

SEQUENCE LISTING

<110> NOUSCOM

<120> GREAT APES ADENOVIRUS NUCLEIC ACID- AND AMINO ACID-SEQUENCES,
VECTORS CONTAINING SAME, AND USES THEREOF

<130> 854-10 PCT

<150> EP17179825.9

<151> 2017-07-05

<160> 74

<170> PatentIn version 3.5

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<211> 37184

<212> DNA

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<210> 34
<211> 7
<212> PRT
<213> Great Ape Adenovirus
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<400> 34

Asn Glu Ala Asp Ala Ala Val
1 5

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<210> 35
<211> 12
<212> PRT
<213> Great Ape Adenovirus
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<400> 35

Met Val Ala Asn Glu Lys Gly Val Leu Gln Ser Lys
1 5 10

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<210> 36
<211> 15
<212> PRT
<213> Great Ape Adenovirus
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<400> 36

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

<210> 37
 <211> 9
 <212> PRT
 <213> Great Ape Adenovirus

<400> 37

Thr Lys Asp Asp Val Asn Ala Lys Val
 1 5

<210> 38
 <211> 26
 <212> PRT
 <213> Great Ape Adenovirus

<400> 38

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

Trp Thr Lys Asp Asp Gln Phe Ala Asp Arg
 20 25

<210> 39
 <211> 29
 <212> PRT
 <213> Great Ape Adenovirus

<400> 39

Glu Gln Glu Glu Asn Gln Val Val Ala Ala Asp Asp Glu Leu Glu Asp
 1 5 10 15

Glu Glu Ala Gln Ala Gln Glu Glu Ala Pro Val Lys Lys
 20 25

<210> 40
 <211> 15
 <212> PRT
 <213> Great Ape Adenovirus

<400> 40

Leu Gln Ile Gly Thr Glu Val Val Gly Asp Thr Ser Lys Asp Thr
 1 5 10 15

<210> 41
 <211> 7
 <212> PRT
 <213> Great Ape Adenovirus

<400> 41

Asn Glu Ala Asp Ala Thr Val
 1 5

<210> 42
 <211> 12
 <212> PRT
 <213> Great Ape Adenovirus

<400> 42

Met Val Ala Asn Glu Gln Gly Val Leu Glu Ser Lys
 1 5 10

<210> 43
 <211> 15
 <212> PRT
 <213> Great Ape Adenovirus

<400> 43

Asn Thr Thr Thr Leu Asn Ala Arg Asp Gly Thr Gly Asn Pro Glu
 1 5 10 15

<210> 44
 <211> 9
 <212> PRT
 <213> Great Ape Adenovirus

<400> 44

Lys Lys Asp Asp Val Asn Ala Lys Ile
 1 5

<210> 45
 <211> 26
 <212> PRT
 <213> Great Ape Adenovirus

<400> 45

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

Trp Thr Lys Asp Asp Gln Phe Ala Asp Arg
 20 25

<210> 46

<211> 955

<212> PRT

<213> Great Ape Adenovirus

<400> 46

Met Ala Thr Pro Ser Met Met Pro Gln Trp Ser Tyr Met His Ile Ser
 1 5 10 15

Gly Gln Asp Ala Ser Glu Tyr Leu Ser Pro Gly Leu Val Gln Phe Ala
 20 25 30

Arg Ala Thr Asp Thr Tyr Phe Asn Met Ser Asn Lys Phe Arg Asn Pro
 35 40 45

Thr Val Ala Pro Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu
 50 55 60

Thr Leu Arg Phe Ile Pro Val Asp Arg Glu Asp Thr Ala Tyr Ser Tyr
 65 70 75 80

Lys Ala Arg Phe Thr Leu Ala Val Gly Asp Asn Arg Val Leu Asp Met
 85 90 95

Ala Ser Thr Tyr Phe Asp Ile Arg Gly Val Leu Asp Arg Gly Pro Thr
 100 105 110

Phe Lys Pro Tyr Ser Gly Thr Ala Tyr Asn Pro Leu Ala Pro Lys Gly
 115 120 125

Ala Pro Asn Ser Cys Glu Trp Glu Gln Glu Glu Asn Gln Val Val Ala
 130 135 140

Ala Asp Asp Glu Leu Glu Asp Glu Glu Ala Gln Ala Gln Glu Glu Ala
 145 150 155 160

Pro Val Lys Lys Ile His Val Tyr Ala Gln Ala Pro Leu Ser Gly Glu
 165 170 175

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

Thr Ser Lys Asp Thr Phe Ala Asp Lys Thr Phe Gln Pro Glu Pro Gln
 195 200 205

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

Arg Val Leu Lys Lys Thr Thr Pro Met Arg Pro Cys Tyr Gly Ser Tyr
 225 230 235 240

Ala Arg Pro Thr Asn Ala Asn Gly Gly Gln Gly Ile Met Val Ala Asn
 245 250 255

Glu Gln Gly Val Leu Glu Ser Lys Val Glu Met Gln Phe Phe Ser Asn
 260 265 270

Thr Thr Thr Leu Asn Ala Arg Asp Gly Thr Gly Asn Pro Glu Pro Lys
 275 280 285

Val Val Leu Tyr Ser Glu Asp Val His Leu Glu Ser Pro Asp Thr His
 290 295 300

Leu Ser Tyr Lys Pro Lys Lys Asp Asp Val Asn Ala Lys Ile Met Leu
 305 310 315 320

Gly Gln Gln Ala Met Pro Asn Arg Pro Asn Leu Ile Gly Phe Arg Asp
 325 330 335

Asn Phe Ile Gly Leu Met Phe Tyr Asn Ser Thr Gly Asn Met Gly Val
 340 345 350

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

Arg Asn Thr Glu Leu Ser Tyr Gln Leu Leu Leu Asp Ser Ile Gly Asp
 370 375 380

Arg Thr Arg Tyr Phe Ser Met Trp Asn Gln Ala Val Asp Ser Tyr Asp
 385 390 395 400

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

Asn Tyr Cys Phe Pro Leu Gly Gly Ile Gly Val Thr Asp Thr Tyr Gln
 420 425 430

Gly Ile Lys Asn Thr Asn Gly Asn Gly Gln Trp Thr Lys Asp Asp Gln
 435 440 445

Phe Ala Asp Arg Asn Glu Ile Gly Val Gly Asn Asn Phe Ala Met Glu
 450 455 460

Ile Asn Ile Gln Ala Asn Leu Trp Arg Asn Phe Leu Tyr Ala Asn Val
 465 470 475 480

Gly Leu Tyr Leu Pro Asp Lys Leu Lys Tyr Asn Pro Thr Asn Val Asp
 485 490 495

Ile Ser Asp Asn Pro Asn Thr Tyr Asp Tyr Met Asn Lys Arg Val Val
 500 505 510

Ala Pro Gly Leu Val Asp Cys Phe Val Asn Val Gly Ala Arg Trp Ser
 515 520 525

Leu Asp Tyr Met Asp Asn Val Asn Pro Phe Asn His His Arg Asn Ala
 530 535 540

Gly Leu Arg Tyr Arg Ser Met Ile Leu Gly Asn Gly Arg Tyr Val Pro
 545 550 555 560

Phe His Ile Gln Val Pro Gln Lys Phe Phe Ala Ile Lys Asn Leu Leu
 565 570 575

Leu Leu Pro Gly Ser Tyr Thr Tyr Glu Trp Asn Phe Arg Lys Asp Val
 580 585 590

Asn Met Val Leu Gln Ser Ser Leu Gly Asn Asp Leu Arg Val Asp Gly
 595 600 605

Ala Ser Ile Lys Phe Asp Ser Ile Thr Leu Tyr Ala Thr Phe Phe Pro
 610 615 620

Met Ala His Asn Thr Ala Ser Thr Leu Glu Ala Met Leu Arg Asn Asp
