

SEQUENCE LISTING

<110> Tenaya Therapeutics Inc.

<120> ADENO-ASSOCIATED VIRUS WITH ENGINEERED CAPSID

<130> TENA-019/01WO 334682-2113

<150> US 63/012,703

<151> 2020-04-20

<160> 485

<170> PatentIn version 3.5

<210> 1

<211> 736

<212> PRT

<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 1

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 2
<211> 9
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 2

Asn Gly Ser Gly Gln Asn Gln Gln Thr
1 5

<210> 3
<211> 6
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 3

Asn Asn Ser Glu Phe Ala
1 5

<210> 4
<211> 5
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 4

Gly Arg Asp Asn Val
1 5

<210> 5
<211> 4
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 5

Ser Ala Gln Ala
1

<210> 6
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 6

Gly Tyr His Lys Ser Gly Ala Ala Gln
1 5

<210> 7
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 7

Val Ile Ile Lys Ser Gly Ala Ala Gln
1 5

<210> 8
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 8

Gly Tyr His Lys Ile Gly Ala Ala Gln
1 5

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

<220>
<223> computer generated peptide library sequence

<400> 9

Gly Tyr His Lys Ser Gly Val Ala Gln
1 5

<210> 10

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 10

Val Tyr His Lys Ser Gly Ala Ala Gln
1 5

<210> 11

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 11

Gly Tyr His Lys Ile Ser Ala Ala Gln
1 5

<210> 12

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 12

Thr Thr Val Pro Ser Ser Ser Arg Tyr
1 5

<210> 13

<211> 9

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 13

Val Ile Ile Arg Val Val Arg Leu Ser
1 5

<210> 14
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 14

Thr Val Leu Gly Gln Asn Gln Gln Thr
1 5

<210> 15
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 15

Ile Tyr His Lys Ser Gly Ala Ala Gln
1 5

<210> 16
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 16

Thr Val Leu Asp Lys Asn Gln Gln Thr
1 5

<210> 17
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 17

Tyr Ser Gly Thr Asp Val Arg Tyr Lys
1 5

<210> 18
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 18

Val Thr Ala Ser Gly Lys Glu His Arg
1 5

<210> 19
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 19

Gly Tyr Arg Lys Ser Gly Ala Ala Gln
1 5

<210> 20
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 20

Asn Arg Thr Val Ser Asn Gly Ser Glu
1 5

<210> 21
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 21

Thr Val Leu Asp Arg Ile Asn Lys Thr
1 5

<210> 22
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 22

Thr Gly Val Gly His Leu Thr Ser Ala
1 5

<210> 23
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 23

Gly Tyr His Lys Gly Gly Ala Ala Gln
1 5

<210> 24
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 24

Val Ile Ala Lys Ser Gly Ala Ala Gln
1 5

<210> 25
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 25

Gly Tyr His Lys Ser Gly Ala Ala His
1 5

<210> 26
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 26

Phe Ile Ile Lys Ser Gly Ala Ala Gln
1 5

<210> 27
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 27

Gly Tyr His Lys Val Val Arg Leu Ser
1 5

<210> 28

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 28

Gly Ala Thr Arg Ser Ala Val Glu Ser
1 5

<210> 29

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 29

Thr Val Ser Gly Gln Asn Gln Gln Thr
1 5

<210> 30

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 30

Leu Ser His Lys Ser Gly Ala Ala Gln
1 5

<210> 31
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 31

Ser Ser Ser Gly Gln Asn Gln Gln Thr
1 5

<210> 32
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 32

Ser Gly Ser Gly Gln Asn Gln Gln Thr
1 5

<210> 33
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 33

Ser Gln Val Asn Gly Arg Pro Arg Asp
1 5

<210> 34
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 34

Gly Tyr His Lys Glu Trp Cys Gly Ser
1 5

<210> 35

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 35

Val Val Ser Ser Lys Ser Leu Asn Ser
1 5

<210> 36

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 36

Gly Tyr His Lys Ser Gly Ala Ala Pro
1 5

<210> 37

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 37

Asp Ala Ser Ser Arg Glu Lys Val Arg
1 5

<210> 38

<211> 9

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 38

Ser Tyr His Lys Ser Gly Ala Ala Gln
1 5

<210> 39
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 39

Thr Ala Asn Gly Ser Gln Lys Tyr Leu
1 5

<210> 40
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 40

Val Ile Ile Arg Val Gly Ala Ala Gln
1 5

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 41

Ser Ser Thr Asn Lys Ile Ser Thr Ala
1 5

<210> 42
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 42

Thr Val Leu Asp Arg Ile Gln Gln Thr
1 5

<210> 43
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 43

Gly Tyr His Lys Ser Gly Ala Val Gln
1 5

<210> 44
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 44

Thr Val Leu Asp Gln Asn Gln Gln Thr
1 5

<210> 45
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 45

Val Asn Met Ser Ser Pro Ile Lys Thr
1 5

<210> 46
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 46

Ala Ala Tyr Asn Ser Asn Ser Ala Phe
1 5

<210> 47
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 47

Gly Tyr His Lys Ser Gly Ala Ala Arg
1 5

<210> 48
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 48

Val Ile Ile Arg Val Val Arg Leu Gln
1 5

<210> 49
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 49

Arg Phe Trp Thr Gln Asn Gln Gln Thr
1 5

<210> 50
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 50

Ser Ser Pro Arg Ala Ser Ser Ala Leu
1 5

<210> 51
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 51

Ile Ile Ile Arg Val Val Arg Leu Ser
1 5

<210> 52
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 52

Lys Ser Ser Asn Leu Thr Ala Met Pro
1 5

<210> 53

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 53

Asn Leu Asn Ser Asp Arg His Ser Ala
1 5

<210> 54

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 54

Leu Ser Leu Lys Ser Gly Ala Ala Gln
1 5

<210> 55

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 55

Thr Val Leu Asp Arg Asn Gln Gln Thr
1 5

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

<220>
<223> computer generated peptide library sequence

<400> 56

Gly Ser Glu Arg Val Ser Asn Ser Gly
1 5

<210> 57
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 57

Val Ile Ala Lys Ile Gly Ala Ala Gln
1 5

<210> 58
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 58

Val Tyr His Lys Ile Gly Ala Ala Gln
1 5

<210> 59
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 59

Leu Ser Tyr Lys Ser Gly Ala Ala Gln
1 5

<210> 60

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 60

Ser Thr Val Ser Gln Pro Val Arg Thr
1 5

<210> 61

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 61

Gly His His Lys Ser Gly Ala Ala Gln
1 5

<210> 62

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 62

Tyr Ala Gly Ile Asp Pro Arg Tyr His
1 5

<210> 63

<211> 9

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 63

Asp Arg Ser Arg Lys Ser Met Cys Asp
1 5

<210> 64
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 64

Val Ile Ile Arg Ser Gly Ala Ala Gln
1 5

<210> 65
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 65

Gly Tyr His Lys Ser Gly Gly Ser Ala
1 5

<210> 66
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 66

Val Ile Ile Lys Ile Gly Ala Ala Gln
1 5

<210> 67
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 67

Gly Tyr His Lys Val Val Gln Leu Ser
1 5

<210> 68
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 68

Val Ile Ile Lys Leu Val Ala Ala Gln
1 5

<210> 69
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 69

Lys Val Ser Ser His Ser Val Cys Asp
1 5

<210> 70
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 70

Gly Tyr His Lys Arg Val Arg Leu Ser
1 5

<210> 71
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 71

Gly Tyr His Lys Ser Ser Ala Ala Gln
1 5

<210> 72
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 72

Gly Tyr Arg Lys Ile Gly Ala Ala Gln
1 5

<210> 73
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 73

Gly Tyr His Lys Ser Gly Ala Ala Cys
1 5

<210> 74
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 74

Gly Tyr Arg Gln Ser Gly Ala Ala Gln
1 5

<210> 75
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 75

Val Ile Ile Lys Leu Ile Ala Ala Gln
1 5

<210> 76
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 76

Val Ile Ile Arg Val Val Arg Ala Gln
1 5

<210> 77
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 77

Gly Tyr His Lys Ser Gly Ala Ala Trp
1 5

<210> 78

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 78

Gly Tyr His Lys Ser Gly Ala Val Ser
1 5

<210> 79

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 79

Gly Tyr His Lys Glu Trp Cys Ser Ser
1 5

<210> 80

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 80

Ser Ser Ser Ser Asn Arg Leu Ala Asp
1 5

<210> 81
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 81

Ser Asn Asn Ser Ser Ser Ala Lys Phe
1 5

<210> 82
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 82

Val Lys Leu Ser Ser Thr Ser Ser Ser
1 5

<210> 83
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 83

Gly Tyr His Lys Glu Trp Cys Ala Gln
1 5

<210> 84
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 84

Ala Gly Ser Gly Gln Asn Gln Gln Thr
1 5

<210> 85

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 85

Asn Pro His Gly Thr Ala Thr Tyr Leu
1 5

<210> 86

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 86

Asn Gly Ser Gly Gln Asn Gln His Thr
1 5

<210> 87

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 87

Gly Tyr His Lys Val Gly Ala Ala Gln
1 5

<210> 88

<211> 9

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 88

Val Ile Ile Arg Val Val Arg Leu Lys
1 5

<210> 89
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 89

Asn Ser Ile Pro Ser Thr Ser Lys Trp
1 5

<210> 90
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 90

Val Ile Ile Arg Val Val Gln Leu Gln
1 5

<210> 91
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 91

Ser Gln Val Asn Gly Arg Pro Gln Asp
1 5

<210> 92
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 92

Asn Gly Ser Gly Gln Asp Gln Gln Thr
1 5

<210> 93
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 93

Gly Leu Asn Ser Ser Asp Arg Arg Leu
1 5

<210> 94
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 94

Ile Tyr His Lys Ile Gly Ala Ala Gln
1 5

<210> 95
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 95

Tyr His Lys Ser Gly Ala Ala Gln Leu
1 5

<210> 96
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 96

Tyr Ser Gly Thr Asp Val Gln Tyr Lys
1 5

<210> 97
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 97

Leu Gly Ser Gly Gln Asn Gln Gln Thr
1 5

<210> 98
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 98

Pro Val Ser Ser Gly Ala Asp Arg Arg
1 5

<210> 99
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 99

Glu His Ser Thr Lys Leu Asn Ala Cys
1 5

<210> 100
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 100

Asn Gly Ser Asp Arg Ile Asn Lys Arg
1 5

<210> 101
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 101

Val Ile Ile Lys Gly Gly Ala Ala Gln
1 5

<210> 102
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 102

Gly Tyr His Arg Val Val Arg Leu Ser
1 5

<210> 103

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 103

