SEQUENCE LISTING

<110> CureVac GmbH

<120> Respiratory syncytial virus (RSV) vaccine

<130> CU01P151WO1

<160> 37

<170> PatentIn version 3.5

<210> 1
<211> 574
<212> PRT
<213> respiratory syncytial virus

<400> 1

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Met Glu Leu Pro Ile Leu Lys Ala Asn Ala Ile Thr Thr Ile Leu Ala
1               5                  10                  15

Ala Val Thr Phe Cys Phe Ala Ser Ser Gln Asn Ile Thr Glu Glu Phe
            20                  25                  30

Tyr Gln Ser Thr Cys Ser Ala Val Ser Lys Gly Tyr Leu Ser Ala Leu
        35                  40                  45

Arg Thr Gly Trp Tyr Thr Ser Val Ile Thr Ile Glu Leu Ser Asn Ile
    50                  55                  60

Lys Glu Asn Lys Cys Asn Gly Thr Asp Ala Lys Val Lys Leu Ile Asn
65                  70                  75                  80

Gln Glu Leu Asp Lys Tyr Lys Asn Ala Val Thr Glu Leu Gln Leu Leu
                85                  90                  95

Met Gln Ser Thr Thr Ala Ala Asn Asn Arg Ala Arg Arg Glu Leu Pro
            100                 105                 110

Arg Phe Met Asn Tyr Thr Leu Asn Asn Thr Lys Lys Thr Asn Val Thr
        115                 120                 125

Leu Ser Lys Lys Arg Lys Arg Arg Phe Leu Gly Phe Leu Leu Gly Val
    130                 135                 140

Gly Ser Ala Ile Ala Ser Gly Ile Ala Val Ser Lys Val Leu His Leu
145                 150                 155                 160

Glu Gly Glu Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys
                165                 170                 175

Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val
            180                 185                 190

Leu Asp Leu Lys Asn Tyr Ile Asp Lys Gln Leu Leu Pro Ile Val Asn
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195 200 205

