SEQUENCE LISTING

<110> Oncolytics Biotech Inc.; COFFEY, Matthew C.; THOMPSON, Bradley G.; PANDHA, Hardev

<120> ABROGATING PROINFLAMMATORY CYTOKINE PRODUCTION DURING ONCOLYTIC REOVIRUS THERAPY

<130> 32731-2058

<150> 61/056,292
<151> 2008-05-27

<150> 61/113,791
<151> 2008-11-12

<160> 21

<170> Microsoft Word

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<210> SEQ ID NO:11
<211> 455
<212> PRT
<213> Reovirus

<400> SEQ ID NO:11

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Ile Thr Gln Gly Leu Asp Asp Ala Asn Lys Arg Ile Ile Ala Leu Glu
    50                  55                  60
Gln Ser Arg Asp Asp Leu Val Ala Ser Val Ser Asp Ala Gln Leu Ala
65                  70                  75                  80
Ile Ser Arg Leu Glu Ser Ser Ile Gly Ala Leu Gln Thr Val Val Asn
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Gly Leu Asp Ser Ser Val Thr Gln Leu Gly Ala Arg Val Gly Gln Leu
            100                 105                 110
Glu Thr Gly Leu Ala Glu Leu Arg Val Asp His Asp Asn Leu Val Ala
        115                 120                 125
Arg Val Asp Thr Ala Glu Arg Asn Ile Gly Ser Leu Thr Thr Glu Leu
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Ser Thr Leu Thr Leu Arg Val Thr Ser Ile Gln Ala Asp Phe Glu Ser
145                 150                 155                 160
Arg Ile Ser Thr Leu Glu Arg Thr Ala Val Thr Ser Ala Gly Ala Pro
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Thr Leu Ser Gly Asn Asn Leu Ala Ile Arg Leu Pro Gly Asn Thr Gly
        195                 200                 205
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225                 230                 235                 240
Ser Ile Asn Ser Arg Ile Gly Ala Thr Glu Gln Ser Tyr Val Ala Ser
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Ile Gly Ile Val Ser Tyr Ser Gly Ser Gly Leu Asn Trp Arg Val Gln
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Val Asn Ser Asp Ile Phe Ile Val Asp Asp Tyr Ile His Ile Cys Leu
            340                 345                 350
Pro Ala Phe Asp Gly Phe Ser Ile Ala Asp Gly Gly Asp Leu Ser Leu
        355                 360                 365
Asn Phe Val Thr Gly Leu Leu Pro Pro Leu Leu Thr Gly Asp Thr Glu
    370                 375                 380
Pro Ala Phe His Asn Asp Val Val Thr Tyr Gly Ala Gln Thr Val Ala
385                 390                 395                 400
Ile Gly Leu Ser Ser Gly Gly Ala Pro Gln Tyr Met Ser Lys Asn Leu
                405                 410                 415
Trp Val Glu Gln Trp Gln Asp Gly Val Leu Arg Leu Arg Val Glu Gly
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Gly Gly Ser Ile Thr His Ser Asn Ser Lys Trp Pro Ala Met Thr Val
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Ser Tyr Pro Arg Ser Phe Thr
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<210> SEQ ID NO:12
<211> 418
<212> PRT
<213> Reovirus

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Gly Asn Ser Pro Trp Gln Leu Thr Gln Phe Leu Asp Trp Ile Ser Leu
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Gly Arg Gly Leu Ala Thr Ser Ala Leu Val Pro Thr Ala Gly Ser Arg
    50                  55                  60
Tyr Tyr Gln Met Ser Cys Leu Leu Ser Gly Thr Leu Gln Ile Pro Phe
65                  70                  75                  80
Arg Pro Asn His Arg Trp Gly Asp Ile Arg Phe Leu Arg Leu Val Trp
                85                  90                  95
Ser Ala Pro Thr Leu Asp Gly Leu Val Val Ala Pro Pro Gln Val Leu
            100                 105                 110
Ala Gln Pro Ala Leu Gln Ala Gln Ala Asp Arg Val Tyr Asp Cys Asp
        115                 120                 125
Asp Tyr Pro Phe Leu Ala Arg Asp Pro Arg Phe Lys His Arg Val Tyr
    130                 135                 140
Gln Gln Leu Ser Ala Val Thr Leu Leu Asn Leu Thr Gly Phe Gly Pro
145                 150                 155                 160
Ile Ser Tyr Val Arg Val Asp Glu Asp Met Trp Ser Gly Asp Val Asn
                165                 170                 175
Gln Leu Leu Met Asn Tyr Phe Gly His Thr Phe Ala Glu Ile Ala Tyr
            180                 185                 190
Thr Leu Cys Gln Ala Ser Ala Asn Arg Pro Trp Glu Tyr Asp Gly Thr
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Tyr Ala Arg Met Thr Gln Ile Val Leu Ser Leu Phe Trp Leu Ser Tyr
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            260                 265                 270
Met Pro Thr Ser Pro Asp Trp Asn Met Asp Val Asn Leu Ile Leu Ser
        275                 280                 285
Ser Thr Leu Thr Gly Cys Leu Cys Ser Gly Ser Gln Leu Pro Leu Ile
    290                 295                 300
Asp Asn Asn Ser Val Pro Ala Val Ser Arg Asn Ile His Gly Trp Thr
305                 310                 315                 320
Gly Arg Ala Gly Asn Gln Leu His Gly Phe Gln Val Arg Arg Met Val
                325                 330                 335
Thr Glu Phe Cys Asp Arg Leu Arg Arg Asp Gly Val Met Thr Gln Ala
            340                 345                 350
Gln Gln Asn Gln Val Glu Ala Leu Ala Asp Gln Thr Gln Gln Phe Lys
        355                 360                 365
Arg Asp Lys Leu Glu Thr Trp Ala Arg Glu Asp Asp Gln Tyr Asn Gln
    370                 375                 380
Ala His Pro Asn Ser Thr Met Phe Arg Thr Lys Pro Phe Thr Asn Ala
385                 390                 395                 400
Gln Trp Gly Arg Gly Asn Thr Gly Ala Thr Ser Ala Ala Ile Ala Ala
                405                 410                 415
Leu Ile
```

<210> SEQ ID NO:13
<211> 254
<212> PRT
<213> Reovirus

<400> SEQ ID NO:13

```
Met Ala Ser Ser Leu Arg Ala Ala Ile Ser Lys Ile Lys Arg Asp Asp
 1               5                  10                  15
Val Gly Gln Gln Val Cys Pro Asn Tyr Val Met Leu Arg Ser Ser Val
            20                  25                  30
Thr Thr Lys Val Val Arg Asn Val Val Glu Tyr Gln Ile Arg Thr Gly
        35                  40                  45
Gly Phe Phe Ser Cys Leu Ala Met Leu Arg Pro Leu Gln Tyr Ala Lys
    50                  55                  60
Arg Glu Arg Leu Leu Gly Gln Arg Asn Leu Glu Arg Ile Ser Thr Arg
65                  70                  75                  80
Asp Ile Leu Gln Thr Arg Asp Leu His Ser Leu Cys Met Pro Thr Pro
                85                  90                  95
Asp Ala Pro Met Ser Asn His Gln Ala Ser Thr Met Arg Glu Leu Ile
            100                 105                 110
Cys Ser Tyr Phe Lys Val Asp His Ala Asp Gly Leu Lys Tyr Ile Pro
        115                 120                 125
Met Asp Glu Arg Tyr Ser Pro Ser Ser Leu Ala Arg Leu Phe Thr Met
    130                 135                 140
Gly Met Ala Gly Leu His Ile Thr Thr Glu Pro Ser Tyr Lys Arg Val
145                 150                 155                 160
Pro Ile Met His Leu Ala Ala Asp Leu Asp Cys Met Thr Leu Ala Leu
                165                 170                 175
Pro Tyr Met Ile Thr Leu Asp Gly Asp Thr Val Val Pro Val Ala Pro
            180                 185                 190
Thr Leu Ser Ala Glu Gln Leu Leu Asp Asp Gly Leu Lys Gly Leu Ala
```

```
        195                 200                 205
Cys Met Asp Met Asp Val Arg Trp Thr Arg Ile Ala Gly Arg Leu Val
    210                 215                 220
Ile Arg Val Trp Thr Leu His Ala Ala Ser Thr Ser Cys Ile Ala Arg
225                 230                 235                 240
Arg Gln Gln Lys Pro Ser Val Cys Leu Arg His Ala Leu Cys
                245                 250
```

<210> SEQ ID NO:14
<211> 366
<212> PRT
<213> Reovirus

<400> SEQ ID NO:14

