

SEQUENCE LISTING

<110> EditForce, Inc.

<120> Myotonic dystrophy type 1 therapeutic drug

<130> EDFP2101F

<150> JP2021-077262

<151> 2021-04-30

<160> 29

<170> PatentIn version 3.5

<210> 1

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 1

Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ser	Gly	Lys	Ile
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Glu	Glu	Ala	Leu	Lys	Leu	Phe	Lys	Glu	Met	Glu	Glu	Lys	Gly	Ile	Thr
			20					25					30		

Pro	Ser	Val
		35

<210> 2

<211> 35

<212> PRT

<213> Artificial Sequence

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<223> Artificial polypeptide

<400> 2

Val	Thr	Tyr	Asn	Thr	Asn	Ile	Asp	Gln	Leu	Cys	Lys	Ser	Gly	Lys	Ile
1				5					10					15	

Glu	Glu	Ala	Leu	Lys	Leu	Phe	Lys	Glu	Met	Glu	Glu	Lys	Gly	Ile	Thr
			20					25					30		

Pro Ser Val
35

<210> 3
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial polypeptide

<400> 3

Val Thr Tyr Asn Thr Asn Ile Asp Gln Leu Cys Lys Ser Gly Arg Ile
1 5 10 15

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
20 25 30

Pro Ser Val
35

<210> 4
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial polypeptide

<400> 4

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Arg Ile
1 5 10 15

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
20 25 30

Pro Ser Val
35

<210> 5
<211> 35
<212> PRT
<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 5

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
1 5 10 15

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
20 25 30

Pro Asp Val
35

<210> 6

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 6

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
1 5 10 15

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
20 25 30

Pro Asp Val
35

<210> 7

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 7

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
1 5 10 15

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

20

25

30

Pro Asp Val
35

<210> 8
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial polypeptide

<400> 8

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
1 5 10 15

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
20 25 30

Pro Asp Glu
35

<210> 9
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial polypeptide

<400> 9

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Val
1 5 10 15

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
20 25 30

Pro Asp Val
35

<210> 10
<211> 35
<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 10

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Val
1 5 10 15

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
20 25 30

Pro Asp Glu
35

<210> 11

<211> 869

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 11

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
35 40 45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp

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

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
325 330 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
340 345 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
355 360 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
370 375 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385 390 395 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
405 410 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
420 425 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
435 440 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
450 455 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465 470 475 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
485 490 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
500 505 510

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

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

530					535					540					
Thr	Pro	Ser	Val	Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys
545					550					555					560
Ala	Gly	Arg	Leu	Asp	Glu	Ala	Glu	Glu	Leu	Leu	Glu	Glu	Met	Glu	Glu
				565					570					575	
Lys	Gly	Ile	Lys	Pro	Asp	Val	Val	Thr	Tyr	Thr	Thr	Leu	Ile	Asp	Gly
			580					585					590		
Leu	Cys	Lys	Ala	Gly	Lys	Val	Asp	Glu	Ala	Leu	Glu	Leu	Phe	Asp	Glu
		595					600					605			
Met	Lys	Glu	Arg	Gly	Ile	Lys	Pro	Asp	Val	Val	Thr	Tyr	Asn	Thr	Leu
	610					615					620				
Ile	Asp	Gly	Leu	Cys	Lys	Ser	Gly	Lys	Ile	Glu	Glu	Ala	Leu	Lys	Leu
625					630					635					640
Phe	Lys	Glu	Met	Glu	Glu	Lys	Gly	Ile	Thr	Pro	Ser	Val	Val	Thr	Tyr
				645					650					655	
Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Arg	Leu	Asp	Glu	Ala
		660						665					670		
Glu	Glu	Leu	Leu	Glu	Glu	Met	Glu	Glu	Lys	Gly	Ile	Lys	Pro	Asp	Val
		675					680					685			
Val	Thr	Tyr	Thr	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Lys	Val
	690					695					700				
Asp	Glu	Ala	Leu	Glu	Leu	Phe	Asp	Glu	Met	Lys	Glu	Arg	Gly	Ile	Lys
705					710					715					720
Pro	Asp	Val	Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ser
				725					730					735	
Gly	Lys	Ile	Glu	Glu	Ala	Leu	Lys	Leu	Phe	Lys	Glu	Met	Glu	Glu	Lys
			740					745					750		

