

Page 1
SEQUENCE LISTING

<110> Schaffer, David V.
Klimczak, Ryan R.
Koerber, James T.
Flannery, John G.
Dalkara Mourrot, Deniz
Visel, Meike
Byrne, Leah C.T.

<120> Adeno-Associated Virus Virions with Variant Capsid and Methods of Use Thereof

<130> BERK-160WO

<150> 61/478,355

<151> 2011-04-22

<160> 64

<170> PatentIn version 3.5

<210> 1

<211> 733

<212> PRT

<213> Adeno-associated virus-2

<400> 1

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Thr Leu Ser
1 5 10 15

Glu Gly Ile Arg Gln Trp Trp Lys Leu Lys Pro Gly Pro Pro Pro Pro
20 25 30

Lys Pro Ala Glu Arg His Lys Asp Asp Ser Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Phe Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Glu Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Arg Gln Leu Asp Ser Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Val Leu Glu Pro
115 120 125

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

Pro Val Glu His Ser Pro Val Glu Pro Asp Ser Ser Ser Gly Thr Gly
145 150 155 160

Lys Ala Gly Gln Gln Pro Ala Arg Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

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

Ala Ala Pro Ser Gly Leu Gly Thr Asn Thr Met Ala Thr Gly Ser Gly
195 200 205

Ala Pro Met Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Asn Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Thr Trp Met Gly Asp Arg Val Ile
225 230 235 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
245 250 255

Tyr Lys Gln Ile Ser Ser Gln Ser Gly Ala Ser Asn Asp Asn His Tyr
260 265 270

Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe His
275 280 285

Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn Trp
290 295 300

Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln Val
305 310 315 320

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

Thr Ser Thr Val Gln Val Phe Thr Asp Ser Glu Tyr Gln Leu Pro Tyr
340 345 350

Val Leu Gly Ser Ala His Gln Gly Cys Leu Pro Pro Phe Pro Ala Asp
355 360 365

Val Phe Met Val Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asn Gly Ser
370 375 380

Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe Pro Ser
385 390 395 400

Gln Met Leu Arg Thr Gly Asn Asn Phe Thr Phe Ser Tyr Thr Phe Glu
405 410 415

Asp Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu Asp Arg
420 425 430

Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Arg Thr

435

440

445

Asn Thr Pro Ser Gly Thr Thr Thr Gln Ser Arg Leu Gln Phe Ser Gln
 450 455 460

Ala Gly Ala Ser Asp Ile Arg Asp Gln Ser Arg Asn Trp Leu Pro Gly
 465 470 475 480

Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys Thr Ser Ala Asp Asn Asn
 485 490 495

Asn Ser Glu Tyr Ser Trp Thr Gly Ala Thr Lys Tyr His Leu Asn Gly
 500 505 510

Arg Asp Ser Leu Val Asn Pro Gly Pro Ala Met Ala Ser His Lys Asp
 515 520 525

Asp Glu Glu Lys Phe Phe Pro Gln Ser Gly Val Leu Ile Phe Gly Lys
 530 535 540

Gln Gly Ser Glu Lys Thr Asn Val Asp Ile Glu Lys Val Met Ile Thr
 545 550 555 560

Asp Glu Glu Glu Ile Arg Thr Thr Asn Pro Val Ala Thr Glu Gln Tyr
 565 570 575

Gly Ser Val Ser Thr Asn Leu Gln Arg Gly Asn Arg Gln Ala Ala Thr
 580 585 590

Ala Asp Val Asn Thr Gln Gly Val Leu Pro Gly Met Val Trp Gln Asp
 595 600 605

Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr
 610 615 620

Asp Gly His Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu Lys
 625 630 635 640

His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asn
 645 650 655

Pro Ser Thr Thr Phe Ser Ala Ala Lys Phe Ala Ser Phe Ile Thr Gln
 660 665 670

Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln Lys
 675 680 685

Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr
 690 695 700

Asn Lys Ser Val Asn Val Asp Phe Thr Val Asp Thr Asn Gly Val Tyr
 705 710 715 720

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg
725 730

<210> 2
<211> 42
<212> PRT
<213> Adeno-associated virus-2

<400> 2

Pro Val Ala Thr Glu Gln Tyr Gly Ser Val Ser Thr Asn Leu Gln Arg
1 5 10 15

Gly Asn Arg Gln Ala Ala Thr Ala Asp Val Asn Thr Gln Gly Val Leu
20 25 30

Pro Gly Met Val Trp Gln Asp Arg Asp Val
35 40

<210> 3
<211> 42
<212> PRT
<213> Adeno-associated virus-AAV-1

<400> 3

Pro Val Ala Thr Glu Arg Phe Gly Thr Val Ala Val Asn Phe Gln Ser
1 5 10 15

Ser Ser Thr Asp Pro Ala Thr Gly Asp Val His Ala Met Gly Ala Leu
20 25 30

Pro Gly Met Val Trp Gln Asp Arg Asp Val
35 40

<210> 4
<211> 42
<212> PRT
<213> Adeno-associated virus-5

<400> 4

Arg Val Ala Tyr Asn Val Gly Gly Gln Met Ala Thr Asn Asn Gln Ser
1 5 10 15

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

Pro Gly Ser Val Trp Met Glu Arg Asp Val
35 40

<210> 5
<211> 42
<212> PRT
<213> Adeno-associated virus-AAV-6

<400> 5

Pro Val Ala Thr Glu Arg Phe Gly Thr Val Ala Val Asn Leu Gln Ser
1 5 10 15

Ser Ser Thr Asp Pro Ala Thr Gly Asp Val His Val Met Gly Ala Leu
20 25 30

Pro Gly Met Val Trp Gln Asp Arg Asp Val
35 40

<210> 6
<211> 42
<212> PRT
<213> Adeno-associated virus-AAV-

<400> 6

Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ser Ser Asn Leu Gln Ala
1 5 10 15

Ala Asn Thr Ala Ala Gln Thr Gln Val Val Asn Asn Gln Gly Ala Leu
20 25 30

Pro Gly Met Val Trp Gln Asn Arg Asp Val
35 40

<210> 7
<211> 42
<212> PRT
<213> Adeno-associated virus-AAV-8

<400> 7

Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ala Asp Asn Leu Gln Gln
1 5 10 15

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

Pro Gly Met Val Trp Gln Asn Arg Asp Val
35 40

<210> 8
<211> 42
<212> PRT
<213> Adeno-associated virus-AAV-9

<400> 8

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
1 5 10 15

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
20 25 30

Pro Gly Met Val Trp Gln Asp Arg Asp Val
35 40

<210> 9
 <211> 42
 <212> PRT
 <213> Adeno-associated virus-AAV-10

<400> 9

Pro Val Ala Thr Glu Gln Tyr Gly Val Val Ala Asp Asn Leu Gln Gln
 1 5 10 15

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

Pro Gly Met Val Trp Gln Asn Arg Asp Val
 35 40

<210> 10
 <211> 224
 <212> PRT
 <213> Homo sapiens

<400> 10

Met Ser Arg Lys Ile Glu Gly Phe Leu Leu Leu Leu Phe Gly Tyr
 1 5 10 15

Glu Ala Thr Leu Gly Leu Ser Ser Thr Glu Asp Glu Gly Glu Asp Pro
 20 25 30

Trp Tyr Gln Lys Ala Cys Lys Cys Asp Cys Gln Gly Gly Pro Asn Ala
 35 40 45

Leu Trp Ser Ala Gly Ala Thr Ser Leu Asp Cys Ile Pro Glu Cys Pro
 50 55 60

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

Ile Thr Cys Ser Asn Pro Glu Gln Tyr Val Gly Trp Tyr Ser Ser Trp
 85 90 95

Thr Ala Asn Lys Ala Arg Leu Asn Ser Gln Gly Phe Gly Cys Ala Trp
 100 105 110

Leu Ser Lys Phe Gln Asp Ser Ser Gln Trp Leu Gln Ile Asp Leu Lys
 115 120 125

Glu Ile Lys Val Ile Ser Gly Ile Leu Thr Gln Gly Arg Cys Asp Ile
 130 135 140

Asp Glu Trp Met Thr Lys Tyr Ser Val Gln Tyr Arg Thr Asp Glu Arg
 145 150 155 160

Leu Asn Trp Ile Tyr Tyr Lys Asp Gln Thr Gly Asn Asn Arg Val Phe
 165 170 175

Tyr Gly Asn Ser Asp Arg Thr Ser Thr Val Gln Asn Leu Leu Arg Pro
180 185 190

Pro Ile Ile Ser Arg Phe Ile Arg Leu Ile Pro Leu Gly Trp His Val
195 200 205

Arg Ile Ala Ile Arg Met Glu Leu Leu Glu Cys Val Ser Lys Cys Ala
210 215 220

```
<210> 11
<211> 247
<212> PRT
<213> Homo sapiens
```