 625 630 635 640

Thr Asn Asp Gln Ser Phe Asn Asp Tyr Leu Ser Gly Ala Asn Met Leu
 645 650 655

Tyr Pro Ile Pro Ala Lys Ala Thr Asn Val Pro Ile Ser Ile Pro Ser
 660 665 670

Arg Asn Trp Ala Ala Phe Arg Gly Trp Ala Phe Thr Arg Leu Lys Thr
 675 680 685

Lys Glu Thr Pro Ser Leu Gly Ser Gly Phe Asp Pro Tyr Phe Val Tyr
 690 695 700

Ser Gly Ser Ile Pro Tyr Leu Asp Gly Thr Phe Tyr Leu Asn His Thr
 705 710 715 720

Phe Lys Lys Ile Ser Ile Met Tyr Asp Ser Ser Val Ser Trp Pro Gly
 725 730 735

Asn Asp Arg Leu Leu Thr Pro Asn Glu Phe Glu Val Lys Arg Ala Val
 740 745 750

Asp Gly Glu Gly Tyr Asn Val Ala Gln Cys Asn Met Thr Lys Asp Trp
 755 760 765

Phe Leu Val Gln Met Leu Ala Asn Tyr Asn Ile Gly Tyr Gln Gly Phe
 770 775 780

Tyr Ile Pro Glu Ser Tyr Lys Asp Arg Met Tyr Ser Phe Phe Arg Asn
 785 790 795 800

Phe Gln Pro Met Ser Arg Gln Val Val Asp Glu Thr Asn Tyr Lys Asp
 805 810 815

Tyr Gln Ala Ile Gly Ile Thr His Gln His Asn Asn Ser Gly Phe Val
 820 825 830

Gly Tyr Leu Ala Pro Thr Met Arg Glu Gly Gln Ala Tyr Pro Ala Asn
 835 840 845

Phe Pro Tyr Pro Leu Ile Gly Lys Thr Ala Val Asp Ser Val Thr Gln
 850 855 860

Lys Lys Phe Leu Cys Asp Arg Thr Leu Trp Arg Ile Pro Phe Ser Ser
 865 870 875 880

Asn Phe Met Ser Met Gly Ala Leu Thr Asp Leu Gly Gln Asn Leu Leu
 885 890 895

Tyr Ala Asn Ser Ala His Ala Leu Asp Met Thr Phe Glu Val Asp Pro
 900 905 910

Met Asp Glu Pro Thr Leu Leu Tyr Ile Val Phe Glu Val Phe Asp Val
 915 920 925

Val Arg Val His Gln Pro His Arg Gly Val Ile Glu Thr Val Tyr Leu
 930 935 940

Arg Thr Pro Phe Ser Ala Gly Asn Ala Thr Thr
 945 950 955

<210> 47
 <211> 955
 <212> PRT
 <213> Great Ape Adenovirus

<400> 47

Met Ala Thr Pro Ser Met Met Pro Gln Trp Ser Tyr Met His Ile Ser
 1 5 10 15

Gly Gln Asp Ala Ser Glu Tyr Leu Ser Pro Gly Leu Val Gln Phe Ala
 20 25 30

Arg Ala Thr Asp Thr Tyr Phe Asn Met Ser Asn Lys Phe Arg Asn Pro
 35 40 45

Thr Val Ala Pro Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu
 50 55 60

Thr Leu Arg Phe Ile Pro Val Asp Arg Glu Asp Thr Ala Tyr Ser Tyr
 65 70 75 80

Lys Ala Arg Phe Thr Leu Ala Val Gly Asp Asn Arg Val Leu Asp Met
 85 90 95

Ala Ser Thr Tyr Phe Asp Ile Arg Gly Val Leu Asp Arg Gly Pro Thr
 100 105 110

Phe Lys Pro Tyr Ser Gly Thr Ala Tyr Asn Pro Leu Ala Pro Lys Gly
 115 120 125

Ala Pro Asn Ser Cys Glu Trp Glu Gln Glu Glu Asn Gln Val Glu Ala
 130 135 140

Ala Asp Glu Asp Val Glu Asp Glu Glu Ala Gln Ala Gln Glu Glu Ala
 145 150 155 160

Pro Val Lys Lys Ile His Val Tyr Ala Gln Ala Pro Leu Ala Gly Glu
 165 170 175

Lys Ile Thr Lys Asp Gly Leu Gln Ile Gly Thr Glu Val Val Gly Glu
 180 185 190

Thr Ser Lys Asp Thr Phe Ala Asp Lys Thr Phe Gln Pro Glu Pro Gln
 195 200 205

Ile Gly Glu Ser Gln Trp Asn Glu Ala Asp Ala Ala Val Ala Gly Gly
 210 215 220

Arg Val Leu Lys Lys Thr Thr Pro Met Arg Pro Cys Tyr Gly Ser Tyr
 225 230 235 240

Ala Arg Pro Thr Asn Ala Asn Gly Gly Gln Gly Ile Leu Val Ala Asn
 245 250 255

Glu Gln Gly Val Met Glu Ser Lys Val Glu Met Gln Phe Phe Ser Asn
 260 265 270

Thr Ser Thr Leu Asn Ala Arg Asp Gly Thr Gly Asn Pro Glu Pro Lys
 275 280 285

Val Val Leu Tyr Ser Glu Asp Val His Leu Glu Ser Pro Asp Thr His
 290 295 300

Leu Ser Tyr Lys Pro Lys Lys Asp Asp Val Asn Ala Lys Val Met Leu
 305 310 315 320

Gly Gln Gln Ala Met Pro Asn Arg Pro Asn Leu Ile Gly Phe Arg Asp
 325 330 335

Asn Phe Ile Gly Leu Met Phe Tyr Asn Ser Thr Gly Asn Met Gly Val

340

345

350

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

Arg Asn Thr Glu Leu Ser Tyr Gln Leu Met Leu Asp Ser Ile Gly Asp
 370 375 380

Arg Thr Arg Tyr Phe Ser Met Trp Asn Gln Ala Val Asp Ser Tyr Asp
 385 390 395 400

Pro Asp Val Arg Ile Ile Glu Asn His Gly Val Glu Asp Glu Leu Pro
 405 410 415

Asn Tyr Cys Phe Pro Leu Gly Gly Ile Gly Ile Thr Asp Thr Tyr Gln
 420 425 430

Gly Val Lys Asn Thr Asn Gly Asn Gly Gln Trp Thr Lys Asp Asp Gln
 435 440 445

Phe Ala Asp Arg Asn Glu Ile Gly Val Gly Asn Asn Phe Ala Met Glu
 450 455 460

Ile Asn Ile Gln Ala Asn Leu Trp Arg Asn Phe Leu Tyr Ala Asn Val
 465 470 475 480

Gly Leu Tyr Leu Pro Asp Lys Leu Lys Tyr Asn Pro Thr Asn Val Asp
 485 490 495

Ile Ser Asp Asn Pro Asn Thr Tyr Asp Tyr Met Asn Lys Arg Val Val
 500 505 510

Ala Pro Gly Leu Val Asp Cys Phe Val Asn Val Gly Ala Arg Trp Ser
 515 520 525

Leu Asp Tyr Met Asp Asn Val Asn Pro Phe Asn His His Arg Asn Ala
 530 535 540

Gly Leu Arg Tyr Arg Ser Met Ile Leu Gly Asn Gly Arg Tyr Val Pro
 545 550 555 560

Phe His Ile Gln Val Pro Gln Lys Phe Phe Ala Ile Lys Asn Leu Leu
 565 570 575

Leu Leu Pro Gly Ser Tyr Thr Tyr Glu Trp Asn Phe Arg Lys Asp Val
 580 585 590

Asn Met Val Leu Gln Ser Ser Leu Gly Asn Asp Leu Arg Val Asp Gly
 595 600 605

Ala Ser Ile Lys Phe Asp Ser Ile Thr Leu Tyr Ala Thr Phe Phe Pro
 610 615 620

Met Ala His Asn Thr Ala Ser Thr Leu Glu Ala Met Leu Arg Asn Asp
 625 630 635 640

Thr Asn Asp Gln Ser Phe Asn Asp Tyr Leu Ser Gly Ala Asn Met Leu
 645 650 655

Tyr Pro Ile Pro Ala Lys Ala Thr Asn Val Pro Ile Ser Ile Pro Ser
 660 665 670

Arg Asn Trp Ala Ala Phe Arg Gly Trp Ala Phe Thr Arg Leu Lys Thr
 675 680 685

Lys Glu Thr Pro Ser Leu Gly Ser Gly Phe Asp Pro Tyr Phe Val Tyr
 690 695 700

Ser Gly Ser Ile Pro Tyr Leu Asp Gly Thr Phe Tyr Leu Asn His Thr
 705 710 715 720

Phe Lys Lys Ile Ser Ile Met Tyr Asp Ser Ser Val Ser Trp Pro Gly
 725 730 735

Asn Asp Arg Leu Leu Thr Pro Asn Glu Phe Glu Val Lys Arg Ala Val

740

745

750