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
755 760 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
770 775 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
805 810 815

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 12
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial polypeptide

<400> 12

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
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Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
35 40 45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn
145 150 155 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
180 185 190

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Asn Ile Asp Gln Leu
195 200 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
210 215 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225 230 235 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
245 250 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr

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

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
485 490 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
500 505 510

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

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
530 535 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545 550 555 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
565 570 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
580 585 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
595 600 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
610 615 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625 630 635 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
645 650 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
660 665 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
675 680 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val

690

695

700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
 705 710 715 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
 725 730 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
 740 745 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
 755 760 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
 770 775 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
 785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
 805 810 815

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
 820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
 835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
 850 855 860

His His His Gly Arg
 865

<210> 13

<211> 869

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 13

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
35 40 45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn
145 150 155 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
180 185 190

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Asn Ile Asp Gln Leu
195 200 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
 210 215 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
 225 230 235 240

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Glu Glu Leu Leu
 245 250 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
 275 280 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
 290 295 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
 305 310 315 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
 325 330 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
 340 345 350

Lys Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
 355 360 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
 370 375 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
 385 390 395 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
 405 410 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys

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

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
645 650 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
660 665 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
675 680 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
690 695 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705 710 715 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
725 730 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
740 745 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
755 760 765

Cys Lys Ala Gly Lys Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
770 775 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
805 810 815

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His

850

855

860

His His His Gly Arg
865

<210> 14

<211> 869

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 14

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
35 40 45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn

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

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
 370 375 380

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

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
 405 410 415

Gly Leu Cys Lys Ser Gly Arg Ile Glu Glu Ala Leu Lys Leu Phe Lys
 420 425 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
 435 440 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
 450 455 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
 465 470 475 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Val Asp Glu
 485 490 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
 500 505 510

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

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
 530 535 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
 545 550 555 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
 565 570 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly

580					585					590					
Leu	Cys	Lys	Ala	Gly	Arg	Val	Asp	Glu	Ala	Leu	Glu	Leu	Phe	Asp	Glu
		595					600					605			
Met	Lys	Glu	Arg	Gly	Ile	Lys	Pro	Asp	Val	Val	Thr	Tyr	Asn	Thr	Leu
	610					615					620				
Ile	Asp	Gly	Leu	Cys	Lys	Ser	Gly	Arg	Ile	Glu	Glu	Ala	Leu	Lys	Leu
625					630					635					640
Phe	Lys	Glu	Met	Glu	Glu	Lys	Gly	Ile	Thr	Pro	Ser	Val	Val	Thr	Tyr
			645						650					655	
Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Arg	Leu	Asp	Glu	Ala
			660					665					670		
Glu	Glu	Leu	Leu	Glu	Glu	Met	Glu	Glu	Lys	Gly	Ile	Lys	Pro	Asp	Val
		675					680					685			
Val	Thr	Tyr	Thr	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Arg	Val
	690					695					700				
Asp	Glu	Ala	Leu	Glu	Leu	Phe	Asp	Glu	Met	Lys	Glu	Arg	Gly	Ile	Lys
705					710					715					720
Pro	Asp	Val	Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ser
				725					730					735	
Gly	Arg	Ile	Glu	Glu	Ala	Leu	Lys	Leu	Phe	Lys	Glu	Met	Glu	Glu	Lys
			740					745					750		
Gly	Ile	Thr	Pro	Ser	Val	Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu
	755						760					765			
Cys	Lys	Ala	Gly	Arg	Leu	Asp	Glu	Ala	Glu	Glu	Leu	Leu	Glu	Glu	Met
	770					775					780				
Glu	Glu	Lys	Gly	Ile	Lys	Pro	Asp	Val	Val	Thr	Tyr	Thr	Thr	Leu	Ile
785					790					795					800