<400> 11

Met Thr Ile Leu Phe Leu Thr Met Val Ile Ser Tyr Phe Gly Cys Met
1 5 10 15

Lys Ala Ala Pro Met Lys Glu Ala Asn Ile Arg Gly Gln Gly Gly Leu
20 25 30

Ala Tyr Pro Gly Val Arg Thr His Gly Thr Leu Glu Ser Val Asn Gly
35 40 45

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

His Val Ile Glu Glu Leu Leu Asp Glu Asp His Lys Val Arg Pro Asn
65 70 75 80

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

Ser Ser Gln Val Pro Leu Glu Pro Pro Leu Leu Phe Leu Leu Glu Glu
100 105 110

Tyr Lys Asn Tyr Leu Asp Ala Ala Asn Met Ser Met Met Val Leu Arg
115 120 125

His Ser Asp Pro Ala Arg Arg Gly Glu Leu Ser Val Cys Asp Ser Ile
130 135 140

Ser Glu Trp Val Thr Ala Ala Asp Lys Lys Thr Ala Val Asp Met Ser
145 150 155 160

Gly Gly Thr Val Thr Val Leu Glu Lys Val Pro Val Ser Lys Gly Gln
165 170 175

Leu Lys Gln Tyr Phe Tyr Glu Thr Lys Cys Asn Pro Met Gly Tyr Thr
180 185 190

Lys Glu Gly Cys Arg Gly Ile Asp Lys Arg His Trp Asn Ser Gln Cys
 195 200 205

Arg Thr Thr Gln Ser Tyr Val Arg Ala Leu Thr Met Asp Ser Lys Lys
 210 215 220

Arg Ile Gly Trp Arg Phe Ile Arg Ile Asp Thr Ser Cys Val Cys Thr
 225 230 235 240

Leu Thr Ile Lys Arg Gly Arg
 245

<210> 12
 <211> 533
 <212> PRT
 <213> Homo sapiens

<400> 12

Met Ser Ile Gln Val Glu His Pro Ala Gly Gly Tyr Lys Lys Leu Phe
 1 5 10 15

Glu Thr Val Glu Glu Leu Ser Ser Pro Leu Thr Ala His Val Thr Gly
 20 25 30

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

Leu Phe Glu Val Gly Ser Glu Pro Phe Tyr His Leu Phe Asp Gly Gln
 50 55 60

Ala Leu Leu His Lys Phe Asp Phe Lys Glu Gly His Val Thr Tyr His
 65 70 75 80

Arg Arg Phe Ile Arg Thr Asp Ala Tyr Val Arg Ala Met Thr Glu Lys
 85 90 95

Arg Ile Val Ile Thr Glu Phe Gly Thr Cys Ala Phe Pro Asp Pro Cys
 100 105 110

Lys Asn Ile Phe Ser Arg Phe Phe Ser Tyr Phe Arg Gly Val Glu Val
 115 120 125

Thr Asp Asn Ala Leu Val Asn Val Tyr Pro Val Gly Glu Asp Tyr Tyr
 130 135 140

Ala Cys Thr Glu Thr Asn Phe Ile Thr Lys Ile Asn Pro Glu Thr Leu
 145 150 155 160

Glu Thr Ile Lys Gln Val Asp Leu Cys Asn Tyr Val Ser Val Asn Gly
 165 170 175

Ala Thr Ala His Pro His Ile Glu Asn Asp Gly Thr Val Tyr Asn Ile
 180 185 190

Gly Asn Cys Phe Gly Lys Asn Phe Ser Ile Ala Tyr Asn Ile Val Lys
 195 200 205
 Ile Pro Pro Leu Gln Ala Asp Lys Glu Asp Pro Ile Ser Lys Ser Glu
 210 215 220
 Ile Val Val Gln Phe Pro Cys Ser Asp Arg Phe Lys Pro Ser Tyr Val
 225 230 235 240
 His Ser Phe Gly Leu Thr Pro Asn Tyr Ile Val Phe Val Glu Thr Pro
 245 250 255
 Val Lys Ile Asn Leu Phe Lys Phe Leu Ser Ser Trp Ser Leu Trp Gly
 260 265 270
 Ala Asn Tyr Met Asp Cys Phe Glu Ser Asn Glu Thr Met Gly Val Trp
 275 280 285
 Leu His Ile Ala Asp Lys Lys Arg Lys Lys Tyr Leu Asn Asn Lys Tyr
 290 295 300
 Arg Thr Ser Pro Phe Asn Leu Phe His His Ile Asn Thr Tyr Glu Asp
 305 310 315 320
 Asn Gly Phe Leu Ile Val Asp Leu Cys Cys Trp Lys Gly Phe Glu Phe
 325 330 335
 Val Tyr Asn Tyr Leu Tyr Leu Ala Asn Leu Arg Glu Asn Trp Glu Glu
 340 345 350
 Val Lys Lys Asn Ala Arg Lys Ala Pro Gln Pro Glu Val Arg Arg Tyr
 355 360 365
 Val Leu Pro Leu Asn Ile Asp Lys Ala Asp Thr Gly Lys Asn Leu Val
 370 375 380
 Thr Leu Pro Asn Thr Thr Ala Thr Ala Ile Leu Cys Ser Asp Glu Thr
 385 390 395 400
 Ile Trp Leu Glu Pro Glu Val Leu Phe Ser Gly Pro Arg Gln Ala Phe
 405 410 415
 Glu Phe Pro Gln Ile Asn Tyr Gln Lys Tyr Cys Gly Lys Pro Tyr Thr
 420 425 430
 Tyr Ala Tyr Gly Leu Gly Leu Asn His Phe Val Pro Asp Arg Leu Cys
 435 440 445
 Lys Leu Asn Val Lys Thr Lys Glu Thr Trp Val Trp Gln Glu Pro Asp
 450 455 460

Ser Tyr Pro Ser Glu Pro Ile Phe Val Ser His Pro Asp Ala Leu Glu
465 470 475 480

Glu Asp Asp Gly Val Val Leu Ser Val Val Val Ser Pro Gly Ala Gly
485 490 495

Gln Lys Pro Ala Tyr Leu Leu Ile Leu Asn Ala Lys Asp Leu Ser Glu
500 505 510

Val Ala Arg Ala Glu Val Glu Ile Asn Ile Pro Val Thr Phe His Gly
515 520 525

Leu Phe Lys Lys Ser
530

<210> 13
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 13

Leu Gly Glu Thr Thr Arg Pro
1 5

<210> 14
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 14

Asn Glu Thr Ile Thr Arg Pro
1 5

<210> 15
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 15

Lys Ala Gly Gln Ala Asn Asn
1 5

<210> 16
<211> 7
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 16

Lys Asp Pro Lys Thr Thr Asn
1 5

<210> 17

<211> 27

<212> RNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 17

cgcaaucagu gaaugcuuau acauccg

27

<210> 18

<211> 5541

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic construct

<400> 18

agcttgatc caatcaacct ctggattaca aaatttgtga aagattgact ggtattctta	60
actatgttgc tccttttacg ctatgtggat acgtgtcttt aatgcctttg tatcatgcta	120
ttgcttcccg tatggctttc attttctcct ccttgataaa atcctgggtg ctgtctcttt	180
atgaggagt gtggcccggt gtcaggcaac gtggcggtgt gtgcactgtg tttgctgacg	240
caacccccac tggttggggc attgccacca cctgtcagct cctttccggg actttcgctt	300
tccccctccc tattgccacg gcggaactca tcgccgcctg ccttgcccgc tgctggacag	360
gggctcggct gttgggcact gacaattccg tgggtgtgtc ggggaagctg acgtcctttc	420
catggctgct cgcctgtgtt gccacctgga ttctgcgcgg gacgtccttc tgctacgtcc	480
cttcggccct caatccagcg gaccttcctt cccgcggcct gctgccggct ctgcggcctc	540
ttccgcgtct tcgagatctg cctcgactgt gccttctagt tgccagccat ctgttgtttg	600
cccctcccc gtgccttcct tgaccctgga aggtgccact cccactgtcc tttcctaata	660
aaatgaggaa attgcatcgc attgtctgag taggtgtcat tctattctgg ggggtggggt	720
ggggcaggac agcaaggggg aggattggga agacaatagc aggcattgctg gggactcgag	780
ttaagggcga attccccgatt aggatcttcc tagagcatgg ctacgtagat aagtagcatg	840
gcgggttaat cattaactac aaggaacccc tagtgatgga gttggccact ccctctctgc	900
gcgctcgtc gctcactgag gccgggcgac caaaggctgc ccgacgcccg ggctttgccc	960
gggcgccctc agtgagcgag cgagcgcgca gccttaatta acctaattca ctggccgtcg	1020
ttttacaacg tcgtgactgg gaaaaccctg gcgttaccca acttaatcgc cttgcagcac	1080
atcccccttt cgccagctgg cgtaatagcg aagaggcccg caccgatcgc ctttcccaac	1140
agttgcgcag cctgaatggc gaatgggacg cgccctgtag cggcgcatta agcgcggcgg	1200

