

SEQUENCE LISTING

<110> Consiglio Nazionale Delle Ricerche

<120> Methods and compositions for modulating cardiac contractility

<130> PN501259WO

<150> GB 0904743.2

<151> 2009-03-19

<160> 23

<170> PatentIn version 3.3

<210> 1

<211> 655

<212> PRT

<213> Mus sp.

<400> 1

Met Val Gln Ser Asp Thr Ser Lys Ser Pro Pro Val Ala Ala Val Ala
1 5 10 15

Gln Glu Ser Gln Met Glu Leu Leu Glu Ser Ala Ala Pro Ala Gly Ala
20 25 30

Leu Gly Ala Gln Ser Tyr Gly Lys Gly Ala Arg Arg Lys Asn Arg Phe
35 40 45

Lys Gly Ser Asp Gly Ser Thr Ser Ser Asp Thr Thr Ser Asn Ser Phe
50 55 60

Val Arg Gln Gly Ser Ala Asp Ser Tyr Thr Ser Arg Pro Ser Asp Ser
65 70 75 80

Asp Val Ser Leu Glu Glu Asp Arg Glu Ala Val Arg Arg Glu Ala Glu
85 90 95

Arg Gln Ala Gln Ala Gln Leu Glu Lys Ala Lys Thr Lys Pro Val Ala
100 105 110

Phe Ala Val Arg Thr Asn Val Arg Tyr Ser Ala Ala Gln Glu Asp Asp
115 120 125

Val Pro Val Pro Gly Met Ala Ile Ser Phe Glu Ala Lys Asp Phe Leu
130 135 140

His Val Lys Glu Lys Phe Asn Asn Asp Trp Trp Ile Gly Arg Leu Val
145 150 155 160

Lys Glu Gly Cys Glu Ile Gly Phe Ile Pro Ser Pro Val Lys Leu Glu

	165		170		175
Asn Met Arg Leu Gln His Glu Gln Arg Ala Lys Gln Gly Lys Phe Tyr	180	185	190		
Ser Ser Lys Ser Gly Gly Asn Ser Ser Ser Ser Leu Gly Asp Ile Val	195	200	205		
Pro Ser Ser Arg Lys Ser Thr Pro Pro Ser Ser Ala Ile Asp Ile Asp	210	215	220		
Ala Thr Gly Leu Asp Ala Glu Glu Asn Asp Ile Pro Ala Asn His Arg	225	230	235	240	
Ser Pro Lys Pro Ser Ala Asn Ser Val Thr Ser Pro His Ser Lys Glu	245	250	255		
Lys Arg Met Pro Phe Phe Lys Lys Thr Glu His Thr Pro Pro Tyr Asp	260	265	270		
Val Val Pro Ser Met Arg Pro Val Val Leu Val Gly Pro Ser Leu Lys	275	280	285		
Gly Tyr Glu Val Thr Asp Met Met Gln Lys Ala Leu Phe Asp Phe Leu	290	295	300		
Lys His Arg Phe Glu Gly Arg Ile Ser Ile Thr Arg Val Thr Ala Asp	305	310	315	320	
Ile Ser Leu Ala Lys Arg Ser Val Leu Asn Asn Pro Ser Lys His Ala	325	330	335		
Ile Ile Glu Arg Ser Asn Thr Arg Ser Ser Leu Ala Glu Val Gln Ser	340	345	350		
Glu Ile Glu Arg Ile Phe Glu Leu Ala Arg Thr Leu Gln Leu Val Val	355	360	365		
Leu Asp Ala Asp Thr Ile Asn His Pro Ala Gln Leu Ser Lys Thr Ser	370	375	380		
Leu Ala Pro Ile Ile Val Tyr Val Lys Ile Ser Ser Pro Lys Val Leu	385	390	395	400	
Gln Arg Leu Ile Lys Ser Arg Gly Lys Ser Gln Ala Lys His Leu Asn	405	410	415		

Val Gln Met Val Ala Ala Asp Lys Leu Ala Gln Cys Pro Pro Gln Glu
 420 425 430
 Ser Phe Asp Val Ile Leu Asp Glu Asn Gln Leu Glu Asp Ala Cys Glu
 435 440 445
 His Leu Ala Asp Tyr Leu Glu Ala Tyr Trp Lys Ala Thr His Pro Pro
 450 455 460
 Ser Gly Asn Leu Pro Asn Pro Leu Leu Ser Arg Thr Leu Ala Ser Ser
 465 470 475 480
 Thr Leu Pro Leu Ser Pro Thr Leu Ala Ser Asn Ser Gln Gly Ser Gln
 485 490 495
 Gly Asp Gln Arg Pro Asp Arg Ser Ala Pro Arg Ser Ala Ser Gln Ala
 500 505 510
 Glu Glu Glu Pro Cys Leu Glu Pro Val Lys Lys Ser Gln His Arg Ser
 515 520 525
 Ser Ser Ala Thr His Gln Asn His Arg Ser Gly Thr Gly Arg Gly Leu
 530 535 540
 Ser Arg Gln Glu Thr Phe Asp Ser Glu Thr Gln Glu Ser Arg Asp Ser
 545 550 555 560
 Ala Tyr Val Glu Pro Lys Glu Asp Tyr Ser His Glu His Val Asp Arg
 565 570 575
 Tyr Val Pro His Arg Glu His Asn His Arg Glu Glu Thr His Ser Ser
 580 585 590
 Asn Gly His Arg His Arg Glu Ser Arg His Arg Ser Arg Asp Met Gly
 595 600 605
 Arg Asp Gln Asp His Asn Glu Cys Ile Lys Gln Arg Ser Arg His Lys
 610 615 620
 Ser Lys Asp Arg Tyr Cys Asp Lys Glu Gly Glu Val Ile Ser Lys Arg
 625 630 635 640
 Arg Asn Glu Ala Gly Glu Trp Asn Arg Asp Val Tyr Ile Arg Gln
 645 650 655