Lys Gln Ser Cys Arg Ile Ser Asn Ile Glu Thr Val Ile Glu Phe Gln
210 215 220

Gln Lys Asn Asn Arg Leu Leu Glu Ile Thr Arg Glu Phe Ser Val Asn
225 230 235 240

Ala Gly Val Thr Thr Pro Val Ser Thr Tyr Met Leu Thr Asn Ser Glu
245 250 255

Leu Leu Ser Leu Ile Asn Asp Met Pro Ile Thr Asn Asp Gln Lys Lys
260 265 270

Leu Met Ser Asn Asn Val Gln Ile Val Arg Gln Gln Ser Tyr Ser Ile
275 280 285

Met Ser Ile Ile Lys Glu Glu Val Leu Ala Tyr Val Val Gln Leu Pro
290 295 300

Leu Tyr Gly Val Ile Asp Thr Pro Cys Trp Lys Leu His Thr Ser Pro
305 310 315 320

Leu Cys Thr Thr Asn Thr Lys Glu Gly Ser Asn Ile Cys Leu Thr Arg
325 330 335

Thr Asp Arg Gly Trp Tyr Cys Asp Asn Ala Gly Ser Val Ser Phe Phe
340 345 350

Pro Gln Ala Glu Thr Cys Lys Val Gln Ser Asn Arg Val Phe Cys Asp
355 360 365

Thr Met Asn Ser Leu Thr Leu Pro Ser Glu Val Asn Leu Cys Asn Val
370 375 380

Asp Ile Phe Asn Pro Lys Tyr Asp Cys Lys Ile Met Thr Ser Lys Thr
385 390 395 400

Asp Val Ser Ser Ser Val Ile Thr Ser Leu Gly Ala Ile Val Ser Cys
405 410 415

Tyr Gly Lys Thr Lys Cys Thr Ala Ser Asn Lys Asn Arg Gly Ile Ile
420 425 430

Lys Thr Phe Ser Asn Gly Cys Asp Tyr Val Ser Asn Lys Gly Val Asp
435 440 445

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

Lys Ser Leu Tyr Val Lys Gly Glu Pro Ile Ile Asn Phe Tyr Asp Pro

465 470 475 480

Leu Val Phe Pro Ser Asp Glu Phe Asp Ala Ser Ile Ser Gln Val Asn
485 490 495

Glu Lys Ile Asn Gln Ser Leu Ala Phe Ile Arg Lys Ser Asp Glu Leu
500 505 510

Leu His His Val Asn Ala Gly Lys Ser Thr Thr Asn Ile Met Ile Thr
515 520 525

Thr Ile Ile Ile Val Ile Ile Val Ile Leu Leu Ser Leu Ile Ala Val
530 535 540

Gly Leu Leu Leu Tyr Cys Lys Ala Arg Ser Thr Pro Val Thr Leu Ser
545 550 555 560

Lys Asp Gln Leu Ser Gly Ile Asn Asn Ile Ala Phe Ser Asn
565 570

<210> 2
<211> 298
<212> PRT
<213> respiratory syncytial virus

<400> 2

Met Ser Lys Asn Lys Asp Gln Arg Thr Ala Lys Thr Leu Glu Lys Thr
1 5 10 15

Trp Asp Thr Leu Asn His Leu Leu Phe Ile Ser Ser Gly Leu Tyr Lys
20 25 30

Leu Asn Leu Lys Ser Ile Ala Gln Ile Thr Leu Ser Ile Leu Ala Met
35 40 45

Ile Ile Ser Thr Ser Leu Ile Ile Thr Ala Ile Ile Phe Ile Ala Ser
50 55 60

Ala Asn His Lys Val Thr Leu Thr Thr Ala Ile Ile Gln Asp Ala Thr
65 70 75 80

Ser Gln Ile Lys Asn Thr Thr Pro Thr Tyr Leu Thr Gln Asp Pro Gln
85 90 95

Leu Gly Ile Ser Phe Ser Asn Leu Ser Glu Ile Thr Ser Gln Thr Thr
100 105 110

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

Thr Thr Val Lys Thr Lys Asn Thr Thr Thr Thr Gln Thr Gln Pro Ser
130 135 140

```
Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn Lys Pro Asn
145                 150                 155                 160

Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys
                165                 170                 175

Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys
            180                 185                 190

Lys Pro Gly Lys Lys Thr Thr Thr Lys Pro Thr Lys Lys Pro Thr Phe
        195                 200                 205

Lys Thr Thr Lys Lys Asp Leu Lys Pro Gln Thr Thr Lys Pro Lys Glu
    210                 215                 220

Val Pro Thr Thr Lys Pro Thr Glu Glu Pro Thr Ile Asn Thr Thr Lys
225                 230                 235                 240

Thr Asn Ile Thr Thr Thr Leu Leu Thr Asn Asn Thr Thr Gly Asn Pro
                245                 250                 255

Lys Leu Thr Ser Gln Met Glu Thr Phe His Ser Thr Ser Ser Glu Gly
            260                 265                 270

Asn Leu Ser Pro Ser Gln Val Ser Thr Thr Ser Glu His Pro Ser Gln
        275                 280                 285

Pro Ser Ser Pro Pro Asn Thr Thr Arg Gln
    290                 295
```

<210> 3
<211> 64
<212> PRT
<213> respiratory syncytial virus

<400> 3

```
Met Glu Asn Thr Ser Ile Thr Ile Glu Phe Ser Ser Lys Phe Trp Pro
1               5                   10                  15

Tyr Phe Thr Leu Ile His Met Ile Thr Thr Ile Ile Ser Leu Leu Ile
            20                  25                  30

Ile Ile Ser Ile Met Thr Ala Ile Leu Asn Lys Leu Cys Glu Tyr Asn
        35                  40                  45

Val Phe His Asn Lys Thr Phe Glu Leu Pro Arg Ala Arg Val Asn Thr
    50                  55                  60
```