Val Ile Ile Arg Val Val Arg Leu Leu
1 5

<210> 104

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 104

Val Ile Leu Lys Ser Gly Ala Ala Gln
1 5

<210> 105

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 105

Leu Asn Ser Met Leu Ile
1 5

<210> 106
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 106

Asn Gly Met Ser Phe Thr
1 5

<210> 107
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 107

His Lys Thr Phe Ser Ile
1 5

<210> 108
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 108

Ser Met Ser Asn Phe Val
1 5

<210> 109
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 109

Ala Thr Ile Pro Pro Ile
1 5

<210> 110

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 110

Ser Ser Thr His Phe Asp
1 5

<210> 111

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 111

Asn Asn Gln Phe Ser Tyr
1 5

<210> 112

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 112

Asn Met Gly His Tyr Ser
1 5

<210> 113

<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 113

Ser Lys Gln Met Phe Gln
1 5

<210> 114
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 114

Trp Pro Ser Ala Gly Val
1 5

<210> 115
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 115

Asn Gly Gly Tyr Gln Cys
1 5

<210> 116
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 116

Ser Thr Ser Pro Ile Val
1 5

<210> 117
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 117

Ser Gln Ser Gly Leu Trp
1 5

<210> 118
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 118

Val Asn Ser Gln Phe Ser
1 5

<210> 119
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 119

Ser Gly Ile Glu Phe Arg
1 5

<210> 120
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 120

Ser Ala Ser Lys Phe Thr
1 5

<210> 121
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 121

Gln Leu Asn Trp Thr Ser
1 5

<210> 122
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 122

Ser Met Gly Phe Pro Val
1 5

<210> 123
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 123

Ser Ser Phe Met Gly Leu
1 5

<210> 124
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 124

Gly Ser Asn Phe His Val
1 5

<210> 125
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 125

Asp Met Thr Leu Tyr Ala
1 5

<210> 126
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 126

Met Gly Cys Leu Phe Thr
1 5

<210> 127
<211> 6
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 127

Ala Leu Ala Phe Asn Ser
1 5

<210> 128

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 128

Ser Lys Phe Leu Phe Ala
1 5

<210> 129

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 129

Gln Asp Ala Gly Leu Leu
1 5

<210> 130

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 130

Gln Asp Ala Ser Leu Leu
1 5

<210> 131
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 131

Arg Asp Asp Met Phe Ser
1 5

<210> 132
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 132

Leu Ser Arg Cys Phe Gln
1 5

<210> 133
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 133

Leu Ser Arg Asp Phe Gln
1 5

<210> 134
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 134

Gln Gly Leu Thr Pro Val
1 5

<210> 135

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 135

Gln Trp Asp Val Phe Thr
1 5

<210> 136

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 136

Pro Arg Val Ser Phe Ala
1 5

<210> 137

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 137

Gln Ser Tyr Tyr Asn Pro
1 5

<210> 138

<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 138

Arg Ala Ser His Leu Gly
1 5

<210> 139
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 139

Ile Ile Leu Phe Val Pro
1 5

<210> 140
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 140

Ile Ile Ser Phe Ser Tyr
1 5

<210> 141
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 141

Leu Asp Ser Met Leu Ile
1 5

<210> 142
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 142

Asn Ile Gly His Tyr Ser
1 5

<210> 143
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 143

Asn Arg Met Ser Phe Thr
1 5

<210> 144
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 144

Asn Gly Met Ser Phe Ala
1 5

<210> 145
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 145

Ile Ile Leu Leu Leu Pro
1 5

<210> 146
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 146

Arg Met Arg Ser Leu Leu
1 5

<210> 147
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 147

Arg Arg Arg Cys Arg Phe
1 5

<210> 148
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 148

Pro Lys Gln Met Phe Gln
1 5

<210> 149
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 149

Leu Met Ser Asn Phe Val
1 5

<210> 150
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 150

Gly Ala Ser His Leu Gly
1 5

<210> 151
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 151

Cys Ala Ser Ile Ser Trp
1 5

<210> 152
<211> 6
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 152

Ser Met Thr Thr Phe Arg
1 5

<210> 153

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 153

Ala Ala Ile Pro Pro Ile
1 5

<210> 154

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 154

Pro Gly Cys Glu Ser Leu
1 5

<210> 155

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 155

Ser Met Gly Phe Ala Cys
1 5

<210> 156
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 156

Phe Leu Pro Ser Leu Met
1 5

<210> 157
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 157

Asn Gly Ile Ser Phe Thr
1 5

<210> 158
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 158

Glu Ser Ser Arg Trp Ala
1 5

<210> 159
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 159

Gln Leu Tyr Phe Val Pro
1 5

<210> 160

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 160

Ser Ser Asn Phe His Val
1 5

<210> 161

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 161

Leu Glu Phe Met Leu Ile
1 5

<210> 162

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 162

Gln Phe Asp Ser Phe Asp
1 5

<210> 163

<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 163

Ser Pro Val Phe Ala Cys
1 5

<210> 164
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 164

Val Arg Leu Ile Phe Asp
1 5

<210> 165
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 165

Asn Gly Met Ser Phe Ile
1 5

<210> 166
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 166

Leu Leu Phe Pro Pro Ile
1 5

<210> 167
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 167

Gly Ala Gly Val Thr Gly
1 5

<210> 168
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 168

Gln Trp Met Ser Phe Thr
1 5

<210> 169
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 169

Ser Ile Gly Phe Pro Val
1 5

<210> 170
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 170

Arg Met Gln Ser Leu Leu
1 5

<210> 171
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 171

Thr Ser Ala Leu Gln Val
1 5

<210> 172
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 172

Ser Leu Thr His Phe Asp
1 5

<210> 173
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 173

Gln Glu Leu Pro Phe Leu
1 5

<210> 174
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 174

Leu Tyr Phe Leu Leu Pro
1 5

<210> 175
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 175

Leu Ser Phe Phe Phe Ala
1 5

<210> 176
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 176

Leu Ser Arg Ile Phe Gln
1 5

<210> 177
<211> 6
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 177

Asp Glu Val Ile Leu Phe
1 5

<210> 178

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 178

Arg Ala Gly Val Ala Gly
1 5

<210> 179

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 179

Asn Gly Met Ser Leu Pro
1 5

<210> 180

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 180

Pro Phe Glu Asp Phe Gln
1 5

<210> 181
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 181

Gln Tyr Gly Ser Leu Phe
1 5

<210> 182
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 182

Asn Tyr Thr Phe Val Leu
1 5

<210> 183
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 183

Met Ser Gly Tyr Gln Cys
1 5

<210> 184
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 184

Asn Tyr Ala Phe Val Pro
1 5

<210> 185

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 185

Arg Ala Gly Val Thr Gly
1 5

<210> 186

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 186

Trp Asn Ser Met Leu Ile
1 5

<210> 187

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 187

Ile Arg Arg Phe Ser Ile
1 5

<210> 188

<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 188

Asn Gly Met Ser Phe Tyr
1 5

<210> 189
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 189

Ile Ile Gln Phe Ser Tyr
1 5

<210> 190
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 190

Asn Gly Cys Leu Phe Thr
1 5

<210> 191
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 191

Arg Asp Ala Ser Leu Leu
1 5

<210> 192
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 192

Ala Asp Ser Met Leu Ile
1 5

<210> 193
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 193

Val Asp Ser Gln Phe Ser
1 5

<210> 194
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 194

Ser Ile Gly Asn Phe Val
1 5

<210> 195
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 195

Asn Gly Met Ser Leu Leu
1 5

<210> 196
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 196

Asn Tyr Thr Phe Val Pro
1 5

<210> 197
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 197

Ile Arg Arg Leu Val Phe
1 5

<210> 198
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 198

Pro Met Ser Asn Phe Val
1 5

<210> 199
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 199

Leu Trp Val Phe Pro Val
1 5

<210> 200
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 200

Val Arg Leu His Phe Asp
1 5

<210> 201
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 201

Ser Met Ser Asn Leu Phe
1 5

<210> 202
<211> 6
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 202

Ser Thr Ser Leu Ile Val
1 5

<210> 203

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 203

His Lys Thr Phe Gly Ile
1 5

<210> 204

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 204

Arg Gly Asn Gln Val
1 5

<210> 205

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 205

Val Ser Leu Asn Arg
1 5

<210> 206
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 206

Cys Asp Tyr Ser Val
1 5

<210> 207
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 207

Gln His Gly His Ile
1 5

<210> 208
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 208

Leu Cys Ser Leu Val
1 5

<210> 209
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 209

Pro Thr Ile Tyr Val
1 5

<210> 210

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 210

Asp Val Ile His Ile
1 5

<210> 211

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 211

Ala Glu Phe Tyr Ala
1 5

<210> 212

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 212

Asn Ser Val Val Cys
1 5

<210> 213

<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 213

Val Arg Ser Asn Cys
1 5

<210> 214
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 214

Leu Ala Asn Asn Ile
1 5

<210> 215
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 215

Asn Leu Gln Phe Met
1 5

<210> 216
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 216

Glu Phe Arg Asp Leu
1 5

<210> 217
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 217

Asp Phe Gly Ser Leu
1 5

<210> 218
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 218

Val Thr Asn Tyr Cys
1 5

<210> 219
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 219

Trp Asn Thr Asn Ala
1 5

<210> 220
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 220