<210> 2
 <211> 660
 <212> PRT

<213> Homo sapiens

<400> 2

Met Val Gln Arg Asp Met Ser Lys Ser Pro Pro Thr Ala Ala Ala Ala
1 5 10 15

Val Ala Gln Glu Ile Gln Met Glu Leu Leu Glu Asn Val Ala Pro Ala
20 25 30

Gly Ala Leu Gly Ala Ala Ala Gln Ser Tyr Gly Lys Gly Ala Arg Arg
35 40 45

Lys Asn Arg Phe Lys Gly Ser Asp Gly Ser Thr Ser Ser Asp Thr Thr
50 55 60

Ser Asn Ser Phe Val Arg Gln Gly Ser Ala Asp Ser Tyr Thr Ser Arg
65 70 75 80

Pro Ser Asp Ser Asp Val Ser Leu Glu Glu Asp Arg Glu Ala Val Arg
85 90 95

Arg Glu Ala Glu Arg Gln Ala Gln Ala Gln Leu Glu Lys Ala Lys Thr
100 105 110

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

His Glu Asp Asp Val Pro Val Pro Gly Met Ala Ile Ser Phe Glu Ala
130 135 140

Lys Asp Phe Leu His Val Lys Glu Lys Phe Asn Asn Asp Trp Trp Ile
145 150 155 160

Gly Arg Leu Val Lys Glu Gly Cys Glu Ile Gly Phe Ile Pro Ser Pro
165 170 175

Val Lys Leu Glu Asn Met Arg Leu Gln His Glu Gln Arg Ala Lys Gln
180 185 190

Gly Lys Phe Tyr Ser Ser Lys Ser Gly Gly Asn Ser Ser Ser Ser Leu
195 200 205

Gly Asp Ile Val Pro Ser Ser Arg Lys Ser Thr Pro Pro Ser Ser Ala
210 215 220

Ile Asp Ile Asp Ala Thr Gly Leu Asp Ala Glu Glu Asn Asp Ile Pro
225 230 235 240

Ala Asn His Arg Ser Pro Lys Pro Ser Ala Asn Ser Val Thr Ser Pro
 245 250 255

His Ser Lys Glu Lys Arg Met Pro Phe Phe Lys Lys Thr Glu His Thr
 260 265 270

Pro Pro Tyr Asp Val Val Pro Ser Met Arg Pro Val Val Leu Val Gly
 275 280 285

Pro Ser Leu Lys Gly Tyr Glu Val Thr Asp Met Met Gln Lys Ala Leu
 290 295 300

Phe Asp Phe Leu Lys His Arg Phe Glu Gly Arg Ile Ser Ile Thr Arg
 305 310 315 320

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

Ser Lys His Ala Ile Ile Glu Arg Ser Asn Thr Arg Ser Ser Leu Ala
 340 345 350

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

Gln Leu Val Val Leu Asp Ala Asp Thr Ile Asn His Pro Ala Gln Leu
 370 375 380

Ser Lys Thr Ser Leu Ala Pro Ile Ile Val Tyr Val Lys Ile Ser Ser
 385 390 395 400

Pro Lys Val Leu Gln Arg Leu Ile Lys Ser Arg Gly Lys Ser Gln Ala
 405 410 415

Lys His Leu Asn Val Gln Met Val Ala Ala Asp Lys Leu Ala Gln Cys
 420 425 430

Pro Pro Glu Leu Phe Asp Val Ile Leu Asp Glu Asn Gln Leu Glu Asp
 435 440 445

Ala Cys Glu His Leu Ala Asp Tyr Leu Glu Ala Tyr Trp Lys Ala Thr
 450 455 460

His Pro Pro Ser Ser Ser Leu Pro Asn Pro Leu Leu Ser Arg Thr Leu
 465 470 475 480

Ala Thr Ser Ser Leu Pro Leu Ser Pro Thr Leu Ala Ser Asn Ser Gln
 485 490 495

Gly Ser Gln Gly Asp Gln Arg Thr Asp Arg Ser Ala Pro Ile Arg Ser
500 505 510

Ala Ser Gln Ala Glu Glu Glu Pro Ser Val Glu Pro Val Lys Lys Ser
515 520 525

Gln His Arg Ser Ser Ser Ser Ala Pro His His Asn His Arg Ser Gly
530 535 540

Thr Ser Arg Gly Leu Ser Arg Gln Glu Thr Phe Asp Ser Glu Thr Gln
545 550 555 560

Glu Ser Arg Asp Ser Ala Tyr Val Glu Pro Lys Glu Asp Tyr Ser His
565 570 575

Asp His Val Asp His Tyr Ala Ser His Arg Asp His Asn His Arg Asp
580 585 590

Glu Thr His Gly Ser Ser Asp His Arg His Arg Glu Ser Arg His Arg
595 600 605

Ser Arg Asp Val Asp Arg Glu Gln Asp His Asn Glu Cys Asn Lys Gln
610 615 620

Arg Ser Arg His Lys Ser Lys Asp Arg Tyr Cys Glu Lys Asp Gly Glu
625 630 635 640

Val Ile Ser Lys Lys Arg Asn Glu Ala Gly Glu Trp Asn Arg Asp Val
645 650 655

Tyr Ile Arg Gln
660

<210> 3
<211> 178
<212> PRT
<213> Mus sp.

<400> 3

Ala Ser Ser Thr Leu Pro Leu Ser Pro Thr Leu Ala Ser Asn Ser Gln
1 5 10 15

Gly Ser Gln Gly Asp Gln Arg Pro Asp Arg Ser Ala Pro Arg Ser Ala
20 25 30

Ser Gln Ala Glu Glu Glu Pro Cys Leu Glu Pro Val Lys Lys Ser Gln
35 40 45

His Arg Ser Ser Ser Ala Thr His Gln Asn His Arg Ser Gly Thr Gly
50 55 60

Arg Gly Leu Ser Arg Gln Glu Thr Phe Asp Ser Glu Thr Gln Glu Ser
65 70 75 80

Arg Asp Ser Ala Tyr Val Glu Pro Lys Glu Asp Tyr Ser His Glu His
85 90 95

Val Asp Arg Tyr Val Pro His Arg Glu His Asn His Arg Glu Glu Thr
100 105 110

His Ser Ser Asn Gly His Arg His Arg Glu Ser Arg His Arg Ser Arg
115 120 125

Asp Met Gly Arg Asp Gln Asp His Asn Glu Cys Ile Lys Gln Arg Ser
130 135 140

Arg His Lys Ser Lys Asp Arg Tyr Cys Asp Lys Glu Gly Glu Val Ile
145 150 155 160

Ser Lys Arg Arg Asn Glu Ala Gly Glu Trp Asn Arg Asp Val Tyr Ile
165 170 175

Arg Gln

<210> 4
<211> 180
<212> PRT
<213> Homo sapiens

<400> 4

Ala Thr Ser Ser Leu Pro Leu Ser Pro Thr Leu Ala Ser Asn Ser Gln
1 5 10 15

Gly Ser Gln Gly Asp Gln Arg Thr Asp Arg Ser Ala Pro Ile Arg Ser
20 25 30

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

Gln His Arg Ser Ser Ser Ser Ala Pro His His Asn His Arg Ser Gly
50 55 60

Thr Ser Arg Gly Leu Ser Arg Gln Glu Thr Phe Asp Ser Glu Thr Gln
65 70 75 80

Glu Ser Arg Asp Ser Ala Tyr Val Glu Pro Lys Glu Asp Tyr Ser His
85 90 95

Asp His Val Asp His Tyr Ala Ser His Arg Asp His Asn His Arg Asp
100 105 110

Glu Thr His Gly Ser Ser Asp His Arg His Arg Glu Ser Arg His Arg
115 120 125

Ser Arg Asp Val Asp Arg Glu Gln Asp His Asn Glu Cys Asn Lys Gln
130 135 140

Arg Ser Arg His Lys Ser Lys Asp Arg Tyr Cys Glu Lys Asp Gly Glu
145 150 155 160

Val Ile Ser Lys Lys Arg Asn Glu Ala Gly Glu Trp Asn Arg Asp Val
165 170 175

Tyr Ile Arg Gln
180

<210> 5
<211> 26
<212> PRT
<213> Mus sp.