gtgtggtggt	tacgcgagc	gtgaccgcta	cacttgccag	cgccctagcg	cccgtcctt	1260
tcgcttttctt	cccttccttt	ctcgccacgt	tcgccggcctt	tccccgtcaa	gctctaaatc	1320
gggggctccc	tttaggggttc	cgatttagtg	ctttacggca	cctcgacccc	aaaaaacttg	1380
attaggggtga	tggttcacgt	agtgggccat	cgccccgata	gacggttttt	cgccctttga	1440
cgctggagtt	cacgttcctc	aatagtggac	tcttgttcca	aactggaaca	acactcaacc	1500
ctatctcgggt	ctattctttt	gatttataag	ggattttttcc	gatttcggcc	tattggttaa	1560
aaaatgagct	gatttaacaa	aaatttaacg	cgaattttta	caaaatatta	acgtttataa	1620
tttcagggtgg	catctttcgg	ggaaatgtgc	gcggaacccc	tatttgttta	tttttctaaa	1680
tacattcaaa	tatgtatccg	ctcatgagac	aataaccctg	ataaatgctt	caataatatt	1740
gaaaaaggaa	gagtatgagt	attcaacatt	tccgtgtcgc	ccttattccc	ttttttgcgg	1800
cattttgcct	tcctgttttt	gctcaccag	aaacgctggt	gaaagtaaaa	gatgctgaag	1860
atcagttggg	tgcacgagtg	ggttacatcg	aactggatct	caatagtggg	aagatccttg	1920
agagttttcg	ccccgaagaa	cgttttccaa	tgatgagcac	ttttaagtt	ctgctatgtg	1980
gcgcggtatt	atccccgtatt	gacgccgggc	aagagcaact	cggtcgccgc	atacactatt	2040
ctcagaatga	cttggttgag	tactcaccag	tcacagaaaa	gcatcttacg	gatggcatga	2100
cagtaagaga	attatgcagt	gctgccataa	ccatgagtga	taacactgcg	gccaacttac	2160
ttctgacaac	gatcggagga	ccgaaggagc	taaccgcttt	tttgcacaa	atgggggatc	2220
atgtaactcg	ccttgatcgt	tgggaaccgg	agctgaatga	agccatacca	aacgacgagc	2280
gtgacaccac	gatgcctgta	gtaatggtaa	caacgttgcg	caactatta	actggcgaac	2340
tacttactct	agcttcccgg	caacaattaa	tagactggat	ggaggcggat	aaagttgcag	2400
gaccacttct	gcgctcggcc	cttccggctg	gctggtttat	tgctgataaa	tctggagccg	2460
gtgagcgtgg	gtctcgcggt	atcattgcag	cactggggcc	agatggtaag	ccctcccgtg	2520
tcgtagttat	ctacacgacg	gggagtcagg	caactatgga	tgaacgaaat	agacagatcg	2580
ctgagatagg	tgcctcactg	attaagcatt	ggtaactgtc	agaccaagtt	tactcatata	2640
tactttagat	tgatttaaaa	cttcattttt	aatttaaaag	gatctaggtg	aagatccttt	2700
ttgataatct	catgacccaa	atcccctaac	gtgagttttc	gttccactga	gcgtcagacc	2760
ccgtagaaaa	gatcaaagga	tcttcttgag	atcctttttt	tctgcgcgta	atctgctgct	2820
tgcaaacaaa	aaaaccaccg	ctaccagcgg	tggtttggtt	gccggatcaa	gagctaccaa	2880
ctctttttcc	gaaggtaact	ggcttcagca	gagcgcagat	accaaatact	gtccttctag	2940
tgtagccgta	gttagggcac	cacttcaaga	actctgtagc	accgcctaca	tacctcgctc	3000
tgctaatcct	gttaccagtg	gctgctgcca	gtggcgataa	gtcgtgtctt	accgggttgg	3060
actcaagacg	atagttaccg	gataaggcgc	agcggtcggg	ctgaacgggg	ggttcgtgca	3120
cacagcccag	cttggagcga	acgacctaca	ccgaactgag	atacctacag	cgtgagctat	3180
gagaaagcgc	cacgcttccc	gaaggggagaa	aggcggacag	gtatccggtg	agcggcaggg	3240
tcggaacagg	agagcgcacg	agggagcttc	caggggggaaa	cgccctggtat	ctttatagtc	3300

ctgtcggggtt	tcgccacctc	tgacttgagc	gtcgattttt	gtgatgctcg	tcaggggggc	3360
ggagcctatg	gaaaaacgcc	agcaacgcgg	ccttttttacg	gttcctggcc	ttttgctgcg	3420
gttttgctca	catgttcttt	cctgcgttat	cccctgattc	tgtggataac	cgtattaccg	3480
cctttgagtg	agctgatacc	gctcgccgca	gccgaacgac	cgagcgcagc	gagtcagtga	3540
gcgaggaagc	ggaagagcgc	ccaatacgca	aaccgcctct	ccccgcgcgt	tggccgattc	3600
attaatgcag	ctggcacgac	aggtttcccc	actggaaaagc	gggcagtgag	cgcaacgcaa	3660
ttaatgtgag	ttagctcact	cattaggcac	cccaggcttt	acactttatg	cttccggctc	3720
gtatgttggtg	tggaattgtg	agcggataac	aatttcacac	aggaaacagc	tatgaccatg	3780
attacgccag	atttaattaa	ggctgcgcgc	tcgctcgctc	actgaggccg	cccgggcaaa	3840
gcccgggcgt	cgggcgacct	ttggtcgccc	ggcctcagtg	agcgagcgag	cgcgcagaga	3900
gggagtgggc	aactccatca	ctaggggttc	cttgtagtta	atgattaacc	cgccatgcta	3960
cttatctacg	tagccatgct	ctaggaagat	cggaattcgc	ccttaagcta	gcagatcttc	4020
cccacctagc	cacctggcaa	actgctcctt	ctctcaaagg	cccaaacatg	gcctcccaga	4080
ctgcaacccc	caggcagtca	ggccctgtct	ccacaacctc	acagccaccc	tggacggaat	4140
ctgcttcttc	ccacatttga	gtcctcctca	gcccctgagc	tcctctgggc	agggctgttt	4200
ctttccatct	ttgtattccc	aggggcctgc	aaataaatgt	ttaatgaacg	aacaagagag	4260
tgaattccaa	ttccatgcaa	caaggattgg	gctcctgggc	cctaggctat	gtgtctggca	4320
ccagaaacgg	aagctgcagg	ttgcagcccc	tgccctcatg	gagctcctcc	tgtcagagga	4380
gtgtggggac	tggatgactc	cagaggtaac	ttgtggggga	acgaacaggt	aaggggctgt	4440
gtgacgagat	gagagactgg	gagaataaac	cagaaagtct	ctagctgtcc	agaggacata	4500
gcacagaggc	ccatgggtccc	tatttcaaac	ccaggccacc	agactgagct	gggaccttgg	4560
gacagacaag	tcatgcagaa	gttaggggac	cttctcctcc	cttttcctgg	atggatcctg	4620
agtaccttct	cctcccctgac	ctcaggcttc	ctcctagtgt	caccttggcc	cctcttagaa	4680
gccaattagg	ccctcagttt	ctgcagcggg	gattaatatg	attatgaaca	cccccaatct	4740
cccagatgct	gattcagcca	ggagcttagg	agggggaggt	cactttataa	gggtctgggg	4800
gggtcagaac	ccagagtcac	cccctgaatt	ctgcagatat	ccatcacact	ggcggccgcg	4860
ccaccatgtc	acgcaagata	gaaggctttt	tgttattact	tctctttggc	tatgaagcca	4920
cattgggatt	atcgtctacc	gaggatgaag	gcgaggaccc	ctggtaccaa	aaagcatgca	4980
agtgcgattg	ccaaggagga	cccaatgctc	tgtgggtctgc	aggtgccacc	tccttggtgact	5040
gtataccaga	atgcccatac	cacaagcctc	tgggtttcga	gtcaggggag	gtcacaccgg	5100
accagatcac	ctgctctaac	ccggagcagt	atgtgggctg	gtattcttcg	tggactgcaa	5160
acaaggcccc	gctcaacagt	caaggctttg	gggtgtgcctg	gctctccaag	ttccaggaca	5220
gtagccagtg	gttacagata	gatctgaagg	agatcaaagt	gatttcaggg	atcctcacc	5280
aggggcgcgtg	tgacatcgat	gagtggatga	ccaagtacag	cgtgcagtac	aggaccgatg	5340

agcgccctgaa ctggatttac tacaaggacc agactggaaa caaccggggtc ttctatggca 5400
 actcggaccg cacctccacg gtccagaacc tgctgcggcc ccccatcatc tcccgttca 5460
 tccgcctcat cccgctgggc tggcacgtcc gcattgccat ccggatggag ctgctggagt 5520
 gcgtcagcaa gtgtgcctga a 5541