<210> 4
<211> 256
<212> PRT

<213> respiratory syncytial virus

<400> 4

```
Met Glu Thr Tyr Val Asn Lys Leu His Glu Gly Ser Thr Tyr Thr Ala
1               5                  10                  15

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

Thr Ile Trp Val Pro Met Phe Gln Ser Ser Met Pro Ala Asp Leu Leu
        35                  40                  45

Ile Lys Glu Leu Ala Asn Val Asn Ile Leu Val Lys Gln Ile Ser Thr
    50                  55                  60

Pro Lys Gly Pro Ser Leu Arg Val Met Ile Asn Ser Arg Ser Ala Leu
65                  70                  75                  80

Leu Ala Gln Met Pro Ser Lys Phe Thr Ile Cys Ala Asn Val Ser Leu
                85                  90                  95

Asp Glu Arg Ser Lys Leu Ala Tyr Asp Val Thr Thr Pro Cys Glu Ile
            100                 105                 110

Lys Ala Cys Ser Leu Thr Cys Leu Lys Ser Lys Asn Met Leu Thr Thr
        115                 120                 125

Val Lys Asp Leu Thr Met Lys Thr Leu Asn Pro Thr His Asp Ile Ile
    130                 135                 140

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

Pro Thr Tyr Leu Arg Ser Ile Ser Val Arg Asn Lys Asp Leu Asn Thr
                165                 170                 175

Leu Glu Asn Ile Thr Thr Thr Glu Phe Lys Asn Ala Ile Thr Asn Ala
            180                 185                 190

Lys Ile Ile Pro Tyr Ser Gly Leu Leu Leu Val Ile Thr Val Thr Asp
        195                 200                 205

Asn Lys Gly Ala Phe Lys Tyr Ile Lys Pro Gln Ser Gln Phe Ile Val
    210                 215                 220

Asp Leu Gly Ala Tyr Leu Glu Lys Glu Ser Ile Tyr Tyr Val Thr Thr
225                 230                 235                 240

Asn Trp Lys His Thr Ala Thr Arg Phe Ala Ile Lys Pro Met Glu Asp
                245                 250                 255
```