<400> 5

Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp Pro Glu
1 5 10 15

Asn Glu Asp Glu Gly Met Asp Glu Asp Lys
20 25

<210> 6
<211> 26
<212> PRT
<213> Rattus sp.

<400> 6

Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp Pro Glu
1 5 10 15

Asn Glu Asp Glu Gly Met Asp Glu Asp Lys
20 25

<210> 7
<211> 26
<212> PRT

<213> Homo sapiens

<400> 7

Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp Pro Glu
1 5 10 15

Asn Glu Asp Glu Gly Met Asp Glu Glu Lys
20 25

<210> 8

<211> 14

<212> PRT

<213> Mus sp.

<400> 8

Lys Ser Ile Thr Ala Asp Gly Glu Ser Pro Pro Thr Thr Lys
1 5 10

<210> 9

<211> 14

<212> PRT

<213> Rattus sp.

<400> 9

Lys Ser Ile Thr Ala Asp Gly Glu Ser Pro Pro Thr Thr Lys
1 5 10

<210> 10

<211> 22

<212> PRT

<213> Mus sp.

<400> 10

His Ser Asn Pro Asp Thr Ala Gly Glu Glu Asp Glu Glu Glu Pro Glu
1 5 10 15

Met Pro Val Gly Pro Arg
20

<210> 11

<211> 22

<212> PRT

<213> Rattus sp.

<400> 11

His Ser Asn Pro Asp Thr Ala Gly Glu Glu Asp Glu Glu Glu Pro Glu
1 5 10 15

Met Pro Val Gly Pro Arg
20

<210> 12
 <211> 25
 <212> PRT
 <213> Homo sapiens

<400> 12

Lys Ser Pro Tyr Pro Asn Pro Glu Thr Thr Gly Glu Glu Asp Glu Glu
 1 5 10 15

Glu Pro Glu Met Pro Val Gly Pro Arg
 20 25

<210> 13
 <211> 14
 <212> PRT
 <213> Mus sp.

<400> 13

Lys Thr Gly Asn Asn Gln Ala Asp Thr Glu Ser Pro Ser His
 1 5 10

<210> 14
 <211> 14
 <212> PRT
 <213> Rattus sp.

<400> 14

Lys Thr Gly Asn Asn Gln Ala Asp Thr Glu Ser Pro Ser His
 1 5 10

<210> 15
 <211> 26
 <212> PRT
 <213> Mus sp.

<400> 15

Arg Met Ser Glu Glu Ala Glu Tyr Ser Glu Pro Ser Leu Leu Ser Thr
 1 5 10 15

Asp Met Phe Ser Tyr Gln Glu Asp Glu His
 20 25

<210> 16
 <211> 25
 <212> PRT
 <213> Homo sapiens

<400> 16

His Asp Thr Glu Ala Cys Ser Glu Pro Ser Leu Leu Ser Thr Glu Met
 1 5 10 15

Leu Ser Tyr Gln Asp Asp Glu Asn Arg
 20 25

<210> 17
 <211> 13
 <212> PRT
 <213> Homo sapiens

<400> 17

Arg Gly Ala Pro Ser Glu Glu Glu Leu Gln Asp Ser Arg
 1 5 10

<210> 18
 <211> 26
 <212> PRT
 <213> Mus sp.

<400> 18

Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp Pro Glu
 1 5 10 15

Asn Glu Asp Glu Gly Met Asp Glu Asp Lys
 20 25

<210> 19
 <211> 26
 <212> PRT
 <213> Homo sapiens

<400> 19

Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp Pro Glu
 1 5 10 15

Asn Glu Asp Glu Gly Met Asp Glu Glu Lys
 20 25

<210> 20
 <211> 15
 <212> PRT
 <213> Artificial

<220>
 <223> H sequence (mouse and human)

<400> 20

Gly Glu Glu Asp Glu Glu Glu Pro Glu Met Pro Val Gly Pro Arg
 1 5 10 15

<210> 21
 <211> 2139
 <212> PRT

<213> Mus sp.