```
Met Ala Ser Ser Leu Arg Ala Ala Ile Ser Lys Ile Lys Arg Asp Asp
 1               5                  10                  15
Val Gly Gln Gln Val Cys Pro Asn Tyr Val Met Leu Arg Ser Ser Val
            20                  25                  30
Thr Thr Lys Val Val Arg Asn Val Val Glu Tyr Gln Ile Arg Thr Gly
        35                  40                  45
Gly Phe Phe Ser Cys Leu Ala Met Leu Arg Pro Leu Gln Tyr Ala Lys
    50                  55                  60
Arg Glu Arg Leu Leu Gly Gln Arg Asn Leu Glu Arg Ile Ser Thr Arg
65                  70                  75                  80
Asp Ile Leu Gln Thr Arg Asp Leu His Ser Leu Cys Met Pro Thr Pro
                85                  90                  95
Asp Ala Pro Met Ser Asn His Gln Ala Ser Thr Met Arg Glu Leu Ile
            100                 105                 110
Cys Ser Tyr Phe Lys Val Asp His Ala Asp Gly Leu Lys Tyr Ile Pro
        115                 120                 125
Met Asp Glu Arg Tyr Ser Pro Ser Ser Leu Ala Arg Leu Phe Thr Met
    130                 135                 140
Gly Met Ala Gly Leu His Ile Thr Thr Glu Pro Ser Tyr Lys Arg Val
145                 150                 155                 160
Pro Ile Met His Leu Ala Ala Asp Leu Asp Cys Met Thr Leu Ala Leu
                165                 170                 175
Pro Tyr Met Ile Thr Leu Asp Gly Asp Thr Val Val Pro Val Ala Pro
            180                 185                 190
Thr Leu Ser Ala Glu Gln Leu Leu Asp Asp Gly Leu Lys Gly Leu Ala
        195                 200                 205
Cys Met Asp Ile Ser Tyr Gly Cys Glu Val Asp Ala Asn Ser Arg Pro
    210                 215                 220
Ala Gly Asp Gln Ser Met Asp Ser Ser Arg Cys Ile Asn Glu Leu Tyr
225                 230                 235                 240
Cys Glu Glu Thr Ala Glu Ala Ile Cys Val Leu Lys Thr Cys Leu Val
                245                 250                 255
Leu Asn Cys Met Gln Phe Lys Leu Glu Met Asp Asp Leu Ala His Asn
            260                 265                 270
Ala Ala Glu Leu Asp Lys Ile Gln Met Met Ile Pro Phe Ser Glu Arg
        275                 280                 285
Val Phe Arg Met Ala Ser Ser Phe Ala Thr Ile Asp Ala Gln Cys Phe
    290                 295                 300
Arg Phe Cys Val Met Met Lys Asp Lys Asn Leu Lys Ile Asp Met Arg
305                 310                 315                 320
Glu Thr Thr Arg Leu Trp Thr Arg Ser Ala Ser Asp Asp Ser Val Ala
                325                 330                 335
Thr Ser Ser Leu Ser Ile Ser Leu Asp Arg Gly Arg Trp Val Ala Ala
            340                 345                 350
```

```
Asp Ala Ser Asp Ala Arg Leu Leu Val Phe Pro Ile Arg Val
        355                 360                 365


<210> SEQ ID NO:15
<211> 365
<212> PRT
<213> Reovirus

<400> SEQ ID NO:15
Met Glu Val Cys Leu Pro Asn Gly His Gln Val Val Asp Leu Ile Asn
 1               5                  10                  15
Asn Ala Phe Glu Gly Arg Val Ser Ile Tyr Ser Ala Gln Glu Gly Trp
            20                  25                  30
Asp Lys Thr Ile Ser Ala Gln Pro Asp Met Met Val Cys Gly Gly Ala
        35                  40                  45
Val Val Cys Met His Cys Leu Gly Val Val Gly Ser Leu Gln Arg Lys
    50                  55                  60
Leu Lys His Leu Pro His His Arg Cys Asn Gln Gln Ile Arg His Gln
65                  70                  75                  80
Asp Tyr Val Asp Val Gln Phe Ala Asp Arg Val Thr Ala His Trp Lys
                85                  90                  95
Arg Gly Met Leu Ser Phe Val Ala Gln Met His Glu Met Met Asn Asp
            100                 105                 110
Val Ser Pro Asp Asp Leu Asp Arg Val Arg Thr Glu Gly Gly Ser Leu
        115                 120                 125
Val Glu Leu Asn Arg Leu Gln Val Asp Pro Asn Ser Met Phe Arg Ser
    130                 135                 140
Ile His Ser Ser Trp Thr Asp Pro Leu Gln Val Val Asp Asp Leu Asp
145                 150                 155                 160
Thr Lys Leu Asp Gln Tyr Trp Thr Ala Leu Asn Leu Met Ile Asp Ser
                165                 170                 175
Ser Asp Leu Ile Pro Asn Phe Met Met Arg Asp Pro Ser His Ala Phe
            180                 185                 190
Asn Gly Val Lys Leu Lys Gly Asp Ala Arg Gln Thr Gln Phe Ser Arg
        195                 200                 205
Thr Phe Asp Ser Arg Ser Ser Leu Glu Trp Gly Val Met Val Tyr Asp
    210                 215                 220
Tyr Ser Glu Leu Asp His Asp Pro Ser Lys Gly Arg Ala Tyr Arg Lys
225                 230                 235                 240
Glu Leu Val Thr Pro Ala Arg Asp Phe Gly His Phe Gly Leu Ser His
                245                 250                 255
Tyr Ser Arg Ala Thr Thr Pro Ile Leu Gly Lys Met Pro Ala Val Phe
            260                 265                 270
Ser Gly Met Leu Thr Gly Asn Cys Lys Met Tyr Pro Phe Ile Lys Gly
        275                 280                 285
Thr Ala Lys Leu Lys Thr Val Arg Lys Leu Val Glu Ala Val Asn His
    290                 295                 300
Ala Trp Gly Val Glu Lys Ile Arg Tyr Ala Leu Gly Pro Gly Gly Met
305                 310                 315                 320
Thr Gly Trp Tyr Asn Arg Thr Met Gln Gln Ala Pro Ile Val Leu Thr
                325                 330                 335
Pro Ala Ala Leu Thr Met Phe Pro Asp Thr Ile Lys Phe Gly Asp Leu
            340                 345                 350
Asn Tyr Pro Val Met Ile Gly Asp Pro Met Ile Leu Gly
        355                 360                 365