<210> 5
<211> 391
<212> PRT
<213> respiratory syncytial virus

<400> 5

Met Ala Leu Ser Lys Val Lys Leu Asn Asp Thr Leu Asn Lys Asp Gln
1 5 10 15

Leu Leu Ser Ser Ser Lys Tyr Thr Ile Gln Arg Ser Thr Gly Asp Ser
20 25 30

Ile Asp Thr Pro Asn Tyr Asp Val Gln Lys His Ile Asn Lys Leu Cys
35 40 45

Gly Met Leu Leu Ile Thr Glu Asp Ala Asn His Lys Phe Thr Gly Leu
50 55 60

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

Lys Ile Leu Arg Asp Ala Gly Tyr His Val Lys Ala Asn Gly Val Asp
85 90 95

Val Thr Thr His Arg Gln Asp Ile Asn Gly Lys Glu Met Lys Phe Glu
100 105 110

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

Ile Glu Ser Arg Lys Ser Tyr Lys Lys Met Leu Lys Glu Met Gly Glu
130 135 140

Val Ala Pro Glu Tyr Arg His Asp Ser Pro Asp Cys Gly Met Ile Ile
145 150 155 160

Leu Cys Ile Ala Ala Leu Val Ile Thr Lys Leu Ala Ala Gly Asp Arg
165 170 175

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

Glu Met Lys Arg Tyr Lys Gly Leu Leu Pro Lys Asp Ile Ala Asn Ser
195 200 205

Phe Tyr Glu Val Phe Glu Lys His Pro His Phe Ile Asp Val Phe Val
210 215 220

His Phe Gly Ile Ala Gln Ser Ser Thr Arg Gly Gly Ser Arg Val Glu
225 230 235 240

Gly Ile Phe Ala Gly Leu Phe Met Asn Ala Tyr Gly Ala Gly Gln Val

245 250 255

Met Leu Arg Trp Gly Val Leu Ala Lys Ser Val Lys Asn Ile Met Leu
260 265 270

Gly His Ala Ser Val Gln Ala Glu Met Glu Gln Val Val Glu Val Tyr
275 280 285

Glu Tyr Ala Gln Lys Leu Gly Gly Glu Ala Gly Phe Tyr His Ile Leu
290 295 300

Asn Asn Pro Lys Ala Ser Leu Leu Ser Leu Thr Gln Phe Pro His Phe
305 310 315 320

Ser Ser Val Val Leu Gly Asn Ala Ala Gly Leu Gly Ile Met Gly Glu
325 330 335

Tyr Arg Gly Thr Pro Arg Asn Gln Asp Leu Tyr Asp Ala Ala Lys Ala
340 345 350

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

Asp Leu Thr Ala Glu Glu Leu Glu Ala Ile Lys His Gln Leu Asn Pro
370 375 380

Lys Asp Asn Asp Val Glu Leu
385 390

<210> 6
<211> 2165
<212> PRT
<213> respiratory syncytial virus

<400> 6

Met Asp Pro Ile Ile Asn Gly Asn Ser Ala Asn Val Tyr Leu Thr Asp
1 5 10 15

Ser Tyr Leu Lys Gly Val Ile Ser Phe Ser Glu Cys Asn Ala Leu Gly
20 25 30

Ser Tyr Ile Phe Asn Gly Pro Tyr Leu Lys Asn Asp Tyr Thr Asn Leu
35 40 45

Ile Ser Arg Gln Asn Pro Leu Ile Glu His Met Asn Leu Lys Lys Leu
50 55 60

Asn Ile Thr Gln Ser Leu Ile Ser Lys Tyr His Lys Gly Glu Ile Lys
65 70 75 80

Leu Glu Glu Pro Thr Tyr Phe Gln Ser Leu Leu Met Thr Tyr Lys Ser
85 90 95

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Met Thr Ser Leu Glu Gln Ile Ala Thr Thr Asn Leu Leu Lys Lys Ile
            100                 105                 110

Ile Arg Arg Ala Ile Glu Ile Ser Asp Val Lys Val Tyr Ala Ile Leu
        115                 120                 125

Asn Lys Leu Gly Leu Lys Glu Lys Asp Lys Ile Lys Ser Asn Asn Gly
    130                 135                 140

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

Leu Ser Ala Val Lys Asp Asn Gln Ser His Leu Lys Ala Asp Lys Asn
                165                 170                 175

His Ser Thr Lys Gln Lys Asp Thr Ile Lys Thr Thr Leu Leu Lys Lys
            180                 185                 190

Leu Met Cys Ser Met Gln His Pro Pro Ser Trp Leu Ile His Trp Phe
        195                 200                 205

Asn Leu Tyr Thr Lys Leu Asn Asn Ile Leu Thr Gln Tyr Arg Ser Asn
    210                 215                 220

Glu Val Lys Asn His Gly Phe Ile Leu Ile Asp Asn Gln Thr Leu Ser
225                 230                 235                 240

Gly Phe Gln Phe Ile Leu Asn Gln Tyr Gly Cys Ile Val Tyr His Lys
                245                 250                 255

Glu Leu Lys Arg Ile Thr Val Thr Thr Tyr Asn Gln Phe Leu Thr Trp
            260                 265                 270

Lys Asp Ile Ser Leu Ser Arg Leu Asn Val Cys Leu Ile Thr Trp Ile
        275                 280                 285

Ser Asn Cys Leu Asn Thr Leu Asn Lys Ser Leu Gly Leu Arg Cys Gly
    290                 295                 300

Phe Asn Asn Val Ile Leu Thr Gln Leu Phe Leu Tyr Gly Asp Cys Ile
305                 310                 315                 320

Leu Lys Leu Phe His Asn Glu Gly Phe Tyr Ile Ile Lys Glu Val Glu
                325                 330                 335