<400> 21

Met Val Asn Glu Asn Thr Arg Met Tyr Val Pro Glu Glu Asn His Gln
1 5 10 15

Gly Ser Asn Tyr Gly Ser Pro Arg Pro Ala His Ala Asn Met Asn Ala
20 25 30

Asn Ala Ala Ala Gly Leu Ala Pro Glu His Ile Pro Thr Pro Gly Ala
35 40 45

Ala Leu Ser Trp Gln Ala Ala Ile Asp Ala Ala Arg Gln Ala Lys Leu
50 55 60

Met Gly Ser Ala Gly Asn Ala Thr Ile Ser Thr Val Ser Ser Thr Gln
65 70 75 80

Arg Lys Arg Gln Gln Tyr Gly Lys Pro Lys Lys Gln Gly Gly Thr Thr
85 90 95

Ala Thr Arg Pro Pro Arg Ala Leu Leu Cys Leu Thr Leu Lys Asn Pro
100 105 110

Ile Arg Arg Ala Cys Ile Ser Ile Val Glu Trp Lys Pro Phe Glu Ile
115 120 125

Ile Ile Leu Leu Thr Ile Phe Ala Asn Cys Val Ala Leu Ala Ile Tyr
130 135 140

Ile Pro Phe Pro Glu Asp Asp Ser Asn Ala Thr Asn Ser Asn Leu Glu
145 150 155 160

Arg Val Glu Tyr Leu Phe Leu Ile Ile Phe Thr Val Glu Ala Phe Leu
165 170 175

Lys Val Ile Ala Tyr Gly Leu Leu Phe His Pro Asn Ala Tyr Leu Arg
180 185 190

Asn Gly Trp Asn Leu Leu Asp Phe Ile Ile Val Val Val Gly Leu Phe
195 200 205

Ser Ala Ile Leu Glu Gln Ala Thr Lys Ala Asp Gly Ala Asn Ala Leu
210 215 220

Gly Gly Lys Gly Ala Gly Phe Asp Val Lys Ala Leu Arg Ala Phe Arg
225 230 235 240

Val Leu Arg Pro Leu Arg Leu Val Ser Gly Val Pro Ser Leu Gln Val
245 250 255
Val Leu Asn Ser Ile Ile Lys Ala Met Val Pro Leu Leu His Ile Ala
260 265 270
Leu Leu Val Leu Phe Val Ile Ile Ile Tyr Ala Ile Ile Gly Leu Glu
275 280 285
Leu Phe Met Gly Lys Met His Lys Thr Cys Tyr Asn Gln Glu Gly Ile
290 295 300
Ile Asp Val Pro Ala Glu Glu Asp Pro Ser Pro Cys Ala Leu Glu Thr
305 310 315 320
Gly His Gly Arg Gln Cys Gln Asn Gly Thr Val Cys Lys Pro Gly Trp
325 330 335
Asp Gly Pro Lys His Gly Ile Thr Asn Phe Asp Asn Phe Ala Phe Ala
340 345 350
Met Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Val
355 360 365
Leu Tyr Trp Met Gln Asp Ala Met Gly Tyr Glu Leu Pro Trp Val Tyr
370 375 380
Phe Val Ser Leu Val Ile Phe Gly Ser Phe Phe Val Leu Asn Leu Val
385 390 395 400
Leu Gly Val Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala Lys
405 410 415
Ala Arg Gly Asp Phe Gln Lys Leu Arg Glu Lys Gln Gln Leu Glu Glu
420 425 430
Asp Leu Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp
435 440 445
Pro Glu Asn Glu Asp Glu Gly Met Asp Glu Asp Lys Pro Arg Asn Met
450 455 460
Ser Met Pro Thr Ser Glu Thr Glu Ser Val Asn Thr Glu Asn Val Ala
465 470 475 480
Gly Gly Asp Ile Glu Gly Glu Asn Cys Gly Ala Arg Leu Ala His Arg
485 490 495

Ile Ser Lys Ser Lys Phe Ser Arg Tyr Trp Arg Arg Trp Asn Arg Phe
 500 505 510

Cys Arg Arg Lys Cys Arg Ala Ala Val Lys Ser Asn Val Phe Tyr Trp
 515 520 525

Leu Val Ile Phe Leu Val Phe Leu Asn Thr Leu Thr Ile Ala Ser Glu
 530 535 540

His Tyr Asn Gln Pro His Trp Leu Thr Glu Val Gln Asp Thr Ala Asn
 545 550 555 560

Lys Ala Leu Leu Ala Leu Phe Thr Ala Glu Met Leu Leu Lys Met Tyr
 565 570 575

Ser Leu Gly Leu Gln Ala Tyr Phe Val Ser Leu Phe Asn Arg Phe Asp
 580 585 590

Cys Phe Ile Val Cys Gly Gly Ile Leu Glu Thr Ile Leu Val Glu Thr
 595 600 605

Lys Ile Met Ser Pro Leu Gly Ile Ser Val Leu Arg Cys Val Arg Leu
 610 615 620

Leu Arg Ile Phe Lys Ile Thr Arg Tyr Trp Asn Ser Leu Ser Asn Leu
 625 630 635 640

Val Ala Ser Leu Leu Asn Ser Val Arg Ser Ile Ala Ser Leu Leu Leu
 645 650 655

Leu Leu Phe Leu Phe Ile Ile Ile Phe Ser Leu Leu Gly Met Gln Leu
 660 665 670

Phe Gly Gly Lys Phe Asn Phe Asp Glu Met Gln Thr Arg Arg Ser Thr
 675 680 685

Phe Asp Asn Phe Pro Gln Ser Leu Leu Thr Val Phe Gln Ile Leu Thr
 690 695 700

Gly Glu Asp Trp Asn Ser Val Met Tyr Asp Gly Ile Met Ala Tyr Gly
 705 710 715 720

Gly Pro Ser Phe Pro Gly Met Leu Val Cys Ile Tyr Phe Ile Ile Leu
 725 730 735

Phe Ile Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe Leu Ala Ile Ala

Val	Val	Lys	Ile	Leu	Arg	Val	Leu	Arg	Val	Leu	Arg	Pro	Leu	Arg	Ala
		995					1000						1005		
Ile	Asn	Arg	Ala	Lys	Gly	Leu	Lys	His	Val	Val	Gln	Cys	Val	Phe	
	1010					1015					1020				
Val	Ala	Ile	Arg	Thr	Ile	Gly	Asn	Ile	Val	Ile	Val	Thr	Thr	Leu	
	1025					1030					1035				
Leu	Gln	Phe	Met	Phe	Ala	Cys	Ile	Gly	Val	Gln	Leu	Phe	Lys	Gly	
	1040					1045					1050				
Lys	Leu	Tyr	Thr	Cys	Ser	Asp	Ser	Ser	Lys	Gln	Thr	Glu	Ala	Glu	
	1055					1060					1065				
Cys	Lys	Gly	Asn	Tyr	Ile	Thr	Tyr	Lys	Asp	Gly	Glu	Val	Asp	His	
	1070					1075					1080				
Pro	Ile	Ile	Gln	Pro	Arg	Ser	Trp	Glu	Asn	Ser	Lys	Phe	Asp	Phe	
	1085					1090					1095				
Asp	Asn	Val	Leu	Ala	Ala	Met	Met	Ala	Leu	Phe	Thr	Val	Ser	Thr	
	1100					1105					1110				
Phe	Glu	Gly	Trp	Pro	Glu	Leu	Leu	Tyr	Arg	Ser	Ile	Asp	Ser	His	
	1115					1120					1125				
Thr	Glu	Asp	Lys	Gly	Pro	Ile	Tyr	Asn	Tyr	Arg	Val	Glu	Ile	Ser	
	1130					1135					1140				
Ile	Phe	Phe	Ile	Ile	Tyr	Ile	Ile	Ile	Ile	Ala	Phe	Phe	Met	Met	
	1145					1150					1155				
Asn	Ile	Phe	Val	Gly	Phe	Val	Ile	Val	Thr	Phe	Gln	Glu	Gln	Gly	
	1160					1165					1170				
Glu	Gln	Glu	Tyr	Lys	Asn	Cys	Glu	Leu	Asp	Lys	Asn	Gln	Arg	Gln	
	1175					1180					1185				
Cys	Val	Glu	Tyr	Ala	Leu	Lys	Ala	Arg	Pro	Leu	Arg	Arg	Tyr	Ile	
	1190					1195					1200				
Pro	Lys	Asn	Gln	His	Gln	Tyr	Lys	Val	Trp	Tyr	Val	Val	Asn	Ser	
	1205					1210					1215				
Thr	Tyr	Phe	Glu	Tyr	Leu	Met	Phe	Val	Leu	Ile	Leu	Leu	Asn	Thr	
	1220					1225					1230				

