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SEQUENCE LISTING

<110> BIO-THERA SOLUTIONS, LTD.

<120> Recombinant Antibody Having Unique Glycan Profile Produced by CHO
Host Cell with Edited Genome and Preparation Method Thereof

<130> 63CP-292919-WO

<140> PCT/CN2018/100008
<141> 2018-08-10

<150> 201710687889.9
<151> 2017-08-11

<160> 28

<170> PatentIn version 3.5

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ggaagcacag gacaagaaag ctgcctcctt gtatcaccag gaagatcttt ttgtaagagt

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Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
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Glu Ser Leu Arg Ile Pro Glu Gly Pro Ile Asp Gln Gly Thr Ala Thr
65 70 75 80

Gly Arg Val Arg Val Leu Glu Glu Gln Leu Val Lys Ala Lys Glu Gln
85 90 95

Ile Glu Asn Tyr Lys Lys Gln Ala Arg Asn Asp Leu Gly Lys Asp His
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Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe

115

120

125

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

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
 165 170 175

Gly Glu Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
 180 185 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Arg
 195 200 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
 210 215 220

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

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His	Val	Glu	Glu	His	Phe	Gln	Leu	Leu	Glu	Arg	Arg	Met	Lys	Val	Asp
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Ala	Lys	Thr	Lys	Tyr	Ser	Asn	Tyr	Glu	Phe	Ile	Ser	Asp	Asn	Ser	Ile
			420					425					430		
Ser	Trp	Ser	Ala	Gly	Leu	His	Asn	Arg	Tyr	Thr	Glu	Asn	Ser	Leu	Arg
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Gly	Val	Ile	Leu	Asp	Ile	His	Phe	Leu	Ser	Gln	Ala	Asp	Phe	Leu	Val
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Cys	Thr	Phe	Ser	Ser	Gln	Val	Cys	Arg	Val	Ala	Tyr	Glu	Ile	Met	Gln
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Tyr	Tyr	Phe	Gly	Gly	Gln	Asn	Ala	His	Asn	Gln	Ile	Ala	Val	Tyr	Pro

500

505

510

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

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
 50 55 60

Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn
 65 70 75 80

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Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
85 90 95

Leu Cys Gln Ala His Gly Leu Thr Pro Asp Gln Val Val Ala Ile Ala
100 105 110

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
115 120 125

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp Gln Val Val Ala
130 135 140

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

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp Gln Val
165 170 175

Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val
180 185 190

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp
195 200 205

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

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
225 230 235 240

Pro Ala Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala
245 250 255

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
260 265 270

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Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys
275 280 285

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
290 295 300

His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn Gly Gly
305 310 315 320

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
325 330 335

Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn
340 345 350

Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
355 360 365

Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala
370 375 380

Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
385 390 395 400

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp Gln Val Val Ala
405 410 415

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
420 425 430

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val
435 440 445

Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val
450 455 460

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Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp
465 470 475 480

Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu
485 490 495

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
500 505 510

Pro Asp Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
515 520 525

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
530 535 540

Leu Thr Pro Asp Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
545 550 555 560

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
565 570 575

His Gly Leu Thr Pro Asp Gln Val Val Ala Ile Ala Ser His Asp Gly
580 585 590

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
595 600 605

Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn
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 20 25 30

His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn Gly Gly
 35 40 45

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
 50 55 60

Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser His
 65 70 75 80

Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
 85 90 95

Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala
 100 105 110

Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
 115 120 125

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala
 130 135 140

Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg

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Val	Ala	Ile	Ala	Ser	His	Asp	Gly	Gly	Lys	Gln	Ala	Leu	Glu	Thr	Val
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Gln	Arg	Leu	Leu	Pro	Val	Leu	Cys	Gln	Ala	His	Gly	Leu	Thr	Pro	Ala
		195					200					205			
Gln	Val	Val	Ala	Ile	Ala	Ser	Asn	Ile	Gly	Gly	Lys	Gln	Ala	Leu	Glu
	210					215					220				
Thr	Val	Gln	Arg	Leu	Leu	Pro	Val	Leu	Cys	Gln	Ala	His	Gly	Leu	Thr
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Pro	Asp	Gln	Val	Val	Ala	Ile	Ala	Ser	Asn	Ile	Gly	Gly	Lys	Gln	Ala
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345

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Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
 355 360 365

Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala
 370 375 380

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
 385 390 395 400

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala
 405 410 415

Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
 420 425 430

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val
 435 440 445

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
 450 455 460

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala
 465 470 475 480

Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu
 485 490 495

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
 500 505 510

Pro Asp Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala
 515 520 525

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly

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540

Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Arg
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 caagcccacg gcctcacccc ggcgcaagtt gtagcgattg ctagtaatgg cggcggtcga 1680
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<400> 14

