatgttaaa tgttgataca aacacattag aatcaccatt 1080
tagtgacttg aacaacctac caagtgatgt ggtctcggcc ttgaaaaata aactgaagaa 1140
gcagtctaca gctacgggtg atggagtagc tagggccttt cttagagcac aggctgcttt 1200
gtttggatcc tacagagatg cactgagata caaacctggt gagcccatca ctttctgtga 1260
ggagagtttt gtaaagcacc gctcaagcgt gatgaaacag ttcctggaaa ctgccattaa 1320
cctccagctt ttttaagcagt ttatcgatgg tcgactggca aaactaaatg caggaagggg 1380
tttctctgat gtatttgaag aagagatcac ttcaggtggc ttttgtggag gtaaagacaa 1440
gttacaatat gattatccat tttctcaata acaattttct tggctcttgc acttgtgtct 1500
gataaaacct atttcataaa caactaatga tttcctccta aatatgtaat gtcttaaata 1560
catttttcat cttataaaag ctatggaatt agcttatttt gcctgatacc tgttactcaa 1620
ggcattaagt tggcctcctg aattggcagc tgttggcctc gataatctct taatattgct 1680
ggaaattagt aatacagaaa tccaatcaac tcatatcttc ctgtctttcc ttctgaatag 1740
tagtattctc tgctagaaaa ctactagtga tggttattac tgagtatgaa ttaagaact 1800
gaggttatga ttggtaatac aatccaaaaa gaagggctctg aacaccaaaa ttctttatac 1860
atatttaagt aactgtatta ttattataca gatgtcttta cttttttgac tttatagatc 1920
actgcagcat taagaaagtt tccagtttac cattccataa gtacaattaa tccttctagt 1980
gtaaatgttc aaatactggt ataattatct aggcaattaa taatttaca actgatattt 2040
ttgcacgatt gtagtgggtg atagtcttga cttgcagagc attttgcttg agtccttgaa 2100
atgtcgtggt cattcattat ttgctgagtg cttacaatgt attaggcact gttctaaata 2160
ttaagtgtac taaataaaca aaaatccttg tattctg 2197

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<210> 45
<211> 423
<212> PRT
<213> Homo sapiens

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<400> 45
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Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
1           5           10           15

```

```

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
20           25           30

```

```

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
35           40           45

```

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

290 295 300
 Pro Gly Pro Thr Gly Pro Lys Gly Ile Ser Gly His Pro Gly Glu Lys
 305 310 315 320
 Gly Glu Arg Gly Leu Arg Gly Glu Pro Gly Pro Gln Gly Ser Ala Gly
 325 330 335
 Gln Arg Gly Glu Pro Gly Pro Lys Gly Asp Pro Gly Glu Lys Ser His
 340 345 350
 Trp Gly Glu Gly Leu His Gln Leu Arg Glu Ala Leu Lys Ile Leu Ala
 355 360 365
 Glu Arg Val Leu Ile Leu Glu Thr Met Ile Gly Leu Tyr Glu Pro Glu
 370 375 380
 Leu Gly Ser Gly Ala Gly Pro Ala Gly Thr Gly Thr Pro Ser Leu Leu
 385 390 395 400
 Arg Gly Lys Arg Gly Gly His Ala Thr Asn Tyr Arg Ile Val Ala Pro
 405 410 415
 Arg Ser Arg Asp Glu Arg Gly
 420
 <210> 46
 <211> 212
 <212> PRT
 <213> Homo sapiens
 <400> 46
 Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15
 Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30
 Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45
 Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60
 Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr
 65 70 75 80

79

Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys
 85 90 95

Pro Gly His Ser Gly Val Ser Cys Glu Glu Val Ala Ala Ser Ser Ala
 100 105 110

Ser Leu Glu Pro Met Trp Ser Gly Ser Thr Met Arg Arg Met Ala Leu
 115 120 125

Arg Pro Thr Ala Phe Ser Gly Cys Leu Asn Cys Ser Lys Val Ser Glu
 130 135 140

Leu Thr Glu Arg Leu Lys Val Leu Glu Ala Lys Met Thr Met Leu Thr
 145 150 155 160

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

Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser Pro Gly Asp Gly
 180 185 190

Gly Leu Gln Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr Glu Thr Asn
 195 200 205

Asn His Trp Pro
 210

<210> 47
 <211> 175
 <212> PRT
 <213> Homo sapiens

<400> 47

Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45

Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr
 65 70 75 80

Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys
 85 90 95

Pro Gly His Ser Gly Val Ser Cys Glu Glu Gly Cys Leu Asn Cys Ser
 100 105 110

Lys Val Ser Glu Leu Thr Glu Arg Leu Lys Val Leu Glu Ala Lys Met
 115 120 125

Thr Met Leu Thr Val Ile Glu Gln Pro Val Pro Pro Thr Pro Ala Thr
 130 135 140

Pro Glu Asp Pro Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser
 145 150 155 160

Pro Gly Asp Gly Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu
 165 170 175

<210> 48
 <211> 34
 <212> PRT
 <213> Homo sapiens

<400> 48

Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

Arg Arg

<210> 49
 <211> 445
 <212> PRT
 <213> Homo sapiens

<400> 49

Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45

Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr
 65 70 75 80

Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys
 85 90 95

Pro Gly His Ser Gly Val Ser Cys Glu Glu Val Ala Ala Ser Ser Ala
 100 105 110

Ser Leu Glu Pro Met Trp Ser Gly Ser Thr Met Arg Arg Met Ala Leu
 115 120 125

Arg Pro Thr Ala Phe Ser Gly Cys Leu Asn Cys Ser Lys Val Ser Glu