Ile Cys	Leu Ala Met Gln His	Tyr Gly Gln Ser Cys	Leu Phe Lys
1235	1240	1245	
Ile Ala	Met Asn Ile Leu Asn	Met Leu Phe Thr Gly	Leu Phe Thr
1250	1255	1260	
Val Glu	Met Ile Leu Lys Leu	Ile Ala Phe Lys Pro	Lys His Tyr
1265	1270	1275	
Phe Cys	Asp Ala Trp Asn Thr	Phe Asp Ala Leu Ile	Val Val Gly
1280	1285	1290	
Ser Ile	Val Asp Ile Ala Ile	Thr Glu Val His Pro	Ala Glu His
1295	1300	1305	
Thr Gln	Cys Ser Pro Ser Met	Ser Ala Glu Glu Asn	Ser Arg Ile
1310	1315	1320	
Ser Ile	Thr Phe Phe Arg Leu	Phe Arg Val Met Arg	Leu Val Lys
1325	1330	1335	
Leu Leu	Ser Arg Gly Glu Gly	Ile Arg Thr Leu Leu	Trp Thr Phe
1340	1345	1350	
Ile Lys	Ser Phe Gln Ala Leu	Pro Tyr Val Ala Leu	Leu Ile Val
1355	1360	1365	
Met Leu	Phe Phe Ile Tyr Ala	Val Ile Gly Met Gln	Val Phe Gly
1370	1375	1380	
Lys Ile	Ala Leu Asn Asp Thr	Thr Glu Ile Asn Arg	Asn Asn Asn
1385	1390	1395	
Phe Gln	Thr Phe Pro Gln Ala	Val Leu Leu Leu Phe	Arg Cys Ala
1400	1405	1410	
Thr Gly	Glu Ala Trp Gln Asp	Ile Met Leu Ala Cys	Met Pro Gly
1415	1420	1425	
Lys Lys	Cys Ala Pro Glu Ser	Glu Pro Ser Asn Ser	Thr Glu Gly
1430	1435	1440	
Glu Thr	Pro Cys Gly Ser Ser	Phe Ala Val Phe Tyr	Phe Ile Ser
1445	1450	1455	
Phe Tyr	Met Leu Cys Ala Phe	Leu Ile Ile Asn Leu	Phe Val Ala
1460	1465	1470	

Val	Ile	Met	Asp	Asn	Phe	Asp	Tyr	Leu	Thr	Arg	Asp	Trp	Ser	Ile
1475						1480					1485			
Leu	Gly	Pro	His	His	Leu	Asp	Glu	Phe	Lys	Arg	Ile	Trp	Ala	Glu
1490						1495					1500			
Tyr	Asp	Pro	Glu	Ala	Lys	Gly	Arg	Ile	Lys	His	Leu	Asp	Val	Val
1505						1510					1515			
Thr	Leu	Leu	Arg	Arg	Ile	Gln	Pro	Pro	Leu	Gly	Phe	Gly	Lys	Leu
1520						1525					1530			
Cys	Pro	His	Arg	Val	Ala	Cys	Lys	Arg	Leu	Val	Ser	Met	Asn	Met
1535						1540					1545			
Pro	Leu	Asn	Ser	Asp	Gly	Thr	Val	Met	Phe	Asn	Ala	Thr	Leu	Phe
1550						1555					1560			
Ala	Leu	Val	Arg	Thr	Ala	Leu	Arg	Ile	Lys	Thr	Glu	Gly	Asn	Leu
1565						1570					1575			
Glu	Gln	Ala	Asn	Glu	Glu	Leu	Arg	Ala	Ile	Ile	Lys	Lys	Ile	Trp
1580						1585					1590			
Lys	Arg	Thr	Ser	Met	Lys	Leu	Leu	Asp	Gln	Val	Val	Pro	Pro	Ala
1595						1600					1605			
Gly	Asp	Asp	Glu	Val	Thr	Val	Gly	Lys	Phe	Tyr	Ala	Thr	Phe	Leu
1610						1615					1620			
Ile	Gln	Glu	Tyr	Phe	Arg	Lys	Phe	Lys	Lys	Arg	Lys	Glu	Gln	Gly
1625						1630					1635			
Leu	Val	Gly	Lys	Pro	Ser	Gln	Arg	Asn	Ala	Leu	Ser	Leu	Gln	Ala
1640						1645					1650			
Gly	Leu	Arg	Thr	Leu	His	Asp	Ile	Gly	Pro	Glu	Ile	Arg	Arg	Ala
1655						1660					1665			
Ile	Ser	Gly	Asp	Leu	Thr	Ala	Glu	Glu	Glu	Leu	Asp	Lys	Ala	Met
1670						1675					1680			
Lys	Glu	Ala	Val	Ser	Ala	Ala	Ser	Glu	Asp	Asp	Ile	Phe	Arg	Arg
1685						1690					1695			
Ala	Gly	Gly	Leu	Phe	Gly	Asn	His	Val	Thr	Tyr	Tyr	Gln	Ser	Asp

1700		1705		1710
Ser Arg Gly Asn Phe Pro Gln Thr Phe Ala Thr Gln Arg Pro Leu				
1715		1720		1725
His Ile Asn Lys Thr Gly Asn Asn Gln Ala Asp Thr Glu Ser Pro				
1730		1735		1740
Ser His Glu Lys Leu Val Asp Ser Thr Phe Thr Pro Ser Ser Tyr				
1745		1750		1755
Ser Ser Thr Gly Ser Asn Ala Asn Ile Asn Asn Ala Asn Asn Thr				
1760		1765		1770
Ala Leu Gly Arg Phe Pro His Pro Ala Gly Tyr Ser Ser Thr Val				
1775		1780		1785
Ser Thr Val Glu Gly His Gly Pro Pro Leu Ser Pro Ala Val Arg				
1790		1795		1800
Val Gln Glu Ala Ala Trp Lys Leu Ser Ser Lys Arg Cys His Ser				
1805		1810		1815
Arg Glu Ser Gln Gly Ala Thr Val Asn Gln Glu Ile Phe Pro Asp				
1820		1825		1830
Glu Thr Arg Ser Val Arg Met Ser Glu Glu Ala Glu Tyr Cys Ser				
1835		1840		1845
Glu Pro Ser Leu Leu Ser Thr Asp Met Phe Ser Tyr Gln Glu Asp				
1850		1855		1860
Glu His Arg Gln Leu Thr Cys Pro Glu Glu Asp Lys Arg Glu Ile				
1865		1870		1875
Gln Pro Ser Pro Lys Arg Ser Phe Leu Arg Ser Ala Ser Leu Gly				
1880		1885		1890
Arg Arg Ala Ser Phe His Leu Glu Cys Leu Lys Arg Gln Lys Asp				
1895		1900		1905
Gln Gly Gly Asp Ile Ser Gln Lys Thr Ala Leu Pro Leu His Leu				
1910		1915		1920
Val His His Gln Ala Leu Ala Val Ala Gly Leu Ser Pro Leu Leu				
1925		1930		1935