Asp Gly Glu Gly Tyr Asn Val Ala Gln Cys Asn Met Thr Lys Asp Trp
 755 760 765

Phe Leu Val Gln Met Leu Ala Asn Tyr Asn Ile Gly Tyr Gln Gly Phe
 770 775 780

Tyr Ile Pro Glu Ser Tyr Lys Asp Arg Met Tyr Ser Phe Phe Arg Asn
 785 790 795 800

Phe Gln Pro Met Ser Arg Gln Val Val Asp Glu Thr Asn Tyr Lys Asp
 805 810 815

Tyr Gln Ala Ile Gly Ile Thr His Gln His Asn Asn Ser Gly Phe Val
 820 825 830

Gly Tyr Leu Ala Pro Thr Met Arg Glu Gly Gln Ala Tyr Pro Ala Asn
 835 840 845

Phe Pro Tyr Pro Leu Ile Gly Lys Thr Ala Val Asp Ser Val Thr Gln
 850 855 860

Lys Lys Phe Leu Cys Asp Arg Thr Leu Trp Arg Ile Pro Phe Ser Ser
 865 870 875 880

Asn Phe Met Ser Met Gly Ala Leu Thr Asp Leu Gly Gln Asn Leu Leu
 885 890 895

Tyr Ala Asn Ser Ala His Ala Leu Asp Met Thr Phe Glu Val Asp Pro
 900 905 910

Met Asp Glu Pro Thr Leu Leu Tyr Ile Val Phe Glu Val Phe Asp Val
 915 920 925

Val Arg Val His Gln Pro His Arg Gly Val Ile Glu Thr Val Tyr Leu
 930 935 940

Arg Thr Pro Phe Ser Ala Gly Asn Ala Thr Thr
 945 950 955

<210> 48
 <211> 956
 <212> PRT
 <213> Great Ape Adenovirus

<400> 48

Met Ala Thr Pro Ser Met Met Pro Gln Trp Ser Tyr Met His Ile Ser
 1 5 10 15

Gly Gln Asp Ala Ser Glu Tyr Leu Ser Pro Gly Leu Val Gln Phe Ala
 20 25 30

Arg Ala Thr Asp Thr Tyr Phe Asn Met Ser Asn Lys Phe Arg Asn Pro
 35 40 45

Thr Val Ala Pro Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu
 50 55 60

Thr Leu Arg Phe Ile Pro Val Asp Arg Glu Asp Thr Ala Tyr Ser Tyr
 65 70 75 80

Lys Ala Arg Phe Thr Leu Ala Val Gly Asp Asn Arg Val Leu Asp Met
 85 90 95

Ala Ser Thr Tyr Phe Asp Ile Arg Gly Val Leu Asp Arg Gly Pro Thr
 100 105 110

Phe Lys Pro Tyr Ser Gly Thr Ala Tyr Asn Pro Leu Ala Pro Lys Gly
 115 120 125

Ala Pro Asn Ser Cys Glu Trp Glu Gln Glu Glu Asn Gln Val Val Ala
 130 135 140

Ala Asp Glu Asp Leu Glu Glu Asp Glu Glu Ala Gln Ala Glu Glu Gln
 145 150 155 160

Ala Pro Val Lys Lys Ile His Val Tyr Ala Gln Ala Pro Leu Ala Gly
 165 170 175

Glu Lys Ile Thr Lys Asp Gly Leu Gln Ile Gly Thr Glu Val Val Gly
 180 185 190

Asp Thr Ser Lys Asp Thr Phe Ala Asp Lys Thr Phe Gln Pro Glu Pro
 195 200 205

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

Gly Arg Val Leu Lys Lys Thr Thr Pro Met Arg Pro Cys Tyr Gly Ser
 225 230 235 240

Tyr Ala Arg Pro Thr Asn Ala Asn Gly Gly Gln Gly Ile Met Val Ala
 245 250 255

Asn Glu Gln Gly Val Leu Gln Ser Lys Val Glu Met Gln Phe Phe Ser
 260 265 270

Asn Thr Ser Thr Leu Asn Ala Arg Asp Gly Thr Gly Asn Pro Glu Pro
 275 280 285

Lys Val Val Leu Tyr Ser Glu Asp Val His Leu Glu Ser Pro Asp Thr
 290 295 300

His Leu Ser Tyr Lys Pro Lys Lys Asp Asp Val Asn Ala Lys Val Met
 305 310 315 320

Leu Gly Gln Gln Ala Met Pro Asn Arg Pro Asn Leu Ile Gly Phe Arg
 325 330 335

Asp Asn Phe Ile Gly Leu Met Phe Tyr Asn Ser Thr Gly Asn Met Gly
 340 345 350

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

Asp Arg Asn Thr Glu Leu Ser Tyr Gln Leu Met Leu Asp Ser Ile Gly
 370 375 380

Asp Arg Thr Arg Tyr Phe Ser Met Trp Asn Gln Ala Val Asp Ser Tyr
 385 390 395 400

Asp Pro Asp Val Arg Ile Ile Glu Asn His Gly Val Glu Asp Glu Leu
 405 410 415

Pro Asn Tyr Cys Phe Pro Leu Gly Gly Ile Gly Ile Thr Asp Thr Tyr
 420 425 430

Gln Gly Val Lys Asn Ser Asn Gly Asn Gly Gln Trp Thr Lys Asp Asp
 435 440 445

Gln Phe Ala Asp Arg Asn Glu Ile Gly Val Gly Asn Asn Phe Ala Met
 450 455 460

Glu Ile Asn Ile Gln Ala Asn Leu Trp Arg Asn Phe Leu Tyr Ala Asn
 465 470 475 480

Val Gly Leu Tyr Leu Pro Asp Lys Leu Lys Tyr Asn Pro Thr Asn Val
 485 490 495

Asp Ile Ser Asp Asn Pro Asn Thr Tyr Asp Tyr Met Asn Lys Arg Val
 500 505 510

Val Ala Pro Gly Leu Val Asp Cys Phe Val Asn Val Gly Ala Arg Trp
 515 520 525

Ser Leu Asp Tyr Met Asp Asn Val Asn Pro Phe Asn His His Arg Asn
 530 535 540

Ala Gly Leu Arg Tyr Arg Ser Met Ile Leu Gly Asn Gly Arg Tyr Val
 545 550 555 560

Pro Phe His Ile Gln Val Pro Gln Lys Phe Phe Ala Ile Lys Asn Leu
 565 570 575

Leu Leu Leu Pro Gly Ser Tyr Thr Tyr Glu Trp Asn Phe Arg Lys Asp
 580 585 590

Val Asn Met Val Leu Gln Ser Ser Leu Gly Asn Asp Leu Arg Val Asp
 595 600 605

Gly Ala Ser Ile Lys Phe Asp Ser Ile Thr Leu Tyr Ala Thr Phe Phe
 610 615 620

Pro Met Ala His Asn Thr Ala Ser Thr Leu Glu Ala Met Leu Arg Asn
 625 630 635 640

Asp Thr Asn Asp Gln Ser Phe Asn Asp Tyr Leu Ser Gly Ala Asn Met
 645 650 655

Leu Tyr Pro Ile Pro Ala Lys Ala Thr Asn Val Pro Ile Ser Ile Pro
 660 665 670

Ser Arg Asn Trp Ala Ala Phe Arg Gly Trp Ala Phe Thr Arg Leu Lys
 675 680 685

Thr Lys Glu Thr Pro Ser Leu Gly Ser Gly Phe Asp Pro Tyr Phe Val
 690 695 700

Tyr Ser Gly Ser Ile Pro Tyr Leu Asp Gly Thr Phe Tyr Leu Asn His
 705 710 715 720

Thr Phe Lys Lys Ile Ser Ile Met Tyr Asp Ser Ser Val Ser Trp Pro
 725 730 735

Gly Asn Asp Arg Leu Leu Thr Pro Asn Glu Phe Glu Val Lys Arg Ala
 740 745 750

Val Asp Gly Glu Gly Tyr Asn Val Ala Gln Cys Asn Met Thr Lys Asp
 755 760 765

Trp Phe Leu Val Gln Met Leu Ala Asn Tyr Asn Ile Gly Tyr Gln Gly
 770 775 780

Phe Tyr Ile Pro Glu Ser Tyr Lys Asp Arg Met Tyr Ser Phe Phe Arg
 785 790 795 800

Asn Phe Gln Pro Met Ser Arg Gln Val Val Asp Glu Thr Asn Tyr Lys
 805 810 815

Asp Tyr Gln Ala Ile Gly Ile Thr His Gln His Asn Asn Ser Gly Phe
 820 825 830

Val Gly Tyr Leu Ala Pro Thr Met Arg Glu Gly Gln Ala Tyr Pro Ala
 835 840 845

Asn Phe Pro Tyr Pro Leu Ile Gly Lys Thr Ala Val Asp Ser Val Thr
 850 855 860

Gln Lys Lys Phe Leu Cys Asp Arg Thr Leu Trp Arg Ile Pro Phe Ser
 865 870 875 880