Asp Gly Leu Cys Lys Ala Gly Arg Val Asp Glu Ala Leu Glu Leu Phe
805 810 815

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 15
<211> 30
<212> RNA
<213> Artificial Sequence

<220>
<223> Artificial polynucleotide

<400> 15
gacacugcug cugcugcugc ugcugaugca 30

<210> 16
<211> 30
<212> RNA
<213> Artificial Sequence

<220>
<223> Artificial polynucleotide

<400> 16
gacaugccag cagcagcagc agcaggacug 30

<210> 17
<211> 957
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial polypeptide

<400> 17

Met Ala Gly Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro
 1 5 10 15

Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val
 20 25 30

Arg Gly Glu Gly Glu Gly Asp Ala Thr Asn Gly Lys Leu Thr Leu Lys
 35 40 45

Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val
 50 55 60

Thr Thr Phe Gly Tyr Gly Val Ala Cys Phe Ser Arg Tyr Pro Asp His
 65 70 75 80

Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val
 85 90 95

Gln Glu Arg Thr Ile Ser Phe Lys Asp Asp Gly Thr Tyr Lys Thr Arg
 100 105 110

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

Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu
 130 135 140

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

Lys Asn Cys Ile Lys Ala Asn Phe Lys Ile Arg His Asn Val Glu Asp
 165 170 175

Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly
 180 185 190

Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser His Gln Ser
 195 200 205

Lys Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu

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

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
435 440 445

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
450 455 460

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
465 470 475 480

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
485 490 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
500 505 510

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
515 520 525

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
530 535 540

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
545 550 555 560

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
565 570 575

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
580 585 590

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
595 600 605

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
610 615 620

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
625 630 635 640

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu

				645				650				655			
Leu	Phe	Asp	Glu	Met	Lys	Glu	Arg	Gly	Ile	Lys	Pro	Asp	Val	Val	Thr
			660				665						670		
Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ser	Gly	Lys	Ile	Glu	Glu
			675				680						685		
Ala	Leu	Lys	Leu	Phe	Lys	Glu	Met	Glu	Glu	Lys	Gly	Ile	Thr	Pro	Ser
			690				695						700		
Val	Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Arg
			705				710						715	720	
Leu	Asp	Glu	Ala	Glu	Glu	Leu	Leu	Glu	Glu	Met	Glu	Glu	Lys	Gly	Ile
			725				730						735		
Lys	Pro	Asp	Val	Val	Thr	Tyr	Thr	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys
			740				745						750		
Ala	Gly	Lys	Val	Asp	Glu	Ala	Leu	Glu	Leu	Phe	Asp	Glu	Met	Lys	Glu
			755				760						765		
Arg	Gly	Ile	Lys	Pro	Asp	Val	Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly
			770				775						780		
Leu	Cys	Lys	Ser	Gly	Lys	Ile	Glu	Glu	Ala	Leu	Lys	Leu	Phe	Lys	Glu
			785				790						795	800	
Met	Glu	Glu	Lys	Gly	Ile	Thr	Pro	Ser	Val	Val	Thr	Tyr	Asn	Thr	Leu
			805				810						815		
Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Arg	Leu	Asp	Glu	Ala	Glu	Glu	Leu
			820				825						830		
Leu	Glu	Glu	Met	Glu	Glu	Lys	Gly	Ile	Lys	Pro	Asp	Val	Val	Thr	Tyr
			835				840						845		
Thr	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Lys	Val	Asp	Glu	Ala
			850				855						860		