 130 135 140

Leu Thr Glu Arg Leu Lys Val Leu Glu Ala Lys Met Thr Met Leu Thr
 145 150 155 160

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

Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser Pro Gly Asp Gly
 180 185 190

Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu Pro Gly Pro Thr Gly
 195 200 205

Pro Lys Gly Asp Ala Gly Ser Arg Gly Pro Met Gly Met Arg Gly Pro
 210 215 220

Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro Gly Arg Ala Gly Ala Val
 225 230 235 240

Gly Thr Pro Gly Glu Arg Gly Pro Pro Gly Pro Pro Gly Pro Gly
 245 250 255

Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His Ala Arg Ile Ser
 260 265 270

Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr Glu Thr Asn Asn
 275 280 285

His Trp Pro Gln Gly Pro Thr Gly Pro Pro Gly Pro Pro Gly Pro Met

290 295 300
 Gly Pro Pro Gly Pro Pro Gly Pro Thr Gly Val Pro Gly Ser Pro Gly
 305 310 315 320
 His Ile Gly Pro Pro Gly Pro Thr Gly Pro Lys Gly Ile Ser Gly His
 325 330 335
 Pro Gly Glu Lys Gly Glu Arg Gly Leu Arg Gly Glu Pro Gly Pro Gln
 340 345 350
 Gly Ser Ala Gly Gln Arg Gly Glu Pro Gly Pro Lys Gly Asp Pro Gly
 355 360 365
 Glu Lys Ser His Trp Ala Pro Ser Leu Gln Ser Phe Leu Gln Gln Gln
 370 375 380
 Ala Gln Leu Glu Leu Leu Ala Arg Arg Val Thr Leu Leu Glu Ala Ile
 385 390 395 400
 Ile Trp Pro Glu Pro Glu Leu Gly Ser Gly Ala Gly Pro Ala Gly Thr
 405 410 415
 Gly Thr Pro Ser Leu Leu Arg Gly Lys Arg Gly Gly His Ala Thr Asn
 420 425 430
 Tyr Arg Ile Val Ala Pro Arg Ser Arg Asp Glu Arg Gly
 435 440 445

 <210> 50
 <211> 443
 <212> PRT
 <213> Homo sapiens

 <400> 50
 Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15
 Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30
 Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45
 Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

Pro	Met	Ser	Cys	Pro	Gly	Ser	Ser	Tyr	Arg	Thr	Val	Val	Arg	Pro	Thr	65	70	75	80
Tyr	Lys	Val	Met	Tyr	Lys	Ile	Val	Thr	Ala	Arg	Glu	Trp	Arg	Cys	Cys	85	90	95	
Pro	Gly	His	Ser	Gly	Val	Ser	Cys	Glu	Glu	Val	Ala	Ala	Ser	Ser	Ala	100	105	110	
Ser	Leu	Glu	Pro	Met	Trp	Ser	Gly	Ser	Thr	Met	Arg	Arg	Met	Ala	Leu	115	120	125	
Arg	Pro	Thr	Ala	Phe	Ser	Gly	Cys	Leu	Asn	Cys	Ser	Lys	Val	Ser	Glu	130	135	140	
Leu	Thr	Glu	Arg	Leu	Lys	Val	Leu	Glu	Ala	Lys	Met	Thr	Met	Leu	Thr	145	150	155	160
Val	Ile	Glu	Gln	Pro	Val	Pro	Pro	Thr	Pro	Ala	Thr	Pro	Glu	Asp	Pro	165	170	175	
Ala	Pro	Leu	Trp	Gly	Pro	Pro	Pro	Ala	Gln	Gly	Ser	Pro	Gly	Asp	Gly	180	185	190	
Gly	Leu	Gln	Asp	Gln	Val	Gly	Ala	Trp	Gly	Leu	Pro	Gly	Pro	Thr	Gly	195	200	205	
Pro	Lys	Gly	Asp	Ala	Gly	Ser	Arg	Gly	Pro	Met	Gly	Met	Arg	Gly	Pro	210	215	220	
Pro	Gly	Pro	Gln	Gly	Pro	Pro	Gly	Ser	Pro	Gly	Arg	Ala	Gly	Ala	Val	225	230	235	240
Gly	Thr	Pro	Gly	Glu	Arg	Gly	Pro	Pro	Gly	Pro	Pro	Gly	Pro	Pro	Gly	245	250	255	
Pro	Pro	Gly	Pro	Pro	Ala	Pro	Val	Gly	Pro	Pro	His	Ala	Arg	Ile	Ser	260	265	270	
Gln	His	Gly	Asp	Pro	Leu	Leu	Ser	Asn	Thr	Phe	Thr	Glu	Thr	Asn	Asn	275	280	285	
His	Trp	Pro	Gln	Gly	Pro	Thr	Gly	Pro	Pro	Gly	Pro	Pro	Gly	Pro	Met	290	295	300	
Gly	Pro	Pro	Gly	Pro	Pro	Gly	Pro	Thr	Gly	Val	Pro	Gly	Ser	Pro	Gly	305	310	315	320

His Ile Gly Pro Pro Gly Pro Thr Gly Pro Lys Gly Ile Ser Gly His
 325 330 335

Pro Gly Glu Lys Gly Glu Arg Gly Leu Arg Gly Glu Pro Gly Pro Gln
 340 345 350

Gly Ser Ala Gly Gln Arg Gly Glu Pro Gly Pro Lys Gly Asp Pro Gly
 355 360 365

Glu Lys Ser His Trp Gly Glu Gly Leu His Gln Leu Arg Glu Ala Leu
 370 375 380

Lys Ile Leu Ala Glu Arg Val Leu Ile Leu Glu Thr Met Ile Gly Leu
 385 390 395 400

Tyr Glu Pro Glu Leu Gly Ser Gly Ala Gly Pro Ala Gly Thr Gly Thr
 405 410 415

Pro Ser Leu Leu Arg Gly Lys Arg Gly Gly His Ala Thr Asn Tyr Arg
 420 425 430

Ile Val Ala Pro Arg Ser Arg Asp Glu Arg Gly
 435 440

<210> 51
 <211> 441
 <212> PRT
 <213> Homo sapiens

<400> 51

Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45

Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr
 65 70 75 80

Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys

Pro Gly His Ser Gly Val Ser Cys Glu Glu Ala Ser Ser Ala Ser Leu
 100 105 110

Glu Pro Met Trp Ser Gly Ser Thr Met Arg Arg Met Ala Leu Arg Pro
 115 120 125

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

Glu Arg Leu Lys Val Leu Glu Ala Lys Met Thr Met Leu Thr Val Ile
 145 150 155 160

Glu Gln Pro Val Pro Pro Thr Pro Ala Thr Pro Glu Asp Pro Ala Pro
 165 170 175

Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser Pro Gly Asp Gly Gly Leu
 180 185 190

Gln Asp Gln Val Gly Ala Trp Gly Leu Pro Gly Pro Thr Gly Pro Lys
 195 200 205

Gly Asp Ala Gly Ser Arg Gly Pro Met Gly Met Arg Gly Pro Pro Gly
 210 215 220

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

Pro Gly Glu Arg Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro
 245 250 255

Gly Pro Pro Ala Pro Val Gly Pro Pro His Ala Arg Ile Ser Gln His
 260 265 270

Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr Glu Thr Asn Asn His Trp
 275 280 285

Pro Gln Gly Pro Thr Gly Pro Pro Gly Pro Pro Gly Pro Met Gly Pro
 290 295 300

Pro Gly Pro Pro Gly Pro Thr Gly Val Pro Gly Ser Pro Gly His Ile
 305 310 315 320

Gly Pro Pro Gly Pro Thr Gly Pro Lys Gly Ile Ser Gly His Pro Gly
 325 330 335

Glu Lys Gly Glu Arg Gly Leu Arg Gly Glu Pro Gly Pro Gln Gly Ser
 340 345 350

Ala Gly Gln Arg Gly Glu Pro Gly Pro Lys Gly Asp Pro Gly Glu Lys
 355 360 365

Ser His Trp Gly Glu Gly Leu His Gln Leu Arg Glu Ala Leu Lys Ile
 370 375 380

Leu Ala Glu Arg Val Leu Ile Leu Glu Thr Met Ile Gly Leu Tyr Glu
 385 390 395 400

Pro Glu Leu Gly Ser Gly Ala Gly Pro Ala Gly Thr Gly Thr Pro Ser
 405 410 415

Leu Leu Arg Gly Lys Arg Gly Gly His Ala Thr Asn Tyr Arg Ile Val
 420 425 430

Ala Pro Arg Ser Arg Asp Glu Arg Gly
 435 440

<210> 52
 <211> 439
 <212> PRT
 <213> Homo sapiens

<400> 52

Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45

Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

Pro Met Ser Cys Pro Gly Ser Arg Thr Val Val Arg Pro Thr Tyr Lys
 65 70 75 80

Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys Pro Gly
 85 90 95

His Ser Gly Val Ser Cys Glu Glu Ala Ser Ser Ala Ser Leu Glu Pro
 100 105 110

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

Gln Arg Gly Glu Pro Gly Pro Lys Gly Asp Pro Gly Glu Lys Ser His
 355 360 365

Trp Gly Glu Gly Leu His Gln Leu Arg Glu Ala Leu Lys Ile Leu Ala
 370 375 380

Glu Arg Val Leu Ile Leu Glu Thr Met Ile Gly Leu Tyr Glu Pro Glu
 385 390 395 400

Leu Gly Ser Gly Ala Gly Pro Ala Gly Thr Gly Thr Pro Ser Leu Leu
 405 410 415

Arg Gly Lys Arg Gly Gly His Ala Thr Asn Tyr Arg Ile Val Ala Pro
 420 425 430

Arg Ser Arg Asp Glu Arg Gly
 435

<210> 53
 <211> 422
 <212> PRT
 <213> Homo sapiens

<400> 53

Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45

Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr
 65 70 75 80

Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys
 85 90 95

Pro Gly His Ser Gly Val Ser Cys Glu Glu Val Ala Ala Ser Ser Ala
 100 105 110

Ser Leu Glu Pro Met Trp Ser Gly Ser Thr Met Arg Arg Met Ala Leu
 115 120 125

Arg Pro Thr Ala Phe Ser Gly Cys Leu Asn Cys Ser Lys Val Ser Glu
 130 135 140

Leu Thr Glu Arg Leu Lys Val Leu Glu Ala Lys Met Thr Met Leu Thr
 145 150 155 160

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

Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser Pro Gly Asp Gly
 180 185 190

Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu Pro Gly Pro Thr Gly
 195 200 205

Pro Lys Gly Asp Ala Gly Ser Arg Gly Pro Met Gly Met Arg Gly Pro
 210 215 220

Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro Gly Arg Ala Gly Ala Val
 225 230 235 240

Gly Thr Pro Gly Glu Arg Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly
 245 250 255

Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His Ala Arg Ile Ser
 260 265 270

Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr Glu Thr Asn Asn
 275 280 285

His Trp Pro Gln Gly Pro Thr Gly Pro Pro Gly Pro Pro Gly Pro Met
 290 295 300

Gly Pro Pro Gly Pro Pro Gly Pro Thr Gly Val Pro Gly Ser Pro Gly
 305 310 315 320

His Ile Gly Leu Arg Gly Glu Pro Gly Pro Gln Gly Ser Ala Gly Gln
 325 330 335

Arg Gly Glu Pro Gly Pro Lys Gly Asp Pro Gly Glu Lys Ser His Trp
 340 345 350

Gly Glu Gly Leu His Gln Leu Arg Glu Ala Leu Lys Ile Leu Ala Glu
 355 360 365

Arg Val Leu Ile Leu Glu Thr Met Ile Gly Leu Tyr Glu Pro Glu Leu

370 375 380
 Gly Ser Gly Ala Gly Pro Ala Gly Thr Gly Thr Pro Ser Leu Leu Arg
 385 390 395 400

 Gly Lys Arg Gly Gly His Ala Thr Asn Tyr Arg Ile Val Ala Pro Arg
 405 410 415

 Ser Arg Asp Glu Arg Gly
 420

 <210> 54
 <211> 212
 <212> PRT
 <213> Homo sapiens

 <400> 54

 Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

 Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

 Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45

 Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

 Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr
 65 70 75 80

 Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys
 85 90 95

 Pro Gly His Ser Gly Val Ser Cys Glu Glu Val Ala Ala Ser Ser Ala
 100 105 110

 Ser Leu Glu Pro Met Trp Ser Gly Ser Thr Met Arg Arg Met Ala Leu
 115 120 125

 Arg Pro Thr Ala Phe Ser Gly Cys Leu Asn Cys Ser Lys Val Ser Glu
 130 135 140

 Leu Thr Glu Arg Leu Lys Val Leu Glu Ala Lys Met Thr Met Leu Thr
 145 150 155 160

91

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

Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser Pro Gly Asp Gly
 180 185 190

Gly Leu Gln Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr Glu Thr Asn
 195 200 205

Asn His Trp Pro
 210

<210> 55

<211> 175

<212> PRT

<213> Homo sapiens

<400> 55

Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu
 1 5 10 15

Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly
 20 25 30

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His
 35 40 45

Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp
 50 55 60

Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr
 65 70 75 80

Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys
 85 90 95

Pro Gly His Ser Gly Val Ser Cys Glu Glu Gly Cys Leu Asn Cys Ser
 100 105 110

Lys Val Ser Glu Leu Thr Glu Arg Leu Lys Val Leu Glu Ala Lys Met
 115 120 125

Thr Met Leu Thr Val Ile Glu Gln Pro Val Pro Pro Thr Pro Ala Thr
 130 135 140

Pro Glu Asp Pro Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser
 145 150 155 160

Pro Gly Asp Gly Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu
165 170 175

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<210> 56
<211> 236
<212> PRT
<213> Homo sapiens
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<220>
<221> misc_feature
<222> (1)..(1)
<223> Xaa can be any naturally occurring amino acid
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<400> 56

Xaa Met Thr Met Leu Thr Val Ile Glu Gln Pro Val Pro Pro Thr Pro
1 5 10 15

Ala Thr Pro Glu Asp Pro Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln
20 25 30

Gly Ser Pro Gly Asp Gly Gly Leu Gln Gly Leu Pro Gly Ala Ile Glu
35 40 45

Ser Val Arg Val Pro Leu Leu Pro Arg Asn Asp Gln Val Gly Ala Trp
50 55 60

Gly Leu Pro Gly Pro Thr Gly Pro Lys Gly Asp Ala Gly Ser Arg Gly
65 70 75 80

Pro Met Gly Met Arg Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Ser
85 90 95

Pro Gly Arg Ala Gly Ala Val Gly Thr Pro Gly Glu Arg Gly Pro Pro
100 105 110

Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Ala Pro Val Gly
115 120 125

Pro Pro His Ala Arg Ile Ser Gln His Gly Asp Pro Leu Leu Ser Asn
130 135 140

Thr Phe Thr Glu Thr Asn Asn His Trp Pro Gln Gly Pro Thr Gly Pro
145 150 155 160

Pro Gly Pro Pro Gly Pro Met Gly Pro Pro Gly Pro Pro Gly Pro Thr
165 170 175

Gly Val Pro Gly Ser Pro Gly His Ile Gly Pro Pro Gly Pro Thr Gly
 180 185 190

Pro Lys Gly Ile Ser Gly His Pro Gly Glu Lys Gly Glu Arg Gly Leu
 195 200 205

Arg Gly Glu Pro Gly Pro Gln Gly Ser Ala Gly Gln Arg Gly Glu Pro
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Gly Pro Lys Gly Asp Pro Gly Glu Lys Ser His Trp
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<210> 57

<211> 305

<212> PRT

<213> Homo sapiens

<400> 57

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 20 25 30

Ser Pro Gly Asp Gly Gly Leu Gln Gly Leu Pro Gly Ala Ile Glu Ser
 35 40 45

Val Arg Val Pro Leu Leu Pro Arg Asn Asp Gln Val Gly Ala Trp Gly
 50 55 60

Leu Pro Gly Pro Thr Gly Pro Lys Gly Asp Ala Gly Ser Arg Gly Pro
 65 70 75 80

Met Gly Met Arg Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro
 85 90 95

Gly Arg Ala Gly Ala Val Gly Thr Pro Gly Glu Arg Gly Pro Pro Gly
 100 105 110

Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Ala Pro Val Gly Pro
 115 120 125

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

Phe Thr Glu Thr Asn Asn His Trp Pro Gln Gly Pro Thr Gly Pro Pro
 145 150 155 160

Gly Pro Pro Gly Pro Met Gly Pro Pro Gly Pro Pro Gly Pro Thr Gly
 165 170 175

Val Pro Gly Ser Pro Gly His Ile Gly Pro Pro Gly Pro Thr Gly Pro
 180 185 190

Lys Gly Ile Ser Gly His Pro Gly Glu Lys Gly Glu Arg Gly Leu Arg
 195 200 205

Gly Glu Pro Gly Pro Gln Gly Ser Ala Gly Gln Arg Gly Glu Pro Gly
 210 215 220

Pro Lys Gly Asp Pro Gly Glu Lys Ser His Trp Gly Glu Gly Leu His
 225 230 235 240

Gln Leu Arg Glu Ala Leu Lys Ile Leu Ala Glu Arg Val Leu Ile Leu
 245 250 255

Glu Thr Met Ile Gly Leu Tyr Glu Pro Glu Leu Gly Ser Gly Ala Gly
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Pro Ala Gly Thr Gly Thr Pro Ser Leu Leu Arg Gly Lys Arg Gly Gly
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His Ala Thr Asn Tyr Arg Ile Val Ala Pro Arg Ser Arg Asp Glu Arg
 290 295 300

Gly
 305

<210> 58
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 <212> PRT
 <213> Homo sapiens

<400> 58

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Ala Leu Leu Glu Leu Pro Cys Cys Trp Glu Gln Gly Trp Ala Glu Glu
 35 40 45

Lys Gln Gln Cys Leu Pro His Val Thr Arg Val Ser Met Arg Gly Phe
 50 55 60

Gly Gly Leu Gly Ala Pro Arg Lys Glu Asp Ser Ala Trp Thr Arg Trp
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Arg Thr Arg Cys Cys Ala His Pro Pro Val Arg Leu Pro Gly Ser Leu
85 90 95

Gly Leu Trp Thr Pro Gly Pro Ser Leu Met Pro Thr Ala Pro Gly Cys
100 105 110

Leu Val Leu Ser Leu Lys Ala Thr Leu Gly Leu Leu Ala Ser Cys Ile
115 120 125

Pro Thr Asn Pro Cys Asp Ser Ile Ala Gly Pro Gln Gly Pro Pro Gly
130 135 140

Ser Pro Gly Arg Ala Gly Ala Val Gly Thr Pro Gly Glu Arg Gly Pro
145 150 155 160

Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Ala Pro Val
165 170 175