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

Arg Lys Arg Phe Tyr Asn Ser Met Leu Asn Asn Ile Thr Asp Ala Ala
        355                 360                 365
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Asn Lys Ala Gln Lys Asn Leu Leu Ser Arg Val Cys His Thr Leu Leu
    370                 375                 380

Asp Lys Thr Val Ser Asp Asn Ile Ile Asn Gly Arg Trp Ile Ile Leu
385                 390                 395                 400

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

Asn Asn Leu Ser Glu Leu Tyr Phe Leu Phe Arg Ile Phe Gly His Pro
            420                 425                 430

Met Val Asp Glu Arg Gln Ala Met Asp Ala Val Lys Val Asn Cys Asn
        435                 440                 445

Glu Thr Lys Phe Tyr Leu Leu Ser Ser Leu Ser Met Leu Arg Gly Ala
    450                 455                 460

Phe Ile Tyr Arg Ile Ile Lys Gly Phe Val Asn Asn Tyr Asn Arg Trp
465                 470                 475                 480

Pro Thr Leu Arg Asn Ala Ile Val Leu Pro Leu Arg Trp Leu Thr Tyr
                485                 490                 495

Tyr Lys Leu Asn Thr Tyr Pro Ser Leu Leu Glu Leu Thr Glu Arg Asp
            500                 505                 510

Leu Ile Val Leu Ser Gly Leu Arg Phe Tyr Arg Glu Phe Arg Leu Pro
        515                 520                 525

Lys Lys Val Asp Leu Glu Met Ile Ile Asn Asp Lys Ala Ile Ser Pro
    530                 535                 540

Pro Lys Asn Leu Ile Trp Thr Ser Phe Pro Arg Asn Tyr Met Pro Ser
545                 550                 555                 560

His Ile Gln Asn Tyr Ile Glu His Glu Lys Leu Lys Phe Ser Glu Ser
                565                 570                 575

Asp Lys Ser Arg Arg Val Leu Glu Tyr Tyr Leu Arg Asp Asn Lys Phe
            580                 585                 590

Asn Glu Cys Asp Leu Tyr Asn Cys Val Val Asn Gln Ser Tyr Leu Asn
        595                 600                 605

Asn Pro Asn His Val Val Ser Leu Thr Gly Lys Glu Arg Glu Leu Ser
    610                 615                 620

Val Gly Arg Met Phe Ala Met Gln Pro Gly Met Phe Arg Gln Val Gln
625                 630                 635                 640
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Ile Leu Ala Glu Lys Met Ile Ala Glu Asn Ile Leu Gln Phe Phe Pro
               645                 650                 655

Glu Ser Leu Thr Arg Tyr Gly Asp Leu Glu Leu Gln Lys Ile Leu Glu
            660                 665                 670

Leu Lys Ala Gly Ile Ser Asn Lys Ser Asn Arg Tyr Asn Asp Asn Tyr
        675                 680                 685

Asn Asn Tyr Ile Ser Lys Cys Ser Ile Ile Thr Asp Leu Ser Lys Phe
    690                 695                 700

Asn Gln Ala Phe Arg Tyr Glu Thr Ser Cys Ile Cys Ser Asp Val Leu
705                 710                 715                 720

Asp Glu Leu His Gly Val Gln Ser Leu Phe Ser Trp Leu His Leu Thr
               725                 730                 735

Ile Pro His Val Thr Ile Ile Cys Thr Tyr Arg His Ala Pro Pro Tyr
            740                 745                 750

Ile Arg Asp His Ile Val Asp Leu Asn Asn Val Asp Glu Gln Ser Gly
        755                 760                 765

Leu Tyr Arg Tyr His Met Gly Gly Ile Glu Gly Trp Cys Gln Lys Leu
    770                 775                 780

Trp Thr Ile Glu Ala Ile Ser Leu Leu Asp Leu Ile Ser Leu Lys Gly
785                 790                 795                 800

Lys Phe Ser Ile Thr Ala Leu Ile Asn Gly Asp Asn Gln Ser Ile Asp
               805                 810                 815

Ile Ser Lys Pro Val Arg Leu Met Glu Gly Gln Thr His Ala Gln Ala
            820                 825                 830