Ser Asn Phe Met Ser Met Gly Ala Leu Thr Asp Leu Gly Gln Asn Leu
 885 890 895

Leu Tyr Ala Asn Ser Ala His Ala Leu Asp Met Thr Phe Glu Val Asp
 900 905 910

Pro Met Asp Glu Pro Thr Leu Leu Tyr Ile Val Phe Glu Val Phe Asp
 915 920 925

Val Val Arg Val His Gln Pro His Arg Gly Val Ile Glu Thr Val Tyr
 930 935 940

Leu Arg Thr Pro Phe Ser Ala Gly Asn Ala Thr Thr
 945 950 955

<210> 49
 <211> 957
 <212> PRT
 <213> Great Ape Adenovirus

<400> 49

Met Ala Thr Pro Ser Met Met Pro Gln Trp Ser Tyr Met His Ile Ser
 1 5 10 15

Gly Gln Asp Ala Ser Glu Tyr Leu Ser Pro Gly Leu Val Gln Phe Ala
 20 25 30

Arg Ala Thr Asp Thr Tyr Phe Asn Met Ser Asn Lys Phe Arg Asn Pro
 35 40 45

Thr Val Ala Pro Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu
 50 55 60

Thr Leu Arg Phe Ile Pro Val Asp Arg Glu Asp Thr Ala Tyr Ser Tyr
 65 70 75 80

Lys Ala Arg Phe Thr Leu Ala Val Gly Asp Asn Arg Val Leu Asp Met
 85 90 95

Ala Ser Thr Tyr Phe Asp Ile Arg Gly Val Leu Asp Arg Gly Pro Thr
 100 105 110

Phe Lys Pro Tyr Ser Gly Thr Ala Tyr Asn Pro Leu Ala Pro Lys Gly
 115 120 125

Ala Pro Asn Ser Cys Glu Trp Glu Gln Glu Glu Thr Gln Ala Ala Glu
 130 135 140

Glu Ala Val Asp Glu Glu Asp Ala Glu Asp Glu Ala Gln Pro Gln Glu
 145 150 155 160

Glu Ala Pro Val Lys Lys Ile His Val Tyr Ala Gln Ala Pro Leu Ala

165

170

175

Gly Glu Lys Ile Thr Lys Asp Gly Leu Gln Ile Gly Thr Glu Val Val
 180 185 190

Gly Asp Thr Ser Lys Asp Thr Phe Ala Asp Lys Thr Phe Gln Pro Glu
 195 200 205

Pro Gln Ile Gly Glu Ser Gln Trp Asn Glu Ala Asp Ala Ala Val Ala
 210 215 220

Gly Gly Arg Val Leu Lys Lys Thr Thr Pro Met Arg Pro Cys Tyr Gly
 225 230 235 240

Ser Tyr Ala Arg Pro Thr Asn Ala Asn Gly Gly Gln Gly Ile Met Val
 245 250 255

Ala Asn Glu Lys Gly Val Leu Gln Ser Lys Val Glu Met Gln Phe Phe
 260 265 270

Ser Asn Thr Ser Thr Leu Asn Ala Arg Asp Gly Thr Gly Asn Pro Glu
 275 280 285

Pro Lys Val Val Leu Tyr Ser Glu Asp Val His Leu Glu Ser Pro Asp
 290 295 300

Thr His Leu Ser Tyr Lys Pro Thr Lys Asp Asp Val Asn Ala Lys Val
 305 310 315 320

Met Leu Gly Gln Gln Ala Met Pro Asn Arg Pro Asn Leu Ile Gly Phe
 325 330 335

Arg Asp Asn Phe Ile Gly Leu Met Phe Tyr Asn Ser Thr Gly Asn Met
 340 345 350

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

Gln Asp Arg Asn Thr Glu Leu Ser Tyr Gln Leu Met Leu Asp Ser Ile
 370 375 380

Gly Asp Arg Thr Arg Tyr Phe Ser Met Trp Asn Gln Ala Val Asp Ser
 385 390 395 400

Tyr Asp Pro Asp Val Arg Ile Ile Glu Asn His Gly Val Glu Asp Glu
 405 410 415

Leu Pro Asn Tyr Cys Phe Pro Leu Gly Gly Ile Gly Ile Thr Asp Thr
 420 425 430

Tyr Gln Gly Val Lys Asn Thr Asn Gly Asn Gly Gln Trp Thr Lys Asp
 435 440 445

Asp Gln Phe Ala Asp Arg Asn Glu Ile Gly Val Gly Asn Asn Phe Ala
 450 455 460

Met Glu Ile Asn Ile Gln Ala Asn Leu Trp Arg Asn Phe Leu Tyr Ala
 465 470 475 480

Asn Val Gly Leu Tyr Leu Pro Asp Lys Leu Lys Tyr Asn Pro Thr Asn
 485 490 495

Val Asp Ile Ser Asp Asn Pro Asn Thr Tyr Asp Tyr Met Asn Lys Arg
 500 505 510

Val Val Ala Pro Gly Leu Val Asp Cys Phe Val Asn Val Gly Ala Arg
 515 520 525

Trp Ser Leu Asp Tyr Met Asp Asn Val Asn Pro Phe Asn His His Arg
 530 535 540

Asn Ala Gly Leu Arg Tyr Arg Ser Met Ile Leu Gly Asn Gly Arg Tyr
 545 550 555 560

Val Pro Phe His Ile Gln Val Pro Gln Lys Phe Phe Ala Ile Lys Asn

565

570

575

Leu Leu Leu Leu Pro Gly Ser Tyr Thr Tyr Glu Trp Asn Phe Arg Lys
 580 585 590

Asp Val Asn Met Val Leu Gln Ser Ser Leu Gly Asn Asp Leu Arg Val
 595 600 605

Asp Gly Ala Ser Ile Lys Phe Asp Ser Ile Thr Leu Tyr Ala Thr Phe
 610 615 620

Phe Pro Met Ala His Asn Thr Ala Ser Thr Leu Glu Ala Met Leu Arg
 625 630 635 640

Asn Asp Thr Asn Asp Gln Ser Phe Asn Asp Tyr Leu Ser Gly Ala Asn
 645 650 655

Met Leu Tyr Pro Ile Pro Ala Lys Ala Thr Asn Val Pro Ile Ser Ile
 660 665 670

Pro Ser Arg Asn Trp Ala Ala Phe Arg Gly Trp Ala Phe Thr Arg Leu
 675 680 685

Lys Thr Lys Glu Thr Pro Ser Leu Gly Ser Gly Phe Asp Pro Tyr Phe
 690 695 700

Val Tyr Ser Gly Ser Ile Pro Tyr Leu Asp Gly Thr Phe Tyr Leu Asn
 705 710 715 720

His Thr Phe Lys Lys Ile Ser Ile Met Tyr Asp Ser Ser Val Ser Trp
 725 730 735

Pro Gly Asn Asp Arg Leu Leu Thr Pro Asn Glu Phe Glu Val Lys Arg
 740 745 750

Ala Val Asp Gly Glu Gly Tyr Asn Val Ala Gln Cys Asn Met Thr Lys
 755 760 765

Asp Trp Phe Leu Val Gln Met Leu Ala Asn Tyr Asn Ile Gly Tyr Gln
 770 775 780

Gly Phe Tyr Ile Pro Glu Ser Tyr Lys Asp Arg Met Tyr Ser Phe Phe
 785 790 795 800

Arg Asn Phe Gln Pro Met Ser Arg Gln Val Val Asp Glu Thr Asn Tyr
 805 810 815

Lys Asp Tyr Gln Ala Ile Gly Ile Thr His Gln His Asn Asn Ser Gly
 820 825 830

Phe Val Gly Tyr Leu Ala Pro Thr Met Arg Glu Gly Gln Ala Tyr Pro
 835 840 845

Ala Asn Phe Pro Tyr Pro Leu Ile Gly Lys Thr Ala Val Asp Ser Val
 850 855 860

Thr Gln Lys Lys Phe Leu Cys Asp Arg Thr Leu Trp Arg Ile Pro Phe
 865 870 875 880

Ser Ser Asn Phe Met Ser Met Gly Ala Leu Thr Asp Leu Gly Gln Asn
 885 890 895

Leu Leu Tyr Ala Asn Ser Ala His Ala Leu Asp Met Thr Phe Glu Val
 900 905 910

Asp Pro Met Asp Glu Pro Thr Leu Leu Tyr Ile Val Phe Glu Val Phe
 915 920 925

Asp Val Val Arg Val His Gln Pro His Arg Gly Val Ile Glu Thr Val
 930 935 940

Tyr Leu Arg Thr Pro Phe Ser Ala Gly Asn Ala Thr Thr
 945 950 955

<210> 50

<211> 955
 <212> PRT
 <213> Great Ape Adenovirus

<400> 50

Met Ala Thr Pro Ser Met Met Pro Gln Trp Ser Tyr Met His Ile Ser
 1 5 10 15

Gly Gln Asp Ala Ser Glu Tyr Leu Ser Pro Gly Leu Val Gln Phe Ala