Gly Pro Pro His Ala Arg Ile Ser Gln His Gly Glu Ser Pro Trp Asp
180 185 190

Pro Ser Arg Trp Arg Trp Gly Trp Ser Ser His Gln His Ser Ala Arg
195 200 205

Tyr His Leu Pro Arg Ala Phe Cys Val Pro Ala Leu Leu Thr Ile Gly
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His Met
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<210> 59

<211> 2031

<212> DNA

<213> Homo sapiens

<400> 59

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 <212> DNA

<213> Homo sapiens

<400> 60

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tgccccgctc tgggggtcccc ctctgcccc gggcagcccc ggagatggag gcctccaggg      720
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<210> 61

<211> 641

<212> DNA

<213> Homo sapiens

<400> 61

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<210> 62

<211> 482

<212> DNA

<213> Homo sapiens

<400> 62

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<210> 63

<211> 2066

<212> DNA

<213> Homo sapiens

<400> 63

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<210> 64
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 <212> DNA
 <213> Homo sapiens

<400> 64
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<210> 65

<211> 2054

<212> DNA

<213> Homo sapiens

<400> 65

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 <212> DNA
 <213> Homo sapiens

<400> 66
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<210> 69
<211> 1976
<212> DNA
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<212> DNA

<213> Homo sapiens

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<211> 518

<212> PRT

<213> Homo sapiens

<400> 73

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20

25

30

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Thr Val Ala Lys Ile Ile Leu Ile His Thr Leu Ala Lys Arg Phe Tyr
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Tyr Met Asn Ala Ser Ala Gln Tyr Leu Gly Glu Val Phe Phe Asp Ile
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 145 150 155 160

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

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 385 390 395 400

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

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<210> 74
 <211> 904
 <212> PRT
 <213> Homo sapiens

<400> 74

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Ala Arg Ala Gln Glu Pro Leu Val Asp Gly Cys Ser Gly Gly Gly Arg
 35 40 45

Thr Arg Lys Arg Ser Pro Gly Gly Ser Gly Gly Ala Ser Arg Gly Ala
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Gly Thr Gly Leu Ser Glu Val Arg Ala Ala Leu Gly Leu Ala Leu Tyr
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Leu Ile Ala Leu Arg Thr Leu Val Gln Leu Ser Leu Gln Gln Leu Val
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Leu Arg Gly Ala Ala Gly His Arg Gly Glu Phe Asp Ala Leu Gln Ala
 100 105 110

Arg Asp Tyr Leu Glu His Ile Thr Ser Ile Gly Pro Arg Thr Thr Gly
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Ser Pro Glu Asn Glu Ile Leu Thr Val His Tyr Leu Leu Glu Gln Ile
 130 135 140

Lys Leu Ile Glu Val Gln Ser Asn Ser Leu His Lys Ile Ser Val Asp
 145 150 155 160

Val Gln Arg Pro Thr Gly Ser Phe Ser Ile Asp Phe Leu Gly Gly Phe
 165 170 175

Thr Ser Tyr Tyr Asp Asn Ile Thr Asn Val Val Val Lys Leu Glu Pro
 180 185 190

Arg Asp Gly Ala Gln His Ala Val Leu Ala Asn Cys His Phe Asp Ser
 195 200 205

Val Ala Asn Ser Pro Gly Ala Ser Asp Asp Ala Val Ser Cys Ser Val
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Met Leu Glu Val Leu Arg Val Leu Ser Thr Ser Ser Glu Ala Leu His
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His Ala Val Ile Phe Leu Phe Asn Gly Ala Glu Glu Asn Val Leu Gln
 245 250 255

Ala Ser His Gly Phe Ile Thr Gln His Pro Trp Ala Ser Leu Ile Arg
 260 265 270

Ala Phe Ile Asn Leu Glu Ala Ala Gly Val Gly Gly Lys Glu Leu Val
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Phe Gln Thr Gly Pro Glu Asn Pro Trp Leu Val Gln Ala Tyr Val Ser
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Ala Ala Lys His Pro Phe Ala Ser Val Val Ala Gln Glu Val Phe Gln
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Ser Gly Ile Ile Pro Ser Asp Thr Asp Phe Arg Ile Tyr Arg Asp Phe
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Gly Asn Ile Pro Gly Ile Asp Leu Ala Phe Ile Glu Asn Gly Tyr Ile
 340 345 350

Tyr His Thr Lys Tyr Asp Thr Ala Asp Arg Ile Leu Thr Asp Ser Ile
 355 360 365

Gln Arg Ala Gly Asp Asn Ile Leu Ala Val Leu Lys His Leu Ala Thr
 370 375 380

Ser Asp Met Leu Ala Ala Ala Ser Lys Tyr Arg His Gly Asn Met Val
 385 390 395 400

Phe Phe Asp Val Leu Gly Leu Phe Val Ile Ala Tyr Pro Ser Arg Ile
 405 410 415

Gly Ser Ile Ile Asn Tyr Met Val Val Met Gly Val Val Leu Tyr Leu
 420 425 430

Gly Lys Lys Phe Leu Gln Pro Lys His Lys Thr Gly Asn Tyr Lys Lys
 435 440 445

Asp Phe Leu Cys Gly Leu Gly Ile Thr Leu Ile Ser Trp Phe Thr Ser