<210> SEQ ID NO:16
```

<211> 736
<212> PRT
<213> Reovirus

<400> SEQ ID NO:16

```
Met Ala Tyr Ile Ala Val Pro Ala Val Val Asp Ser Arg Ser Ser Glu
 1               5                  10                  15
Ala Ile Gly Leu Leu Glu Ser Phe Gly Val Asp Ala Gly Ala Asp Ala
            20                  25                  30
Asn Asp Val Ser Tyr Gln Asp His Asp Tyr Val Leu Asp Gln Leu Gln
        35                  40                  45
Tyr Met Leu Asp Gly Tyr Glu Ala Gly Asp Val Ile Asp Ala Leu Val
    50                  55                  60
His Lys Asn Trp Leu His His Ser Val Tyr Cys Leu Leu Pro Pro Lys
65                  70                  75                  80
Ser Gln Leu Leu Glu Tyr Trp Lys Ser Asn Pro Ser Ala Ile Pro Asp
                85                  90                  95
Asn Val Asp Arg Arg Leu Arg Lys Arg Leu Met Leu Lys Lys Asp Leu
            100                 105                 110
Arg Lys Asp Asp Glu Tyr Asn Gln Leu Ala Arg Ala Phe Lys Ile Ser
        115                 120                 125
Asp Val Tyr Ala Pro Leu Ile Ser Ser Thr Thr Ser Pro Met Thr Met
    130                 135                 140
Ile Gln Asn Leu Asn Arg Gly Glu Ile Val Tyr Thr Thr Thr Asp Arg
145                 150                 155                 160
Val Ile Gly Ala Arg Ile Leu Leu Tyr Ala Pro Arg Lys Tyr Tyr Ala
                165                 170                 175
Ser Thr Leu Ser Phe Thr Met Thr Lys Cys Ile Ile Pro Phe Gly Lys
            180                 185                 190
Glu Val Gly Arg Val Pro His Ser Arg Phe Asn Val Gly Thr Phe Pro
        195                 200                 205
Ser Ile Ala Thr Pro Lys Cys Phe Val Met Ser Gly Val Asp Ile Glu
    210                 215                 220
Ser Ile Pro Asn Glu Phe Ile Lys Leu Phe Tyr Gln Arg Val Lys Ser
225                 230                 235                 240
Val His Ala Asn Ile Leu Asn Asp Ile Ser Pro Gln Ile Val Ser Asp
                245                 250                 255
Met Ile Asn Arg Lys Arg Leu Arg Val His Thr Pro Ser Asp Arg Arg
            260                 265                 270
Ala Ala Gln Leu Met His Leu Pro Tyr His Val Lys Arg Gly Ala Ser
        275                 280                 285
His Val Asp Val Tyr Lys Val Asp Val Val Asp Met Leu Phe Glu Val
    290                 295                 300
Val Asp Val Ala Asp Gly Leu Arg Asn Val Ser Arg Lys Leu Thr Met
305                 310                 315                 320
His Thr Val Pro Val Cys Ile Leu Glu Met Leu Gly Ile Glu Ile Ala
                325                 330                 335
Asp Tyr Cys Ile Arg Gln Glu Asp Gly Met Leu Thr Asp Trp Phe Leu
            340                 345                 350
Leu Leu Thr Met Leu Ser Asp Gly Leu Thr Asp Arg Arg Thr His Cys
        355                 360                 365
Gln Tyr Leu Ile Asn Pro Ser Ser Val Pro Pro Asp Val Ile Leu Asn
    370                 375                 380
Ile Ser Ile Thr Gly Phe Ile Asn Arg His Thr Ile Asp Val Met Pro
385                 390                 395                 400
Asp Ile Tyr Asp Phe Val Lys Pro Ile Gly Ala Val Leu Pro Lys Gly
                405                 410                 415
Ser Phe Lys Ser Thr Ile Met Arg Val Leu Asp Ser Ile Ser Ile Leu
            420                 425                 430
```

```
Gly Ile Gln Ile Met Pro Arg Ala His Val Val Asp Ser Asp Glu Val
        435                 440                 445
Gly Glu Gln Met Glu Pro Thr Phe Glu Gln Ala Val Met Glu Ile Tyr
    450                 455                 460
Lys Gly Ile Ala Gly Val Asp Ser Leu Asp Asp Leu Ile Lys Trp Val
465                 470                 475                 480
Leu Asn Ser Asp Leu Ile Pro His Asp Asp Arg Leu Gly Gln Leu Phe
                485                 490                 495
Gln Ala Phe Leu Pro Leu Ala Lys Asp Leu Leu Ala Pro Met Ala Arg
            500                 505                 510
Lys Phe Tyr Asp Asn Ser Met Ser Glu Gly Arg Leu Leu Thr Phe Ser
        515                 520                 525
His Ala Asp Ser Glu Leu Leu Asn Ala Asn Tyr Phe Gly His Leu Leu
    530                 535                 540
Arg Leu Lys Ile Pro Tyr Ile Thr Glu Val Asn Leu Met Ile Arg Lys
545                 550                 555                 560
Asn Arg Glu Gly Gly Glu Leu Phe Gln Leu Val Leu Ser Tyr Leu Tyr
                565                 570                 575
Lys Met Tyr Ala Thr Ser Ala Gln Pro Lys Trp Phe Gly Ser Leu Leu
            580                 585                 590
Arg Leu Leu Ile Cys Pro Trp Leu His Met Glu Lys Leu Ile Gly Glu
        595                 600                 605
Ala Asp Pro Ala Ser Thr Ser Ala Glu Ile Gly Trp His Ile Pro Arg
    610                 615                 620
Glu Gln Leu Met Gln Asp Gly Trp Cys Gly Cys Glu Asp Gly Phe Ile
625                 630                 635                 640
Pro Tyr Val Ser Ile Arg Ala Pro Arg Leu Val Ile Glu Glu Leu Met
                645                 650                 655
Glu Lys Asn Trp Gly Gln Tyr His Ala Gln Val Ile Val Thr Asp Gln
            660                 665                 670
Leu Val Val Gly Glu Pro Arg Arg Val Ser Ala Lys Ala Val Ile Lys
        675                 680                 685
Gly Asn His Leu Pro Val Lys Leu Val Ser Arg Phe Ala Cys Phe Thr
    690                 695                 700
Leu Thr Ala Lys Tyr Glu Met Arg Leu Ser Cys Gly His Ser Thr Gly
705                 710                 715                 720
Arg Gly Ala Ala Tyr Ser Ala Arg Leu Ala Phe Arg Ser Asp Leu Ala
                725                 730                 735
```

<210> SEQ ID NO:17
<211> 708
<212> PRT
<213> Reovirus

<400> SEQ ID NO:17

```
Met Gly Asn Ala Ser Ser Ile Val Gln Thr Ile Asn Val Thr Gly Asp
 1               5                  10                  15
Gly Asn Val Phe Lys Pro Ser Ala Glu Thr Ser Ser Thr Ala Val Pro
            20                  25                  30
Ser Leu Ser Leu Ser Pro Gly Met Leu Asn Pro Gly Gly Val Pro Trp
        35                  40                  45
Ile Ala Val Gly Asp Glu Thr Ser Val Thr Ser Pro Gly Ala Leu Arg
    50                  55                  60
Arg Met Thr Ser Lys Asp Ile Pro Asp Thr Ala Ile Ile Asn Thr Asp
65                  70                  75                  80
Asn Ser Ser Gly Ala Val Pro Ser Glu Ser Ala Leu Val Pro Tyr Ile
                85                  90                  95
Asp Glu Pro Leu Val Val Val Thr Glu His Ala Ile Thr Asn Phe Thr
```

```
                100                 105                 110
Lys Ala Glu Met Ala Leu Glu Phe Asn Arg Glu Phe Leu Asp Lys Met
            115                 120                 125
Arg Val Leu Ser Val Ser Pro Lys Tyr Ser Asp Leu Leu Thr Tyr Val
        130                 135                 140
Asp Cys Tyr Val Gly Val Ser Ala Arg Gln Ala Leu Asn Asn Phe Gln
145                 150                 155                 160
Lys Gln Val Pro Val Ile Thr Pro Thr Arg Gln Thr Met Tyr Val Asp
                165                 170                 175
Ser Ile Gln Ala Ala Leu Lys Ala Leu Glu Lys Trp Glu Ile Asp Leu
            180                 185                 190
Arg Val Ala Gln Thr Leu Leu Pro Thr Asn Val Pro Ile Gly Glu Val
        195                 200                 205
Ser Cys Pro Met Gln Ser Val Val Lys Leu Leu Asp Asp Gln Leu Pro
    210                 215                 220
Asp Asp Ser Leu Ile Arg Arg Tyr Pro Lys Glu Ala Ala Val Ala Leu
225                 230                 235                 240
Ala Lys Arg Asn Gly Gly Ile Gln Trp Met Asp Val Ser Glu Gly Thr
                245                 250                 255
Val Met Asn Glu Ala Val Asn Ala Val Ala Ala Ser Ala Leu Ala Pro
            260                 265                 270
Ser Ala Ser Ala Pro Pro Leu Glu Glu Lys Ser Lys Leu Thr Glu Gln
        275                 280                 285
Ala Met Asp Leu Val Thr Ala Ala Glu Pro Glu Ile Ile Ala Ser Leu
    290                 295                 300
Ala Pro Val Pro Ala Pro Val Phe Ala Ile Pro Pro Lys Pro Ala Asp
305                 310                 315                 320
Tyr Asn Val Arg Thr Leu Arg Ile Asp Glu Ala Thr Trp Leu Arg Met
                325                 330                 335
Ile Pro Lys Ser Met Asn Thr Pro Phe Gln Ile Gln Val Thr Asp Asn
            340                 345                 350
Thr Gly Thr Asn Trp His Leu Asn Leu Arg Gly Gly Thr Arg Val Val
        355                 360                 365
Asn Leu Asp Gln Ile Ala Pro Met Arg Phe Val Leu Asp Leu Gly Gly
    370                 375                 380
Lys Ser Tyr Lys Glu Thr Ser Trp Asp Pro Asn Gly Lys Lys Val Gly
385                 390                 395                 400
Phe Ile Val Phe Gln Ser Lys Ile Pro Phe Glu Leu Trp Thr Ala Ala
                405                 410                 415
Ser Gln Ile Gly Gln Ala Thr Val Val Asn Tyr Val Gln Leu Tyr Ala
            420                 425                 430
Glu Asp Ser Ser Phe Thr Ala Gln Ser Ile Ile Ala Thr Thr Ser Leu
        435                 440                 445
Ala Tyr Asn Tyr Glu Pro Glu Gln Leu Asn Lys Thr Asp Pro Glu Met
    450                 455                 460
Asn Tyr Tyr Leu Leu Ala Thr Phe Ile Asp Ser Ala Ala Ile Thr Pro
465                 470                 475                 480
Thr Asn Met Thr Gln Pro Asp Val Trp Asp Ala Leu Leu Thr Met Ser
                485                 490                 495
Pro Leu Ser Ala Gly Glu Val Thr Val Lys Gly Ala Val Val Ser Glu
            500                 505                 510
Val Val Pro Ala Asp Leu Ile Gly Ser Tyr Thr Pro Glu Ser Leu Asn
        515                 520                 525
Ala Ser Leu Pro Asn Asp Ala Ala Arg Cys Met Ile Asp Arg Ala Ser
    530                 535                 540
Lys Ile Ala Glu Ala Ile Lys Ile Asp Asp Asp Ala Gly Pro Asp Glu
545                 550                 555                 560
Tyr Ser Pro Asn Ser Val Pro Ile Gln Gly Gln Leu Ala Ile Ser Gln
                565                 570                 575
```