Thr Glu Ser Thr Cys
1 5

<210> 221
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 221

Ser Gly Ala Ala Val
1 5

<210> 222
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 222

Gly Gly Cys Asp Ile
1 5

<210> 223
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 223

Ser Gly Ser Val Val
1 5

<210> 224
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 224

Ser Ser Asn Ala Cys
1 5

<210> 225
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 225

Tyr Asn Thr Thr Val
1 5

<210> 226
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 226

Ser Lys Cys Leu Ala
1 5

<210> 227
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 227

Ser Ala Tyr Thr Val
1 5

<210> 228

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 228

Val Arg Asp Thr Val
1 5

<210> 229

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 229

Trp Arg Ser Met Val
1 5

<210> 230

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 230

Ala Tyr His Gly Val
1 5

<210> 231
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 231

Gly Met Asn Thr Ile
1 5

<210> 232
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 232

Ala Glu Thr Ser Leu
1 5

<210> 233
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 233

Thr Leu Val Tyr Val
1 5

<210> 234
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 234

Asn His Asp Trp Ile
1 5

<210> 235

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 235

Thr Val Gly Ile Val
1 5

<210> 236

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 236

Ser Leu Pro Thr Val
1 5

<210> 237

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 237

Thr Gly Ile Leu Cys
1 5

<210> 238

<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 238

Thr Asp Thr Tyr Ile
1 5

<210> 239
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 239

Leu Pro Val Thr Tyr
1 5

<210> 240
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 240

Gly Asp Val Tyr Ile
1 5

<210> 241
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 241

Leu Tyr Gly Thr Val
1 5

<210> 242
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 242

Gly Cys Glu Phe Ile
1 5

<210> 243
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 243

Ser Ala Gly Leu Leu
1 5

<210> 244
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 244

Ile Lys Ser Asn Ile
1 5

<210> 245
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 245

Val Thr Thr Ser Leu
1 5

<210> 246
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 246

Ala Val Thr Ser Val
1 5

<210> 247
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 247

Arg Asp Ile His Ile
1 5

<210> 248
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 248

Ser Ala Ile Ser Leu
1 5

<210> 249
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 249

Val Ala Ser Thr Cys
1 5

<210> 250
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 250

Ile Lys Gly Leu Leu
1 5

<210> 251
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 251

Gly Ser Tyr His Thr
1 5

<210> 252
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 252

Arg Ile Gly Phe Val
1 5

<210> 253

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 253

Asn Asp Ile Tyr Ile
1 5

<210> 254

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 254

Ala Val Ser Cys Val
1 5

<210> 255

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 255

Gln His Asn Leu Leu
1 5

<210> 256
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 256

Val Ser Ser Cys Val
1 5

<210> 257
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 257

Leu Asn Leu Asp Val
1 5

<210> 258
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 258

Leu Gly Ala Thr Ile
1 5

<210> 259
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 259

Pro Val Leu Cys Val
1 5

<210> 260

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 260

Ser Ala Arg His Ile
1 5

<210> 261

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 261

Arg Ala Thr Leu Ile
1 5

<210> 262

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 262

Pro Tyr Asn His Ala
1 5

<210> 263

<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 263

Ile Gly Asp Ser Ile
1 5

<210> 264
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 264

Ser Pro Met Leu Cys
1 5

<210> 265
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 265

Tyr Asp Ser Thr Leu
1 5

<210> 266
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 266

Ala Leu Lys His Val
1 5

<210> 267
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 267

Ala Asp Leu Leu Thr
1 5

<210> 268
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 268

Asn Asn Gly His Leu
1 5

<210> 269
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 269

Ile Asn Ser Glu Val
1 5

<210> 270
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 270

Ser Asn Lys Thr Thr
1 5

<210> 271
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 271

Gly Ser Thr Gly Leu
1 5

<210> 272
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 272

Asp Ser Asp Met Ile
1 5

<210> 273
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 273

Thr Ser Asn Phe Ile
1 5

<210> 274
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 274

Arg Asn Phe Thr Thr
1 5

<210> 275
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 275

Ser His Lys Tyr Ser
1 5

<210> 276
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 276

Val Ser Asp Ile Val
1 5

<210> 277
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 277

Arg Val Val Gln Ala
1 5

<210> 278

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 278

Ala Ala Cys Ala Val
1 5

<210> 279

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 279

Arg Gly Arg Gln Ile
1 5

<210> 280

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 280

Ala Val Ala Asn Ile
1 5

<210> 281
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 281

Ala Gly Tyr Asp Leu
1 5

<210> 282
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 282

Leu Ser Glu Ala Ala
1 5

<210> 283
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 283

Met Ser Asn Tyr Leu
1 5

<210> 284
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 284

Asn Phe Ser Asp Asn
1 5

<210> 285

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 285

Ser Cys Cys Asp Val
1 5

<210> 286

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 286

Leu Ala Ser Ser Val
1 5

<210> 287

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 287

Pro Asp His Ala Val
1 5

<210> 288

<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 288

Lys Phe Asp Ile Ile
1 5

<210> 289
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 289

Asn Ser Ser Ser Ala
1 5

<210> 290
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 290

His Thr Met His Val
1 5

<210> 291
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 291

Thr Leu Ser Tyr Cys
1 5

<210> 292
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 292

Ala Asp Thr His Arg
1 5

<210> 293
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 293

Ser Met Tyr Ser Val
1 5

<210> 294
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 294

Ser Val Asn Leu Val
1 5

<210> 295
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 295

Met Ser Gly His Leu
1 5

<210> 296
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 296

Lys Ile Ser Asp Thr
1 5

<210> 297
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 297

Thr Gly Leu Leu Ala
1 5

<210> 298
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 298

Ala Trp Thr Thr Ser
1 5

<210> 299
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 299

Gly Gly Ala Leu Ile
1 5

<210> 300
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 300

Ser Cys Ile Glu Val
1 5

<210> 301
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 301

Pro Pro Val Ile Cys
1 5

<210> 302
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 302

Gly Thr Tyr Asn Leu
1 5

<210> 303

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 303

Asn Val Ser Tyr
1

<210> 304

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 304

Ser Met Val Asn
1

<210> 305

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 305

Ala Asn Tyr Gly
1

<210> 306
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 306

Asn Val Gly Thr

1

<210> 307
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 307

Ser Ala Tyr Met

1

<210> 308
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 308

Glu Lys Val Thr

1

<210> 309
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 309

Thr Thr Pro Gly
1

<210> 310

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 310

Gly Val Tyr Ser
1

<210> 311

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 311

Ser Tyr Val Gly
1

<210> 312

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 312

Leu Gln Tyr Asn
1

<210> 313

<211> 4

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 313

Asp Pro Ala Lys
1

<210> 314
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 314

Thr His Phe Ser
1

<210> 315
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 315

Ile Gly Gly Val
1

<210> 316
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 316

Ser Ser Trp Asn

1

<210> 317

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 317

Ser Val Tyr Val

1

<210> 318

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 318

Thr Leu Asn Gly

1

<210> 319

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 319

Asn Thr Ser Asn

1

<210> 320

<211> 4

<212> PRT

<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 320

Val Gln Tyr Ala
1

<210> 321
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 321

Asp Gln Tyr Arg
1

<210> 322
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 322

Met Pro Val Ser
1

<210> 323
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 323

Ser Ala Gln Ala
1

<210> 324
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 324

Met Thr Val Ala
1

<210> 325
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 325

Thr Val Met Gly
1

<210> 326
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 326

Phe Ser Ser Ile
1

<210> 327
<211> 4
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 327

Ser Leu Arg Leu
1

<210> 328

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 328

Ser Ala Met Gly
1

<210> 329

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 329

Tyr Ile Lys Leu
1

<210> 330

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 330

Leu Met Thr Met
1

<210> 331
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 331

Gln Val His Leu
1

<210> 332
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 332

Tyr Asn Ser Val
1

<210> 333
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 333

Cys Val Ile Ser
1

<210> 334
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 334

Arg Leu Asp Gly

1

<210> 335

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 335

Ala Ile Met Val

1

<210> 336

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 336

Gly Thr Thr Gly

1

<210> 337

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 337

Ala Ser Tyr Thr

1

<210> 338

<211> 4

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 338

Leu His Val Gly
1

<210> 339
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 339

Leu Gln Phe Ala
1

<210> 340
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 340

Val Arg Gly Asp
1

<210> 341
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 341

Asn Val Met Ile

1

<210> 342

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 342

Ser Leu Tyr Gly

1

<210> 343

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 343

Gly Thr Val Gly

1

<210> 344