 450 455 460

Leu Val Thr Val Leu Ile Ile Ala Val Phe Ile Ser Leu Ile Gly Gln
465 470 475 480

Ser Leu Ser Trp Tyr Asn His Phe Tyr Val Ser Val Cys Leu Tyr Gly
485 490 495

Thr Ala Thr Val Ala Lys Ile Ile Leu Ile His Thr Leu Ala Lys Arg
500 505 510

Phe Tyr Tyr Met Asn Ala Ser Ala Gln Tyr Leu Gly Glu Val Phe Phe
515 520 525

Asp Ile Ser Leu Phe Val His Cys Cys Phe Leu Val Thr Leu Thr Tyr
530 535 540

Gln Gly Leu Cys Ser Ala Phe Ile Ser Ala Val Trp Val Ala Phe Pro
545 550 555 560

Leu Leu Thr Lys Leu Cys Val His Lys Asp Phe Lys Gln His Gly Ala
565 570 575

Gln Gly Lys Phe Ile Ala Phe Tyr Leu Leu Gly Met Phe Ile Pro Tyr
580 585 590

Leu Tyr Ala Leu Tyr Leu Ile Trp Ala Val Phe Glu Met Phe Thr Pro
595 600 605

Ile Leu Gly Arg Ser Gly Ser Glu Ile Pro Pro Asp Val Val Leu Ala
610 615 620

Ser Ile Leu Ala Gly Cys Thr Met Ile Leu Ser Ser Tyr Phe Ile Asn
625 630 635 640

Phe Ile Tyr Leu Ala Lys Ser Thr Lys Lys Thr Met Leu Thr Leu Thr
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Leu Val Cys Ala Ile Thr Phe Leu Leu Val Cys Ser Gly Thr Phe Phe
660 665 670

Pro Tyr Ser Ser Asn Pro Ala Asn Pro Lys Pro Lys Arg Val Phe Leu
675 680 685

Gln His Met Thr Arg Thr Phe His Asp Leu Glu Gly Asn Ala Val Lys
690 695 700

115

Arg Asp Ser Gly Ile Trp Ile Asn Gly Phe Asp Tyr Thr Gly Ile Ser
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His Ile Thr Pro His Ile Pro Glu Ile Asn Asp Ser Ile Arg Ala His
725 730 735

Cys Glu Glu Asn Ala Pro Leu Cys Gly Phe Pro Trp Tyr Leu Pro Val
740 745 750

His Phe Leu Ile Arg Lys Asn Trp Tyr Leu Pro Ala Pro Glu Val Ser
755 760 765

Pro Arg Asn Pro Pro His Phe Arg Leu Ile Ser Lys Glu Gln Thr Pro
770 775 780

Trp Asp Ser Ile Lys Leu Thr Phe Glu Ala Thr Gly Pro Ser His Met
785 790 795 800

Ser Phe Tyr Val Arg Ala His Lys Gly Ser Thr Leu Ser Gln Trp Ser
805 810 815

Leu Gly Asn Gly Thr Pro Val Thr Ser Lys Gly Gly Asp Tyr Phe Val
820 825 830

Phe Tyr Ser His Gly Leu Gln Ala Ser Ala Trp Gln Phe Trp Ile Glu
835 840 845

Val Gln Val Ser Glu Glu His Pro Glu Gly Met Val Thr Val Ala Ile
850 855 860

Ala Ala His Tyr Leu Ser Gly Glu Asp Lys Arg Ser Pro Gln Leu Asp
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Ala Leu Lys Glu Lys Phe Pro Asp Trp Thr Phe Pro Ser Ala Trp Val
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Cys Thr Tyr Asp Leu Phe Val Phe
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<210> 75

<211> 419

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<213> Homo sapiens

<400> 75

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Ile Ala Val Phe Ile Ser Leu Ile Gly Gln Ser Leu Ser Trp Tyr Asn
 50 55 60

His Phe Tyr Val Ser Val Cys Leu Tyr Gly Thr Ala Thr Val Ala Lys
 65 70 75 80

Ile Ile Leu Ile His Thr Leu Ala Lys Arg Phe Tyr Tyr Met Asn Ala
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Ser Ala Gln Tyr Leu Gly Glu Val Phe Phe Asp Ile Ser Leu Phe Val
 100 105 110

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

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

260

265

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Phe His Asp Leu Glu Gly Asn Ala Val Lys Arg Asp Ser Gly Ile Trp
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Ile Asn Gly Phe Asp Tyr Thr Gly Ile Ser His Ile Thr Pro His Ile
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Pro Glu Ile Asn Asp Ser Ile Arg Ala His Cys Glu Glu Asn Ala Pro
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Leu Cys Gly Phe Pro Trp Tyr Leu Pro Val His Phe Leu Ile Arg Lys
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Asn Trp Tyr Leu Pro Ala Pro Glu Val Ser Pro Arg Asn Pro Pro His
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 355 360 365

Thr Phe Glu Ala Thr Ala Cys Leu Pro Ile Leu Gln Ile Leu Asp Leu
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Pro Ala Ser Thr Ile Met Thr Lys Pro Tyr Val Leu Leu Cys Ser Ser
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Ser His Lys

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<211> 4974

<212> DNA

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<211> 5338

<212> DNA

<213> Homo sapiens

<400> 77

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Ser Phe Pro Ala Asn Glu Asp Lys Asp Pro Ala Phe Thr Ala Leu Leu
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Thr Thr Gln Thr Gln Val Gln Arg Glu Ile Val Asn Lys His Asn Glu
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Leu Arg Arg Ala Val Ser Pro Pro Ala Arg Asn Met Leu Lys Met Glu
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Trp Asn Lys Glu Ala Ala Ala Asn Ala Gln Lys Trp Ala Asn Gln Cys
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Asn Tyr Arg His Ser Asn Pro Lys Asp Arg Met Thr Ser Leu Lys Cys
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100

105

110

Ile Gln Ser Trp Phe Asp Glu Tyr Asn Asp Phe Asp Phe Gly Val Gly