 20 25 30

Arg Ala Thr Asp Thr Tyr Phe Asn Met Ser Asn Lys Phe Arg Asn Pro
 35 40 45

Thr Val Ala Pro Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu
 50 55 60

Thr Leu Arg Phe Ile Pro Val Asp Arg Glu Asp Thr Ala Tyr Ser Tyr
 65 70 75 80

Lys Ala Arg Phe Thr Leu Ala Val Gly Asp Asn Arg Val Leu Asp Met
 85 90 95

Ala Ser Thr Tyr Phe Asp Ile Arg Gly Val Leu Asp Arg Gly Pro Thr
 100 105 110

Phe Lys Pro Tyr Ser Gly Thr Ala Tyr Asn Pro Leu Ala Pro Lys Gly
 115 120 125

Ala Pro Asn Ser Cys Glu Trp Glu Gln Glu Glu Asn Gln Val Val Ala
 130 135 140

Ala Asp Asp Glu Leu Glu Asp Glu Glu Ala Gln Ala Gln Glu Glu Ala
 145 150 155 160

Pro Val Lys Lys Ile His Val Tyr Ala Gln Ala Pro Leu Ser Gly Glu
 165 170 175

Lys Ile Thr Lys Asp Gly Leu Gln Ile Gly Thr Glu Val Val Gly Asp
 180 185 190

Thr Ser Lys Asp Thr Phe Ala Asp Lys Thr Phe Gln Pro Glu Pro Gln
 195 200 205

Ile Gly Glu Ser Gln Trp Asn Glu Ala Asp Ala Thr Val Ala Gly Gly
 210 215 220

Arg Val Leu Lys Lys Thr Thr Pro Met Arg Pro Cys Tyr Gly Ser Tyr
 225 230 235 240

Ala Arg Pro Thr Asn Ala Asn Gly Gly Gln Gly Ile Met Val Ala Asn
 245 250 255

Glu Gln Gly Val Leu Glu Ser Lys Val Glu Met Gln Phe Phe Ser Asn
 260 265 270

Thr Thr Thr Leu Asn Ala Arg Asp Gly Thr Gly Asn Pro Glu Pro Lys
 275 280 285

Val Val Leu Tyr Ser Glu Asp Val His Leu Glu Ser Pro Asp Thr His
 290 295 300

Leu Ser Tyr Lys Pro Lys Lys Asp Asp Val Asn Ala Lys Ile Met Leu
 305 310 315 320

Gly Gln Gln Ala Met Pro Asn Arg Pro Asn Leu Ile Gly Phe Arg Asp
 325 330 335

Asn Phe Ile Gly Leu Met Phe Tyr Asn Ser Thr Gly Asn Met Gly Val
 340 345 350

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

Arg Asn Thr Glu Leu Ser Tyr Gln Leu Met Leu Asp Ser Ile Gly Asp
 370 375 380

Arg Thr Arg Tyr Phe Ser Met Trp Asn Gln Ala Val Asp Ser Tyr Asp
385 390 395 400

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

Asn Tyr Cys Phe Pro Leu Gly Gly Ile Gly Val Thr Asp Thr Tyr Gln
420 425 430

Gly Ile Lys Asn Thr Asn Gly Asn Gly Gln Trp Thr Lys Asp Asp Gln
435 440 445

Phe Ala Asp Arg Asn Glu Ile Gly Val Gly Asn Asn Phe Ala Met Glu
450 455 460

Ile Asn Ile Gln Ala Asn Leu Trp Arg Asn Phe Leu Tyr Ala Asn Val
465 470 475 480

Gly Leu Tyr Leu Pro Asp Lys Leu Lys Tyr Asn Pro Thr Asn Val Asp
485 490 495

Ile Ser Asp Asn Pro Asn Thr Tyr Asp Tyr Met Asn Lys Arg Val Val
500 505 510

Ala Pro Gly Leu Val Asp Cys Phe Val Asn Val Gly Ala Arg Trp Ser
515 520 525

Leu Asp Tyr Met Asp Asn Val Asn Pro Phe Asn His His Arg Asn Ala
530 535 540

Gly Leu Arg Tyr Arg Ser Met Ile Leu Gly Asn Gly Arg Tyr Val Pro
545 550 555 560

Phe His Ile Gln Val Pro Gln Lys Phe Phe Ala Ile Lys Asn Leu Leu
565 570 575

Leu Leu Pro Gly Ser Tyr Thr Tyr Glu Trp Asn Phe Arg Lys Asp Val
 580 585 590

Asn Met Val Leu Gln Ser Ser Leu Gly Asn Asp Leu Arg Val Asp Gly
 595 600 605

Ala Ser Ile Lys Phe Asp Ser Ile Thr Leu Tyr Ala Thr Phe Phe Pro
 610 615 620

Met Ala His Asn Thr Ala Ser Thr Leu Glu Ala Met Leu Arg Asn Asp
 625 630 635 640

Thr Asn Asp Gln Ser Phe Asn Asp Tyr Leu Ser Gly Ala Asn Met Leu
 645 650 655

Tyr Pro Ile Pro Ala Lys Ala Thr Asn Val Pro Ile Ser Ile Pro Ser
 660 665 670

Arg Asn Trp Ala Ala Phe Arg Gly Trp Ala Phe Thr Arg Leu Lys Thr
 675 680 685

Lys Glu Thr Pro Ser Leu Gly Ser Gly Phe Asp Pro Tyr Phe Val Tyr
 690 695 700

Ser Gly Ser Ile Pro Tyr Leu Asp Gly Thr Phe Tyr Leu Asn His Thr
 705 710 715 720

Phe Lys Lys Ile Ser Ile Met Tyr Asp Ser Ser Val Ser Trp Pro Gly
 725 730 735

Asn Asp Arg Leu Leu Thr Pro Asn Glu Phe Glu Val Lys Arg Ala Val
 740 745 750

Asp Gly Glu Gly Tyr Asn Val Ala Gln Cys Asn Met Thr Lys Asp Trp
 755 760 765

Phe Leu Val Gln Met Leu Ala Asn Tyr Asn Ile Gly Tyr Gln Gly Phe
 770 775 780

Tyr Ile Pro Glu Ser Tyr Lys Asp Arg Met Tyr Ser Phe Phe Arg Asn
 785 790 795 800

Phe Gln Pro Met Ser Arg Gln Val Val Asp Glu Thr Asn Tyr Lys Asp
 805 810 815

Tyr Gln Ala Ile Gly Ile Thr His Gln His Asn Asn Ser Gly Phe Val
 820 825 830

Gly Tyr Leu Ala Pro Thr Met Arg Glu Gly Gln Ala Tyr Pro Ala Asn
 835 840 845

Phe Pro Tyr Pro Leu Ile Gly Lys Thr Ala Val Asp Ser Val Thr Gln
 850 855 860

Lys Lys Phe Leu Cys Asp Arg Thr Leu Trp Arg Ile Pro Phe Ser Ser
 865 870 875 880

Asn Phe Met Ser Met Gly Ala Leu Thr Asp Leu Gly Gln Asn Leu Leu
 885 890 895

Tyr Ala Asn Ser Ala His Ala Leu Asp Met Thr Phe Glu Val Asp Pro
 900 905 910

Met Asp Glu Pro Thr Leu Leu Tyr Ile Val Phe Glu Val Phe Asp Val
 915 920 925

Val Arg Val His Gln Pro His Arg Gly Val Ile Glu Thr Val Tyr Leu
 930 935 940

Arg Thr Pro Phe Ser Ala Gly Asn Ala Thr Thr
 945 950 955

<210> 51

<211> 651

<212> PRT

<213> Great Ape Adenovirus

<400> 51

Met Arg Arg Ala Ala Met Phe Glu Glu Gly Pro Pro Pro Ser Tyr Glu
 1 5 10 15

Ser Ala Met Gly Ile Ser Pro Ala Ala Pro Leu Gln Pro Pro Tyr Val
 20 25 30

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

Ser Glu Leu Gln Pro Leu Tyr Asp Thr Thr Arg Leu Tyr Leu Val Asp
 50 55 60

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

Asp Phe Leu Thr Thr Val Ile Gln Asn Asn Asp Phe Thr Pro Thr Glu
 85 90 95

Ala Ser Thr Gln Thr Ile Asn Leu Asp Asn Arg Ser Asn Trp Gly Gly
 100 105 110

Asp Leu Lys Thr Ile Leu His Thr Asn Met Pro Asn Val Asn Glu Phe
 115 120 125

Met Phe Thr Asn Ser Phe Lys Ala Arg Val Met Val Ala Arg Glu Gln
 130 135 140

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

Tyr Ser Glu Thr Met Thr Leu Asp Leu Met Asn Asn Ala Ile Val Glu