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 344

Phe Asn Ser Val

1

<210> 345

<211> 4

<212> PRT

<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 345

Thr Arg Leu Gly
1

<210> 346
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 346

Leu Lys Val Leu
1

<210> 347
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 347

Ser Ile Arg Val
1

<210> 348
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 348

Lys Ile Gln Gly
1

<210> 349
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 349

Gln Ile Leu Gly
1

<210> 350
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 350

Gln Arg Asp Ala
1

<210> 351
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 351

Glu Ala Val Arg
1

<210> 352
<211> 4
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 352

Ala Ile Thr Val

1

<210> 353

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 353

Lys Glu Ser Ile

1

<210> 354

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 354

Leu Met Val Asn

1

<210> 355

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 355

Ile Asn Leu Ser

1

<210> 356
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 356

Gly Gln Val Ser
1

<210> 357
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 357

Thr Ser Leu Leu
1

<210> 358
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 358

Ser Ser Thr Leu
1

<210> 359
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 359

Tyr Glu Lys Phe
1

<210> 360

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 360

Asp Gly Lys Leu
1

<210> 361

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 361

Gln Val Tyr Ser
1

<210> 362

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 362

Gln Lys Glu Gly
1

<210> 363

<211> 4

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 363

Ala Arg Asp Met
1

<210> 364
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 364

Asp Asn Phe Arg
1

<210> 365
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 365

Ser His Gly Leu
1

<210> 366
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 366

Val Ser Val Asn

1

<210> 367

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 367

Gly Leu Lys Asp

1

<210> 368

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 368

Gln Pro Val Phe

1

<210> 369

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 369

Val Tyr Ser Met

1

<210> 370

<211> 4

<212> PRT

<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 370

Val Met Ala Gln
1

<210> 371
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 371

Phe Val Gly Met
1

<210> 372
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 372

Trp Ser Thr Pro
1

<210> 373
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 373

Ser Tyr Pro Val
1

<210> 374
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 374

Thr Thr Tyr Ser
1

<210> 375
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 375

Thr Val Thr Thr
1

<210> 376
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 376

Lys Asp Lys Thr
1

<210> 377
<211> 4
<212> PRT
<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 377

Tyr Arg Glu Leu
1

<210> 378

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 378

Leu Ser His Phe
1

<210> 379

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 379

Ser Pro Gly Thr
1

<210> 380

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 380

Leu Met Gly Thr
1

<210> 381
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 381

Ala Ala Ser Leu
1

<210> 382
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 382

Phe Ser Asn Asn
1

<210> 383
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 383

Gln Ala Arg Leu
1

<210> 384
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 384

Tyr His Ile Ala
1

<210> 385

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 385

Ala Arg Gln Asp
1

<210> 386

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 386

Val Ala Tyr Thr
1

<210> 387

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> computer generated peptide library sequence

<400> 387

Thr Pro Ser Tyr
1

<210> 388

<211> 4

<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 388

Met Ile Leu His

1

<210> 389
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 389

Leu Gly Asn Val

1

<210> 390
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 390

Thr Ser Ile Ser

1

<210> 391
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 391

Thr Met Val Tyr
1

<210> 392
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 392

Leu Val Val Gly
1

<210> 393
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 393

Ser Pro Leu Tyr
1

<210> 394
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 394

Tyr Lys Ser Glu
1

<210> 395
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 395

Phe Thr Arg Leu
1

<210> 396
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 396

Val Ser Tyr Asn
1

<210> 397
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 397

Glu Arg Thr Pro
1

<210> 398
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 398

Phe Arg Ser Glu
1

<210> 399
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 399

Asn Tyr Thr Glu
1

<210> 400
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 400

Gln Thr Ile Asn
1

<210> 401
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> computer generated peptide library sequence

<400> 401

Asp Val His Arg
1

<210> 402
<211> 736
<212> PRT
<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 402

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Ser Gln Val Asn Gly Arg Pro Arg Asp Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 403

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 403

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 404
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 404

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 405

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 405

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Asn Val Ser Tyr Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 406
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 406

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Leu Asn Ser Met Leu Ile Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 407

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 407

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 408

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 408

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Gln Asp Ala Ser Leu Leu Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 409
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 409

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Gly Met Ser Phe Thr Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 410

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 410

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Leu Asn Ser Met Leu Ile Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 411

<211> 50

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 411

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr
50

<210> 412
<211> 49
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 412

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr

<210> 413
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 413

Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro Val Asn
1 5 10 15

Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp Gln Gln
20 25 30

Leu Lys

<210> 414

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 414

Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val Asn
1 5 10 15

Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu Gln
20 25 30

Leu Glu

<210> 415

<211> 44

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 415

Ala Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala Asp Ala Glu Phe
1 5 10 15

Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly Asn Leu Gly Arg
20 25 30

Ala Val Phe Gln Ala Lys Lys Arg Leu Leu Glu Pro
35 40

<210> 416

<211> 44

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 416

Ala Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala Asp Ala Glu Phe
1 5 10 15

Gln Glu Lys Leu Ala Asp Asp Thr Ser Phe Gly Gly Asn Leu Gly Lys
20 25 30

Ala Val Phe Gln Ala Lys Lys Arg Val Leu Glu Pro
35 40

<210> 417

<211> 84

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 417

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
1 5 10 15

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
20 25 30

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
50 55 60

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
65 70 75 80

Ala Pro Val Ala

<210> 418

<211> 75

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 418

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

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
20 25 30

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
35 40 45

Gln Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp
50 55 60

Thr Met Ser Ala Gly Gly Gly Gly Pro Leu Gly
65 70 75

<210> 419

<211> 524

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 419

Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp
1 5 10 15

His Cys Asp Ser Gln Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr
20 25 30

Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile
35 40 45

Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly
50 55 60

Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His
65 70 75 80

Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe
85 90 95

Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu
100 105 110

Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser
115 120 125

Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu
130 135 140

Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe
145 150 155 160

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

Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met
180 185 190

Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val
195 200 205

Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met
210 215 220

Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn
225 230 235 240

Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro
245 250 255

Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr
260 265 270

Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu
275 280 285

Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser
290 295 300

Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp
305 310 315 320

Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr
325 330 335

Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu
340 345 350

Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val
355 360 365

Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val
370 375 380

Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val
385 390 395 400

Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn
405 410 415

Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys His Pro Pro
420 425 430

Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr
435 440 445

Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr
450 455 460

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

Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser
485 490 495

Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro
500 505 510

Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
515 520

<210> 420
<211> 524
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 420

Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp
1 5 10 15

His Cys Asp Ser Gln Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr
20 25 30

Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile
35 40 45

Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly
50 55 60

Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His
65 70 75 80

Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe
85 90 95

Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu
100 105 110

Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser
115 120 125

Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu
130 135 140

Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe
145 150 155 160

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

Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met
180 185 190

Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val
195 200 205

Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met
210 215 220

Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn
225 230 235 240

Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro
245 250 255

Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr
260 265 270

Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu
275 280 285

Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser
290 295 300

Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp
305 310 315 320

Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr
325 330 335

Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu
340 345 350

Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val
355 360 365

Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val
370 375 380

Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val
385 390 395 400

Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn
405 410 415

Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys His Pro Pro
420 425 430

Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr
435 440 445

Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr
450 455 460

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

Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser
485 490 495

Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro
500 505 510

Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
515 520

<210> 421
<211> 726
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 421

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Gln Gly Ala
195 200 205

Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr Trp
210 215 220

Met Gly Asp Arg Val Val Thr Lys Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Asn Asn Tyr Asn Asp Pro Gln Phe Val Asp Phe Ala
690 695 700

Pro Asp Ser Thr Gly Glu Tyr Arg Thr Thr Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Pro Leu
725

<210> 422

<211> 725

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 422

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

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

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

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

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

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

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

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

Ala Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr
210 215 220

Trp Met Gly Asp Arg Val Val Thr Lys Ser Thr Arg Thr Trp Val Leu
225 230 235 240

Pro Ser Tyr Asn Asn His Gln Tyr Arg Glu Ile Lys Ser Gly Ser Val
245 250 255

Asp Gly Ser Asn Ala Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Tyr Trp Gly Phe Arg Pro Arg Ser Leu Arg
290 295 300

Val Lys Ile Phe Asn Ile Gln Val Lys Glu Val Thr Val Gln Asp Ser
305 310 315 320

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

Asp Asp Asp Tyr Gln Leu Pro Tyr Val Val Gly Asn Gly Thr Glu Gly
340 345 350

Cys Leu Pro Ala Phe Pro Pro Gln Val Phe Thr Leu Pro Gln Tyr Gly
355 360 365

Tyr Ala Thr Leu Asn Arg Asp Asn Thr Glu Asn Pro Thr Glu Arg Ser
370 375 380

Ser Phe Phe Cys Leu Glu Tyr Phe Pro Ser Lys Met Leu Arg Thr Gly
385 390 395 400

Asn Asn Phe Glu Phe Thr Tyr Asn Phe Glu Glu Val Pro Phe His Ser
405 410 415

Ser Phe Ala Pro Ser Gln Asn Leu Phe Lys Leu Ala Asn Pro Leu Val
420 425 430

Asp Gln Tyr Leu Tyr Arg Phe Val Ser Thr Asn Asn Thr Gly Gly Val
435 440 445

Gln Phe Asn Lys Asn Leu Ala Gly Arg Tyr Ala Asn Thr Tyr Lys Asn
450 455 460

Trp Phe Pro Gly Pro Met Gly Arg Thr Gln Gly Trp Asn Leu Gly Ser
465 470 475 480

Gly Val Asn Arg Ala Ser Val Ser Ala Phe Ala Thr Thr Asn Arg Met
485 490 495

Glu Leu Glu Gly Ala Ser Tyr Gln Val Pro Pro Gln Pro Asn Gly Met
500 505 510

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

Ile Phe Asn Ser Gln Pro Ala Asn Pro Gly Thr Thr Ala Thr Tyr Leu
530 535 540

Glu Gly Asn Met Leu Ile Thr Ser Glu Ser Glu Thr Gln Pro Val Asn
545 550 555 560

Arg Val Ala Tyr Asn Val Gly Gly Gln Met Ala Thr Asn Asn Gln Ser
565 570 575

Ser Thr Thr Ala Pro Ala Thr Gly Thr Tyr Asn Leu Gln Glu Ile Val
580 585 590

Pro Gly Ser Val Trp Met Glu Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro Glu Thr Gly Ala His Phe His Pro Ser Pro Ala
610 615 620

Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Met Met Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Gly Asn Ile Thr Ser Phe Ser Asp Val Pro Val
645 650 655

Ser Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Thr Val Glu Met
660 665 670

Glu Trp Glu Leu Lys Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile
675 680 685

Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val
690 695 700

Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr
705 710 715 720

Leu Thr Arg Asn Leu
725

<210> 423

<211> 725

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 423

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Gln Gly Ala
195 200 205

Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr Trp
210 215 220

Met Gly Asp Arg Val Val Thr Lys Ser Thr Arg Thr Trp Val Leu Pro
225 230 235 240

Ser Tyr Asn Asn His Gln Tyr Arg Glu Ile Lys Ser Gly Ser Val Asp
245 250 255

Gly Ser Asn Ala Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr
260 265 270

Phe Asp Phe Asn Arg Phe His Ser His Trp Ser Pro Arg Asp Trp Gln
275 280 285

Arg Leu Ile Asn Asn Tyr Trp Gly Phe Arg Pro Arg Ser Leu Arg Val
290 295 300

Lys Ile Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val
305 310 315 320

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

Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys
340 345 350

Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr
355 360 365

Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr
370 375 380

Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe
385 390 395 400

Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala
405 410 415

His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr
420 425 430

Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln
435 440 445

Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly
450 455 460

Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr
465 470 475 480

Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser
485 490 495

Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala
500 505 510

Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly
515 520 525

Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala
530 535 540

Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro
545 550 555 560

Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala
565 570 575

Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro
580 585 590

Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp
595 600 605

Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met
610 615 620

Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn
625 630 635 640

Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu
645 650 655

Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile
660 665 670

Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile
675 680 685

Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val
690 695 700

Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr
705 710 715 720

Leu Thr Arg Asn Leu
725

<210> 424
<211> 727
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 424

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

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

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

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

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

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

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

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

Ala Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

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

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

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

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn
435 440 445

Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 425

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 425

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

Tyr Asn Asp Pro Gln Phe Val Asp Phe Ala Pro Asp Ser Thr Gly Glu
705 710 715 720

Tyr Arg Thr Thr Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Pro Leu
725 730 735

<210> 426

<211> 726

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 426

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Gln Gly Ala
195 200 205

Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr Trp
210 215 220

Met Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Phe
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
690 695 700

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Asn Leu
725

<210> 427

<211> 726

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 427

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Gln Gly Ala
195 200 205

Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Gln Trp
210 215 220

Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
690 695 700

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Asn Leu
725

<210> 428
<211> 726
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 428

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Gln Gly Ala
195 200 205

Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Gln Trp
210 215 220

Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Asn Asn Tyr Asn Asp Pro Gln Phe Val Asp Phe Ala
690 695 700

Pro Asp Ser Thr Gly Glu Tyr Arg Thr Thr Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Pro Leu
725

<210> 429
<211> 727
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 429

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

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

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

Ala Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr
210 215 220

Trp Met Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

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

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

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

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn
435 440 445

Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Thr Val
660 665 670

Glu Met Glu Trp Glu Leu Lys Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 430

<211> 726

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 430

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

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

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

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

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

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

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

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

Ala Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr
210 215 220

Trp Met Gly Asp Arg Val Val Thr Lys Ser Thr Arg Thr Trp Val Leu
225 230 235 240

Pro Ser Tyr Asn Asn His Gln Tyr Arg Glu Ile Lys Ser Gly Ser Val
245 250 255

Asp Gly Ser Asn Ala Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
690 695 700

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Asn Leu
725

<210> 431
<211> 726
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 431

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Gln Gly Ala
195 200 205

Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr Trp
210 215 220

Met Gly Asp Arg Val Val Thr Lys Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
690 695 700

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Asn Leu
725

<210> 432
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 432

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

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

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asp Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

Tyr Asn Asp Pro Gln Phe Val Asp Phe Ala Pro Asp Ser Thr Gly Glu
705 710 715 720

Tyr Arg Thr Thr Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 433
<211> 735
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 433

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

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

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

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

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn 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 Asn Asn Tyr
690 695 700

Asn Asp Pro Gln Phe Val Asp Phe Ala Pro Asp Ser Thr Gly Glu Tyr
705 710 715 720

Arg Thr Thr Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Pro Leu
725 730 735

<210> 434
<211> 735
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 434

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

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

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln
660 665 670

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

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

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

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 435

<211> 726

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 435

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Gln Gly Ala
195 200 205

Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr Trp
210 215 220

Met Gly Asp Arg Val Val Thr Lys Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
690 695 700

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Asn Leu
725

<210> 436

<211> 726

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 436

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Ala Pro Val Ala Asp Asn Asn Glu Gly Ala
195 200 205

Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln Trp
210 215 220

Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
690 695 700

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Asn Leu
725

<210> 437

<211> 726

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 437

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

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

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

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

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

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

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

Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp Ser
145 150 155 160

Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser Gln
165 170 175

Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp Thr
180 185 190

Met Ser Ala Gly Gly Gly Ala Pro Val Ala Asp Asn Asn Glu Gly Ala
195 200 205

Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln Trp
210 215 220

Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro
225 230 235 240

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
245 250 255

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
260 265 270

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

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
290 295 300

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
305 310 315 320

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

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
340 345 350

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
355 360 365

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
370 375 380

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
385 390 395 400

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
405 410 415

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
420 425 430

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln
435 440 445

Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
450 455 460

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
465 470 475 480

Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala
485 490 495

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
500 505 510

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
515 520 525

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val Asp
530 535 540

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
545 550 555 560

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Ser
565 570 575

Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
580 585 590

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile
595 600 605

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
610 615 620

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
625 630 635 640

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
645 650 655

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
660 665 670

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
675 680 685

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
690 695 700

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
705 710 715 720

Tyr Leu Thr Arg Asn Leu
725

<210> 438

<211> 727

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 438

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

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

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

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

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

Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

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

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

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

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn
435 440 445

Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 439
<211> 727
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 439

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

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

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

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

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

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

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

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

Ala Asp Gly Val Gly Asn Ala Ser Gly Asp Trp His Cys Asp Ser Thr
210 215 220

Trp Met Gly Asp Arg Val Val Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

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

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

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

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn
435 440 445

Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 440

<211> 735

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 440

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

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

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn 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

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

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 441
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 441

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

Glu Gln Leu Glu Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 442
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 442

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

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

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

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

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 443

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 443

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

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

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

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

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

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

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 444

<211> 735

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 444

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

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

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

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

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn 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 Asn Asn Tyr
690 695 700

Asn Asp Pro Gln Phe Val Asp Phe Ala Pro Asp Ser Thr Gly Glu Tyr
705 710 715 720

Arg Thr Thr Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Pro Leu
725 730 735

<210> 445

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 445

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

Glu Gln Leu Glu Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 446
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 446

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

Glu Gln Leu Glu Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 447

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 447

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

Glu Gln Leu Glu Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Asn Val Ser Tyr Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 448

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 448

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

Glu Gln Leu Glu Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Leu Asn Ser Met Leu Ile Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 449
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 449

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

Glu Gln Leu Glu Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 450

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 450

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

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro
50 55 60

Val Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn
65 70 75 80

Glu Gln Leu Glu Ala 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 Leu Leu Glu Pro
115 120 125

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

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

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

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

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

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

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

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

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

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

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

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

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

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

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Leu Asn Ser Met Leu Ile Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

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

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln
580 585 590

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

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

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

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

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

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

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

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

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 451

<211> 735

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 451

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser Val
450 455 460

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln
660 665 670

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

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

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

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 452

<211> 735

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 452

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

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

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln
660 665 670

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

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

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

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 453

<211> 735

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 453

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser Val
450 455 460

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Asn Val Ser Tyr Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln
660 665 670

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

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

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

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 454
<211> 735
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 454

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

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

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Leu
485 490 495

Asn Ser Met Leu Ile Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln
660 665 670

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

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

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

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 455

<211> 735

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 455

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

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

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

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

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

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

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

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

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

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

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

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

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

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

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

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

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

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

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

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

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser Val
450 455 460

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Asn
485 490 495

Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

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

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

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

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

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln
660 665 670

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

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

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

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 456

<211> 735

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 456

Met Ser Phe Val Asp His Pro Pro Asp Trp Leu Glu Glu Val Gly Glu
1 5 10 15

Gly Leu Arg Glu Phe Leu Gly Leu Glu Ala Gly Pro Pro Lys Pro Lys
20 25 30

Pro Asn Gln Gln His Gln Asp Gln Ala Arg Gly Leu Val Leu Pro Gly
35 40 45

Tyr Asn Tyr Leu Gly Pro Gly Asn Gly Leu Asp Arg Gly Glu Pro Val
50 55 60

Asn Arg Ala Asp Glu Val Ala Arg Glu His Asp Ile Ser Tyr Asn Glu
65 70 75 80

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

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

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

Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg Pro
130 135 140

Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly Lys
145 150 155 160

Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr Gly
165 170 175

Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro Ala
180 185 190

Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly Ala
195 200 205

Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser Ser
210 215 220

Gly Asn Trp His Cys Asp Ser Gln Trp Leu Gly Asp Arg Val Ile Thr
225 230 235 240

Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu Tyr
245 250 255

Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn Ala
260 265 270

Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe
275 280 285

His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn
290 295 300

Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln
305 310 315 320

Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn Asn
325 330 335

Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu Pro
340 345 350

Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp Gly
370 375 380

Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe Pro
385 390 395 400

Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu Phe
405 410 415

Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu Asp
420 425 430

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Lys
435 440 445

Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser Val
450 455 460

Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro Gly
465 470 475 480

Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn Leu
485 490 495

Asn Ser Met Leu Ile Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn Gly
500 505 510

Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys Glu
515 520 525

Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly Lys
530 535 540

Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile Thr
545 550 555 560

Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser Tyr
565 570 575

Gly Gln Val Ala Thr Asn His Gln Ala Asn Tyr Gly Gln Ala Gln Thr
580 585 590

Gly Trp Val Gln Asn Gln Gly Ile 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 Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys
625 630 635 640

His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asp
645 650 655

Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln
660 665 670

Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Lys Lys
675 680 685

Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr
690 695 700

Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val Tyr
705 710 715 720

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 457

<211> 727

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 457

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Phe Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Thr Gly Lys Arg
130 135 140

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

Gln Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp
180 185 190

Thr Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Glu Gly
195 200 205

Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp
275 280 285

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe
325 330 335

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Gly Tyr His Lys Ser Gly
435 440 445

Ala Ala Gln Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 458
<211> 727
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 458

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Phe Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Thr Gly Lys Arg
130 135 140

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

Gln Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp
180 185 190

Thr Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Glu Gly
195 200 205

Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp
275 280 285

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe
325 330 335

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn
435 440 445

Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 459
<211> 727
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 459

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Phe Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Thr Gly Lys Arg
130 135 140

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

Gln Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp
180 185 190

Thr Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Glu Gly
195 200 205

Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp
275 280 285

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe
325 330 335

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Gly Tyr His Lys Ser Gly
435 440 445

Ala Ala Gln Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Asn Val Ser Tyr Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 460

<211> 727

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 460

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Phe Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Thr Gly Lys Arg
130 135 140

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

Gln Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp
180 185 190

Thr Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Glu Gly
195 200 205

Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp
275 280 285

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe
325 330 335

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn
435 440 445

Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Leu Asn Ser Met Leu Ile Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ser Ala Gln Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 461

<211> 727

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 461

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Phe Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Thr Gly Lys Arg
130 135 140

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

Gln Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp
180 185 190

Thr Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Glu Gly
195 200 205

Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp
275 280 285

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe
325 330 335

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Gly Tyr His Lys Ser Gly
435 440 445

Ala Ala Gln Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ala Asn Tyr Gly Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 462
<211> 727
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 462

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Phe Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Thr Gly Lys Arg
130 135 140

Ile Asp Asp His Phe Pro Lys Arg Lys Lys Ala Arg Thr Glu Glu Asp
145 150 155 160

Ser Lys Pro Ser Thr Ser Ser Asp Ala Glu Ala Gly Pro Ser Gly Ser
165 170 175

Gln Gln Leu Gln Ile Pro Ala Gln Pro Ala Ser Ser Leu Gly Ala Asp
180 185 190

Thr Met Ser Ala Gly Gly Gly Gly Pro Leu Gly Asp Asn Asn Glu Gly
195 200 205

Ala Asp Gly Val Gly Ser Ser Ser Gly Asn Trp His Cys Asp Ser Gln
210 215 220

Trp Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu
225 230 235 240

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser
245 250 255

Gly Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp
260 265 270

Gly Tyr Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp
275 280 285

Trp Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu
290 295 300

Asn Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn
305 310 315 320

Gly Val Lys Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe
325 330 335

Thr Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu
340 345 350

Gly Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr
355 360 365

Gly Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser
370 375 380

Phe Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn
385 390 395 400

Asn Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser
405 410 415

Tyr Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp
420 425 430

Gln Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Asn Gly Ser Gly Gln Asn
435 440 445

Gln Gln Thr Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val
450 455 460

Gln Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val
465 470 475 480

Ser Thr Thr Val Thr Gln Asn Leu Asn Ser Met Leu Ile Trp Pro Gly
485 490 495

Ala Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly
500 505 510

Pro Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu
515 520 525

Ser Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Gly Arg Asp Asn Val
530 535 540

Asp Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr
545 550 555 560

Asn Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln
565 570 575

Ala Asn Tyr Gly Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile
580 585 590

Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro
595 600 605

Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro
610 615 620

Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile
625 630 635 640

Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp
645 650 655

Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val
660 665 670

Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro
675 680 685

Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe
690 695 700

Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr
705 710 715 720

Arg Tyr Leu Thr Arg Asn Leu
725

<210> 463
<211> 502
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<220>
<221> misc_feature
<222> (218)..(226)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (263)..(268)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (315)..(319)
<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc_feature

<222> (352)..(355)

<223> Xaa can be any naturally occurring amino acid

<400> 463

Leu Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro
1 5 10 15

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly
20 25 30

Gly Ser Ser Asn Asp Asn Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly
35 40 45

Tyr Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp Trp
50 55 60

Gln Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn
65 70 75 80

Phe Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Asp Asn Asn Gly
85 90 95

Val Lys Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe Thr
100 105 110

Asp Ser Asp Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Glu Gly
115 120 125

Cys Leu Pro Pro Phe Pro Ala Asp Val Phe Met Ile Pro Gln Tyr Gly
130 135 140

Tyr Leu Thr Leu Asn Asp Gly Ser Gln Ala Val Gly Arg Ser Ser Phe
145 150 155 160

Tyr Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn
165 170 175

Phe Gln Phe Ser Tyr Glu Phe Glu Asn Val Pro Phe His Ser Ser Tyr
180 185 190

Ala His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln
195 200 205

Tyr Leu Tyr Tyr Leu Ser Lys Thr Ile Xaa Xaa Xaa Xaa Xaa Xaa Xaa
210 215 220

Xaa Xaa Leu Lys Phe Ser Val Ala Gly Pro Ser Asn Met Ala Val Gln
225 230 235 240

Gly Arg Asn Tyr Ile Pro Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser
245 250 255

Thr Thr Val Thr Gln Asn Xaa Xaa Xaa Xaa Xaa Xaa Trp Pro Gly Ala
260 265 270

Ser Ser Trp Ala Leu Asn Gly Arg Asn Ser Leu Met Asn Pro Gly Pro
275 280 285

Ala Met Ala Ser His Lys Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser
290 295 300

Gly Ser Leu Ile Phe Gly Lys Gln Gly Thr Xaa Xaa Xaa Xaa Xaa Asp
305 310 315 320

Ala Asp Lys Val Met Ile Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn
325 330 335

Pro Val Ala Thr Glu Ser Tyr Gly Gln Val Ala Thr Asn His Gln Xaa
340 345 350

Xaa Xaa Xaa Gln Ala Gln Thr Gly Trp Val Gln Asn Gln Gly Ile Leu
355 360 365

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile

370

375

380

Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro Ser Pro Leu
 385 390 395 400

Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile Leu Ile Lys
 405 410 415

Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys
 420 425 430

Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu
 435 440 445

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu
 450 455 460

Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala
 465 470 475 480

Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg
 485 490 495

Tyr Leu Thr Arg Asn Leu
 500

<210> 464

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 464

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
 1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro

20

25

30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
 35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
 50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
 65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
 115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
 130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
 145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
 165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
 180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
 195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
 210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu

420

425

430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
 435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
 450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
 465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
 485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
 500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
 515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
 530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
 545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
 565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Asn Val Ser Tyr Gln Ala Gln
 580 585 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
 595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
 610 615 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
625 630 635 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
645 650 655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 465
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 465

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
 260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
 275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
 290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
 305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
 325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
 340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
 355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
 370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
 385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
 405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
 420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
 435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Met Val Asn Gln Ala Gln
580 585 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
610 615 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
625 630 635 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala

645

650

655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
 660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
 675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
 690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
 705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
 725 730 735

<210> 466

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 466

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
 1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
 20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
 35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
 50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp

65		70		75		80									
Gln	Gln	Leu	Lys	Ala	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	Leu	Leu	Glu	Pro
		115					120					125			
Leu	Gly	Leu	Val	Glu	Glu	Ala	Ala	Lys	Thr	Ala	Pro	Gly	Lys	Lys	Arg
	130					135					140				
Pro	Val	Glu	Gln	Ser	Pro	Gln	Glu	Pro	Asp	Ser	Ser	Ala	Gly	Ile	Gly
145					150					155					160
Lys	Ser	Gly	Ala	Gln	Pro	Ala	Lys	Lys	Arg	Leu	Asn	Phe	Gly	Gln	Thr
			165						170					175	
Gly	Asp	Thr	Glu	Ser	Val	Pro	Asp	Pro	Gln	Pro	Ile	Gly	Glu	Pro	Pro
			180					185					190		
Ala	Ala	Pro	Ser	Gly	Val	Gly	Ser	Leu	Thr	Met	Ala	Ser	Gly	Gly	Gly
		195					200					205			
Ala	Pro	Val	Ala	Asp	Asn	Asn	Glu	Gly	Ala	Asp	Gly	Val	Gly	Ser	Ser
	210					215					220				
Ser	Gly	Asn	Trp	His	Cys	Asp	Ser	Gln	Trp	Leu	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	Asn	Ser	Thr	Ser	Gly	Gly	Ser	Ser	Asn	Asp	Asn
			260					265					270		

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro

465		470		475		480									
Gly	Pro	Ser	Tyr	Arg	Gln	Gln	Arg	Val	Ser	Thr	Thr	Val	Thr	Gln	Asn
				485					490					495	
Asn	Asn	Ser	Glu	Phe	Ala	Trp	Pro	Gly	Ala	Ser	Ser	Trp	Ala	Leu	Asn
			500					505					510		
Gly	Arg	Asn	Ser	Leu	Met	Asn	Pro	Gly	Pro	Ala	Met	Ala	Ser	His	Lys
		515					520					525			
Glu	Gly	Glu	Asp	Arg	Phe	Phe	Pro	Leu	Ser	Gly	Ser	Leu	Ile	Phe	Gly
	530					535					540				
Lys	Gln	Gly	Thr	Gly	Arg	Asp	Asn	Val	Asp	Ala	Asp	Lys	Val	Met	Ile
545					550					555					560
Thr	Asn	Glu	Glu	Glu	Ile	Lys	Thr	Thr	Asn	Pro	Val	Ala	Thr	Glu	Ser
				565					570					575	
Tyr	Gly	Gln	Val	Ala	Thr	Asn	His	Gln	Asn	Val	Gly	Thr	Gln	Ala	Gln
			580					585					590		
Thr	Gly	Trp	Val	Gln	Asn	Gln	Gly	Ile	Leu	Pro	Gly	Met	Val	Trp	Gln
		595					600					605			
Asp	Arg	Asp	Val	Tyr	Leu	Gln	Gly	Pro	Ile	Trp	Ala	Lys	Ile	Pro	His
	610					615					620				
Thr	Asp	Gly	Asn	Phe	His	Pro	Ser	Pro	Leu	Met	Gly	Gly	Phe	Gly	Met
625					630					635					640
Lys	His	Pro	Pro	Pro	Gln	Ile	Leu	Ile	Lys	Asn	Thr	Pro	Val	Pro	Ala
				645					650					655	
Asp	Pro	Pro	Thr	Ala	Phe	Asn	Lys	Asp	Lys	Leu	Asn	Ser	Phe	Ile	Thr
			660					665					670		

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 467

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 467

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn

290

295

300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
 305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
 325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
 340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
 355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
 370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
 385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
 405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
 420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
 435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
 450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
 465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
 485 490 495

Gln Asp Ala Ser Leu Leu Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
610 615 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
625 630 635 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
645 650 655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn

690

695

700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
 705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
 725 730 735

<210> 468

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein

<400> 468

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
 1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
 20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
 35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
 50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
 65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro

115

120

125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
 130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
 145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
 165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
 180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
 195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
 210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
 260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
 275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
 290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
 305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Gly Met Ser Phe Thr Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys

515

520

525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
 530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
 545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
 565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
 580 585 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
 595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
 610 615 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
 625 630 635 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
 645 650 655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
 660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
 675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
 690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
 705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 469
<211> 9
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 469

Asn Gly Ser Gly Gln Asn Gln Gln Thr
1 5

<210> 470
<211> 18
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 470

Arg Val Ser Thr Thr Val Thr Gln Asn Asn Asn Ser Glu Phe Ala Trp
1 5 10 15

Pro Gly

<210> 471
<211> 14
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 471

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val
1 5 10

<210> 472
<211> 13
<212> PRT
<213> Dependoparvovirus Adeno-associated virus serotype 9

<400> 472

Ala Thr Asn His Gln Ser Ala Gln Ala Gln Thr

1

5

10

<210> 473
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> VR-IV protein motif

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Xaa is Gly or Val

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Xaa is Tyr or Ile

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Xaa is His or Ile

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa is Ser or Ile

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa is Ala or Val

<400> 473

Xaa Xaa Xaa Lys Xaa Gly Xaa Ala Gln
1 5

<210> 474
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> VR-V protein motif