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Lys Val Leu Lys Tyr Tyr Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn
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Trp Ala Asn Arg Leu Tyr Val Pro Tyr Glu Gln Gly Ala Pro Cys Ala
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Ser Cys Pro Asp Asn Cys Asp Asp Gly Leu Cys Thr Asn Gly Cys Lys
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Tyr Glu Asp Leu Tyr Ser Asn Cys Lys Ser Leu Lys Leu Thr Leu Thr
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Cys Lys His Gln Leu Val Arg Asp Ser Cys Lys Ala Ser Cys Asn Cys
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Ser Asn Ser Ile Tyr
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Thr Thr Gln Thr Gln Val Gln Arg Glu Ile Val Asn Lys His Asn Glu
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Leu Arg Arg Ala Val Ser Pro Pro Ala Arg Asn Met Leu Lys Met Glu
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128

Trp Asn Lys Glu Ala Ala Ala Asn Ala Gln Lys Trp Ala Asn Gln Cys
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Asn Tyr Arg His Ser Asn Pro Lys Asp Arg Met Thr Ser Leu Lys Cys
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Gly Glu Asn Leu Tyr Met Ser Ser Ala Ser Ser Ser Trp Ser Gln Ala
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Ile Gln Ser Trp Phe Asp Glu Tyr Asn Asp Phe Asp Phe Gly Val Gly
115 120 125

Pro Lys Thr Pro Asn Ala Val Val Gly His Tyr Thr Gln Val Val Trp
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Tyr Ser Ser Tyr Leu Val Gly Cys Gly Asn Ala Tyr Cys Pro Asn Gln
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Lys Val Leu Lys Tyr Tyr Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn
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Trp Ala Asn Arg Leu Tyr Val Pro Tyr Glu Gln Gly Ala Pro Cys Ala
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Ser Cys Pro Asp Asn Cys Asp Asp Gly Leu Cys Thr Asn Gly Cys Lys
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Tyr Glu Asp Leu Tyr Ser Asn Cys Lys Ser Leu Lys Leu Thr Leu Thr
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Cys Lys His Gln Leu Val Arg Asp Ser Cys Lys Ala Ser Cys Asn Cys
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Ser Asn Ser Ile Tyr
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Leu Arg Arg Ala Val Ser Pro Pro Ala Arg Asn Met Leu Lys Met Glu
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Trp Asn Lys Glu Ala Ala Ala Asn Ala Gln Lys Trp Ala Asn Gln Cys
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Asn Tyr Arg His Ser Asn Pro Lys Asp Arg Met Thr Ser Leu Lys Cys
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Gly Glu Asn Leu Tyr Met Ser Ser Ala Ser Ser Ser Trp Ser Gln Ala
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Ile Gln Ser Trp Phe Asp Glu Tyr Asn Asp Phe Asp Phe Gly Val Gly
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Pro Lys Thr Pro Asn Ala Val Val Gly His Tyr Thr Gln Val Val Trp
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Tyr Ser Ser Tyr Leu Val Gly Cys Gly Asn Ala Tyr Cys Pro Asn Gln
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Lys Val Leu Lys Tyr Tyr Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn
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Trp Ala Asn Arg Leu Tyr Val Pro Tyr Glu Gln Gly Ala Pro Cys Ala
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Ser Cys Pro Asp Asn Cys Asp Asp Gly Leu Cys Thr Asn Gly Cys Lys
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Tyr Glu Asp Leu Tyr Ser Asn Cys Lys Ser Leu Lys Leu Thr Leu Thr
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Ser Asn Ser Ile Tyr
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tttcccatat	gctgtcttaa ttcttttcac tcattcaccc ttcttcccaa tcatctggct 1260
ggcatcctca	caattgagtt gaagctgttc ctctaaaac aatcctgact tttattttgc 1320
caaatcaat	acaatccttt gaatttttta tctgcataaa ttttacagta gaatatgatc 1380

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aaaccttcat ttttaaacct ctcttctctt tgacaaaact tccttaaaaa agaatacaag 1440
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cttcactaaa atcagtgact cacttccaaa gagtggagta tggaaagggg aacatagtaa 1560
ctttacaggg gagaaaaatg acaaatgacg tcttcaccaa gtgatcaaaa ttaacgtcac 1620
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tgtaagatga taacgttaga gaaactgaaa ctgggtgagg gctatctagg aattctctgt 2040
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<210> 84
<211> 2122
<212> DNA
<213> Homo sapiens

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<400> 84
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ttactgcttt gttaaccacc caaacacaag tgcaaaggga gattgtgaat aagcacaatg 180
aactgaggag agcagtatct cccctgcca gaaacatgct gaagatggaa tggaacaaag 240
aggctgcagc aaatgcccaa aagtgggcaa accagtgcaa ttacagacac agtaacccaa 300