<210> 19
 <211> 346
 <212> PRT
 <213> Homo sapiens

<400> 19

Met Ala Leu Leu Lys Val Lys Phe Asp Gln Lys Lys Arg Val Lys Leu
 1 5 10 15

Ala Gln Gly Leu Trp Leu Met Asn Trp Phe Ser Val Leu Ala Gly Ile
 20 25 30

Ile Ile Phe Ser Leu Gly Leu Phe Leu Lys Ile Glu Leu Arg Lys Arg
 35 40 45

Ser Asp Val Met Asn Asn Ser Glu Ser His Phe Val Pro Asn Ser Leu
 50 55 60

Ile Gly Met Gly Val Leu Ser Cys Val Phe Asn Ser Leu Ala Gly Lys
 65 70 75 80

Ile Cys Tyr Asp Ala Leu Asp Pro Ala Lys Tyr Ala Arg Trp Lys Pro
 85 90 95

Trp Leu Lys Pro Tyr Leu Ala Ile Cys Val Leu Phe Asn Ile Ile Leu
 100 105 110

Phe Leu Val Ala Leu Cys Cys Phe Leu Leu Arg Gly Ser Leu Glu Asn
 115 120 125

Thr Leu Gly Gln Gly Leu Lys Asn Gly Met Lys Tyr Tyr Arg Asp Thr
 130 135 140

Asp Thr Pro Gly Arg Cys Phe Met Lys Lys Thr Ile Asp Met Leu Gln
 145 150 155 160

Ile Glu Phe Lys Cys Cys Gly Asn Asn Gly Phe Arg Asp Trp Phe Glu
 165 170 175

Ile Gln Trp Ile Ser Asn Arg Tyr Leu Asp Phe Ser Ser Lys Glu Val
 180 185 190

Lys Asp Arg Ile Lys Ser Asn Val Asp Gly Arg Tyr Leu Val Asp Gly
 195 200 205

Val Pro Phe Ser Cys Cys Asn Pro Ser Ser Pro Arg Pro Cys Ile Gln

210

215

220

Tyr Gln Ile Thr Asn Asn Ser Ala His Tyr Ser Tyr Asp His Gln Thr
 225 230 235 240

Glu Glu Leu Asn Leu Trp Val Arg Gly Cys Arg Ala Ala Leu Leu Ser
 245 250 255

Tyr Tyr Ser Ser Leu Met Asn Ser Met Gly Val Val Thr Leu Leu Ile
 260 265 270

Trp Leu Phe Glu Val Thr Ile Thr Ile Gly Leu Arg Tyr Leu Gln Thr
 275 280 285

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

Gly Trp Leu Leu Glu Arg Ser Val Pro Glu Thr Trp Lys Ala Phe Leu
 305 310 315 320

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

Ala Asp Ala Gly Gln Ala Pro Glu Ala Gly
 340 345

<210> 20
 <211> 470
 <212> PRT
 <213> Homo sapiens

<400> 20

Met Ser His His Pro Ser Gly Leu Arg Ala Gly Phe Ser Ser Thr Ser
 1 5 10 15

Tyr Arg Arg Thr Phe Gly Pro Pro Pro Ser Leu Ser Pro Gly Ala Phe
 20 25 30

Ser Tyr Ser Ser Ser Ser Arg Phe Ser Ser Ser Arg Leu Leu Gly Ser
 35 40 45

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

Ala Gly Ala Gly Ala Leu Leu Arg Leu Pro Ser Glu Arg Leu Asp Phe
 65 70 75 80

Ser Met Ala Glu Ala Leu Asn Gln Glu Phe Leu Ala Thr Arg Ser Asn
 85 90 95

Glu Lys Gln Glu Leu Gln Glu Leu Asn Asp Arg Phe Ala Asn Phe Ile
 100 105 110

Glu Lys Val Arg Phe Leu Glu Gln Gln Asn Ala Ala Leu Arg Gly Glu
 115 120 125
 Leu Ser Gln Ala Arg Gly Gln Glu Pro Ala Arg Ala Asp Gln Leu Cys
 130 135 140
 Gln Gln Glu Leu Arg Glu Leu Arg Arg Glu Leu Glu Leu Leu Gly Arg
 145 150 155 160
 Glu Arg Asp Arg Val Gln Val Glu Arg Asp Gly Leu Ala Glu Asp Leu
 165 170 175
 Ala Ala Leu Lys Gln Arg Leu Glu Glu Glu Thr Arg Lys Arg Glu Asp
 180 185 190
 Ala Glu His Asn Leu Val Leu Phe Arg Lys Asp Val Asp Asp Ala Thr
 195 200 205
 Leu Ser Arg Leu Glu Leu Glu Arg Lys Ile Glu Ser Leu Met Asp Glu
 210 215 220
 Ile Glu Phe Leu Lys Lys Leu His Glu Glu Glu Leu Arg Asp Leu Gln
 225 230 235 240
 Val Ser Val Glu Ser Gln Gln Val Gln Gln Val Glu Val Glu Ala Thr
 245 250 255
 Val Lys Pro Glu Leu Thr Ala Ala Leu Arg Asp Ile Arg Ala Gln Tyr
 260 265 270
 Glu Ser Ile Ala Ala Lys Asn Leu Gln Glu Ala Glu Glu Trp Tyr Lys
 275 280 285
 Ser Lys Tyr Ala Asp Leu Ser Asp Ala Ala Asn Arg Asn His Glu Ala
 290 295 300
 Leu Arg Gln Ala Lys Gln Glu Met Asn Glu Ser Arg Arg Gln Ile Gln
 305 310 315 320
 Ser Leu Thr Cys Glu Val Asp Gly Leu Arg Gly Thr Asn Glu Ala Leu
 325 330 335
 Leu Arg Gln Leu Arg Glu Leu Glu Glu Gln Phe Ala Leu Glu Ala Gly
 340 345 350
 Gly Tyr Gln Ala Gly Ala Ala Arg Leu Glu Glu Glu Leu Arg Gln Leu
 355 360 365
 Lys Glu Glu Met Ala Arg His Leu Arg Glu Tyr Gln Glu Leu Leu Asn
 370 375 380

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

Glu Gly Glu Glu Ser Arg Ile Ser Val Pro Val His Ser Phe Ala Ser
 405 410 415

Leu Asn Ile Lys Thr Thr Val Pro Glu Val Glu Pro Pro Gln Asp Ser
 420 425 430

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

Glu Val Val Thr Glu Ser Gln Lys Glu Gln Arg Ser Glu Leu Asp Lys
 450 455 460

Ser Ser Ala His Ser Tyr
 465 470

<210> 21
 <211> 1286
 <212> PRT
 <213> Homo sapiens

<400> 21

Met Ser His Leu Val Asp Pro Thr Ser Gly Asp Leu Pro Val Arg Asp
 1 5 10 15

Ile Asp Ala Ile Pro Leu Val Leu Pro Ala Ser Lys Gly Lys Asn Met
 20 25 30

Lys Thr Gln Pro Pro Leu Ser Arg Met Asn Arg Glu Glu Leu Glu Asp
 35 40 45

Ser Phe Phe Arg Leu Arg Glu Asp His Met Leu Val Lys Glu Leu Ser
 50 55 60

Trp Lys Gln Gln Asp Glu Ile Lys Arg Leu Arg Thr Thr Leu Leu Arg
 65 70 75 80

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

Leu Ser Glu Thr Ala Arg Arg Gly Gln Lys Ala Gly Trp Arg Gln Arg
 100 105 110

Leu Ser Met His Gln Arg Pro Gln Met His Arg Leu Gln Gly His Phe
 115 120 125

His Cys Val Gly Pro Ala Ser Pro Arg Arg Ala Gln Pro Arg Val Gln
 130 135 140

Val Gly His Arg Gln Leu His Thr Ala Gly Ala Pro Val Pro Glu Lys
 145 150 155 160

Pro Lys Arg Gly Pro Arg Asp Arg Leu Ser Tyr Thr Ala Pro Pro Ser
 165 170 175
 Phe Lys Glu His Ala Thr Asn Glu Asn Arg Gly Glu Val Ala Ser Lys
 180 185 190
 Pro Ser Glu Leu Val Ser Gly Ser Asn Ser Ile Ile Ser Phe Ser Ser
 195 200 205
 Val Ile Ser Met Ala Lys Pro Ile Gly Leu Cys Met Pro Asn Ser Ala
 210 215 220
 His Ile Met Ala Ser Asn Thr Met Gln Val Glu Glu Pro Pro Lys Ser
 225 230 235 240
 Pro Glu Lys Met Trp Pro Lys Asp Glu Asn Phe Glu Gln Arg Ser Ser
 245 250 255
 Leu Glu Cys Ala Gln Lys Ala Ala Glu Leu Arg Ala Ser Ile Lys Glu
 260 265 270
 Lys Val Glu Leu Ile Arg Leu Lys Lys Leu Leu His Glu Arg Asn Ala
 275 280 285
 Ser Leu Val Met Thr Lys Ala Gln Leu Thr Glu Val Gln Glu Ala Tyr
 290 295 300
 Glu Thr Leu Leu Gln Lys Asn Gln Gly Ile Leu Ser Ala Ala His Glu
 305 310 315 320
 Ala Leu Leu Lys Gln Val Asn Glu Leu Arg Ala Glu Leu Lys Glu Glu
 325 330 335
 Ser Lys Lys Ala Val Ser Leu Lys Ser Gln Leu Glu Asp Val Ser Ile
 340 345 350
 Leu Gln Met Thr Leu Lys Glu Phe Gln Glu Arg Val Glu Asp Leu Glu
 355 360 365
 Lys Glu Arg Lys Leu Leu Asn Asp Asn Tyr Asp Lys Leu Leu Glu Ser
 370 375 380
 Met Leu Asp Ser Ser Asp Ser Ser Ser Gln Pro His Trp Ser Asn Glu
 385 390 395 400
 Leu Ile Ala Glu Gln Leu Gln Gln Gln Val Ser Gln Leu Gln Asp Gln
 405 410 415
 Leu Asp Ala Glu Leu Glu Asp Lys Arg Lys Val Leu Leu Glu Leu Ser
 420 425 430

Arg Glu Lys₄₃₅ Ala Gln Asn Glu Asp₄₄₀ Leu Lys Leu Glu Val₄₄₅ Thr Asn Ile
 Leu Gln₄₅₀ Lys His Lys Gln Glu₄₅₅ Val Glu Leu Leu Gln₄₆₀ Asn Ala Ala Thr
 Ile Ser Gln Pro Pro Asp₄₇₀ Arg Gln Ser Glu Pro₄₇₅ Ala Thr His Pro Ala₄₈₀
 Val Leu Gln Glu Asn₄₈₅ Thr Gln Ile Glu Pro₄₉₀ Ser Glu Pro Lys Asn₄₉₅ Gln
 Glu Glu Lys Lys₅₀₀ Leu Ser Gln Val Leu₅₀₅ Asn Glu Leu Gln Val₅₁₀ Ser His
 Ala Glu Thr₅₁₅ Thr Leu Glu Leu Glu₅₂₀ Lys Thr Arg Asp Met₅₂₅ Leu Ile Leu
 Gln Arg₅₃₀ Lys Ile Asn Val Cys₅₃₅ Tyr Gln Glu Glu Leu₅₄₀ Glu Ala Met Met
 Thr Lys Ala Asp Asn Asp₅₅₀ Asn Arg Asp His Lys₅₅₅ Glu Lys Leu Glu Arg₅₆₀
 Leu Thr Arg Leu Leu₅₆₅ Asp Leu Lys Asn Asn₅₇₀ Arg Ile Lys Gln Leu Glu₅₇₅
 Gly Ile Leu Arg₅₈₀ Ser His Asp Leu Pro₅₈₅ Thr Ser Glu Gln Leu₅₉₀ Lys Asp
 Val Ala Tyr₅₉₅ Gly Thr Arg Pro Leu₆₀₀ Ser Leu Cys Leu Glu₆₀₅ Thr Leu Pro
 Ala His₆₁₀ Gly Asp Glu Asp Lys₆₁₅ Val Asp Ile Ser Leu₆₂₀ Leu His Gln Gly
 Glu Asn Leu Phe Glu Leu₆₃₀ His Ile His Gln Ala₆₃₅ Phe Leu Thr Ser Ala₆₄₀
 Ala Leu Ala Gln Ala₆₄₅ Gly Asp Thr Gln Pro₆₅₀ Thr Thr Phe Cys Thr₆₅₅ Tyr
 Ser Phe Tyr Asp₆₆₀ Phe Glu Thr His Cys₆₆₅ Thr Pro Leu Ser Val₆₇₀ Gly Pro
 Gln Pro Leu₆₇₅ Tyr Asp Phe Thr Ser Gln Tyr Val Met Glu₆₈₅ Thr Asp Ser
 Leu Phe₆₉₀ Leu His Tyr Leu Gln₆₉₅ Glu Ala Ser Ala Arg₇₀₀ Leu Asp Ile His