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Tyr Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro
 20 25 30

Tyr Asp Val Pro Asp Tyr Ala Ala His Gly Thr Val Asp Leu Arg Thr
 35 40 45

Leu Gly Tyr Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg
 50 55 60

Ser Thr Val Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr
 65 70 75 80

His Ala His Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr
 85 90 95

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Val Ala Val Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr
100 105 110

His Glu Ala Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala
115 120 125

Leu Glu Ala Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu
130 135 140

Gln Leu Asp Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val
145 150 155 160

Thr Ala Val Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala
165 170 175

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

Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu
195 200 205

Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser
210 215 220

His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro
225 230 235 240

Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile
245 250 255

Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu
260 265 270

Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp Gln Val Val
275 280 285

1002890908_1.txt

Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln
290 295 300

Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp Gln
305 310 315 320

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

Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro
340 345 350

Asp Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu
355 360 365

Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu
370 375 380

Thr Pro Asp Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln
385 390 395 400

Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His
405 410 415

Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly
420 425 430

Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln
435 440 445

Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser His Asp
450 455 460

Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu
465 470 475 480

1002890908_1.txt

Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser
485 490 495

Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro
500 505 510

Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile
515 520 525

Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu
530 535 540

Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val
545 550 555 560

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

Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Asp Gln
580 585 590

Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr
595 600 605

Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro
610 615 620

Ala Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu
625 630 635 640

Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu
645 650 655

Thr Pro Asp Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln
660 665 670

1002890908_1.txt

Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His
675 680 685

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

Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln
705 710 715 720

Ala His Gly Leu Thr Pro Asp Gln Val Val Ala Ile Ala Ser Asn Asn
725 730 735

Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu
740 745 750

Cys Gln Ala His Gly Leu Thr Pro Asp Gln Val Val Ala Ile Ala Ser
755 760 765

His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro
770 775 780

Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile
785 790 795 800

Ala Ser Asn Gly Gly Gly Arg Pro Ala Leu Glu Ser Ile Val Ala Gln
805 810 815

Leu Ser Arg Pro Asp Pro Ala Leu Ala Ala Leu Thr Asn Asp His Leu
820 825 830

Val Ala Leu Ala Cys Leu Gly Gly Arg Pro Ala Leu Asp Ala Val Lys
835 840 845

Lys Gly Leu Pro His Ala Pro Ala Leu Ile Lys Arg Thr Asn Arg Arg
850 855 860

1002890908_1.txt

Ile Pro Glu Arg Thr Ser His Arg Val Ala Gly Ser Gln Leu Val Lys
865 870 875 880

Ser Glu Leu Glu Glu Lys Lys Ser Glu Leu Arg His Lys Leu Lys Tyr
885 890 895

Val Pro His Glu Tyr Ile Glu Leu Ile Glu Ile Ala Arg Asn Pro Thr
900 905 910

Gln Asp Arg Ile Leu Glu Met Lys Val Met Glu Phe Phe Met Lys Val
915 920 925

Tyr Gly Tyr Arg Gly Glu His Leu Gly Gly Ser Arg Lys Pro Asp Gly
930 935 940

Ala Ile Tyr Thr Val Gly Ser Pro Ile Asp Tyr Gly Val Ile Val Asp
945 950 955 960

Thr Lys Ala Tyr Ser Gly Gly Tyr Asn Leu Pro Ile Gly Gln Ala Arg
965 970 975

Glu Met Gln Arg Tyr Val Glu Glu Asn Gln Thr Arg Asn Lys His Ile
980 985 990

Asn Pro Asn Glu Trp Trp Lys Val Tyr Pro Ser Ser Val Thr Glu Phe
995 1000 1005

Lys Phe Leu Phe Val Ser Gly His Phe Lys Gly Asn Tyr Lys Ala
1010 1015 1020

Gln Leu Thr Arg Leu Asn His Ile Thr Asn Cys Asn Gly Ala Val
1025 1030 1035

Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu Met Ile Lys Ala
1040 1045 1050

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Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe Asn Asn Gly
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Glu Ile Asn Phe
1070