```
Leu Glu Thr Gly Tyr Gly Val Arg Ile Phe Asn Pro Lys Gly Ile Leu
            580                 585                 590
Ser Lys Ile Ala Ser Arg Ala Met Gln Ala Phe Ile Gly Asp Pro Ser
        595                 600                 605
Thr Ile Ile Thr Gln Ala Ala Pro Val Leu Ser Asp Lys Asn Asn Trp
    610                 615                 620
Ile Ala Leu Ala Gln Gly Val Lys Thr Ser Leu Arg Thr Lys Ser Leu
625                 630                 635                 640
Ser Ala Gly Val Lys Thr Ala Val Ser Lys Leu Ser Ser Ser Glu Ser
                645                 650                 655
Ile Gln Asn Trp Thr Gln Gly Phe Leu Asp Lys Val Ser Ala His Phe
            660                 665                 670
Pro Ala Pro Lys Pro Asp Cys Pro Thr Ser Gly Asp Ser Gly Glu Ser
        675                 680                 685
Ser Asn Arg Arg Val Lys Arg Asp Ser Tyr Ala Gly Val Val Lys Arg
    690                 695                 700
Gly Tyr Thr Arg
705
```

<210> SEQ ID NO:18
<211> 721
<212> PRT
<213> Reovirus

<400> SEQ ID NO:18

```
Met Ala Ser Phe Lys Gly Phe Ser Ala Asn Thr Val Pro Val Ser Lys
 1               5                  10                  15
Ala Lys Arg Asp Ile Ser Ser Leu Ala Ala Thr Pro Gly Leu Arg Ser
            20                  25                  30
Gln Ser Phe Thr Pro Ser Val Asp Met Ser Gln Ser Arg Glu Phe Leu
        35                  40                  45
Thr Lys Ala Ile Glu Gln Gly Ser Met Ser Ile Pro Tyr Gln His Val
    50                  55                  60
Asn Val Pro Lys Val Asp Arg Lys Val Val Ser Leu Val Val Arg Pro
65                  70                  75                  80
Phe Ser Ser Gly Ala Phe Ser Ile Ser Gly Val Ile Ser Pro Ala His
                85                  90                  95
Ala Tyr Leu Leu Glu Cys Leu Pro Gln Leu Glu Gln Ala Met Ala Phe
            100                 105                 110
Val Ala Ser Pro Glu Ser Phe Gln Ala Ser Asp Val Ala Lys Arg Phe
        115                 120                 125
Ala Ile Lys Pro Gly Met Ser Leu Gln Asp Ala Ile Thr Ala Phe Ile
    130                 135                 140
Asn Phe Val Ser Ala Met Leu Lys Met Thr Val Thr Arg Gln Asn Phe
145                 150                 155                 160
Asp Val Ile Val Ala Glu Ile Glu Arg Leu Ala Ser Thr Ser Val Ser
                165                 170                 175
Val Arg Thr Glu Glu Ala Lys Val Ala Asp Glu Glu Leu Met Leu Phe
            180                 185                 190
Gly Leu Asp His Arg Gly Pro Gln Gln Leu Asp Val Ser Asp Ala Lys
        195                 200                 205
Gly Ile Met Lys Ala Ala Asp Ile Gln Thr Thr His Asp Val His Leu
    210                 215                 220
Ala Pro Gly Val Gly Asn Ile Asp Pro Glu Ile Tyr Asn Glu Gly Arg
225                 230                 235                 240
Phe Met Phe Met Gln His Lys Pro Leu Ala Ala Asp Gln Ser Tyr Phe
                245                 250                 255
Thr Leu Glu Thr Ala Asp Tyr Phe Lys Ile Tyr Pro Thr Tyr Asp Glu
```

```
                260                 265                 270
His Asp Gly Arg Met Ala Asp Gln Lys Gln Ser Gly Leu Ile Leu Cys
        275                 280                 285
Thr Lys Asp Glu Val Leu Ala Glu Gln Thr Ile Phe Lys Leu Asp Ala
    290                 295                 300
Pro Asp Asp Lys Thr Val His Leu Leu Asp Arg Asp Asp Asp His Val
305                 310                 315                 320
Val Ala Arg Phe Thr Lys Val Phe Ile Glu Asp Val Ala Pro Gly His
                325                 330                 335
His Ala Ala Gln Arg Ser Gly Gln Arg Ser Val Leu Asp Asp Leu Tyr
            340                 345                 350
Ala Asn Thr Gln Val Ile Ser Ile Thr Ser Ala Ala Leu Lys Trp Val
        355                 360                 365
Val Lys His Gly Val Ser Asp Gly Ile Val Asn Arg Lys Asn Val Lys
    370                 375                 380
Val Cys Val Gly Phe Asp Pro Leu Tyr Thr Leu Ser Thr His Asn Gly
385                 390                 395                 400
Val Ser Leu Cys Ala Leu Leu Met Asp Glu Lys Leu Ser Val Leu Asn
                405                 410                 415
Ser Ala Cys Arg Met Thr Leu Arg Ser Leu Met Lys Thr Gly Arg Asp
            420                 425                 430
Val Asp Ala His Arg Ala Phe Gln Arg Val Leu Ser Gln Gly Tyr Thr
        435                 440                 445
Ser Leu Met Cys Tyr Tyr His Pro Ser Arg Lys Leu Ala Tyr Gly Glu
    450                 455                 460
Val Leu Phe Leu Glu Arg Ser Asn Asp Val Thr Asp Gly Ile Lys Leu
465                 470                 475                 480
Gln Leu Asp Ala Ser Arg Gln Cys His Glu Cys Pro Val Leu Gln Gln
                485                 490                 495
Lys Val Val Glu Leu Glu Lys Gln Ile Ile Met Gln Lys Ser Ile Gln
            500                 505                 510
Ser Asp Pro Thr Pro Val Ala Leu Gln Pro Leu Leu Ser Gln Leu Arg
        515                 520                 525
Glu Leu Ser Ser Glu Val Thr Arg Leu Gln Met Glu Leu Ser Arg Ala
    530                 535                 540
Gln Ser Leu Asn Ala Gln Leu Glu Ala Asp Val Lys Ser Ala Gln Ser
545                 550                 555                 560
Cys Ser Leu Asp Met Tyr Leu Arg His His Thr Cys Ile Asn Gly His
                565                 570                 575
Ala Lys Glu Asp Glu Leu Leu Asp Ala Val Arg Val Ala Pro Asp Val
            580                 585                 590
Arg Arg Glu Ile Met Glu Lys Arg Ser Glu Val Arg Gln Gly Trp Cys
        595                 600                 605
Glu Arg Ile Ser Lys Glu Ala Ala Ala Lys Cys Gln Thr Val Ile Asp
    610                 615                 620
Asp Leu Thr Leu Met Asn Gly Lys Gln Ala Gln Glu Ile Thr Glu Leu
625                 630                 635                 640
Arg Asp Ser Ala Glu Lys Tyr Glu Lys Gln Ile Ala Glu Leu Val Ser
                645                 650                 655
Thr Ile Thr Gln Asn Gln Ile Thr Tyr Gln Gln Glu Leu Gln Ala Leu
            660                 665                 670
Val Ala Lys Asn Val Glu Leu Asp Ala Leu Asn Gln Arg Gln Ala Lys
        675                 680                 685
Ser Leu Arg Ile Thr Pro Ser Leu Leu Ser Ala Thr Pro Ile Asp Ser
    690                 695                 700
Val Asp Asp Val Ala Asp Leu Ile Asp Phe Ser Val Pro Thr Asp Glu
705                 710                 715                 720
Leu
```

<210> SEQ ID NO:19
<211> 1267
<212> PRT
<213> Reovirus

<400> SEQ ID NO:19