Gln Arg 1940	Ser His Ser Pro Thr 1945	Thr Phe Pro Arg Pro 1950	Cys Pro Thr
Pro Pro 1955	Val Thr Pro Gly Ser 1960	Arg Gly Arg Pro Leu 1965	Arg Pro Ile
Pro Thr 1970	Leu Arg Leu Glu Gly 1975	Ala Glu Ser Ser Glu 1980	Lys Leu Asn
Ser Ser 1985	Phe Pro Ser Ile His 1990	Cys Ser Ser Trp Ser 1995	Glu Glu Thr
Thr Ala 2000	Cys Ser Gly Ser Ser 2005	Ser Met Ala Arg Arg 2010	Ala Arg Pro
Val Ser 2015	Leu Thr Val Pro Ser 2020	Gln Ala Gly Ala Pro 2025	Gly Arg Gln
Phe His 2030	Gly Ser Ala Ser Ser 2035	Leu Val Glu Ala Val 2040	Leu Ile Ser
Glu Gly 2045	Leu Gly Gln Phe Ala 2050	Gln Asp Pro Lys Phe 2055	Ile Glu Val
Thr Thr 2060	Gln Glu Leu Ala Asp 2065	Ala Cys Asp Met Thr 2070	Ile Glu Glu
Met Glu 2075	Asn Ala Ala Asp Asn 2080	Ile Leu Ser Gly Gly 2085	Ala Gln Gln
Ser Pro 2090	Asn Gly Thr Leu Leu 2095	Pro Phe Val Asn Cys 2100	Arg Asp Pro
Gly Gln 2105	Asp Arg Ala Val Val 2110	Pro Glu Asp Glu Ser 2115	Cys Ala Tyr
Ala Leu 2120	Gly Arg Gly Arg Ser 2125	Glu Glu Ala Leu Ala 2130	Asp Ser Arg
Ser Tyr 2135	Val Ser Asn Leu		

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 <212> PRT
 <213> Homo sapiens

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Met Val Asn Glu Asn Thr Arg Met Tyr Ile Pro Glu Glu Asn His Gln
 1 5 10 15
 Gly Ser Asn Tyr Gly Ser Pro Arg Pro Ala His Ala Asn Met Asn Ala
 20 25 30
 Asn Ala Ala Ala Gly Leu Ala Pro Glu His Ile Pro Thr Pro Gly Ala
 35 40 45
 Ala Leu Ser Trp Gln Ala Ala Ile Asp Ala Ala Arg Gln Ala Lys Leu
 50 55 60
 Met Gly Ser Ala Gly Asn Ala Thr Ile Ser Thr Val Ser Ser Thr Gln
 65 70 75 80
 Arg Lys Arg Gln Gln Tyr Gly Lys Pro Lys Lys Gln Gly Ser Thr Thr
 85 90 95
 Ala Thr Arg Pro Pro Arg Ala Leu Leu Cys Leu Thr Leu Lys Asn Pro
 100 105 110
 Ile Arg Arg Ala Cys Ile Ser Ile Val Glu Trp Lys Pro Phe Glu Ile
 115 120 125
 Ile Ile Leu Leu Thr Ile Phe Ala Asn Cys Val Ala Leu Ala Ile Tyr
 130 135 140
 Ile Pro Phe Pro Glu Asp Asp Ser Asn Ala Thr Asn Ser Asn Leu Glu
 145 150 155 160
 Arg Val Glu Tyr Leu Phe Leu Ile Ile Phe Thr Val Glu Ala Phe Leu
 165 170 175
 Lys Val Ile Ala Tyr Gly Leu Leu Phe His Pro Asn Ala Tyr Leu Arg
 180 185 190
 Asn Gly Trp Asn Leu Leu Asp Phe Ile Ile Val Val Val Gly Leu Phe
 195 200 205
 Ser Ala Ile Leu Glu Gln Ala Thr Lys Ala Asp Gly Ala Asn Ala Leu
 210 215 220
 Gly Gly Lys Gly Ala Gly Phe Asp Val Lys Ala Leu Arg Ala Phe Arg
 225 230 235 240
 Val Leu Arg Pro Leu Arg Leu Val Ser Gly Val Pro Ser Leu Gln Val
 245 250 255

Val Leu Asn Ser Ile Ile Lys Ala Met Val Pro Leu Leu His Ile Ala
 260 265 270

Leu Leu Val Leu Phe Val Ile Ile Ile Tyr Ala Ile Ile Gly Leu Glu
 275 280 285

Leu Phe Met Gly Lys Met His Lys Thr Cys Tyr Asn Gln Glu Gly Ile
 290 295 300

Ala Ala Glu Asp Asp Pro Ser Pro Cys Ala Leu Glu Thr Gly His Gly
 305 310 315 320

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

Lys His Gly Ile Thr Asn Phe Asp Asn Phe Ala Phe Ala Met Leu Thr
 340 345 350

Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Val Leu Tyr Trp
 355 360 365

Val Asn Asp Ala Val Gly Arg Asp Trp Pro Trp Ile Tyr Phe Val Thr
 370 375 380

Leu Ile Ile Ile Gly Ser Phe Phe Val Leu Asn Leu Val Leu Gly Val
 385 390 395 400

Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala Lys Ala Arg Gly
 405 410 415