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<220>
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Tyr Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro
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Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Ala	His	Gly	Thr	Val	Asp	Leu	Arg	Thr
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Ser	Thr	Val	Ala	Gln	His	His	Glu	Ala	Leu	Val	Gly	His	Gly	Phe	Thr
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His	Ala	His	Ile	Val	Ala	Leu	Ser	Gln	His	Pro	Ala	Ala	Leu	Gly	Thr
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Val	Ala	Val	Lys	Tyr	Gln	Asp	Met	Ile	Ala	Ala	Leu	Pro	Glu	Ala	Thr
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His	Glu	Ala	Ile	Val	Gly	Val	Gly	Lys	Gln	Trp	Ser	Gly	Ala	Arg	Ala
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Leu	Glu	Ala	Leu	Leu	Thr	Val	Ala	Gly	Glu	Leu	Arg	Gly	Pro	Pro	Leu
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Gln	Leu	Asp	Thr	Gly	Gln	Leu	Leu	Lys	Ile	Ala	Lys	Arg	Gly	Gly	Val
145					150					155					160
Thr	Ala	Val	Glu	Ala	Val	His	Ala	Trp	Arg	Asn	Ala	Leu	Thr	Gly	Ala
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Pro	Leu	Asn	Leu	Thr	Pro	Glu	Gln	Val	Val	Ala	Ile	Ala	Ser	His	Asp
			180					185					190		
Gly	Gly	Lys	Gln	Ala	Leu	Glu	Thr	Val	Gln	Arg	Leu	Leu	Pro	Val	Leu
		195					200					205			
Cys	Gln	Ala	His	Gly	Leu	Thr	Pro	Ala	Gln	Val	Val	Ala	Ile	Ala	Ser
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1002890908_1.txt

Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro
225 230 235 240

Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile
245 250 255

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

Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val
275 280 285

Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln
290 295 300

Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln
305 310 315 320

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

Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro
340 345 350

Ala Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu
355 360 365

Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu
370 375 380

Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln
385 390 395 400

Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His
405 410 415

1002890908_1.txt

Gly Leu Thr Pro Asp Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly
420 425 430

Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln
435 440 445

Ala His Gly Leu Thr Pro Asp Gln Val Val Ala Ile Ala Ser Asn Asn
450 455 460

Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu
465 470 475 480

Cys Gln Ala His Gly Leu Thr Pro Asp Gln Val Val Ala Ile Ala Ser
485 490 495

Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro
500 505 510

Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile
515 520 525

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

Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln Val Val
545 550 555 560

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

Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Ala Gln
580 585 590

Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr
595 600 605

1002890908_1.txt

Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro
610 615 620

Ala Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu
625 630 635 640

Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu
645 650 655

Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln
660 665 670

Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His
675 680 685

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

Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln
705 710 715 720

Ala His Gly Leu Thr Pro Ala Gln Val Val Ala Ile Ala Ser Asn Gly
725 730 735

Gly Gly Arg Pro Ala Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro
740 745 750

Asp Pro Ala Leu Ala Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala
755 760 765

Cys Leu Gly Gly Arg Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro
770 775 780

His Ala Pro Ala Leu Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg
785 790 795 800

1002890908_1.txt

Thr Ser His Arg Val Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu
805 810 815

Glu Lys Lys Ser Glu Leu Arg His Lys Leu Lys Tyr Val Pro His Glu
820 825 830

Tyr Ile Glu Leu Ile Glu Ile Ala Arg Asn Pro Thr Gln Asp Arg Ile
835 840 845

Leu Glu Met Lys Val Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg
850 855 860

Gly Glu His Leu Gly Gly Ser Arg Lys Pro Asp Gly Ala Ile Tyr Thr
865 870 875 880

Val Gly Ser Pro Ile Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr
885 890 895

Ser Gly Gly Tyr Asn Leu Pro Ile Gly Gln Ala Asp Ala Met Gln Ser
900 905 910

Tyr Val Glu Glu Asn Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu
915 920 925

Trp Trp Lys Val Tyr Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe
930 935 940

Val Ser Gly His Phe Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu
945 950 955 960

Asn His Ile Thr Asn Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu
965 970 975

Leu Ile Gly Gly Glu Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu
980 985 990

1002890908_1.txt

Val Arg Arg Lys Phe Asn Asn Gly Glu Ile Asn Phe
995 1000

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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

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1002890908_1.txt

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1002890908_1.txt

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

<220>
 <223> Synthetic

<400> 18

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Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val Ser Tyr Ile
 20 25 30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr
 35 40 45

Ala Thr Ser Asn Leu Ala Ser Gly Val Pro Val Arg Phe Ser Gly Ser
 50 55 60

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

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Thr Ser Asn Pro Pro Thr
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala Pro

100

105

110

Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
 115 120 125

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

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
 145 150 155 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
 165 170 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
 180 185 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
 195 200 205

Asn Arg Gly Glu Cys
 210

<210> 19
 <211> 451
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 19

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
 20 25 30

1002890908_1.txt

Asn Met His Trp Val Lys Gln Thr Pro Gly Arg Gly Leu Glu Trp Ile
35 40 45

Gly Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe
50 55 60

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

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Thr Tyr Tyr Gly Gly Asp Trp Tyr Phe Asn Val Trp Gly
100 105 110