```
Met Ser Ser Met Ile Leu Thr Gln Phe Gly Pro Phe Ile Glu Ser Ile
 1               5                  10                  15
Ser Gly Ile Thr Asp Gln Ser Asn Asp Val Phe Glu Asp Ala Ala Lys
            20                  25                  30
Ala Phe Ser Met Phe Thr Arg Ser Asp Val Tyr Lys Ala Leu Asp Glu
        35                  40                  45
Ile Pro Phe Ser Asp Asp Ala Met Leu Pro Ile Pro Pro Thr Ile Tyr
    50                  55                  60
Thr Lys Pro Ser His Asp Ser Tyr Tyr Tyr Ile Asp Ala Leu Asn Arg
65                  70                  75                  80
Val Arg Arg Lys Thr Tyr Gln Gly Pro Asp Asp Val Tyr Val Pro Asn
                85                  90                  95
Cys Ser Ile Val Glu Leu Leu Glu Pro His Glu Thr Leu Thr Ser Tyr
            100                 105                 110
Gly Arg Leu Ser Glu Ala Ile Glu Asn Arg Ala Lys Asp Gly Asp Ser
        115                 120                 125
Gln Ala Arg Ile Ala Thr Thr Tyr Gly Arg Ile Ala Glu Ser Gln Ala
    130                 135                 140
Arg Gln Ile Lys Ala Pro Leu Glu Lys Phe Val Leu Ala Leu Leu Val
145                 150                 155                 160
Ala Glu Ala Gly Gly Ser Leu Tyr Asp Pro Val Leu Gln Lys Tyr Asp
                165                 170                 175
Glu Ile Pro Asp Leu Ser His Asn Cys Pro Leu Trp Cys Phe Arg Glu
            180                 185                 190
Ile Cys Arg His Ile Ser Gly Pro Leu Pro Asp Arg Ala Pro Tyr Leu
        195                 200                 205
Tyr Leu Ser Ala Gly Val Phe Trp Leu Met Ser Pro Arg Met Thr Ser
    210                 215                 220
Ala Ile Pro Pro Leu Leu Ser Asp Leu Val Asn Leu Ala Ile Leu Gln
225                 230                 235                 240
Gln Thr Ala Gly Leu Asp Pro Ser Leu Val Lys Leu Gly Val Gln Ile
                245                 250                 255
Cys Leu His Ala Ala Ala Ser Ser Ser Tyr Ala Trp Phe Ile Leu Lys
            260                 265                 270
Thr Lys Ser Ile Phe Pro Gln Asn Thr Leu His Ser Met Tyr Glu Ser
        275                 280                 285
Leu Glu Gly Gly Tyr Cys Pro Asn Leu Glu Trp Leu Glu Pro Arg Ser
    290                 295                 300
Asp Tyr Lys Phe Met Tyr Met Gly Val Met Pro Leu Ser Ala Lys Tyr
305                 310                 315                 320
Ala Arg Ser Ala Pro Ser Asn Asp Lys Lys Ala Arg Glu Leu Gly Glu
                325                 330                 335
Lys Tyr Gly Leu Ser Ser Val Val Gly Glu Leu Arg Lys Arg Thr Lys
            340                 345                 350
Thr Tyr Val Lys His Asp Phe Ala Ser Val Arg Tyr Ile Arg Asp Ala
        355                 360                 365
Met Ala Cys Thr Ser Gly Ile Phe Leu Val Arg Thr Pro Thr Glu Thr
    370                 375                 380
Val Leu Gln Glu Tyr Thr Gln Ser Pro Glu Ile Lys Val Pro Ile Pro
385                 390                 395                 400
Gln Lys Asp Trp Thr Gly Pro Ile Gly Glu Ile Arg Ile Leu Lys Asp
```

405 410 415
Thr Thr Ser Ser Ile Ala Arg Tyr Leu Tyr Arg Thr Trp Tyr Leu Ala
420 425 430
Ala Ala Arg Met Ala Ala Gln Pro Arg Thr Trp Asp Pro Leu Phe Gln
435 440 445
Ala Ile Met Arg Ser Gln Tyr Val Thr Ala Arg Gly Gly Ser Gly Ala
450 455 460
Ala Leu Arg Glu Ser Leu Tyr Ala Ile Asn Val Ser Leu Pro Asp Phe
465 470 475 480
Lys Gly Leu Pro Val Lys Ala Ala Thr Lys Ile Phe Gln Ala Ala Gln
485 490 495
Leu Ala Asn Leu Pro Phe Ser His Thr Ser Val Ala Ile Leu Ala Asp
500 505 510
Thr Ser Met Gly Leu Arg Asn Gln Val Gln Arg Arg Pro Arg Ser Ile
515 520 525
Met Pro Leu Asn Val Pro Gln Gln Gln Val Ser Ala Pro His Thr Leu
530 535 540
Thr Ala Asp Tyr Ile Asn Tyr His Met Asn Leu Ser Thr Thr Ser Gly
545 550 555 560
Ser Ala Val Ile Glu Lys Val Ile Pro Leu Gly Val Tyr Ala Ser Ser
565 570 575
Pro Pro Asn Gln Ser Ile Asn Ile Asp Ile Ser Ala Cys Asp Ala Ser
580 585 590
Ile Thr Trp Asp Phe Phe Leu Ser Val Ile Met Ala Ala Ile His Glu
595 600 605
Gly Val Ala Ser Ser Ser Ile Gly Lys Pro Phe Met Gly Val Pro Ala
610 615 620
Ser Ile Val Asn Asp Glu Ser Val Val Gly Val Arg Ala Ala Arg Pro
625 630 635 640
Ile Ser Gly Met Gln Asn Met Ile Gln His Leu Ser Lys Leu Tyr Lys
645 650 655
Arg Gly Phe Ser Tyr Arg Val Asn Asp Ser Phe Ser Pro Gly Asn Asp
660 665 670
Phe Thr His Met Thr Thr Thr Phe Pro Ser Gly Ser Thr Ala Thr Ser
675 680 685
Thr Glu His Thr Ala Asn Asn Ser Thr Met Met Glu Thr Phe Leu Thr
690 695 700
Val Trp Gly Pro Glu His Thr Asp Asp Pro Asp Val Leu Arg Leu Met
705 710 715 720
Lys Ser Leu Thr Ile Gln Arg Asn Tyr Val Cys Gln Gly Asp Asp Gly
725 730 735
Leu Met Ile Ile Asp Gly Thr Thr Ala Gly Lys Val Asn Ser Glu Thr
740 745 750
Ile Gln Lys Met Leu Glu Leu Ile Ser Lys Tyr Gly Glu Glu Phe Gly
755 760 765
Trp Lys Tyr Asp Ile Ala Tyr Asp Gly Thr Ala Glu Tyr Leu Lys Leu
770 775 780
Tyr Phe Ile Phe Gly Cys Arg Ile Pro Asn Leu Ser Arg His Pro Ile
785 790 795 800
Val Gly Lys Glu Arg Ala Asn Ser Ser Ala Glu Glu Pro Trp Pro Ala
805 810 815
Ile Leu Asp Gln Ile Met Gly Val Phe Phe Asn Gly Val His Asp Gly
820 825 830
Leu Gln Trp Gln Arg Trp Ile Arg Tyr Ser Trp Ala Leu Cys Cys Ala
835 840 845
Phe Ser Arg Gln Arg Thr Met Ile Gly Glu Ser Val Gly Tyr Leu Gln
850 855 860
Tyr Pro Met Trp Ser Phe Val Tyr Trp Gly Leu Pro Leu Val Lys Ala
865 870 875 880

Phe Gly Ser Asp Pro Trp Ile Phe Ser Trp Tyr Met Pro Thr Gly Asp
885 890 895
Leu Gly Met Tyr Ser Trp Ile Ser Leu Ile Arg Pro Leu Met Thr Arg
900 905 910
Trp Met Val Ala Asn Gly Tyr Val Thr Asp Arg Cys Ser Pro Val Phe
915 920 925
Gly Asn Ala Asp Tyr Arg Arg Cys Phe Asn Glu Leu Lys Leu Tyr Gln
930 935 940
Gly Tyr Tyr Met Ala Gln Leu Pro Arg Asn Pro Lys Lys Ser Gly Arg
945 950 955 960
Ala Ala Pro Arg Glu Val Arg Glu Gln Phe Thr Gln Ala Leu Ser Asp
965 970 975
Tyr Leu Leu Gln Asn Pro Glu Leu Lys Ser Arg Val Leu Arg Gly Arg
980 985 990
Ser Glu Trp Glu Lys Tyr Gly Ala Gly Ile Ile His Asn Pro Pro Ser
995 1000 1005
Leu Phe Asp Val Pro His Lys Trp Tyr Gln Gly Ala Gln Glu Ala Ala
1010 1015 1020
Ile Ala Thr Arg Glu Glu Leu Ala Glu Met Asp Glu Thr Leu Met Arg
1025 1030 1035 1040
Ala Arg Arg His Arg Tyr Ser Ser Phe Ser Lys Leu Leu Glu Ala Tyr