Gln Ala Met Ala Ser Glu His Ser Thr Leu Ala Ala Gly Trp Ile Cys
 705 710 715 720
 Phe Asp Arg Val Leu Glu Thr Val Glu Lys Val His Gly Leu Ala Thr
 725 730 735
 Leu Ile Gly Ala Gly Gly Glu Glu Phe Gly Val Leu Glu Tyr Trp Met
 740 745 750
 Arg Leu Arg Phe Pro Ile Lys Pro Ser Leu Gln Ala Cys Asn Lys Arg
 755 760 765
 Lys Lys Ala Gln Val Tyr Leu Ser Thr Asp Val Leu Gly Gly Arg Lys
 770 775 780
 Ala Gln Glu Glu Glu Phe Arg Ser Glu Ser Trp Glu Pro Gln Asn Glu
 785 790 795 800
 Leu Trp Ile Glu Ile Thr Lys Cys Cys Gly Leu Arg Ser Arg Trp Leu
 805 810 815
 Gly Thr Gln Pro Ser Pro Tyr Ala Val Tyr Arg Phe Phe Thr Phe Ser
 820 825 830
 Asp His Asp Thr Ala Ile Ile Pro Ala Ser Asn Asn Pro Tyr Phe Arg
 835 840 845
 Asp Gln Ala Arg Phe Pro Val Leu Val Thr Ser Asp Leu Asp His Tyr
 850 855 860
 Leu Arg Arg Glu Ala Leu Ser Ile His Val Phe Asp Asp Glu Asp Leu
 865 870 875 880
 Glu Pro Gly Ser Tyr Leu Gly Arg Ala Arg Val Pro Leu Leu Pro Leu
 885 890 895
 Ala Lys Asn Glu Ser Ile Lys Gly Asp Phe Asn Leu Thr Asp Pro Ala
 900 905 910
 Glu Lys Pro Asn Gly Ser Ile Gln Val Gln Leu Asp Trp Lys Phe Pro
 915 920 925
 Tyr Ile Pro Pro Glu Ser Phe Leu Lys Pro Glu Ala Gln Thr Lys Gly
 930 935 940
 Lys Asp Thr Lys Asp Ser Ser Lys Ile Ser Ser Glu Glu Glu Lys Ala
 945 950 955 960
 Ser Phe Pro Ser Gln Asp Gln Met Ala Ser Pro Glu Val Pro Ile Glu
 965 970 975
 Ala Gly Gln Tyr Arg Ser Lys Arg Lys Pro Pro His Gly Gly Glu Arg

980

985

990

Lys Glu Lys Glu His Gln Val Val Ser Tyr Ser Arg Arg Lys His Gly
 995 1000 1005

Lys Arg Ile Gly Val Gln Gly Lys Asn Arg Met Glu Tyr Leu Ser
 1010 1015 1020

Leu Asn Ile Leu Asn Gly Asn Thr Pro Glu Gln Val Asn Tyr Thr
 1025 1030 1035

Glu Trp Lys Phe Ser Glu Thr Asn Ser Phe Ile Gly Asp Gly Phe
 1040 1045 1050

Lys Asn Gln His Glu Glu Glu Glu Met Thr Leu Ser His Ser Ala
 1055 1060 1065

Leu Lys Gln Lys Glu Pro Leu His Pro Val Asn Asp Lys Glu Ser
 1070 1075 1080

Ser Glu Gln Gly Ser Glu Val Ser Glu Ala Gln Thr Thr Asp Ser
 1085 1090 1095

Asp Asp Val Ile Val Pro Pro Met Ser Gln Lys Tyr Pro Lys Ala
 1100 1105 1110

Asp Ser Glu Lys Met Cys Ile Glu Ile Val Ser Leu Ala Phe Tyr
 1115 1120 1125

Pro Glu Ala Glu Val Met Ser Asp Glu Asn Ile Lys Gln Val Tyr
 1130 1135 1140

Val Glu Tyr Lys Phe Tyr Asp Leu Pro Leu Ser Glu Thr Glu Thr
 1145 1150 1155

Pro Val Ser Leu Arg Lys Pro Arg Ala Gly Glu Glu Ile His Phe
 1160 1165 1170

His Phe Ser Lys Val Ile Asp Leu Asp Pro Gln Glu Gln Gln Gly
 1175 1180 1185

Arg Arg Arg Phe Leu Phe Asp Met Leu Asn Gly Gln Asp Pro Asp
 1190 1195 1200

Gln Gly His Leu Lys Phe Thr Val Val Ser Asp Pro Leu Asp Glu
 1205 1210 1215

Glu Lys Lys Glu Cys Glu Glu Val Gly Tyr Ala Tyr Leu Gln Leu
 1220 1225 1230

Trp Gln Ile Leu Glu Ser Gly Arg Asp Ile Leu Glu Gln Glu Leu
 1235 1240 1245

Asp Ile Val Ser Pro Glu Asp Leu Ala Thr Pro Ile Gly Arg Leu
1250 1255 1260

Lys Val Ser Leu Gln Ala Ala Val Leu His Ala Ile Tyr Lys
1265 1270 1275

Glu Met Thr Glu Asp Leu Phe Ser
1280 1285

<210> 22

<211> 240

<212> PRT

<213> Adeno-associated virus-1

<400> 22

Thr Phe Ser Tyr Thr Phe Glu Glu Val Pro Phe His Ser Ser Tyr Ala
1 5 10 15

His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr
20 25 30

Leu Tyr Tyr Leu Asn Arg Thr Gln Asn Gln Ser Gly Ser Ala Gln Asn
35 40 45

Lys Asp Leu Leu Phe Ser Arg Gly Ser Pro Ala Gly Met Ser Val Gln
50 55 60

Pro Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser
65 70 75 80

Lys Thr Lys Thr Asp Asn Asn Asn Ser Asn Phe Thr Trp Thr Gly Ala
85 90 95

Ser Lys Tyr Asn Leu Asn Gly Arg Glu Ser Ile Ile Asn Pro Gly Thr
100 105 110

Ala Met Ala Ser His Lys Asp Asp Glu Asp Lys Phe Phe Pro Met Ser
115 120 125

Gly Val Met Ile Phe Gly Lys Glu Ser Ala Gly Ala Ser Asn Thr Ala
130 135 140

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

Pro Val Ala Thr Glu Arg Phe Gly Thr Val Ala Val Asn Phe Gln Ser
165 170 175

Ser Ser Thr Asp Pro Ala Thr Gly Asp Val His Ala Met Gly Ala Leu
180 185 190

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
 195 200 205

Trp Ala Lys Ile Pro His Thr Asp Gly His Phe His Pro Ser Pro Leu
 210 215 220

Met Gly Gly Phe Gly Leu Lys Asn Pro Pro Pro Gln Ile Leu Ile Lys
 225 230 235 240

<210> 23

<211> 240

<212> PRT

<213> Adeno-associated virus-6

<400> 23

Thr Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr Ala
 1 5 10 15

His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr
 20 25 30

Leu Tyr Tyr Leu Asn Arg Thr Gln Asn Gln Ser Gly Ser Ala Gln Asn
 35 40 45

Lys Asp Leu Leu Phe Ser Arg Gly Ser Pro Ala Gly Met Ser Val Gln
 50 55 60

Pro Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser
 65 70 75 80

Lys Thr Lys Thr Asp Asn Asn Asn Ser Asn Phe Thr Trp Thr Gly Ala
 85 90 95

Ser Lys Tyr Asn Leu Asn Gly Arg Glu Ser Ile Ile Asn Pro Gly Thr
 100 105 110

Ala Met Ala Ser His Lys Asp Asp Lys Asp Lys Phe Phe Pro Met Ser
 115 120 125

Gly Val Met Ile Phe Gly Lys Glu Ser Ala Gly Ala Ser Asn Thr Ala
 130 135 140

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

Pro Val Ala Thr Glu Arg Phe Gly Thr Val Ala Val Asn Leu Gln Ser
 165 170 175

Ser Ser Thr Asp Pro Ala Thr Gly Asp Val His Val Met Gly Ala Leu
 180 185 190

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
 195 200 205

Trp Ala Lys Ile Pro His Thr Asp Gly His Phe His Pro Ser Pro Leu
210 215 220

Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys
225 230 235 240

<210> 24

<211> 240

<212> PRT

<213> Adeno-associated virus-3

<400> 24

Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr Ala His
1 5 10 15

Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu
20 25 30

Tyr Tyr Leu Asn Arg Thr Gln Gly Thr Thr Ser Gly Thr Thr Asn Gln
35 40 45

Ser Arg Leu Leu Phe Ser Gln Ala Gly Pro Gln Ser Met Ser Leu Gln
50 55 60

Ala Arg Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Leu Ser
65 70 75 80

Lys Thr Ala Asn Asp Asn Asn Asn Ser Asn Phe Pro Trp Thr Ala Ala
85 90 95

Ser Lys Tyr His Leu Asn Gly Arg Asp Ser Leu Val Asn Pro Gly Pro
100 105 110

Ala Met Ala Ser His Lys Asp Asp Glu Glu Lys Phe Phe Pro Met His
115 120 125

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

Leu Asp Asn Val Met Ile Thr Asp Glu Glu Glu Ile Arg Thr Thr Asn
145 150 155 160

Pro Val Ala Thr Glu Gln Tyr Gly Thr Val Ala Asn Asn Leu Gln Ser
165 170 175

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

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
195 200 205

Trp Ala Lys Ile Pro His Thr Asp Gly His Phe His Pro Ser Pro Leu
 210 215 220

Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Met Ile Lys
 225 230 235 240