Asp Phe Gln Lys Leu Arg Glu Lys Gln Gln Leu Glu Glu Asp Leu Lys
 420 425 430

Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp Pro Glu Asn
 435 440 445

Glu Asp Glu Gly Met Asp Glu Glu Lys Pro Arg Asn Met Ser Met Pro
 450 455 460

Thr Ser Glu Thr Glu Ser Val Asn Thr Glu Asn Val Ala Gly Gly Asp
 465 470 475 480

Ile Glu Gly Glu Asn Cys Gly Ala Arg Leu Ala His Arg Ile Ser Lys
 485 490 495

Ser Lys Phe Ser Arg Tyr Trp Arg Arg Trp Asn Arg Phe Cys Arg Arg
 500 505 510

Lys Cys Arg Ala Ala Val Lys Ser Asn Val Phe Tyr Trp Leu Val Ile
 515 520 525

Phe Leu Val Phe Leu Asn Thr Leu Thr Ile Ala Ser Glu His Tyr Asn
 530 535 540

Gln Pro Asn Trp Leu Thr Glu Val Gln Asp Thr Ala Asn Lys Ala Leu
 545 550 555 560

Leu Ala Leu Phe Thr Ala Glu Met Leu Leu Lys Met Tyr Ser Leu Gly
 565 570 575

Leu Gln Ala Tyr Phe Val Ser Leu Phe Asn Arg Phe Asp Cys Phe Val
 580 585 590

Val Cys Gly Gly Ile Leu Glu Thr Ile Leu Val Glu Thr Lys Ile Met
 595 600 605

Ser Pro Leu Gly Ile Ser Val Leu Arg Cys Val Arg Leu Leu Arg Ile
 610 615 620

Phe Lys Ile Thr Arg Tyr Trp Asn Ser Leu Ser Asn Leu Val Ala Ser
 625 630 635 640

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

Leu Phe Ile Ile Ile Phe Ser Leu Leu Gly Met Gln Leu Phe Gly Gly
 660 665 670

Lys Phe Asn Phe Asp Glu Met Gln Thr Arg Arg Ser Thr Phe Asp Asn
 675 680 685

Phe Pro Gln Ser Leu Leu Thr Val Phe Gln Ile Leu Thr Gly Glu Asp
 690 695 700

Trp Asn Ser Val Met Tyr Asp Gly Ile Met Ala Tyr Gly Gly Pro Ser
 705 710 715 720

Phe Pro Gly Met Leu Val Cys Ile Tyr Phe Ile Ile Leu Phe Ile Cys
 725 730 735

Gly Asn Tyr Ile Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn
 740 745 750

Leu Ala Asp Ala Glu Ser Leu Thr Ser Ala Gln Lys Glu Glu Glu Glu

Ala	Lys	Gly	Leu	Lys	His	Val	Val	Gln	Cys	Val	Phe	Val	Ala	Ile
1010						1015					1020			
Arg	Thr	Ile	Gly	Asn	Ile	Val	Ile	Val	Thr	Thr	Leu	Leu	Gln	Phe
1025						1030					1035			
Met	Phe	Ala	Cys	Ile	Gly	Val	Gln	Leu	Phe	Lys	Gly	Lys	Leu	Tyr
1040						1045					1050			
Thr	Cys	Ser	Asp	Ser	Ser	Lys	Gln	Thr	Glu	Ala	Glu	Cys	Lys	Gly
1055						1060					1065			
Asn	Tyr	Ile	Thr	Tyr	Lys	Asp	Gly	Glu	Val	Asp	His	Pro	Ile	Ile
1070						1075					1080			
Gln	Pro	Arg	Ser	Trp	Glu	Asn	Ser	Lys	Phe	Asp	Phe	Asp	Asn	Val
1085						1090					1095			
Leu	Ala	Ala	Met	Met	Ala	Leu	Phe	Thr	Val	Ser	Thr	Phe	Glu	Gly
1100						1105					1110			
Trp	Pro	Glu	Leu	Leu	Tyr	Arg	Ser	Ile	Asp	Ser	His	Thr	Glu	Asp
1115						1120					1125			
Lys	Gly	Pro	Ile	Tyr	Asn	Tyr	Arg	Val	Glu	Ile	Ser	Ile	Phe	Phe
1130						1135					1140			
Ile	Ile	Tyr	Ile	Ile	Ile	Ile	Ala	Phe	Phe	Met	Met	Asn	Ile	Phe
1145						1150					1155			
Val	Gly	Phe	Val	Ile	Val	Thr	Phe	Gln	Glu	Gln	Gly	Glu	Gln	Glu
1160						1165					1170			
Tyr	Lys	Asn	Cys	Glu	Leu	Asp	Lys	Asn	Gln	Arg	Gln	Cys	Val	Glu
1175						1180					1185			
Tyr	Ala	Leu	Lys	Ala	Arg	Pro	Leu	Arg	Arg	Tyr	Ile	Pro	Lys	Asn
1190						1195					1200			
Gln	His	Gln	Tyr	Lys	Val	Trp	Tyr	Val	Val	Asn	Ser	Thr	Tyr	Phe
1205						1210					1215			
Glu	Tyr	Leu	Met	Phe	Val	Leu	Ile	Leu	Leu	Asn	Thr	Ile	Cys	Leu
1220						1225					1230			
Ala	Met	Gln	His	Tyr	Gly	Gln	Ser	Cys	Leu	Phe	Lys	Ile	Ala	Met
1235						1240					1245			

Asn	Ile	Leu	Asn	Met	Leu	Phe	Thr	Gly	Leu	Phe	Thr	Val	Glu	Met
1250						1255					1260			
Ile	Leu	Lys	Leu	Ile	Ala	Phe	Lys	Pro	Lys	Gly	Tyr	Phe	Ser	Asp
1265						1270					1275			
Pro	Trp	Asn	Val	Phe	Asp	Phe	Leu	Ile	Val	Ile	Gly	Ser	Ile	Ile
1280						1285					1290			
Asp	Val	Ile	Leu	Ser	Glu	Thr	Asn	Pro	Ala	Glu	His	Thr	Gln	Cys
1295						1300					1305			
Ser	Pro	Ser	Met	Asn	Ala	Glu	Glu	Asn	Ser	Arg	Ile	Ser	Ile	Thr
1310						1315					1320			
Phe	Phe	Arg	Leu	Phe	Arg	Val	Met	Arg	Leu	Val	Lys	Leu	Leu	Ser
1325						1330					1335			
Arg	Gly	Glu	Gly	Ile	Arg	Thr	Leu	Leu	Trp	Thr	Phe	Ile	Lys	Ser
1340						1345					1350			
Phe	Gln	Ala	Leu	Pro	Tyr	Val	Val	Leu	Leu	Ile	Val	Met	Leu	Phe
1355						1360					1365			
Phe	Ile	Tyr	Ala	Val	Ile	Gly	Met	Gln	Val	Phe	Gly	Lys	Ile	Ala
1370						1375					1380			
Leu	Asn	Asp	Thr	Thr	Glu	Ile	Asn	Arg	Asn	Asn	Asn	Phe	Gln	Thr
1385						1390					1395			
Phe	Pro	Gln	Ala	Val	Leu	Leu	Leu	Phe	Arg	Cys	Ala	Thr	Gly	Glu
1400						1405					1410			
Ala	Trp	Gln	Asp	Ile	Met	Leu	Ala	Cys	Met	Pro	Gly	Lys	Lys	Cys
1415						1420					1425			
Ala	Pro	Glu	Ser	Glu	Pro	Ser	Asn	Ser	Thr	Glu	Gly	Glu	Thr	Pro
1430						1435					1440			
Cys	Gly	Ser	Ser	Phe	Ala	Val	Phe	Tyr	Phe	Ile	Ser	Phe	Tyr	Met
1445						1450					1455			
Leu	Cys	Ala	Phe	Leu	Ile	Ile	Asn	Leu	Phe	Val	Ala	Val	Ile	Met
1460						1465					1470			
Asp	Asn	Phe	Asp	Tyr	Leu	Thr	Arg	Asp	Trp	Ser	Ile	Leu	Gly	Pro
1475						1480					1485			