Asp Tyr Leu Leu Ala Leu Asn Ser Leu Lys Leu Leu Tyr Lys Glu Tyr
        835                 840                 845

Ala Gly Ile Gly His Lys Leu Lys Gly Thr Glu Thr Tyr Ile Ser Arg
    850                 855                 860

Asp Met Gln Phe Met Ser Lys Thr Ile Gln His Asn Gly Val Tyr Tyr
865                 870                 875                 880

Pro Ala Ser Ile Lys Lys Val Leu Arg Val Gly Pro Trp Ile Asn Thr
               885                 890                 895

Ile Leu Asp Asp Phe Lys Val Ser Leu Glu Ser Ile Gly Ser Leu Thr
            900                 905                 910
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Gln Glu Leu Glu Tyr Arg Gly Glu Ser Leu Leu Cys Ser Leu Ile Phe
        915                 920                 925

Arg Asn Val Trp Leu Tyr Asn Gln Ile Ala Leu Gln Leu Lys Asn His
    930                 935                 940

Ala Leu Cys Asn Asn Lys Leu Tyr Leu Asp Ile Leu Lys Val Leu Lys
945                 950                 955                 960

His Leu Lys Thr Phe Phe Asn Leu Asp Asn Ile Asp Thr Ala Leu Thr
                965                 970                 975

Leu Tyr Met Asn Leu Pro Met Leu Phe Gly Gly Gly Asp Pro Asn Leu
            980                 985                 990

Leu Tyr Arg Ser Phe Tyr Arg Arg  Thr Pro Asp Phe Leu  Thr Glu Ala
        995                 1000                1005

Ile Val  His Ser Val Phe Ile  Leu Ser Tyr Tyr Thr  Asn His Asp
    1010                1015                1020

Leu Lys  Asp Lys Leu Gln Asp  Leu Ser Asp Asp Arg  Leu Asn Lys
    1025                1030                1035

Phe Leu  Thr Cys Ile Ile Thr  Phe Asp Lys Asn Pro  Asn Ala Glu
    1040                1045                1050

Phe Val  Thr Leu Met Arg Asp  Pro Gln Ala Leu Gly  Ser Glu Arg
    1055                1060                1065

Gln Ala  Lys Ile Thr Ser Glu  Ile Asn Arg Leu Ala  Val Thr Glu
    1070                1075                1080

Val Leu  Ser Thr Ala Pro Asn  Lys Ile Phe Ser Lys  Ser Ala Gln
    1085                1090                1095

His Tyr  Thr Thr Thr Glu Ile  Asp Leu Asn Asp Ile  Met Gln Asn
    1100                1105                1110

Ile Glu  Pro Thr Tyr Pro His  Gly Leu Arg Val Val  Tyr Glu Ser
    1115                1120                1125

Leu Pro  Phe Tyr Lys Ala Glu  Lys Ile Val Asn Leu  Ile Ser Gly
    1130                1135                1140

Thr Lys  Ser Ile Thr Asn Ile  Leu Glu Lys Thr Ser  Ala Ile Asp
    1145                1150                1155

Leu Thr  Asp Ile Asp Arg Ala  Thr Glu Met Met Arg  Lys Asn Ile
    1160                1165                1170
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Thr Leu  Leu Ile Arg Ile Leu  Pro Leu Asp Cys Asn  Arg Asp Lys
    1175                1180                1185

Arg Glu  Ile Leu Ser Met Glu  Asn Leu Ser Ile Thr  Glu Leu Ser
    1190                1195                1200

Lys Tyr  Val Arg Glu Arg Ser  Trp Ser Leu Ser Asn  Ile Val Gly
    1205                1210                1215

Val Thr  Ser Pro Ser Ile Met  Tyr Thr Met Asp Ile  Lys Tyr Thr
    1220                1225                1230

Thr Ser  Thr Ile Ala Ser Gly  Ile Ile Ile Glu Lys  Tyr Asn Val
    1235                1240                1245