Ala Gly Thr Thr Val Thr Val Ser Ala Ala Ser Thr Lys Gly Pro Ser
115 120 125

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

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
165 170 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
180 185 190

Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
195 200 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Ala Glu Pro Lys Ser Cys
210 215 220

1002890908_1.txt

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225 230 235 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

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

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
340 345 350

Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
355 360 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
405 410 415

1002890908_1.txt

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 20
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 20

Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
20 25 30

Asn Gly Ile Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn Leu Val Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Ala Gln Asn
85 90 95

Leu Glu Leu Pro Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys

100

105

110

Arg

<210> 21

<211> 449

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 21

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Tyr Ser
 20 25 30

Trp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly Lys Phe
 50 55 60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Asn Val Phe Asp Gly Tyr Trp Leu Val Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
 115 120 125

1002890908_1.txt

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
165 170 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
180 185 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
195 200 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
210 215 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
225 230 235 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
245 250 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
260 265 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
275 280 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
290 295 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305 310 315 320

1002890908_1.txt

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
340 345 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
355 360 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
370 375 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385 390 395 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
405 410 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
420 425 430

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

Lys

<210> 22
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 22

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly

1002890908_1.txt

1	5	10	15
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr	20	25	30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile	35	40	45
Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly	50	55	60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro	65	70	75
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser Asn Trp Pro Ile	85	90	95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala	100	105	110
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly	115	120	125
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala	130	135	140
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln	145	150	155
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser	165	170	175
Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr	180	185	190
Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser			

195

200

205

Phe Asn Arg Gly Glu Cys
210

<210> 23
<211> 452
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 23

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Asp Tyr
20 25 30

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Thr Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Lys Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Ile Gln Tyr Gly Asn Tyr Tyr Tyr Gly Met Asp Val Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
115 120 125

1002890908_1.txt

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

1002890908_1.txt

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

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
340 345 350

Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val
355 360 365

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

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
385 390 395 400

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
405 410 415

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
420 425 430

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
435 440 445

Ser Pro Gly Lys
450

<210> 24
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 24

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly

1	5	10	15
Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr	20	25	30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile	35	40	45
Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly	50	55	60
Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro	65	70	75
Glu Asp Ile Ala Thr Tyr Phe Cys Gln His Phe Asp His Leu Pro Leu	85	90	95
Ala Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala	100	105	110
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly	115	120	125
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala	130	135	140
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln	145	150	155
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser	165	170	175
Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr	180	185	190
Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser			

195

200

205

Phe Asn Arg Gly Glu Cys
210

<210> 25

<211> 449

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 25

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Val Ser Ser Gly
20 25 30

Asp Tyr Tyr Trp Thr Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly His Ile Tyr Tyr Ser Gly Asn Thr Asn Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Ser Ile Asp Thr Ser Lys Thr Gln Phe
65 70 75 80

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

Cys Val Arg Asp Arg Val Thr Gly Ala Phe Asp Ile Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser Ala Cys Thr Lys Gly Pro Ser Val Phe
115 120 125

1002890908_1.txt

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

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
340 345 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
355 360 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
370 375 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385 390 395 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
405 410 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
420 425 430

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

Lys

<210> 26
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<213> Artificial Sequence

<220>
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<400> 26

Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly

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Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ser Ile Ala	20	25	30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile	35	40	45
Tyr Ser Ala Ser Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Ser Gly	50	55	60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro	65	70	75
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln His Tyr Ile Thr Pro Leu	85	90	95
Thr Phe Gly Ala Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala	100	105	110
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly	115	120	125
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala	130	135	140
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln	145	150	155
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser	165	170	175
Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr	180	185	190
Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser			

195

200

205

Phe Asn Arg Gly Glu Cys
210

<210> 27
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 27

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

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Thr Asp Asp Phe
50 55 60

Lys Gly Arg Phe Ala Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Gly Gly Phe Gly Ser Ser Tyr Trp Tyr Phe Asp Val Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser Cys Ser Thr Lys Gly Pro Ser
115 120 125

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

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
165 170 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
180 185 190

Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
195 200 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
210 215 220

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225 230 235 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

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

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
340 345 350

Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
355 360 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
405 410 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
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<210> 28
<211> 203
<212> DNA
<213> Artificial Sequence

<220>
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60

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agagaactct ccaagattct tgcaaagctg gagcgcttaa acaacaaaat gaagacttga 180

ggagaatggc tgagtctctc cgg 203