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Xaa is Ser, Leu, His, Asn or Ala

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Xaa is Thr, Met, Lys, Gly or Asn

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Xaa is Ser, Thr, Met or Ile

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa is Ser, Pro, Phe, Met or Asn

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa is Phe, Ser, Pro or Leu

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Xaa is Ile, Val or Thr

<400> 474

Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 475
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> VR-VII protein motif

<220>
<221> MISC_FEATURE
<222> (1)..(1)

<223> Xaa is Val, Leu, Gln, Cys or Arg

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Xaa is Ser, His, Gly, Cys or Asp

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Xaa is Tyr, Ser, Leu, Gly or Asn

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa is Ser, Leu, His, Gln or Asn

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Xaa is Val, Ile or Arg

<400> 475

Xaa Xaa Xaa Xaa Xaa

1

5

<210> 476

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> VR-VIII protein motif

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Xaa is Ser, Asn or Ala

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Xaa is Val, Met, Asn or Ala

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Xaa is Tyr, Val, Ser or Gly

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa is Tyr, Thr, Met, Gly or Asn

<400> 476

Xaa Xaa Xaa Xaa

1

<210> 477

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> VR-IV variant

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Xaa is Gly, Ser or Val

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Xaa is Tyr, Gln or Ile

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Xaa is His, Trp, Val or Ile

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa is Lys or Asn

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Xaa is Ser, Gly or Ile

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Xaa is Gly or Arg

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Xaa is Ala, Pro or Val

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Xaa is Ala or Arg

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> Xaa is Gln or Asp

<400> 477

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 478

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> VR-IV variant

<220>

<221> MISC_FEATURE

<222> (1)..(11)

<223> Xaa is any amino acid

<220>

<221> MISC_FEATURE

<222> (8)..(11)

<223> Xaa may be present or up to 4 residues may be absent

<400> 478

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10

<210> 479

<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> VR-V variant

<220>
<221> MISC_FEATURE
<222> (1)..(8)
<223> Xaa is any amino acid

<220>
<221> MISC_FEATURE
<222> (5)..(8)
<223> Xaa may be present or up to 4 residues may be absent

<400> 479

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 480
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> VR-VII variant

<220>
<221> MISC_FEATURE
<222> (1)..(7)
<223> Xaa is any amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(7)
<223> Xaa may be present or up to 4 residues may be absent

<400> 480

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 481
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> VR-VIII variant

<220>
<221> MISC_FEATURE
<222> (1)..(6)
<223> Xaa is any amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(6)
<223> Xaa may be present or up to 4 residues may be absent

<400> 481

Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 482
<211> 745
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein

<400> 482

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ser Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp

65		70		75		80									
Gln	Gln	Leu	Lys	Ala	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	Leu	Leu	Glu	Pro
		115					120					125			
Leu	Gly	Leu	Val	Glu	Glu	Ala	Ala	Lys	Thr	Ala	Pro	Gly	Lys	Lys	Arg
	130					135					140				
Pro	Val	Glu	Gln	Ser	Pro	Gln	Glu	Pro	Asp	Ser	Ser	Ala	Gly	Ile	Gly
145					150					155					160
Lys	Ser	Gly	Ala	Gln	Pro	Ala	Lys	Lys	Arg	Leu	Asn	Phe	Gly	Gln	Thr
				165					170					175	
Gly	Asp	Thr	Glu	Ser	Val	Pro	Asp	Pro	Gln	Pro	Ile	Gly	Glu	Pro	Pro
			180					185					190		
Ala	Ala	Pro	Ser	Gly	Val	Gly	Ser	Leu	Thr	Met	Ala	Ser	Gly	Gly	Gly
		195					200					205			
Ala	Pro	Val	Ala	Asp	Asn	Asn	Glu	Gly	Ala	Asp	Gly	Val	Gly	Ser	Ser
	210					215					220				
Ser	Gly	Asn	Trp	His	Cys	Asp	Ser	Gln	Trp	Leu	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	Asn	Ser	Thr	Ser	Gly	Gly	Ser	Ser	Asn	Asp	Asn
			260					265					270		

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro

465		470		475		480									
Gly	Pro	Ser	Tyr	Arg	Gln	Gln	Arg	Val	Ser	Thr	Thr	Val	Thr	Gln	Asn
				485					490					495	
Asn	Asn	Ser	Glu	Phe	Ala	Trp	Pro	Gly	Ala	Ser	Ser	Trp	Ala	Leu	Asn
			500					505					510		
Gly	Arg	Asn	Ser	Leu	Met	Asn	Pro	Gly	Pro	Ala	Met	Ala	Ser	His	Lys
		515					520					525			
Glu	Gly	Glu	Asp	Arg	Phe	Phe	Pro	Leu	Ser	Gly	Ser	Leu	Ile	Phe	Gly
	530					535					540				
Lys	Gln	Gly	Thr	Gly	Arg	Asp	Asn	Val	Asp	Ala	Asp	Lys	Val	Met	Ile
545					550					555					560
Thr	Asn	Glu	Glu	Glu	Ile	Lys	Thr	Thr	Asn	Pro	Val	Ala	Thr	Glu	Ser
				565					570					575	
Tyr	Gly	Gln	Val	Ala	Thr	Asn	His	Gln	Ser	Ala	Gln	Ala	Gln	Ser	Ala
			580					585					590		
Ser	Asn	Val	Asn	Ala	Ala	Gln	Ala	Gln	Thr	Gly	Trp	Val	Gln	Asn	Gln
		595					600					605			
Gly	Ile	Leu	Pro	Gly	Met	Val	Trp	Gln	Asp	Arg	Asp	Val	Tyr	Leu	Gln
	610					615					620				
Gly	Pro	Ile	Trp	Ala	Lys	Ile	Pro	His	Thr	Asp	Gly	Asn	Phe	His	Pro
625					630					635					640
Ser	Pro	Leu	Met	Gly	Gly	Phe	Gly	Met	Lys	His	Pro	Pro	Pro	Gln	Ile
				645					650					655	
Leu	Ile	Lys	Asn	Thr	Pro	Val	Pro	Ala	Asp	Pro	Pro	Thr	Ala	Phe	Asn
			660					665					670		

Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val
675 680 685

Ser Val Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp
690 695 700

Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val
705 710 715 720

Glu Phe Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile
725 730 735

Gly Thr Arg Tyr Leu Thr Arg Asn Leu
740 745

<210> 483
<211> 745
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant AAV capsid protein.

<400> 483

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ser Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg

275

280

285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Ala Ala Ser
580 585 590

Pro Thr Thr Thr Ala Ala Gln Ala Gln Thr Gly Trp Val Gln Asn Gln
595 600 605

Gly Ile Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln
610 615 620

Gly Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn Phe His Pro
625 630 635 640

Ser Pro Leu Met Gly Gly Phe Gly Met Lys His Pro Pro Pro Gln Ile
645 650 655

Leu Ile Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr Ala Phe Asn
660 665 670

Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val

675

680

685

Ser Val Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp
 690 695 700

Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser Asn Asn Val
 705 710 715 720

Glu Phe Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro Arg Pro Ile
 725 730 735

Gly Thr Arg Tyr Leu Thr Arg Asn Leu
 740 745

<210> 484

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein.

<400> 484

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
 1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
 20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
 35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
 50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
 65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
 115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
 130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
 145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
 165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
 180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
 195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
 210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
 260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
 275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Thr Ser Thr Thr Asp Thr Gln Asn

485

490

495

Asn Asn Ser Glu Phe Ala Trp Pro Ala Ala Ser Ser Trp Ala Leu Asn
 500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
 515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
 530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
 545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
 565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
 580 585 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
 595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
 610 615 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
 625 630 635 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
 645 650 655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
 660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
 675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 485

<211> 736

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant AAV capsid protein.

<400> 485

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala 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 Leu Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu 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 Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile

305		310		315		320
Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn						
		325		330		335
Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu						
		340		345		350
Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro						
		355		360		365
Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp						
		370		375		380
Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe						
385		390		395		400
Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu						
		405		410		415
Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu						
		420		425		430
Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser						
		435		440		445
Lys Thr Ile Gly Tyr His Lys Ser Gly Ala Ala Gln Leu Lys Phe Ser						
		450		455		460
Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro						
465		470		475		480
Gly Pro Ser Tyr Arg Gln Gln Val Val Ser Gly Asp Asp Thr Gln Asp						
		485		490		495
Ala Gly Leu Glu Leu Asn Ile Ala Gly Ala Ser Ser Trp Ala Leu Asn						
		500		505		510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
610 615 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
625 630 635 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
645 650 655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val

705

710

715

720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735