Asn Ser  Leu Thr Arg Gly Glu  Arg Gly Pro Thr Lys  Pro Trp Val
    1250                1255                1260

Gly Ser  Ser Thr Gln Glu Lys  Lys Thr Met Pro Val  Tyr Asn Arg
    1265                1270                1275

Gln Val  Leu Thr Lys Lys Gln  Arg Asp Gln Ile Asp  Leu Leu Ala
    1280                1285                1290

Lys Leu  Asp Trp Val Tyr Ala  Ser Ile Asp Asn Lys  Asp Glu Phe
    1295                1300                1305

Met Glu  Glu Leu Ser Ile Gly  Thr Leu Gly Leu Thr  Tyr Glu Lys
    1310                1315                1320

Ala Lys  Lys Leu Phe Pro Gln  Tyr Leu Ser Val Asn  Tyr Leu His
    1325                1330                1335

Arg Leu  Thr Val Ser Ser Arg  Pro Cys Glu Phe Pro  Ala Ser Ile
    1340                1345                1350

Pro Ala  Tyr Arg Thr Thr Asn  Tyr His Phe Asp Thr  Ser Pro Ile
    1355                1360                1365

Asn Arg  Ile Leu Thr Glu Lys  Tyr Gly Asp Glu Asp  Ile Asp Ile
    1370                1375                1380

Val Phe  Gln Asn Cys Ile Ser  Phe Gly Leu Ser Leu  Met Ser Val
    1385                1390                1395

Val Glu  Gln Phe Thr Asn Val  Cys Pro Asn Arg Ile  Ile Leu Ile
    1400                1405                1410

Pro Lys  Leu Asn Glu Ile His  Leu Met Lys Pro Pro  Ile Phe Thr
    1415                1420                1425
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```
Gly Asp  Val Asp Ile His Lys  Leu Lys Gln Val Ile  Gln Lys Gln
    1430                1435                1440

His Met  Phe Leu Pro Asp Lys  Ile Ser Leu Thr Gln  Tyr Val Glu
    1445                1450                1455

Leu Phe  Leu Ser Asn Lys Thr  Leu Lys Ser Gly Ser  His Val Asn
    1460                1465                1470

Ser Asn  Leu Ile Leu Ala His  Lys Ile Ser Asp Tyr  Phe His Asn
    1475                1480                1485

Thr Tyr  Ile Leu Ser Thr Asn  Leu Ala Gly His Trp  Ile Leu Ile
    1490                1495                1500

Ile Gln  Leu Met Lys Asp Ser  Lys Gly Ile Phe Glu  Lys Asp Trp
    1505                1510                1515

Gly Glu  Gly Tyr Ile Thr Asp  His Met Phe Ile Asn  Leu Lys Val
    1520                1525                1530

Phe Phe  Asn Ala Tyr Lys Thr  Tyr Leu Leu Cys Phe  His Lys Gly
    1535                1540                1545

Tyr Gly  Lys Ala Lys Leu Glu  Cys Asp Met Asn Thr  Ser Asp Leu
    1550                1555                1560

Leu Cys  Val Leu Glu Leu Ile  Asp Ser Ser Tyr Trp  Lys Ser Met
    1565                1570                1575

Ser Lys  Val Phe Leu Glu Gln  Lys Val Ile Lys Tyr  Ile Leu Ser
    1580                1585                1590

Gln Asp  Ala Ser Leu His Arg  Val Lys Gly Cys His  Ser Phe Lys
    1595                1600                1605

Leu Trp  Phe Leu Lys Arg Leu  Asn Val Ala Glu Phe  Thr Val Cys
    1610                1615                1620

Pro Trp  Val Val Asn Ile Asp  Tyr His Pro Thr His  Met Lys Ala
    1625                1630                1635

Ile Leu  Thr Tyr Ile Asp Leu  Val Arg Met Gly Leu  Ile Asn Ile
    1640                1645                1650

Asp Arg  Ile His Ile Lys Asn  Lys His Lys Phe Asn  Asp Glu Phe
    1655                1660                1665