 165 170 175

His Tyr Leu Lys Val Gly Arg Gln Asn Gly Val Lys Glu Ser Asp Ile
 180 185 190

Gly Val Lys Phe Asp Thr Arg Asn Phe Arg Leu Gly Trp Asp Pro Val
 195 200 205

Thr Gly Leu Val Met Pro Gly Val Tyr Thr Asn Glu Ala Phe His Pro
 210 215 220

Asp Ile Val Leu Leu Pro Gly Cys Gly Val Asp Phe Thr Gln Ser Arg
 225 230 235 240

Leu Ser Asn Leu Leu Gly Val Arg Lys Arg Gln Pro Phe Gln Glu Gly
 245 250 255

Phe Lys Ile Thr Tyr Glu Asp Leu Glu Gly Gly Asn Ile Pro Ala Leu
 260 265 270

Leu Asp Leu Asp Ala Tyr Glu Glu Ser Leu Lys Pro Glu Glu Ser Ala
 275 280 285

Gly Asp Ser Gly Glu Ser Gly Glu Glu Gln Ala Gly Gly Gly Gly Ser
 290 295 300

Ala Ser Val Glu Asn Glu Ser Thr Pro Ala Val Ala Ala Asp Ala Ala
 305 310 315 320

Glu Val Glu Pro Glu Ala Met Gln Gln Asp Ala Glu Glu Gly Ala Gln
 325 330 335

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

Gly Glu Glu Lys Glu Ala Glu Ala Ala Ala Ala Thr Ala Glu Ala Glu
 355 360 365

Thr Glu Ala Glu Ala Glu Pro Glu Thr Glu Val Met Glu Asp Met Asn
 370 375 380

Asp Gly Glu Arg Arg Gly Asp Thr Phe Ala Thr Arg Gly Glu Glu Lys

Ile Thr Thr Val Ser Glu Asn Val Pro Ala Leu Thr Asp His Gly Thr
 595 600 605

Leu Pro Leu Arg Asn Ser Ile Ser Gly Val Gln Arg Val Thr Ile Thr
 610 615 620

Asp Ala Arg Arg Arg Thr Cys Pro Tyr Val Tyr Lys Ala Leu Gly Ile
 625 630 635 640

Val Ser Pro Arg Val Leu Ser Ser Arg Thr Phe
 645 650

<210> 52

<211> 651

<212> PRT

<213> Great Ape Adenovirus

<400> 52

Met Arg Arg Ala Ala Met Phe Glu Glu Gly Pro Pro Pro Ser Tyr Glu
 1 5 10 15

Ser Ala Met Gly Ile Ser Pro Ala Ala Pro Leu Gln Pro Pro Tyr Val
 20 25 30

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

Ser Glu Leu Gln Pro Leu Tyr Asp Thr Thr Arg Leu Tyr Leu Val Asp
 50 55 60

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

Asp Phe Leu Thr Thr Val Ile Gln Asn Asn Asp Phe Thr Pro Thr Glu
 85 90 95

Ala Ser Thr Gln Thr Ile Asn Leu Asp Asn Arg Ser Asn Trp Gly Gly
 100 105 110

Asp Leu Lys Thr Ile Leu His Thr Asn Met Pro Asn Val Asn Glu Phe
 115 120 125

Met Phe Thr Asn Ser Phe Lys Ala Arg Val Met Val Ala Arg Glu Gln
 130 135 140

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

Tyr Ser Glu Thr Met Thr Leu Asp Leu Met Asn Asn Ala Ile Val Glu
 165 170 175

His Tyr Leu Lys Val Gly Arg Gln Asn Gly Val Lys Glu Ser Asp Ile
 180 185 190

Gly Val Lys Phe Asp Thr Arg Asn Phe Arg Leu Gly Trp Asp Pro Val
 195 200 205

Thr Gly Leu Val Met Pro Gly Val Tyr Thr Asn Glu Ala Phe His Pro
 210 215 220

Asp Ile Val Leu Leu Pro Gly Cys Gly Val Asp Phe Thr Gln Ser Arg
 225 230 235 240

Leu Ser Asn Leu Leu Gly Val Arg Lys Arg Gln Pro Phe Gln Glu Gly
 245 250 255

Phe Lys Ile Thr Tyr Glu Asp Leu Glu Gly Gly Asn Ile Pro Ala Leu
 260 265 270

Leu Asp Leu Asp Ala Tyr Glu Glu Ser Leu Lys Pro Glu Glu Ser Ala
 275 280 285

Gly Asp Ser Gly Glu Ser Gly Glu Glu Gln Ala Gly Gly Gly Gly Ser
 290 295 300

Ala Ser Val Glu Asn Glu Ser Thr Pro Ala Val Ala Ala Asp Ala Ala
 305 310 315 320

Glu Val Glu Pro Glu Ala Met Gln Gln Asp Ala Glu Glu Gly Ala Gln
 325 330 335

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

Gly Glu Glu Lys Glu Ala Glu Ala Ala Ala Ala Thr Ala Glu Ala Glu
 355 360 365

Thr Glu Ala Glu Ala Glu Pro Glu Thr Glu Val Met Glu Asp Met Asn
 370 375 380

Asp Gly Glu Arg Arg Gly Asp Thr Phe Ala Thr Arg Gly Glu Glu Lys
 385 390 395 400

Ala Ala Glu Ala Glu Ala Ala Ala Glu Glu Ala Ala Ala Ala Ala Ala
 405 410 415

Lys Ala Glu Ala Ala Ala Glu Ala Lys Val Glu Ala Asp Val Ala Val
 420 425 430

Glu Ala Gln Ala Glu Glu Glu Ala Ala Thr Glu Ala Val Lys Glu Lys
 435 440 445

Ala Gln Ala Glu Gln Glu Glu Lys Lys Pro Val Ile Gln Pro Leu Lys
 450 455 460

Glu Asp Ser Lys Lys Arg Ser Tyr Asn Val Ile Glu Gly Ser Thr Phe
 465 470 475 480

Thr Gln Tyr Arg Ser Trp Tyr Leu Ala Tyr Asn Tyr Gly Asp Pro Val
 485 490 495

Lys Gly Val Arg Ser Trp Thr Leu Leu Cys Thr Pro Asp Val Thr Cys
 500 505 510

Gly Ser Glu Gln Met Tyr Trp Ser Leu Pro Asn Met Met Gln Asp Pro
 515 520 525

Val Thr Phe Arg Ser Thr Arg Gln Val Ser Asn Phe Pro Val Val Gly
 530 535 540

Ala Glu Leu Leu Pro Val His Ser Lys Ser Phe Tyr Asn Glu Gln Ala
 545 550 555 560

Val Tyr Ser Gln Leu Ile Arg Gln Ala Thr Ser Leu Thr His Val Phe
 565 570 575

Asn Arg Phe Pro Glu Asn Gln Ile Leu Ala Arg Pro Pro Ala Pro Thr
 580 585 590

Ile Thr Thr Val Ser Glu Asn Val Pro Ala Leu Thr Asp His Gly Thr
 595 600 605

Leu Pro Leu Arg Asn Ser Ile Ser Gly Val Gln Arg Val Thr Ile Thr
 610 615 620

Asp Ala Arg Arg Arg Thr Cys Pro Tyr Val Tyr Lys Ala Leu Gly Ile
 625 630 635 640

Val Ser Pro Arg Val Leu Ser Ser Arg Thr Phe
 645 650

<210> 53

<211> 598

<212> PRT

<213> Great Ape Adenovirus

<400> 53

Met Ser Asp Ser Ser Ser Cys Pro Ser Ala Pro Thr Ile Phe Met Leu
 1 5 10 15

Leu Gln Met Lys Arg Ala Arg Ser Ser Asp Glu Thr Phe Asn Pro Val

20

25

30

Tyr Pro Tyr Asp Thr Glu Ile Ala Pro Thr Ser Val Pro Phe Leu Thr
 35 40 45

Pro Pro Phe Val Ser Ser Ala Gly Met Gln Glu Asn Pro Ala Gly Val
 50 55 60

Leu Ser Leu His Leu Ser Glu Pro Leu Thr Thr His Asn Gly Ala Leu
 65 70 75 80

Thr Leu Lys Met Gly Gly Gly Leu Thr Leu Asp Lys Glu Gly Asn Leu
 85 90 95

Thr Ser Gln Asn Ile Thr Ser Val Asp Pro Pro Leu Lys Lys Ser Lys
 100 105 110

Asn Asn Ile Ser Leu Gln Thr Ala Ala Pro Leu Ala Val Ser Ser Gly
 115 120 125

Ala Leu Thr Leu Phe Ala Thr Pro Pro Leu Ala Val Ser Gly Asp Asn
 130 135 140

Leu Thr Val Gln Ser Gln Ala Pro Leu Thr Leu Glu Asp Ser Lys Leu