1045 1050 1055
Leu Leu Val Lys Trp Arg Met Cys Glu Ala Arg Glu Pro Ser Val Asp
1060 1065 1070
Leu Arg Leu Pro Leu Cys Ala Gly Ile Asp Pro Leu Asn Ser Asp Pro
1075 1080 1085
Phe Leu Lys Met Val Ser Val Gly Pro Met Leu Gln Ser Thr Arg Lys
1090 1095 1100
Tyr Phe Ala Gln Thr Leu Phe Met Ala Lys Thr Val Ser Gly Leu Asp
1105 1110 1115 1120
Val Asn Ala Ile Asp Ser Ala Leu Leu Arg Leu Arg Thr Leu Gly Ala
1125 1130 1135
Asp Lys Lys Ala Leu Thr Ala Gln Leu Leu Met Val Gly Leu Gln Glu
1140 1145 1150
Ser Glu Ala Asp Ala Leu Ala Gly Lys Ile Met Leu Gln Asp Val Asn
1155 1160 1165
Thr Val Gln Leu Ala Arg Val Val Asn Leu Ala Val Pro Asp Thr Trp
1170 1175 1180
Met Ser Leu Asp Phe Asp Ser Met Phe Lys His His Val Lys Leu Leu
1185 1190 1195 1200
Pro Lys Asp Gly Arg His Leu Asn Thr Asp Ile Pro Pro Arg Met Gly
1205 1210 1215
Trp Leu Arg Ala Ile Leu Arg Phe Leu Gly Ala Gly Met Val Met Thr
1220 1225 1230
Ala Thr Gly Val Ala Val Asp Ile Tyr Leu Glu Asp Ile His Gly Gly
1235 1240 1245
Gly Arg Ser Leu Gly Gln Arg Phe Met Thr Trp Met Arg Gln Glu Gly
1250 1255 1260
Arg Ser Ala
1265

<210> SEQ ID NO:20
<211> 1289
<212> PRT
<213> Reovirus

<400> SEQ ID NO:20
Met Ala Asn Val Trp Gly Val Arg Leu Ala Asp Ser Leu Ser Ser Pro

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Thr Ile Glu Thr Arg Thr Arg Gln Tyr Thr Leu His Asp Leu Cys Ser
            20                  25                  30
Asp Leu Asp Ala Asn Pro Gly Arg Glu Pro Trp Lys Pro Leu Arg Asn
        35                  40                  45
Gln Arg Thr Asn Asn Ile Val Ala Val Gln Leu Phe Arg Pro Leu Gln
    50                  55                  60
Gly Leu Val Leu Asp Thr Gln Leu Tyr Gly Phe Pro Gly Ala Phe Asp
65                  70                  75                  80
Asp Trp Glu Arg Phe Met Arg Glu Lys Leu Arg Val Leu Lys Tyr Glu
                85                  90                  95
Val Leu Arg Ile Tyr Pro Ile Ser Asn Tyr Ser Asn Glu His Val Asn
            100                 105                 110
Val Phe Val Ala Asn Ala Leu Val Gly Ala Phe Leu Ser Asn Gln Ala
        115                 120                 125
Phe Tyr Asp Leu Leu Pro Leu Leu Ile Ile Asn Asp Thr Met Ile Gly
    130                 135                 140
Asp Leu Leu Gly Thr Gly Ala Ser Leu Ser Gln Phe Phe Gln Ser His
145                 150                 155                 160
Gly Asp Val Leu Glu Val Ala Ala Gly Arg Lys Tyr Leu Gln Met Glu
                165                 170                 175
Asn Tyr Ser Asn Asp Asp Asp Asp Pro Pro Leu Phe Ala Lys Asp Leu
            180                 185                 190
Ser Asp Tyr Ala Lys Ala Phe Tyr Ser Asp Thr Tyr Glu Val Leu Asp
        195                 200                 205
Arg Phe Phe Trp Thr His Asp Ser Ser Ala Gly Val Leu Val His Tyr
    210                 215                 220
Asp Lys Pro Thr Asn Gly His His Tyr Leu Leu Gly Thr Leu Thr Gln
225                 230                 235                 240
Met Val Ser Ala Pro Pro Tyr Ile Ile Asn Ala Thr Asp Ala Met Leu
                245                 250                 255
Leu Glu Ser Cys Leu Glu Gln Phe Ser Ala Asn Val Arg Ala Arg Pro
            260                 265                 270
Ala Gln Pro Val Thr Arg Leu Asp Gln Cys Tyr His Leu Arg Trp Gly
        275                 280                 285
Ala Gln Tyr Val Gly Glu Asp Ser Leu Thr Tyr Arg Leu Gly Val Leu
    290                 295                 300
Ser Leu Leu Ala Thr Asn Gly Tyr Gln Leu Ala Arg Pro Ile Pro Arg
305                 310                 315                 320
Gln Leu Thr Asn Arg Trp Leu Ser Ser Phe Val Ser Gln Ile Met Ser
                325                 330                 335
Asp Gly Val Asn Glu Thr Pro Leu Trp Pro Gln Glu Arg Tyr Val Gln
            340                 345                 350
Ile Ala Tyr Asp Ser Pro Ser Val Val Asp Gly Ala Thr Gln Tyr Gly
        355                 360                 365
Tyr Val Arg Lys Asn Gln Leu Arg Leu Gly Met Arg Ile Ser Ala Leu
    370                 375                 380
Gln Ser Leu Ser Asp Thr Pro Ser Pro Val Gln Trp Leu Pro Gln Tyr
385                 390                 395                 400
Thr Ile Asp Gln Ala Ala Met Asp Glu Gly Asp Leu Met Val Ser Arg
                405                 410                 415
Leu Thr Gln Leu Pro Leu Arg Pro Asp Tyr Gly Asn Ile Trp Val Gly
            420                 425                 430
Asp Ala Leu Ser Tyr Tyr Val Asp Tyr Asn Arg Ser His Arg Val Val
        435                 440                 445
Leu Ser Ser Glu Leu Pro Gln Leu Pro Asp Thr Tyr Phe Asp Gly Asp
    450                 455                 460
Glu Gln Tyr Gly Arg Ser Leu Phe Ser Leu Ala Arg Lys Ile Gly Asp
465                 470                 475                 480
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Arg Ser Leu Val Lys Asp Thr Ala Val Leu Lys His Ala Tyr Gln Ala
485 490 495
Ile Asp Pro Asn Thr Gly Lys Glu Tyr Leu Arg Ser Arg Gln Ser Val
500 505 510
Ala Tyr Phe Gly Ala Ser Ala Gly His Ser Gly Ala Asp Gln Pro Leu
515 520 525
Val Ile Glu Pro Trp Ile Gln Gly Lys Ile Ser Gly Val Pro Pro Pro
530 535 540
Ser Ser Val Arg Gln Phe Gly Tyr Asp Val Ala Arg Gly Ala Ile Val
545 550 555 560
Asp Leu Ala Arg Pro Phe Pro Ser Gly Asp Tyr Gln Phe Val Tyr Ser
565 570 575
Asp Val Asp Gln Val Val Asp Gly His Asp Asp Leu Ser Ile Ser Ser
580 585 590
Gly Leu Val Glu Ser Leu Leu Ser Ser Cys Met His Ala Thr Ala Pro
595 600 605
Gly Gly Ser Phe Val Val Lys Ile Asn Phe Pro Thr Arg Pro Val Trp
610 615 620
His Tyr Ile Glu Gln Lys Ile Leu Pro Asn Ile Thr Ser Tyr Met Leu
625 630 635 640
Ile Lys Pro Phe Val Thr Asn Asn Val Glu Leu Phe Phe Val Ala Phe
645 650 655
Gly Val His Gln His Ser Ser Leu Thr Trp Thr Ser Gly Val Tyr Phe
660 665 670
Phe Leu Val Asp His Phe Tyr Arg Tyr Glu Thr Leu Ser Thr Ile Ser
675 680 685
Arg Gln Leu Pro Ser Phe Gly Tyr Val Asp Asp Gly Ser Ser Val Thr
690 695 700
Gly Ile Glu Thr Ile Ser Ile Glu Asn Pro Gly Phe Ser Asn Met Thr
705 710 715 720
Gln Ala Ala Arg Ile Gly Ile Ser Gly Leu Cys Ala Asn Val Gly Asn
725 730 735
Ala Arg Lys Ser Ile Ala Ile Tyr Glu Ser His Gly Ala Arg Val Leu
740 745 750
Thr Ile Thr Ser Arg Arg Ser Pro Ala Ser Ala Arg Arg Lys Ser Arg