<210> 25

<211> 240

<212> PRT

<213> Adeno-associated virus-2

<400> 25

Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr Ala His
 1 5 10 15

Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu
 20 25 30

Tyr Tyr Leu Ser Arg Thr Asn Thr Pro Ser Gly Thr Thr Thr Gln Ser
 35 40 45

Arg Leu Gln Phe Ser Gln Ala Gly Ala Ser Asp Ile Arg Asp Gln Ser
 50 55 60

Arg Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys
 65 70 75 80

Thr Ser Ala Asp Asn Asn Asn Ser Glu Tyr Ser Trp Thr Gly Ala Thr
 85 90 95

Lys Tyr His Leu Asn Gly Arg Asp Ser Leu Val Asn Pro Gly Pro Ala
 100 105 110

Met Ala Ser His Lys Asp Asp Glu Glu Lys Phe Phe Pro Gln Ser Gly
 115 120 125

Val Leu Ile Phe Gly Lys Gln Gly Ser Glu Lys Thr Asn Val Asp Ile
 130 135 140

Glu Lys Val Met Ile Thr Asp Glu Glu Glu Ile Arg Thr Thr Asn Pro
 145 150 155 160

Val Ala Thr Glu Gln Tyr Gly Ser Val Ser Thr Asn Leu Gln Arg Gly
 165 170 175

Asn Arg Gln Ala Ala Thr Ala Asp Val Asn Thr Gln Gly Val Leu Pro
 180 185 190

Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp
 195 200 205

Ala Lys Ile Pro His Thr Asp Gly His Phe His Pro Ser Pro Leu Met
 210 215 220

Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn
 225 230 235 240

<210> 26
 <211> 243
 <212> PRT
 <213> Adeno-associated virus-8

<400> 26

Asn Phe Gln Phe Thr Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser
 1 5 10 15

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
 20 25 30

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

Asn Thr Gln Thr Leu Gly Phe Ser Gln Gly Gly Pro Asn Thr Met Ala
 50 55 60

Asn Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg
 65 70 75 80

Val Ser Thr Thr Thr Gly Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr
 85 90 95

Ala Gly Thr Lys Tyr His Leu Asn Gly Arg Asn Ser Leu Ala Asn Pro
 100 105 110

Gly Ile Ala Met Ala Thr His Lys Asp Asp Glu Glu Arg Phe Phe Pro
 115 120 125

Ser Asn Gly Ile Leu Ile Phe Gly Lys Gln Asn Ala Ala Arg Asp Asn
 130 135 140

Ala Asp Tyr Ser Asp Val Met Leu Thr Ser Glu Glu Glu Ile Lys Thr
 145 150 155 160

Thr Asn Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ala Asp Asn Leu
 165 170 175

Gln Gln Gln Asn Thr Ala Pro Gln Ile Gly Thr Val Asn Ser Gln Gly
 180 185 190

Ala Leu Pro Gly Met Val Trp Gln Asn Arg Asp Val Tyr Leu Gln Gly
 195 200 205

Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser
 210 215 220

Pro Leu Met Gly Gly Phe Gly Leu Lys His Pro Pro Gln Ile Leu
 225 230 235 240

Ile Lys Asn

<210> 27
 <211> 243
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic polypeptide

<400> 27

Asn Phe Gln Phe Thr Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser
 1 5 10 15

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
 20 25 30

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

Asn Thr Gln Thr Leu Gly Phe Ser Gln Gly Gly Pro Asn Thr Met Ala
 50 55 60

Asn Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg
 65 70 75 80

Val Ser Thr Thr Thr Gly Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr
 85 90 95

Ala Gly Thr Lys Tyr His Leu Asn Gly Arg Asn Ser Leu Ala Asn Pro
 100 105 110

Gly Ile Ala Met Ala Thr His Lys Asp Asp Glu Glu Arg Phe Phe Pro
 115 120 125

Ser Asn Gly Ile Leu Ile Phe Gly Lys Gln Asn Ala Ala Arg Asp Asn
 130 135 140

Ala Asp Tyr Ser Asp Val Met Leu Thr Ser Glu Glu Glu Ile Lys Thr
 145 150 155 160

Thr Asn Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ala Asp Asn Leu
 165 170 175

Gln Gly Gln Arg Gln Ala Ala Gln Ile Gly Thr Val Asn Ser Gln Gly
 180 185 190

Ala Leu Pro Gly Met Val Trp Gln Asn Arg Asp Val Tyr Leu Gln Gly
 195 200 205

Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser
210 215 220

Pro Leu Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu
225 230 235 240

Ile Lys Asn

<210> 28
<211> 241
<212> PRT
<213> Adeno-associated virus-rh8

<400> 28

Phe Gln Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr
1 5 10 15

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
20 25 30

Tyr Leu Tyr Tyr Leu Val Arg Thr Gln Thr Thr Gly Thr Gly Gly Thr
35 40 45

Gln Thr Leu Ala Phe Ser Gln Ala Gly Pro Ser Ser Met Ala Asn Gln
50 55 60

Ala Arg Asn Trp Val Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser
65 70 75 80

Thr Thr Thr Asn Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr Gly Ala
85 90 95

Ala Lys Phe Lys Leu Asn Gly Arg Asp Ser Leu Met Asn Pro Gly Val
100 105 110

Ala Met Ala Ser His Lys Asp Asp Asp Arg Phe Phe Pro Ser Ser
115 120 125

Gly Val Leu Ile Phe Gly Lys Gln Gly Ala Gly Asn Asp Gly Val Asp
130 135 140

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

Pro Val Ala Thr Glu Glu Tyr Gly Ala Val Ala Ile Asn Asn Gln Ala
165 170 175

Ala Asn Thr Gln Ala Gln Thr Gly Leu Val His Asn Gln Gly Val Ile
180 185 190

Pro Gly Met Val Trp Gln Asn Arg Asp Val Tyr Leu Gln Gly Pro Ile

195

200

205

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
 210 215 220

Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys
 225 230 235 240

Asn

<210> 29
 <211> 243
 <212> PRT
 <213> Adeno-associated virus-10
 <400> 29

Asn Phe Glu Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser
 1 5 10 15

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
 20 25 30

Gln Tyr Leu Tyr Tyr Leu Ser Arg Thr Gln Ser Thr Gly Gly Thr Gln
 35 40 45

Gly Thr Gln Gln Leu Leu Phe Ser Gln Ala Gly Pro Ala Asn Met Ser
 50 55 60

Ala Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg
 65 70 75 80

Val Ser Thr Thr Leu Ser Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr
 85 90 95

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

Gly Val Ala Met Ala Thr His Lys Asp Asp Glu Glu Arg Phe Phe Pro
 115 120 125

Ser Ser Gly Val Leu Met Phe Gly Lys Gln Gly Ala Gly Arg Asp Asn
 130 135 140

Val Asp Tyr Ser Ser Val Met Leu Thr Ser Glu Glu Glu Ile Lys Thr
 145 150 155 160

Thr Asn Pro Val Ala Thr Glu Gln Tyr Gly Val Val Ala Asp Asn Leu
 165 170 175

Gln Gln Ala Asn Thr Gly Pro Ile Val Gly Asn Val Asn Ser Gln Gly
 180 185 190

Ala Leu Pro Gly Met Val Trp Gln Asn Arg Asp Val Tyr Leu Gln Gly
195 200 205

Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser
210 215 220

Pro Leu Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu
225 230 235 240

Ile Lys Asn

<210> 30
<211> 242
<212> PRT
<213> Adeno-associated virus-7

<400> 30

Phe Glu Phe Ser Tyr Ser Phe Glu Asp Val Pro Phe His Ser Ser Tyr
1 5 10 15

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
20 25 30

Tyr Leu Tyr Tyr Leu Ala Arg Thr Gln Ser Asn Pro Gly Gly Thr Ala
35 40 45

Gly Asn Arg Glu Leu Gln Phe Tyr Gln Gly Gly Pro Ser Thr Met Ala
50 55 60

Glu Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Phe Arg Gln Gln Arg
65 70 75 80

Val Ser Lys Thr Leu Asp Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr
85 90 95

Gly Ala Thr Lys Tyr His Leu Asn Gly Arg Asn Ser Leu Val Asn Pro
100 105 110

Gly Val Ala Met Ala Thr His Lys Asp Asp Glu Asp Arg Phe Phe Pro
115 120 125

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

Thr Leu Glu Asn Val Leu Met Thr Asn Glu Glu Glu Ile Arg Pro Thr
145 150 155 160

Asn Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ser Ser Asn Leu Gln
165 170 175

Ala Ala Asn Thr Ala Ala Gln Thr Gln Val Val Asn Asn Gln Gly Ala

180

185

190

Leu Pro Gly Met Val Trp Gln Asn Arg Asp Val Tyr Leu Gln Gly Pro
 195 200 205

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
 210 215 220

Leu Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile
 225 230 235 240

Lys Asn

<210> 31
 <211> 240
 <212> PRT
 <213> Adeno-associated virus-9

<400> 31

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
 1 5 10 15

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
 20 25 30

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

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
 50 55 60

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
 65 70 75 80

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
 85 90 95

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
 100 105 110

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
 115 120 125

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
 130 135 140

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
 145 150 155 160

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
 165 170 175

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
180 185 190

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
195 200 205

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
210 215 220

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
225 230 235 240

<210> 32

<211> 239

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 32

Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala
1 5 10 15

His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr
20 25 30

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

Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly
50 55 60

Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr
65 70 75 80

Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser
85 90 95

Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala
100 105 110

Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly
115 120 125

Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala
130 135 140

Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro
145 150 155 160

Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser Gly
165 170 175

Gln Ala Gln Ala Ala Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro
180 185 190

Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp
195 200 205

Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met
210 215 220

Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
225 230 235

<210> 33
<211> 240
<212> PRT
<213> Adeno-associated virus-5

<400> 33

Asn Phe Glu Phe Thr Tyr Asn Phe Glu Glu Val Pro Phe His Ser Ser
1 5 10 15

Phe Ala Pro Ser Gln Asn Leu Phe Lys Leu Ala Asn Pro Leu Val Asp
20 25 30

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

Phe Asn Lys Asn Leu Ala Gly Arg Tyr Ala Asn Thr Tyr Lys Asn Trp
50 55 60

Phe Pro Gly Pro Met Gly Arg Thr Gln Gly Trp Asn Leu Gly Ser Gly
65 70 75 80

Val Asn Arg Ala Ser Val Ser Ala Phe Ala Thr Thr Asn Arg Met Glu
85 90 95

Leu Glu Gly Ala Ser Tyr Gln Val Pro Pro Gln Pro Asn Gly Met Thr
100 105 110

Asn Asn Leu Gln Gly Ser Asn Thr Tyr Ala Leu Glu Asn Thr Met Ile
115 120 125

Phe Asn Ser Gln Pro Ala Asn Pro Gly Thr Thr Ala Thr Tyr Leu Glu
130 135 140

Gly Asn Met Leu Ile Thr Ser Glu Ser Glu Thr Gln Pro Val Asn Arg
145 150 155 160

Val Ala Tyr Asn Val Gly Gly Gln Met Ala Thr Asn Asn Gln Ser Ser
165 170 175

Thr Thr Ala Pro Ala Thr Gly Thr Tyr Asn Leu Gln Glu Ile Val Pro
 180 185 190

Gly Ser Val Trp Met Glu Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp
 195 200 205

Ala Lys Ile Pro Glu Thr Gly Ala His Phe His Pro Ser Pro Ala Met
 210 215 220

Gly Gly Phe Gly Leu Lys His Pro Pro Pro Met Met Leu Ile Lys Asn
 225 230 235 240

<210> 34

<211> 250

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 34

Thr Phe Ser Tyr Thr Phe Glu Glu Val Pro Phe His Ser Ser Tyr Ala
 1 5 10 15

His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr
 20 25 30

Leu Tyr Tyr Leu Asn Arg Thr Gln Asn Gln Ser Gly Ser Ala Gln Asn
 35 40 45

Lys Asp Leu Leu Phe Ser Arg Gly Ser Pro Ala Gly Met Ser Val Gln
 50 55 60

Pro Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser
 65 70 75 80

Lys Thr Lys Thr Asp Asn Asn Asn Ser Asn Phe Thr Trp Thr Gly Ala
 85 90 95

Ser Lys Tyr Asn Leu Asn Gly Arg Glu Ser Ile Ile Asn Pro Gly Thr
 100 105 110

Ala Met Ala Ser His Lys Asp Asp Glu Asp Lys Phe Phe Pro Met Ser
 115 120 125

Gly Val Met Ile Phe Gly Lys Glu Ser Ala Gly Ala Ser Asn Thr Ala
 130 135 140

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

Pro Val Ala Thr Glu Arg Phe Gly Thr Val Ala Val Asn Phe Gln Ser
 165 170 175

Ser Ser Thr Asp₁₈₀ Leu Ala Leu Gly Glu₁₈₅ Thr Thr Arg Pro Ala₁₉₀ Pro Ala

Thr Gly Asp₁₉₅ Val His Ala Met Gly₂₀₀ Ala Leu Pro Gly Met₂₀₅ Val Trp Gln

Asp Arg₂₁₀ Asp Val Tyr Leu Gln₂₁₅ Gly Pro Ile Trp Ala₂₂₀ Lys Ile Pro His

Thr Asp Gly His Phe His₂₃₀ Pro Ser Pro Leu Met₂₃₅ Gly Gly Phe Gly Leu₂₄₀

Lys Asn Pro Pro₂₄₅ Gln Ile Leu Ile Lys₂₅₀

<210> 35

<211> 250

<212> PRT

<213> Artificial sequence

<220>

<223> synthetic polypeptide

<400> 35

Thr Phe Ser Tyr Thr₅ Phe Glu Asp Val₁₀ Pro Phe His Ser Ser Tyr Ala₁₅

His Ser Gln Ser₂₀ Leu Asp Arg Leu Met₂₅ Asn Pro Leu Ile Asp₃₀ Gln Tyr

Leu Tyr Tyr₃₅ Leu Asn Arg Thr Gln₄₀ Asn Gln Ser Gly Ser₄₅ Ala Gln Asn

Lys Asp₅₀ Leu Leu Phe Ser Arg₅₅ Gly Ser Pro Ala Gly₆₀ Met Ser Val Gln

Pro Lys Asn Trp Leu₇₀ Pro Gly Pro Cys Tyr Arg₇₅ Gln Gln Arg Val Ser₈₀

Lys Thr Lys Thr Asp₈₅ Asn Asn Asn Ser Asn₉₀ Phe Thr Trp Thr Gly₉₅ Ala

Ser Lys Tyr Asn₁₀₀ Leu Asn Gly Arg Glu₁₀₅ Ser Ile Ile Asn Pro Gly Thr

Ala Met Ala₁₁₅ Ser His Lys Asp Asp₁₂₀ Lys Asp Lys Phe Phe₁₂₅ Pro Met Ser

Gly Val Met Ile Phe Gly Lys₁₃₅ Glu Ser Ala Gly Ala₁₄₀ Ser Asn Thr Ala

Leu Asp Asn Val Met Ile₁₅₀ Thr Asp Glu Glu Glu₁₅₅ Ile Lys Ala Thr Asn₁₆₀

Pro Val Ala Thr Glu Arg Phe Gly Thr Val Ala Val Asn Leu Gln Ser
165 170 175

Ser Ser Thr Asp Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala Pro Ala
180 185 190

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

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
210 215 220

Thr Asp Gly His Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu
225 230 235 240

Lys His Pro Pro Pro Gln Ile Leu Ile Lys
245 250

<210> 36
<211> 250
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide
<400> 36

Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr Ala His
1 5 10 15

Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu
20 25 30

Tyr Tyr Leu Ser Arg Thr Asn Thr Pro Ser Gly Thr Thr Thr Gln Ser
35 40 45

Arg Leu Gln Phe Ser Gln Ala Gly Ala Ser Asp Ile Arg Asp Gln Ser
50 55 60

Arg Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys
65 70 75 80

Thr Ser Ala Asp Asn Asn Asn Ser Glu Tyr Ser Trp Thr Gly Ala Thr
85 90 95

Lys Tyr His Leu Asn Gly Arg Asp Ser Leu Val Asn Pro Gly Pro Ala
100 105 110

Met Ala Ser His Lys Asp Asp Glu Glu Lys Phe Phe Pro Gln Ser Gly
115 120 125

Val Leu Ile Phe Gly Lys Gln Gly Ser Glu Lys Thr Asn Val Asp Ile

130

135

Glu Lys Val Met Ile Thr Asp Glu Glu Glu Ile Arg Thr Thr Asn Pro
145 150 155 160

Val Ala Thr Glu Gln Tyr Gly Ser Val Ser Thr Asn Leu Gln Arg Gly
165 170 175

Asn Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala Arg Gln Ala Ala Thr
180 185 190

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

Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr
210 215 220

Asp Gly His Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu Lys
225 230 235 240

His Pro Pro Pro Gln Ile Leu Ile Lys Asn
245 250

<210> 37
<211> 253
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 37

Asn Phe Gln Phe Thr Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser
1 5 10 15

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
20 25 30

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

Asn Thr Gln Thr Leu Gly Phe Ser Gln Gly Gly Pro Asn Thr Met Ala
50 55 60

Asn Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg
65 70 75 80

Val Ser Thr Thr Thr Gly Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr
85 90 95

Ala Gly Thr Lys Tyr His Leu Asn Gly Arg Asn Ser Leu Ala Asn Pro
100 105 110

Gly Ile Ala Met Ala Thr His Lys Asp Asp Glu Glu Arg Phe Phe Pro
 115 120 125

Ser Asn Gly Ile Leu Ile Phe Gly Lys Gln Asn Ala Ala Arg Asp Asn
 130 135 140

Ala Asp Tyr Ser Asp Val Met Leu Thr Ser Glu Glu Glu Ile Lys Thr
 145 150 155 160

Thr Asn Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ala Asp Asn Leu
 165 170 175

Gln Gln Gln Asn Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala Thr Ala
 180 185 190

Pro Gln Ile Gly Thr Val Asn Ser Gln Gly Ala Leu Pro Gly Met Val
 195 200 205

Trp Gln Asn Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile
 210 215 220

Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe
 225 230 235 240

Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn
 245 250

<210> 38

<211> 252

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 38

Asn Phe Gln Phe Thr Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser
 1 5 10 15

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
 20 25 30

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

Asn Thr Gln Thr Leu Gly Phe Ser Gln Gly Gly Pro Asn Thr Met Ala
 50 55 60

Asn Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg
 65 70 75 80

Val Ser Thr Thr Thr Gly Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr
 85 90 95

Ala Gly Thr Lys Tyr His Leu Asn Gly Arg Asn Ser Leu Ala Asn Pro
100 105 110

Gly Ile Ala Met Ala Thr His Lys Asp Asp Glu Glu Arg Phe Phe Pro
115 120 125

Ser Asn Gly Ile Leu Ile Phe Gly Lys Gln Asn Ala Ala Arg Asp Asn
130 135 140

Ala Asp Tyr Ser Asp Val Met Leu Thr Ser Glu Glu Glu Ile Lys Thr
145 150 155 160

Thr Asn Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ala Asp Asn Leu
165 170 175