 145 150 155 160

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

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

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

Asp Met Gln Ala Pro Ile Ser Ser Arg Asp Gly Lys Leu Ala Leu Thr
 210 215 220

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

Ala Thr Gly Asn Gly Ile Gly Leu Asn Glu Thr Asn Thr His Leu Gln
 245 250 255

Ala Lys Leu Val Ala Pro Leu Gly Phe Asp Thr Asn Gly Asn Ile Lys
 260 265 270

Leu Ser Val Ala Gly Gly Met Arg Leu Asn Asn Asn Thr Leu Ile Leu
 275 280 285

Asp Val Asn Tyr Pro Phe Glu Ala Gln Gly Gln Leu Ser Leu Arg Val
 290 295 300

Gly Ser Gly Pro Leu Tyr Val Asp Ser Ser Ser His Asn Leu Thr Ile
 305 310 315 320

Arg Cys Leu Arg Gly Leu Tyr Val Thr Ser Ser Asn Asn Gln Asn Gly
 325 330 335

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

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

Thr Thr Glu Lys Pro Ile Gln Thr Lys Ile Gly Leu Gly Met Glu Tyr
 370 375 380

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

Asp Asn Ser Gly Ala Ile Val Val Gly Asn Lys Asn Asp Asp Arg Leu
 405 410 415

Thr Leu Trp Thr Thr Pro Asp Pro Ser Pro Asn Cys Gln Ile Tyr Ser

420

425

430

Glu Lys Asp Ala Lys Leu Thr Leu Val Leu Thr Lys Cys Gly Ser Gln
 435 440 445

Val Val Gly Thr Val Ser Ile Ala Ala Leu Lys Gly Ser Leu Val Pro
 450 455 460

Ile Thr Ser Ala Ile Ser Val Val Gln Ile Tyr Leu Arg Phe Asp Glu
 465 470 475 480

Asn Gly Val Leu Met Ser Asn Ser Ser Leu Asn Gly Glu Tyr Trp Asn
 485 490 495

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

Gly Phe Met Pro Asn Leu Leu Ala Tyr Pro Lys Gly Gln Thr Thr Thr
 515 520 525

Ala Lys Ser Asn Ile Val Ser Gln Val Tyr Met Asn Gly Asp Asp Thr
 530 535 540

Lys Pro Met Thr Phe Thr Ile Asn Phe Asn Gly Leu Ser Glu Thr Gly
 545 550 555 560

Asp Thr Pro Val Ser Lys Tyr Ser Met Thr Phe Ser Trp Arg Trp Pro
 565 570 575

Asn Gly Ser Tyr Ile Gly His Asn Phe Val Thr Asn Ser Phe Thr Phe
 580 585 590

Ser Tyr Ile Ala Gln Glu
 595

<210> 54

<211> 602

<212> PRT

<213> Great Ape Adenovirus

<400> 54

Met Ser Asp Ser Ser Ser Ser Cys Pro Ser Ala Pro Thr Ile Phe Met
1 5 10 15

Leu Leu Gln Met Lys Arg Ala Arg Ser Ser Asp Glu Thr Phe Asn Pro
20 25 30

Val Tyr Pro Tyr Asp Thr Glu Ile Ala Pro Thr Ser Val Pro Phe Leu
35 40 45

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

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

Leu Thr Leu Lys Met Gly Gly Gly Leu Ile Leu Asp Lys Glu Gly Asn
85 90 95

Leu Thr Ser Gln Asn Ile Thr Ser Val Asp Pro Pro Leu Lys Lys Ser
100 105 110

Lys Asn Asn Ile Ser Leu Gln Thr Ala Ala Pro Leu Ala Val Ser Ser
115 120 125

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

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

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

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

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

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

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

Val Gly Thr Gly Lys Gly Ile Gly Leu Asn Glu Thr Ser Thr His Leu
 245 250 255

Gln Ala Lys Leu Val Ala Pro Leu Gly Phe Asp Thr Asn Gly Asn Ile
 260 265 270

Lys Leu Ser Val Ala Gly Gly Met Arg Leu Asn Asn Asp Thr Leu Ile
 275 280 285

Leu Asp Val Asn Tyr Pro Phe Glu Ala Gln Gly Gln Leu Ser Leu Arg
 290 295 300

Val Gly Thr Gly Pro Leu Tyr Val Asp Ser Ser Ser His Asn Leu Thr
 305 310 315 320

Ile Arg Cys Leu Arg Gly Leu Tyr Ile Thr Ser Ser Asn Asn Gln Asn
 325 330 335

Gly Leu Glu Ala Asn Ile Lys Leu Thr Lys Gly Leu Val Tyr Glu Gly
 340 345 350

Asn Ala Ile Ala Val Asn Val Gly Gln Gly Leu Gln Tyr Ser Thr Thr
 355 360 365

Ala Thr Ser Glu Gly Val Tyr Pro Ile Gln Ser Lys Ile Gly Leu Gly
 370 375 380

Met Glu Tyr Asp Thr Asn Gly Ala Met Met Ala Lys Leu Gly Ser Gly
385 390 395 400

Leu Ser Phe Asp Asn Ser Gly Ala Ile Val Val Gly Asn Lys Asn Asp
405 410 415

Asp Lys Leu Thr Leu Trp Thr Thr Pro Asp Pro Ser Pro Asn Cys Arg
420 425 430

Ile Tyr Ser Glu Lys Asp Thr Lys Leu Thr Leu Val Leu Thr Lys Cys
435 440 445

Gly Ser Gln Ile Leu Gly Thr Val Ser Ala Leu Ala Val Arg Gly Ser
450 455 460

Leu Ala Pro Ile Thr Asn Ala Ser Ser Ile Val Gln Ile Phe Leu Arg
465 470 475 480

Phe Asp Glu Asn Gly Leu Leu Met Ser Asn Ser Ser Leu Asp Gly Asp
485 490 495

Tyr Trp Asn Tyr Arg Asn Gly Asp Ser Thr Asn Gly Thr Pro Tyr Thr
500 505 510

Asn Ala Val Gly Phe Met Pro Asn Leu Ala Ala Tyr Pro Lys Gly Gln
515 520 525

Ala Thr Thr Ala Lys Ser Ser Ile Val Ser Gln Val Tyr Met Asp Gly
530 535 540

Asp Thr Thr Lys Pro Ile Thr Leu Lys Ile Asn Phe Asn Gly Ile Asp
545 550 555 560

Glu Thr Thr Glu Asn Thr Pro Val Ser Lys Tyr Ser Met Thr Phe Ser
565 570 575

Trp Ser Trp Pro Thr Ala Ser Tyr Ile Gly His Thr Phe Ala Thr Asn
580 585 590

Ser Phe Thr Phe Ser Tyr Ile Ala Gln Glu
 595 600

<210> 55
 <211> 168
 <212> DNA
 <213> Great Ape Adenovirus

<400> 55
 agggcttttcg ttctgtagcc tggaggaaag taaatgggtt gggttgcggt gtgccccggt 60
 tcgagaccaa gctgagctca gccggctgaa gccgcagcta acgtgggtatt ggcagtccccg 120
 tctcgaccca ggccctgtat cctccaggat acggtcgaga gccctttt 168

<210> 56
 <211> 168
 <212> DNA
 <213> Great Ape Adenovirus

<400> 56
 agggcttttcg ttctgtagcc tggaggaaag taaatgggtt gggttgcggt gtgccccggt 60
 tcgagaccaa gctgagctcg gccggctgaa gccgcagcta acgtgggtatt ggcagtccccg 120
 tctcgaccca ggccctgtat cctccaggat acggtcgaga gccctttt 168