755 760 765
Leu Arg Tyr Leu Pro Leu Ile Asp Pro Arg Ser Leu Glu Val Gln Ala
770 775 780
Arg Thr Ile Leu Pro Ala Asp Pro Val Leu Phe Glu Asn Val Ser Gly
785 790 795 800
Ala Ser Pro His Val Cys Leu Thr Met Met Tyr Asn Phe Glu Val Ser
805 810 815
Ser Ala Val Tyr Asp Gly Asp Val Val Leu Asp Leu Gly Thr Gly Pro
820 825 830
Glu Ala Lys Ile Leu Glu Leu Ile Pro Ala Thr Ser Pro Val Thr Cys
835 840 845
Val Asp Ile Arg Pro Thr Ala Gln Pro Ser Gly Cys Trp Asn Val Arg
850 855 860
Thr Thr Phe Leu Glu Leu Asp Tyr Leu Ser Asp Gly Trp Ile Thr Gly
865 870 875 880
Val Arg Gly Asp Ile Val Thr Cys Met Leu Ser Leu Gly Ala Ala Ala
885 890 895
Ala Gly Lys Ser Met Thr Phe Asp Ala Ala Phe Gln Gln Leu Ile Lys
900 905 910
Val Leu Ser Lys Ser Thr Ala Asn Val Val Leu Val Gln Val Asn Cys
915 920 925
Pro Thr Asp Val Val Arg Ser Ile Lys Gly Tyr Leu Glu Ile Asp Ser
930 935 940
Thr Asn Lys Arg Tyr Arg Phe Pro Lys Phe Gly Arg Asp Glu Pro Tyr

945 950 955 960
Ser Asp Met Asp Ala Leu Glu Lys Ile Cys Arg Thr Ala Trp Pro Asn
965 970 975
Cys Ser Ile Thr Trp Val Pro Leu Ser Tyr Asp Leu Arg Trp Thr Arg
980 985 990
Leu Ala Leu Leu Glu Ser Thr Thr Leu Ser Ser Ala Ser Ile Arg Ile
995 1000 1005
Ala Glu Leu Met Tyr Lys Tyr Met Pro Ile Met Arg Ile Asp Ile His
1010 1015 1020
Gly Leu Pro Met Glu Lys Arg Gly Asn Phe Ile Val Gly Gln Asn Cys
1025 1030 1035 1040
Ser Leu Val Ile Pro Gly Phe Asn Ala Gln Asp Val Phe Asn Cys Tyr
1045 1050 1055
Phe Asn Ser Ala Leu Ala Phe Ser Thr Glu Asp Val Asn Ala Ala Met
1060 1065 1070
Ile Pro Gln Val Ser Ala Gln Phe Asp Ala Thr Lys Gly Glu Trp Thr
1075 1080 1085
Leu Asp Met Val Phe Ser Asp Ala Gly Ile Tyr Thr Met Gln Ala Leu
1090 1095 1100
Val Gly Ser Asn Ala Asn Pro Val Ser Leu Gly Ser Phe Val Val Asp
1105 1110 1115 1120
Ser Pro Asp Val Asp Ile Thr Asp Ala Trp Pro Ala Gln Leu Asp Phe
1125 1130 1135
Thr Ile Ala Gly Thr Asp Val Asp Ile Thr Val Asn Pro Tyr Tyr Arg
1140 1145 1150
Leu Met Thr Phe Val Arg Ile Asp Gly Gln Trp Gln Ile Ala Asn Pro
1155 1160 1165
Asp Lys Phe Gln Phe Phe Ser Ser Ala Ser Gly Thr Leu Val Met Asn
1170 1175 1180
Val Lys Leu Asp Ile Ala Asp Lys Tyr Leu Leu Tyr Tyr Ile Arg Asp
1185 1190 1195 1200
Val Gln Ser Arg Asp Val Gly Phe Tyr Ile Gln His Pro Leu Gln Leu
1205 1210 1215
Leu Asn Thr Ile Thr Leu Pro Thr Asn Glu Asp Leu Phe Leu Ser Ala
1220 1225 1230
Pro Asp Met Arg Glu Trp Ala Val Lys Glu Ser Gly Asn Thr Ile Cys
1235 1240 1245
Ile Leu Asn Ser Gln Gly Phe Val Leu Pro Gln Asp Trp Asp Val Leu
1250 1255 1260
Thr Asp Thr Ile Ser Trp Ser Pro Ser Ile Pro Thr Tyr Ile Val Pro
1265 1270 1275 1280
Pro Gly Asp Tyr Thr Leu Thr Pro Leu
1285

<210> SEQ ID NO:21
<211> 1275
<212> PRT
<213> Reovirus

<400> SEQ ID NO:21
Met Lys Arg Ile Pro Arg Lys Thr Lys Gly Lys Ser Ser Gly Lys Gly
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Asn Asp Ser Thr Glu Arg Ala Asp Asp Gly Ser Ser Gln Leu Arg Asp
20 25 30
Lys Gln Asn Asn Lys Ala Gly Pro Ala Thr Thr Glu Pro Gly Thr Ser
35 40 45
Asn Arg Glu Gln Tyr Lys Ala Arg Pro Gly Ile Ala Ser Val Gln Arg
50 55 60

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Ala Thr Glu Ser Ala Glu Met Pro Met Lys Asn Asn Asp Glu Gly Thr
65                  70                  75                  80
Pro Asp Lys Lys Gly Asn Thr Lys Gly Asp Leu Val Asn Glu His Ser
                85                  90                  95
Glu Ala Lys Asp Glu Ala Asp Glu Ala Thr Lys Lys Gln Ala Lys Asp
            100                 105                 110
Thr Asp Lys Ser Lys Ala Gln Val Thr Tyr Ser Asp Thr Gly Ile Asn
        115                 120                 125
Asn Ala Asn Glu Leu Ser Arg Ser Gly Asn Val Asp Asn Glu Gly Gly
    130                 135                 140
Ser Asn Gln Lys Pro Met Ser Thr Arg Ile Ala Glu Ala Thr Ser Ala
145                 150                 155                 160
Ile Val Ser Lys His Pro Ala Arg Val Gly Leu Pro Pro Thr Ala Ser
                165                 170                 175
Ser Gly His Gly Tyr Gln Cys His Val Cys Ser Ala Val Leu Phe Ser
            180                 185                 190
Pro Leu Asp Leu Asp Ala His Val Ala Ser His Gly Leu His Gly Asn
        195                 200                 205
Met Thr Leu Thr Ser Ser Asp Ile Gln Arg His Ile Thr Glu Phe Ile
    210                 215                 220
Ser Ser Trp Gln Asn His Pro Ile Val Gln Val Ser Ala Asp Val Glu
225                 230                 235                 240
Asn Lys Lys Thr Ala Gln Leu Leu His Ala Asp Thr Pro Arg Leu Val
                245                 250                 255
Thr Trp Asp Ala Gly Leu Cys Thr Ser Phe Lys Ile Val Pro Ile Val
            260                 265                 270
Pro Ala Gln Val Pro Gln Asp Val Leu Ala Tyr Thr Phe Phe Thr Ser
        275                 280                 285
Ser Tyr Ala Ile Gln Ser Pro Phe Pro Glu Ala Ala Val Ser Arg Ile
    290                 295                 300
Val Val His Thr Arg Trp Ala Ser Asn Val Asp Phe Asp Arg Asp Ser
305                 310                 315                 320
Ser Val Ile Met Ala Pro Pro Thr Glu Asn Asn Ile His Leu Phe Lys
                325                 330                 335
Gln Leu Leu Asn Thr Glu Thr Leu Ser Val Arg Gly Ala Asn Pro Leu
            340                 345                 350
Met Phe Arg Ala Asn Val Leu His Met Leu Leu Glu Phe Val Leu Asp
        355                 360                 365
Asn Leu Tyr Leu Asn Arg His Thr Gly Phe Ser Gln Asp His Thr Pro
    370                 375                 380
Phe Thr Glu Gly Ala Asn Leu Arg Ser Leu Pro Gly Pro Asp Ala Glu
385                 390                 395                 400
Lys Trp Tyr Ser Ile Met Tyr Pro Thr Arg Met Gly Thr Pro Asn Val
                405                 410                 415
Ser Lys Ile Cys Asn Phe Val Ala Ser Cys Val Arg Asn Arg Val Gly
            420                 425                 430
Arg Phe Asp Arg Ala Gln Met Met Asn Gly Ala Met Ser Glu Trp Val
        435                 440                 445
Asp Val Phe Glu Thr Ser Asp Ala Leu Thr Val Ser Ile Arg Gly Arg
    450                 455                 460
Trp Met Ala Arg Leu Ala Arg Met Asn Ile Asn Pro Thr Glu Ile Glu
465                 470                 475                 480