aggatcgaat gacaagtcta aaatgtggtg agaatctcta catgtcaagt gcctccagct 360
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acctcgttgg atgtggaaat gcctactgtc ccaatcaaaa agttctaaaa tactactatg 540
tttgccaata ttgtcctgct ggtaattggg ctaatagact atatgtccct tatgaacaag 600
gagcaccttg tgccagttgc ccagataact gtgacgatgg actatgcacc aatggttgca 660
agtacgaaga tctctatagt aactgtaaaa gtttgaagct cacattaacc tgtaaacatc 720
agttggtcag ggacagttgc aaggcctcct gcaattgttc aaacagcatt tattaataac 780
gcattacaca ccgagtaggg ctatgtagag aggagtcaga ttatctactt agatttgga 840
tctacttaga tttaacatat actagctgag aaattgtagg catgtttgat acacatttga 900
tttcaaagt ttttcttctg gatctgcttt ttattttaca aaaatatttt tcatacaaat 960

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ggttaaaaag aaacaaaatc tataacaaca acttttgatt tttatatata aactttgtga 1020
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agaacaatat aattttcaca tgaacccttg gctgtagttg cctttcctag ctccactcta 1200
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atgcaaaata aaaagtgtct tg 2122

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<210> 85
<211> 409
<212> PRT
<213> Homo sapiens

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<400> 85
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Met Glu Glu Ser Trp Glu Ala Ala Pro Gly Gly Gln Ala Gly Ala Glu
1          5          10          15

```

```

Leu Pro Met Glu Pro Val Gly Ser Leu Val Pro Thr Leu Glu Gln Pro
20          25          30

```

```

Gln Val Pro Ala Lys Val Arg Gln Pro Glu Gly Pro Glu Ser Ser Pro
35          40          45

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

Tyr Tyr Phe Ser Ala Glu Ala Gln Ala Trp Glu Ala Ser Gln Ala Phe
305 310 315 320

Cys Ser Ala Tyr His Ala Thr Leu Pro Leu Leu Ser His Thr Gln Asp
325 330 335

Phe Leu Gly Arg Tyr Pro Val Ser Arg His Ser Trp Val Gly Ala Trp
340 345 350

Arg Gly Pro Gln Gly Trp His Trp Ile Asp Glu Ala Pro Leu Pro Pro
355 360 365

Gln Leu Leu Pro Glu Asp Gly Glu Asp Asn Leu Asp Ile Asn Cys Gly
370 375 380

Ala Leu Glu Glu Gly Thr Leu Val Ala Ala Asn Cys Ser Thr Pro Arg
385 390 395 400

Pro Trp Val Cys Ala Lys Gly Thr Gln
405

<210> 86
<211> 314
<212> PRT
<213> Homo sapiens

<400> 86

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

Leu Pro Met Glu Pro Val Gly Ser Leu Val Pro Thr Leu Glu Gln Pro
20 25 30

Gln Val Pro Ala Lys Val Arg Gln Pro Glu Gly Pro Glu Ser Ser Pro
35 40 45

Ser Pro Ala Gly Ala Val Glu Lys Ala Ala Gly Ala Gly Leu Glu Pro
50 55 60

Ser Ser Lys Lys Lys Pro Pro Ser Pro Arg Pro Gly Ser Pro Arg Val
65 70 75 80

Pro Pro Leu Ser Leu Gly Tyr Gly Val Cys Pro Glu Pro Pro Ser Pro
85 90 95

Gly Pro Ala Leu Val Lys Leu Pro Arg Asn Gly Glu Ala Pro Gly Ala
100 105 110

Glu Pro Ala Pro Ser Ala Trp Ala Pro Met Glu Leu Gln Val Asp Val
 115 120 125

Arg Val Lys Pro Val Gly Ala Ala Gly Gly Ser Ser Thr Pro Ser Pro
 130 135 140

Arg Pro Ser Thr Arg Phe Leu Lys Val Pro Val Pro Glu Ser Pro Ala
 145 150 155 160

Phe Ser Arg His Ala Asp Pro Ala His Gln Leu Leu Leu Arg Ala Pro
 165 170 175

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

Thr Glu Ser Gly Cys Asp Ala Glu Gly Arg Ala Ser Pro Ala Glu Gly
 195 200 205

Ser Ala Gly Ser Pro Gly Ser Pro Thr Cys Cys Arg Cys Lys Glu Leu
 210 215 220

Gly Leu Glu Lys Glu Asp Ala Ala Leu Leu Pro Arg Ala Gly Leu Asp
 225 230 235 240

Gly Asp Glu Lys Leu Pro Arg Ala Val Thr Leu Thr Asp Ser Leu Arg
 245 250 255

Thr Ala Arg Thr Ile Trp Ile Ser Thr Val Gly Pro Trp Arg Lys Ala
 260 265 270

Arg Trp Trp Leu Gln Thr Ala Ala Leu Gln Asp Pro Gly Ser Val Pro
 275 280 285

Arg Gly Pro Ser Asp Leu Gly Ser Ala Trp Ser Ser Ala Cys Gln Ala
 290 295 300

Asp Ala Ala Pro Pro Thr Gly Glu Ala Ser
 305 310

<210> 87

<211> 1544

<212> DNA

<213> Homo sapiens

<400> 87

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 gtgcgacaac ctgaagggtcc cgaaagcagc ccaagtccgg ccggggccgt ggagaaggcg 240
 gcgggcgagc gcctggagcc ctcgagcaag aaaaagccgc cttcgctctg ccccggttcc 300
 ccgcgcgtgc cgccgctcag cctgggtctac ggggtctgccc ccgagccgcc gtcaccgggc 360
 cctgccttgg tcaagctgcc ccggaatggc gaggcgcccc gggctgagcc tgcgcccagc 420
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<210> 88

<211> 1192

<212> DNA

<213> Homo sapiens

<400> 88

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<210> 89
 <211> 21
 <212> DNA
 <213> Homo sapiens

<400> 89
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<210> 90
 <211> 21
 <212> DNA
 <213> Homo sapiens

<400> 90
 ctggagccct cgagcaagaa a 21

<210> 91
 <211> 21
 <212> DNA
 <213> Homo sapiens

<400> 91
 cccgtgggtc atctgatata a 21

<210> 92
<211> 21
<212> DNA
<213> Homo sapiens

<400> 92
aaggactttg ctcggcgttt a 21

<210> 93
<211> 21
<212> DNA
<213> Homo sapiens

<400> 93
tacgtggatg tttgtaacgt a 21

<210> 94
<211> 21
<212> DNA
<213> Homo sapiens

<400> 94
ctcgtattgg ctcaatcata a 21