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

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
690 695 700

Val	Val	Thr	Tyr	Asn	Thr	Leu	Ile	Asp	Gly	Leu	Cys	Lys	Ala	Gly	Arg
705					710					715					720

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
725 730 735

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
740 745 750

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
755 760 765

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
770 775 780

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
785 790 795 800

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
805 810 815

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
820 825 830

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
835 840 845

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
850 855 860

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu
865 870 875 880

Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala
885 890 895

Arg Asp Pro Pro Val Leu Ser Ser Pro Lys Lys Lys Arg Lys Val Glu
900 905 910

Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys
915 920 925

Val Gly Ser Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp
930 935 940

Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala Gly Arg
945 950 955

<210> 18
<211> 957
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial polypeptide

<400> 18

Met Ala Gly Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro
1 5 10 15

Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val
20 25 30

Arg Gly Glu Gly Glu Gly Asp Ala Thr Asn Gly Lys Leu Thr Leu Lys
35 40 45

Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val
50 55 60

Thr Thr Phe Gly Tyr Gly Val Ala Cys Phe Ser Arg Tyr Pro Asp His
65 70 75 80

Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val
85 90 95

Gln Glu Arg Thr Ile Ser Phe Lys Asp Asp Gly Thr Tyr Lys Thr Arg
100 105 110

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

Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu
130 135 140

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

Lys Asn Cys Ile Lys Ala Asn Phe Lys Ile Arg His Asn Val Glu Asp
165 170 175

Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly
180 185 190

Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser His Gln Ser
195 200 205

Lys Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu
210 215 220

Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr
225 230 235 240

Lys Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Asn
245 250 255

Ile Asp Gln Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
260 265 270

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
275 280 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala

290

295

300

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
 305 310 315 320

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
 325 330 335

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
 340 345 350

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
 355 360 365

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
 370 375 380

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
 385 390 395 400

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
 405 410 415

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
 420 425 430

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
 435 440 445

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
 450 455 460

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
 465 470 475 480

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
 485 490 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
 500 505 510

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
515 520 525

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
530 535 540

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
545 550 555 560

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
565 570 575

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
580 585 590

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
595 600 605

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
610 615 620

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
625 630 635 640

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
645 650 655

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
660 665 670

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

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
690 695 700

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
705 710 715 720

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

735

Val	Gly	Ser	Asp	Tyr	Lys	Asp	His	Asp	Gly	Asp	Tyr	Lys	Asp	His	Asp
	930					935					940				

Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala Gly Arg
 945 950 955

<210> 19
 <211> 957
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Artificial polypeptide

<400> 19

Met Ala Gly Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro
 1 5 10 15

Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val
 20 25 30

Arg Gly Glu Gly Glu Gly Asp Ala Thr Asn Gly Lys Leu Thr Leu Lys
 35 40 45

Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val
 50 55 60

Thr Thr Phe Gly Tyr Gly Val Ala Cys Phe Ser Arg Tyr Pro Asp His
 65 70 75 80

Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val
 85 90 95

Gln Glu Arg Thr Ile Ser Phe Lys Asp Asp Gly Thr Tyr Lys Thr Arg
 100 105 110

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

Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu
 130 135 140

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

Lys Asn Cys Ile Lys Ala Asn Phe Lys Ile Arg His Asn Val Glu Asp
165 170 175

Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly
180 185 190

Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser His Gln Ser
195 200 205

Lys Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu
210 215 220

Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr
225 230 235 240

Lys Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Asn
245 250 255

Ile Asp Gln Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
260 265 270

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
275 280 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
290 295 300

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
305 310 315 320

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
325 330 335

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
340 345 350

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
355 360 365

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

370

375

380

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
 385 390 395 400

Cys Lys Ala Gly Lys Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
 405 410 415

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
 420 425 430

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
 435 440 445

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
 450 455 460

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
 465 470 475 480

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
 485 490 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
 500 505 510