Trp Ala Leu Thr Glu Cys Ala Gln Gly Tyr Val Thr Val Thr Ser Pro
                485                 490                 495
Tyr Ala Pro Ser Val Asn Arg Leu Met Pro Tyr Arg Ile Ser Asn Ala
            500                 505                 510
Glu Arg Gln Ile Ser Gln Ile Ile Arg Ile Met Asn Ile Gly Asn Asn
        515                 520                 525
Ala Thr Val Ile Gln Pro Val Leu Gln Asp Ile Ser Val Leu Leu Gln
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    530                 535                 540
Arg Ile Ser Pro Leu Gln Ile Asp Pro Thr Ile Ile Ser Asn Thr Met
545                 550                 555                 560
Ser Thr Val Ser Glu Ser Thr Thr Gln Thr Leu Ser Pro Ala Ser Ser
                565                 570                 575
Ile Leu Gly Lys Leu Arg Pro Ser Asn Ser Asp Phe Ser Ser Phe Arg
            580                 585                 590
Val Ala Leu Ala Gly Trp Leu Tyr Asn Gly Val Val Thr Thr Val Ile
        595                 600                 605
Asp Asp Ser Ser Tyr Pro Lys Asp Gly Gly Ser Val Thr Ser Leu Glu
    610                 615                 620
Asn Leu Trp Asp Phe Phe Ile Leu Ala Leu Ala Leu Pro Leu Thr Thr
625                 630                 635                 640
Asp Pro Cys Ala Pro Val Lys Ala Phe Met Thr Leu Ala Asn Met Met
                645                 650                 655
Val Gly Phe Glu Thr Ile Pro Met Asp Asn Gln Ile Tyr Thr Gln Ser
            660                 665                 670
Arg Arg Ala Ser Ala Phe Ser Thr Pro His Thr Trp Pro Arg Cys Phe
        675                 680                 685
Met Asn Ile Gln Leu Ile Ser Pro Ile Asp Ala Pro Ile Leu Arg Gln
    690                 695                 700
Trp Ala Glu Ile Ile His Arg Tyr Trp Pro Asn Pro Ser Gln Ile Arg
705                 710                 715                 720
Tyr Gly Ala Pro Asn Val Phe Gly Ser Ala Asn Leu Phe Thr Pro Pro
                725                 730                 735
Glu Val Leu Leu Leu Pro Ile Asp His Gln Pro Ala Asn Val Thr Thr
            740                 745                 750
Pro Thr Leu Asp Phe Thr Asn Glu Leu Thr Asn Trp Arg Ala Arg Val
        755                 760                 765
Cys Glu Leu Met Lys Asn Leu Val Asp Asn Gln Arg Tyr Gln Pro Gly
    770                 775                 780
Trp Thr Gln Ser Leu Val Ser Ser Met Arg Gly Thr Leu Asp Lys Leu
785                 790                 795                 800
Lys Leu Ile Lys Ser Met Thr Pro Met Tyr Leu Gln Gln Leu Ala Pro
                805                 810                 815
Val Glu Leu Ala Val Ile Ala Pro Met Leu Pro Phe Pro Pro Phe Gln
            820                 825                 830
Val Pro Tyr Val Arg Leu Asp Arg Asp Arg Val Pro Thr Met Val Gly
        835                 840                 845
Val Thr Arg His Ser Arg Asp Thr Ile Thr Gln Pro Ala Leu Ser Leu
    850                 855                 860
Ser Thr Thr Asn Thr Thr Val Gly Val Pro Leu Ala Leu Asp Ala Arg
865                 870                 875                 880
Ala Ile Thr Val Ala Leu Leu Ser Gly Lys Tyr Pro Pro Asp Leu Val
                885                 890                 895
Thr Asn Val Trp Tyr Ala Asp Ala Ile Tyr Pro Met Tyr Ala Asp Thr
            900                 905                 910
Glu Val Phe Ser Asn Leu Gln Arg Asp Met Ile Thr Cys Glu Ala Val
        915                 920                 925
Gln Thr Leu Val Thr Leu Val Ala Gln Ile Ser Glu Thr Gln Tyr Pro
    930                 935                 940
Val Asp Arg Tyr Leu Asp Trp Ile Pro Ser Leu Arg Ala Ser Ala Ala
945                 950                 955                 960
Thr Ala Ala Thr Phe Ala Glu Trp Val Asn Thr Ser Met Lys Thr Ala
                965                 970                 975
Phe Asp Leu Ser Asp Met Leu Leu Glu Pro Leu Leu Ser Gly Asp Pro
            980                 985                 990
Arg Met Thr Gln Leu Ala Ile Gln Tyr Gln Gln Tyr Asn Gly Arg Thr
        995                 1000                1005
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Phe Asn Ile Ile Pro Glu Met Pro Gly Ser Val Ile Ala Asp Cys Val
    1010                1015                1020
Gln Leu Thr Ala Glu Val Phe Asn His Glu Tyr Asn Leu Phe Gly Ile
1025                1030                1035                1040
Ala Arg Gly Asp Ile Ile Ile Gly Arg Val Gln Ser Thr His Leu Trp
                1045                1050                1055
Ser Pro Leu Ala Pro Pro Pro Asp Leu Val Phe Asp Arg Asp Thr Pro
            1060                1065                1070
Gly Val His Ile Phe Gly Arg Asp Cys Arg Ile Ser Phe Gly Met Asn
        1075                1080                1085
Gly Ala Ala Pro Met Ile Arg Asp Glu Thr Gly Leu Met Val Pro Phe
    1090                1095                1100
Glu Gly Asn Trp Ile Phe Pro Leu Ala Leu Trp Gln Met Asn Thr Arg
1105                1110                1115                1120
Tyr Phe Asn Gln Gln Phe Asp Ala Trp Ile Lys Thr Gly Glu Leu Arg
                1125                1130                1135
Ile Arg Ile Glu Met Gly Ala Tyr Pro Tyr Met Leu His Tyr Tyr Asp
            1140                1145                1150
Pro Arg Gln Tyr Ala Asn Ala Trp Asn Leu Thr Ser Ala Trp Leu Glu
        1155                1160                1165
Glu Ile Thr Pro Thr Ser Ile Pro Ser Val Pro Phe Met Val Pro Ile
    1170                1175                1180
Ser Ser Asp His Asp Ile Ser Ser Ala Pro Ala Val Gln Tyr Ile Ile
1185                1190                1195                1200
Ser Thr Glu Tyr Asn Asp Arg Ser Leu Phe Cys Thr Asn Ser Ser Ser
                1205                1210                1215
Pro Gln Thr Ile Ala Gly Pro Asp Lys His Ile Pro Val Glu Arg Tyr
            1220                1225                1230
Asn Ile Leu Thr Asn Pro Asp Ala Pro Pro Thr Gln Ile Gln Leu Pro
        1235                1240                1245
Glu Val Val Asp Leu Tyr Asn Val Val Thr Arg Tyr Ala Tyr Glu Thr
    1250                1255                1260
Pro Pro Ile Thr Ala Val Val Met Gly Val Pro
1265                1270                1275
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