His	His	Leu	Asp	Glu	Phe	Lys	Arg	Ile	Trp	Ala	Glu	Tyr	Asp	Pro
1490						1495					1500			
Glu	Ala	Lys	Gly	Arg	Ile	Lys	His	Leu	Asp	Val	Val	Thr	Leu	Leu
1505						1510					1515			
Arg	Arg	Ile	Gln	Pro	Pro	Leu	Gly	Phe	Gly	Lys	Leu	Cys	Pro	His
1520						1525					1530			
Arg	Val	Ala	Cys	Lys	Arg	Leu	Val	Ser	Met	Asn	Met	Pro	Leu	Asn
1535						1540					1545			
Ser	Asp	Gly	Thr	Val	Met	Phe	Asn	Ala	Thr	Leu	Phe	Ala	Leu	Val
1550						1555					1560			
Arg	Thr	Ala	Leu	Arg	Ile	Lys	Thr	Glu	Gly	Asn	Leu	Glu	Gln	Ala
1565						1570					1575			
Asn	Glu	Glu	Leu	Arg	Ala	Ile	Ile	Lys	Lys	Ile	Trp	Lys	Arg	Thr
1580						1585					1590			
Ser	Met	Lys	Leu	Leu	Asp	Gln	Val	Val	Pro	Pro	Ala	Gly	Asp	Asp
1595						1600					1605			
Glu	Val	Thr	Val	Gly	Lys	Phe	Tyr	Ala	Thr	Phe	Leu	Ile	Gln	Glu
1610						1615					1620			
Tyr	Phe	Arg	Lys	Phe	Lys	Lys	Arg	Lys	Glu	Gln	Gly	Leu	Val	Gly
1625						1630					1635			
Lys	Pro	Ser	Gln	Arg	Asn	Ala	Leu	Ser	Leu	Gln	Ala	Gly	Leu	Arg
1640						1645					1650			
Thr	Leu	His	Asp	Ile	Gly	Pro	Glu	Ile	Arg	Arg	Ala	Ile	Ser	Gly
1655						1660					1665			
Asp	Leu	Thr	Ala	Glu	Glu	Glu	Leu	Asp	Lys	Ala	Met	Lys	Glu	Ala
1670						1675					1680			
Val	Ser	Ala	Ala	Ser	Glu	Asp	Asp	Ile	Phe	Arg	Arg	Ala	Gly	Gly
1685						1690					1695			
Leu	Phe	Gly	Asn	His	Val	Ser	Tyr	Tyr	Gln	Ser	Asp	Gly	Arg	Ser
1700						1705					1710			
Ala	Phe	Pro	Gln	Thr	Phe	Thr	Thr	Gln	Arg	Pro	Leu	His	Ile	Asn

1715		1720		1725
Lys Ala Gly Ser Ser Gln Gly Asp Thr Glu Ser Pro Ser His Glu 1730 1735 1740				
Lys Leu Val Asp Ser Thr Phe Thr Pro Ser Ser Tyr Ser Ser Thr 1745 1750 1755				
Gly Ser Asn Ala Asn Ile Asn Asn Ala Asn Asn Thr Ala Leu Gly 1760 1765 1770				
Arg Leu Pro Arg Pro Ala Gly Tyr Pro Ser Thr Val Ser Thr Val 1775 1780 1785				
Glu Gly His Gly Pro Pro Leu Ser Pro Ala Ile Arg Val Gln Glu 1790 1795 1800				
Val Ala Trp Lys Leu Ser Ser Asn Arg Cys His Ser Arg Glu Ser 1805 1810 1815				
Gln Ala Ala Met Ala Gly Gln Glu Glu Thr Ser Gln Asp Glu Thr 1820 1825 1830				
Tyr Glu Val Lys Met Asn His Asp Thr Glu Ala Cys Ser Glu Pro 1835 1840 1845				
Ser Leu Leu Ser Thr Glu Met Leu Ser Tyr Gln Asp Asp Glu Asn 1850 1855 1860				
Arg Gln Leu Thr Leu Pro Glu Glu Asp Lys Arg Asp Ile Arg Gln 1865 1870 1875				
Ser Pro Lys Arg Gly Phe Leu Arg Ser Ala Ser Leu Gly Arg Arg 1880 1885 1890				
Ala Ser Phe His Leu Glu Cys Leu Lys Arg Gln Lys Asp Arg Gly 1895 1900 1905				
Gly Asp Ile Ser Gln Lys Thr Val Leu Pro Leu His Leu Val His 1910 1915 1920				
His Gln Ala Leu Ala Val Ala Gly Leu Ser Pro Leu Leu Gln Arg 1925 1930 1935				
Ser His Ser Pro Ala Ser Phe Pro Arg Pro Phe Ala Thr Pro Pro 1940 1945 1950				

Ala Thr Pro Gly Ser Arg Gly Trp Pro Pro Gln Pro Val Pro Thr
1955 1960 1965

Leu Arg Leu Glu Gly Val Glu Ser Ser Glu Lys Leu Asn Ser Ser
1970 1975 1980

Phe Pro Ser Ile His Cys Gly Ser Trp Ala Glu Thr Thr Pro Gly
1985 1990 1995

Gly Gly Gly Ser Ser Ala Ala Arg Arg Val Arg Pro Val Ser Leu
2000 2005 2010

Met Val Pro Ser Gln Ala Gly Ala Pro Gly Arg Gln Phe His Gly
2015 2020 2025

Ser Ala Ser Ser Leu Val Glu Ala Val Leu Ile Ser Glu Gly Leu
2030 2035 2040

Gly Gln Phe Ala Gln Asp Pro Lys Phe Ile Glu Val Thr Thr Gln
2045 2050 2055

Glu Leu Ala Asp Ala Cys Asp Met Thr Ile Glu Glu Met Glu Ser
2060 2065 2070

Ala Ala Asp Asn Ile Leu Ser Gly Gly Ala Pro Gln Ser Pro Asn
2075 2080 2085

Gly Ala Leu Leu Pro Phe Val Asn Cys Arg Asp Ala Gly Gln Asp
2090 2095 2100

Arg Ala Gly Gly Glu Glu Asp Ala Gly Cys Val Arg Ala Arg Gly
2105 2110 2115

Arg Pro Ser Glu Glu Glu Leu Gln Asp Ser Arg Val Tyr Val Ser
2120 2125 2130

Ser Leu
2135

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<400> 23

Arg Thr Asp Arg Ser
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