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
 515 520 525

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
 530 535 540

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
 545 550 555 560

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
 565 570 575

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
 580 585 590

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
595 600 605

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Glu Glu Leu Leu Glu
610 615 620

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
625 630 635 640

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
645 650 655

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
660 665 670

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

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
690 695 700

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
705 710 715 720

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
725 730 735

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
740 745 750

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
755 760 765

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
770 775 780

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
785 790 795 800

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu

805

810

815

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Glu Glu Leu
 820 825 830

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
 835 840 845

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
 850 855 860

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu
 865 870 875 880

Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala
 885 890 895

Arg Asp Pro Pro Val Leu Ser Ser Pro Lys Lys Lys Arg Lys Val Glu
 900 905 910

Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys
 915 920 925

Val Gly Ser Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp
 930 935 940

Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala Gly Arg
 945 950 955

<210> 20

<211> 957

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 20

Met Ala Gly Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro
 1 5 10 15

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

20

25

30

Arg Gly Glu Gly Glu Gly Asp Ala Thr Asn Gly Lys Leu Thr Leu Lys
 35 40 45

Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val
 50 55 60

Thr Thr Phe Gly Tyr Gly Val Ala Cys Phe Ser Arg Tyr Pro Asp His
 65 70 75 80

Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val
 85 90 95

Gln Glu Arg Thr Ile Ser Phe Lys Asp Asp Gly Thr Tyr Lys Thr Arg
 100 105 110

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

Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu
 130 135 140

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

Lys Asn Cys Ile Lys Ala Asn Phe Lys Ile Arg His Asn Val Glu Asp
 165 170 175

Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly
 180 185 190

Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser His Gln Ser
 195 200 205

Lys Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu
 210 215 220

Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr
 225 230 235 240

Lys Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Asn
245 250 255

Ile Asp Gln Leu Cys Lys Ser Gly Arg Ile Glu Glu Ala Leu Lys Leu
260 265 270

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
275 280 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
290 295 300

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
305 310 315 320

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Val
325 330 335

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
340 345 350

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
355 360 365

Gly Arg Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
370 375 380

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
385 390 395 400

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
405 410 415

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
420 425 430

Asp Gly Leu Cys Lys Ala Gly Arg Val Asp Glu Ala Leu Glu Leu Phe
435 440 445

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn

450

455

460

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

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
 485 490 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
 500 505 510

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
 515 520 525

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
 530 535 540

Arg Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
 545 550 555 560

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
 565 570 575

Lys Ser Gly Arg Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
 580 585 590

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
 595 600 605

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
 610 615 620

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
 625 630 635 640

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Val Asp Glu Ala Leu Glu
 645 650 655

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
 660 665 670

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

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
690 695 700

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
705 710 715 720

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
725 730 735

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
740 745 750

Ala Gly Arg Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
755 760 765

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
770 775 780

Leu Cys Lys Ser Gly Arg Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
785 790 795 800

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
805 810 815

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
820 825 830

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
835 840 845

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Val Asp Glu Ala
850 855 860

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu
865 870 875 880

Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala

885

890

895

Arg Asp Pro Pro Val Leu Ser Ser Pro Lys Lys Lys Arg Lys Val Glu
 900 905 910

Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys
 915 920 925

Val Gly Ser Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp
 930 935 940

Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala Gly Arg
 945 950 955

<210> 21

<211> 306

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<400> 21

Met Ala Gly Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro
 1 5 10 15

Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val
 20 25 30

Arg Gly Glu Gly Glu Gly Asp Ala Thr Asn Gly Lys Leu Thr Leu Lys
 35 40 45

Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val
 50 55 60

Thr Thr Phe Gly Tyr Gly Val Ala Cys Phe Ser Arg Tyr Pro Asp His
 65 70 75 80

Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val
 85 90 95

Gln Glu Arg Thr Ile Ser Phe Lys Asp Asp Gly Thr Tyr Lys Thr Arg

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

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