<210> 57
 <211> 174
 <212> DNA
 <213> Great Ape Adenovirus

<400> 57
 ggctcgcttc cgtagtctgg agaaacaatc gccagggttg cgttgcggcg taccgccggtt 60
 cgagccccta tggcggcttg gatcggccgg aaccgcggct aacgtgggct gtggcagccc 120
 cgtcctcagg accccgccag ccgacttctc cagttacggg agcgagcccc tttt 174

<210> 58
 <211> 104
 <212> DNA
 <213> Artificial Sequence

<220>

<223> FW primer GAd-GAG left end

<400> 58

gaactccgaa ttcgttttaa ccatcatcaa taatatacct tatttttgat tgaggccaat 60

atgataatga ggtgggcggg gcgaggcggg gcgggtgacg tagg 104

<210> 59

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> RV primer GAd-GAG left end

<400> 59

cataatcggc cgcagcggcc cgtcagatga cggcgacaat aaa 43

<210> 60

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> FW primer GAd right end

<400> 60

cataatcgac ccgagtcgca ctctcacagc accagca 37

<210> 61

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> RV primer GAd right end

<400> 61

gaactccgga tccgttttaa ccatcatcaa taatatacct tattttg 47

<210> 62

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> FW primer pIX

<400> 62

cataatcgcg atcgcgctta ggcctgacca tctgg

35

<210> 63

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> RV primer pIX

<400> 63

gaactccggc gcgccttagg gggaggcaag gctg

34

<210> 64

<211> 55

<212> DNA

<213> Artificial Sequence

<220>

<223> FW primer Amp-LacZ-SacB Ex. 2

<400> 64

gaactccggc gcgcctaggg ataacagggt aataccccta tttgtttatt tttct

55

<210> 65

<211> 56

<212> DNA

<213> Artificial Sequence

<220>

<223> RV primer Amp-LacZ-SacB Ex. 2

<400> 65

cataatcggc gcgccattac cctgttatcc ctattatttg ttaactgtta attgtc

56

<210> 66

<211> 92

<212> DNA

<213> Artificial Sequence

<220>

<223> FW primer Amp-LacZ-SacB Ex. 4

<400> 66
 ggattacacc aagatctttg ctgtcatttg tgtgctgagt ataataaagg ctgagatcag 60
 aatctactcg acccctatatt gtttattttt ct 92

<210> 67
 <211> 93
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> RV primer Amp-LacZ-SacB Ex. 4

<400> 67
 cttgctatca gatttcaagt aagtgatttt ttattgatta cagttatgat caattgaaag 60
 ggataagggtc ttatttggtta actgttaatt gtc 93

<210> 68
 <211> 100
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> SS oligo Amp-LacZ-SacB

<400> 68
 ctgtcatttg tgtgctgagt ataataaagg ctgagatcag aatctactcg gaccttatcc 60
 ctttcaattg atcataactg taatcaataa aaaatcactt 100

<210> 69
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> CMVfw

<400> 69
 catctacgta ttagtcatcg ctattacca 29

<210> 70
 <211> 21
 <212> DNA

<213> Artificial Sequence

<220>

<223> CMVrv

<400> 70

gacttggaaa tccccgtgag t 21

<210> 71

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> CMVFAM-TAMRA probe

<400> 71

acatcaatgg gcgtggatag cggtt 25

<210> 72

<211> 33360

<212> DNA

<213> Artificial Sequence

<220>

<223> GADNOU19 GAG (DE1DE3)

<400> 72

catcatcaat aatatacctt attttggatt gaggccaata tgataatgag gtgggcgggg 60

cgaggcgggg cggttgacgt aggacgcgcg agtaggggtg ggagggtgtg cggaagtgtg 120

gcatttgcaa gtgggaggag ctgacatgca atcttccgtc gcggaaaatg tgacgttttt 180

gatgagcgcc gcctacctcc ggaagtgcca attttcgcgc gcttttcacc ggatatcgta 240

gtaattttgg gcgggaccat gtaagatttg gccattttcg cgcgaaaagt gaaacgggga 300

agtgaaaact gaataatagg gcgttagtca tagcgcgtaa tatttaccga gggccgaggg 360

actttgaccg attacgtgga ggactcgccc aggtgttttt tacgtgaatt tccgcgttcc 420

gggtcaaagt ctccgttttt attgtcgccg tcacttgacg ggccgccatt gcatacgttg 480

tatccatatac ataatatgta catttatatt ggctcatgtc caacattacc gccatgttga 540

cattgattat tgactagtta ttaatagtaa tcaattacgg ggtcattagt tcatagccca 600

tatatggagt tccgcgttac ataacttacg gtaaattggcc cgcctggctg accgccaac	660
gacccccgcc cattgacgtc aataatgacg tatgttccca tagtaacgcc aatagggact	720
ttccattgac gtcaatgggt ggagtattta cggtaaactg cccacttggc agtacatcaa	780
gtgtatcata tgccaagtac gccccctatt gacgtcaatg acggtaaattg gcccgcctgg	840
cattatgccc agtacatgac cttatgggac tttcctactt ggacgtacat ctacgtatta	900
gtcatcgcta ttaccatggt gatgcggttt tggcagtaca tcaatgggagc tggatagcgg	960
tttgactcac ggggatttcc aagtctccac cccattgacg tcaatgggagc tttgttttgg	1020
cacaaaaatc aacgggactt tcaaaaatgt cgtaacaact ccgccccatt gacgcaaatg	1080
ggcggtaggc gtgtacggtg ggaggcttat ataagcagag ctctccctat cagtgataga	1140
gatctcccta tcagtgatag agatcgctga cgagctcggt tagtgaaccg tcagatcgcc	1200
tggagacgcc atccacgctg ttttgacctc catagaagac accgggaccg atccagcctc	1260
cgcggccggg aacggtgcat tggaacgcgg attccccgtg ccaagagtga gatctaccat	1320
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Gly Leu Leu Glu Thr Ser Glu Gly Cys Arg Gln Ile Leu Gly Gln Leu
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Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu Leu Arg Ser Leu Tyr Asn
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Thr Val Ala Thr Leu Tyr Cys Val His Gln Lys Ile Asp Val Lys Asp
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Thr Lys Glu Ala Leu Glu Lys Ile Glu Glu Glu Gln Asn Lys Ser Lys
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Lys Lys Ala Gln Gln Ala Ala Ala Gly Thr Gly Asn Ser Ser Gln Val
 115 120 125

Ser Gln Asn Tyr Pro Ile Val Gln Asn Leu Gln Gly Gln Met Val His
 130 135 140

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

Glu Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe Ser Ala Leu Ser
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Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr Val Gly
 180 185 190

Gly His Gln Ala Ala Met Gln Met Leu Lys Glu Thr Ile Asn Glu Glu
 195 200 205

Ala Ala Glu Trp Asp Arg Leu His Pro Val His Ala Gly Pro Ile Ala
 210 215 220

Pro Gly Gln Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly Thr Thr
 225 230 235 240

Ser Thr Leu Gln Glu Gln Ile Gly Trp Met Thr Asn Asn Pro Pro Ile
 245 250 255

Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys
 260 265 270

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

Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys Thr Leu
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Arg Ala Glu Gln Ala Ser Gln Glu Val Lys Asn Trp Met Thr Glu Thr
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Leu Gly Pro Ala Ala Thr Leu Glu Glu Met Met Thr Ala Cys Gln Gly
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Val Gly Gly Pro Gly His Lys Ala Arg Val Leu Ala Glu Ala Met Ser
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Asn Gln Arg Lys Thr Val Lys Cys Phe Asn Cys Gly Lys Val Gly His
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Ile Ala Lys Asn Cys Arg Ala Pro Arg Lys Lys Gly Cys Trp Lys Cys
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Gly Lys Glu Gly His Gln Met Lys Asp Cys Asn Glu Arg Gln Ala Asn
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Phe Leu Gly Lys Ile Trp Pro Ser His Lys Gly Arg Pro Gly Asn Phe
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Leu Gln Ser Arg Pro Glu Pro Thr Ala Pro Pro Glu Glu Ser Phe Arg
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Phe Gly Glu Glu Lys Thr Thr Pro Ser Gln Lys Gln Glu Pro Ile Asp
 465 470 475 480

Lys Glu Leu Tyr Pro Leu Ala Ser Leu Arg Ser Leu Phe Gly Asn Asp
 485 490 495

Pro Ser Ser Gln
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