Gln Gly Gln Arg Gly Leu Gly Glu Thr Thr Arg Pro Ala Gln Ala Ala
180 185 190

Gln Ile Gly Thr Val Asn Ser Gln Gly Ala Leu Pro Gly Met Val Trp
195 200 205

Gln Asn Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro
210 215 220

His Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly
225 230 235 240

Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn
245 250

<210> 39
<211> 251
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide

<400> 39

Phe Gln Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr
1 5 10 15

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
20 25 30

Tyr Leu Tyr Tyr Leu Val Arg Thr Gln Thr Thr Gly Thr Gly Gly Thr
35 40 45

Gln Thr Leu Ala Phe Ser Gln Ala Gly Pro Ser Ser Met Ala Asn Gln
50 55 60

Ala Arg Asn Trp Val Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser
65 70 75 80

Thr Thr Thr Asn Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr Gly Ala
85 90 95

Ala Lys Phe Lys Leu Asn Gly Arg Asp Ser Leu Met Asn Pro Gly Val
100 105 110

Ala Met Ala Ser His Lys Asp Asp Asp Arg Phe Phe Pro Ser Ser
115 120 125

Gly Val Leu Ile Phe Gly Lys Gln Gly Ala Gly Asn Asp Gly Val Asp
130 135 140

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

Pro Val Ala Thr Glu Glu Tyr Gly Ala Val Ala Ile Asn Asn Gln Ala
165 170 175

Ala Asn Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala Thr Gln Ala Gln
180 185 190

Thr Gly Leu Val His Asn Gln Gly Val Ile Pro Gly Met Val Trp Gln
195 200 205

Asn Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
210 215 220

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu
225 230 235 240

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn
245 250

<210> 40
<211> 253
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 40

Asn Phe Glu Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser
1 5 10 15

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
20 25 30

Gln Tyr Leu Tyr Tyr Leu Ser Arg Thr Gln Ser Thr Gly Gly Thr Gln
35 40 45

Gly Thr Gln Gln Leu Leu Phe Ser Gln Ala Gly Pro Ala Asn Met Ser

50

55

Ala Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg
65 70 75 80

Val Ser Thr Thr Leu Ser Gln Asn Asn Ser Asn Phe Ala Trp Thr
85 90 95

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

Gly Val Ala Met Ala Thr His Lys Asp Asp Glu Glu Arg Phe Phe Pro
115 120 125

Ser Ser Gly Val Leu Met Phe Gly Lys Gln Gly Ala Gly Arg Asp Asn
130 135 140

Val Asp Tyr Ser Ser Val Met Leu Thr Ser Glu Glu Glu Ile Lys Thr
145 150 155 160

Thr Asn Pro Val Ala Thr Glu Gln Tyr Gly Val Val Ala Asp Asn Leu
165 170 175

Gln Gln Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala Ala Asn Thr Gly
180 185 190

Pro Ile Val Gly Asn Val Asn Ser Gln Gly Ala Leu Pro Gly Met Val
195 200 205

Trp Gln Asn Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile
210 215 220

Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe
225 230 235 240

Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn
245 250

<210> 41
<211> 252
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide

<400> 41

Phe Glu Phe Ser Tyr Ser Phe Glu Asp Val Pro Phe His Ser Ser Tyr
1 5 10 15

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
20 25 30

Tyr Leu Tyr Tyr Leu Ala Arg Thr Gln Ser Asn Pro Gly Gly Thr Ala
 35 40 45

Gly Asn Arg Glu Leu Gln Phe Tyr Gln Gly Gly Pro Ser Thr Met Ala
 50 55 60

Glu Gln Ala Lys Asn Trp Leu Pro Gly Pro Cys Phe Arg Gln Gln Arg
 65 70 75 80

Val Ser Lys Thr Leu Asp Gln Asn Asn Asn Ser Asn Phe Ala Trp Thr
 85 90 95

Gly Ala Thr Lys Tyr His Leu Asn Gly Arg Asn Ser Leu Val Asn Pro
 100 105 110

Gly Val Ala Met Ala Thr His Lys Asp Asp Glu Asp Arg Phe Phe Pro
 115 120 125

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

Thr Leu Glu Asn Val Leu Met Thr Asn Glu Glu Glu Ile Arg Pro Thr
 145 150 155 160

Asn Pro Val Ala Thr Glu Glu Tyr Gly Ile Val Ser Ser Asn Leu Gln
 165 170 175

Ala Ala Asn Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala Thr Ala Ala
 180 185 190

Gln Thr Gln Val Val Asn Asn Gln Gly Ala Leu Pro Gly Met Val Trp
 195 200 205

Gln Asn Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro
 210 215 220

His Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly
 225 230 235 240

Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn
 245 250

<210> 42
 <211> 249
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic polypeptide

<400> 42

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
 1 5 10 15

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
 20 25 30

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

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
 50 55 60

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
 65 70 75 80

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
 85 90 95

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
 100 105 110

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
 115 120 125

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
 130 135 140

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
 145 150 155 160

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
 165 170 175

Ala Gln Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala Gln Ala Gln Thr
 180 185 190

Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln Asp
 195 200 205

Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr
 210 215 220

Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
 225 230 235 240

His Pro Pro Pro Gln Ile Leu Ile Lys
 245

<210> 43

<211> 248

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 43

Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala
 1 5 10 15

His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr
 20 25 30

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

Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly
 50 55 60

Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr
 65 70 75 80

Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser
 85 90 95

Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala
 100 105 110

Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly
 115 120 125

Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala
 130 135 140

Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro
 145 150 155 160

Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser Gly
 165 170 175

Gln Ala Ala Leu Gly Glu Thr Thr Arg Pro Ala Gln Ala Ala Thr Gly
 180 185 190

Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln Asp Arg
 195 200 205

Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr Asp
 210 215 220

Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys His
 225 230 235 240

Pro Pro Pro Gln Ile Leu Ile Lys
 245

<210> 44

<211> 250

<212> PRT

<213> Artificial sequence

<220>

<223> synthetic peptide

<400> 44

Asn Phe Glu Phe Thr Tyr Asn Phe Glu Glu Val Pro Phe His Ser Ser
 1 5 10 15

Phe Ala Pro Ser Gln Asn Leu Phe Lys Leu Ala Asn Pro Leu Val Asp
 20 25 30

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

Phe Asn Lys Asn Leu Ala Gly Arg Tyr Ala Asn Thr Tyr Lys Asn Trp
 50 55 60

Phe Pro Gly Pro Met Gly Arg Thr Gln Gly Trp Asn Leu Gly Ser Gly
 65 70 75 80

Val Asn Arg Ala Ser Val Ser Ala Phe Ala Thr Thr Asn Arg Met Glu
 85 90 95

Leu Glu Gly Ala Ser Tyr Gln Val Pro Pro Gln Pro Asn Gly Met Thr
 100 105 110

Asn Asn Leu Gln Gly Ser Asn Thr Tyr Ala Leu Glu Asn Thr Met Ile
 115 120 125

Phe Asn Ser Gln Pro Ala Asn Pro Gly Thr Thr Ala Thr Tyr Leu Glu
 130 135 140

Gly Asn Met Leu Ile Thr Ser Glu Ser Glu Thr Gln Pro Val Asn Arg
 145 150 155 160

Val Ala Tyr Asn Val Gly Gly Gln Met Ala Thr Asn Asn Gln Ser Leu
 165 170 175

Ala Leu Gly Glu Thr Thr Arg Pro Ala Ser Thr Thr Ala Pro Ala Thr
 180 185 190

Gly Thr Tyr Asn Leu Gln Glu Ile Val Pro Gly Ser Val Trp Met Glu
 195 200 205

Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro Glu Thr
 210 215 220

Gly Ala His Phe His Pro Ser Pro Ala Met Gly Gly Phe Gly Leu Lys
 225 230 235 240

His Pro Pro Pro Met Met Leu Ile Lys Asn
 245 250

<210> 45
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic polypeptide

<400> 45

Leu Ala Leu Gly Glu Thr Thr Arg Pro Ala
 1 5 10

<210> 46
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic polypeptide

<400> 46

Leu Ala Asn Glu Thr Ile Thr Arg Pro Ala
 1 5 10

<210> 47
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic polypeptide

<400> 47

Leu Ala Lys Ala Gly Gln Ala Asn Asn Ala
 1 5 10

<210> 48
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic polypeptide

<400> 48

Leu Ala Lys Asp Pro Lys Thr Thr Asn Ala
 1 5 10

<210> 49
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic polypeptide

<400> 49

Ala Ala Leu Gly Glu Thr Thr Arg Pro Ala

1 5

<210> 50
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 50

Ala Ala Asn Glu Thr Ile Thr Arg Pro Ala
1 5 10

<210> 51
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 51

Ala Ala Lys Ala Gly Gln Ala Asn Asn Ala
1 5 10

<210> 52
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 52

Ala Ala Lys Asp Pro Lys Thr Thr Asn Ala
1 5 10

<210> 53
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 53

Gly Leu Gly Glu Thr Thr Arg Pro Ala
1 5

<210> 54
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 54

Gly Asn Glu Thr Ile Thr Arg Pro Ala
1 5

<210> 55
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 55

Gly Lys Ala Gly Gln Ala Asn Asn Ala
1 5

<210> 56
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 56

Gly Lys Asp Pro Lys Thr Thr Asn Ala
1 5

<210> 57
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 57

Lys Asp Thr Asp Thr Thr Arg
1 5

<210> 58
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 58

Arg Ala Gly Gly Ser Val Gly
1 5

<210> 59
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 59

Ala Val Asp Thr Thr Lys Phe
1 5

<210> 60
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 60

Ser Thr Gly Lys Val Pro Asn
1 5

<210> 61
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 61

Leu Ala Lys Asp Thr Asp Thr Thr Arg Ala
1 5 10

<210> 62
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 62

Leu Ala Arg Ala Gly Gly Ser Val Gly Ala
1 5 10

<210> 63
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 63

Leu Ala Ala Val Asp Thr Thr Lys Phe Ala
1 5 10

<210> 64
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 64

Leu	Ala	Ser	Thr	Gly	Lys	Val	Pro	Asn	Ala
1				5					10