Tyr Thr  Ser Asn Leu Phe Tyr  Ile Asn Tyr Asn Phe  Ser Asp Asn
    1670                1675                1680
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Thr His  Leu Leu Thr Lys His  Ile Arg Ile Ala Asn  Ser Glu Leu
    1685                1690                1695

Glu Asn  Asn Tyr Asn Lys Leu  Tyr His Pro Thr Pro  Glu Thr Leu
    1700                1705                1710

Glu Asn  Ile Leu Ala Asn Pro  Ile Lys Ser Asn Asp  Lys Lys Thr
    1715                1720                1725

Leu Asn  Asp Tyr Cys Ile Gly  Lys Asn Val Asp Ser  Ile Met Leu
    1730                1735                1740

Pro Leu  Leu Ser Asn Lys Lys  Leu Val Lys Ser Ser  Ala Met Ile
    1745                1750                1755

Arg Thr  Asn Tyr Ser Lys Gln  Asp Leu Tyr Asn Leu  Phe Pro Thr
    1760                1765                1770

Val Val  Ile Asp Arg Ile Ile  Asp His Ser Gly Asn  Thr Ala Lys
    1775                1780                1785

Ser Asn  Gln Leu Tyr Thr Thr  Thr Ser His Gln Ile  Ser Leu Val
    1790                1795                1800

His Asn  Ser Thr Ser Leu Tyr  Cys Met Leu Pro Trp  His His Ile
    1805                1810                1815

Asn Arg  Phe Asn Phe Val Phe  Ser Ser Thr Gly Cys  Lys Ile Ser
    1820                1825                1830

Ile Glu  Tyr Ile Leu Lys Asp  Leu Lys Ile Lys Asp  Pro Asn Cys
    1835                1840                1845

Ile Ala  Phe Ile Gly Glu Gly  Ala Gly Asn Leu Leu  Leu Arg Thr
    1850                1855                1860

Val Val  Glu Leu His Pro Asp  Ile Arg Tyr Ile Tyr  Arg Ser Leu
    1865                1870                1875

Lys Asp  Cys Asn Asp His Ser  Leu Pro Ile Glu Phe  Leu Arg Leu
    1880                1885                1890

Tyr Asn  Gly His Ile Asn Ile  Asp Tyr Gly Glu Asn  Leu Thr Ile
    1895                1900                1905

Pro Ala  Thr Asp Ala Thr Asn  Asn Ile His Trp Ser  Tyr Leu His
    1910                1915                1920

Ile Lys  Phe Ala Glu Pro Ile  Ser Leu Phe Val Cys  Asp Ala Glu
    1925                1930                1935
```

Leu Pro Val Thr Val Asn Trp Ser Lys Ile Ile Ile Glu Trp Ser
1940 1945 1950

Lys His Val Arg Lys Cys Lys Tyr Cys Ser Ser Val Asn Lys Cys
1955 1960 1965

Thr Leu Ile Val Lys Tyr His Ala Gln Asp Asp Ile Asp Phe Lys
1970 1975 1980

Leu Asp Asn Ile Thr Ile Leu Lys Thr Tyr Val Cys Leu Gly Ser
1985 1990 1995

Lys Leu Lys Gly Ser Glu Val Tyr Leu Val Leu Thr Ile Gly Pro
2000 2005 2010

Ala Asn Ile Phe Pro Val Phe Asn Val Val Gln Asn Ala Lys Leu
2015 2020 2025

Ile Leu Ser Arg Thr Lys Asn Phe Ile Met Pro Lys Lys Ala Asp
2030 2035 2040

Lys Glu Ser Ile Asp Ala Asn Ile Lys Ser Leu Ile Pro Phe Leu
2045 2050 2055

Cys Tyr Pro Ile Thr Lys Lys Gly Ile Asn Thr Ala Leu Ser Lys
2060 2065 2070

Leu Lys Ser Val Val Ser Gly Asp Ile Leu Ser Tyr Ser Ile Ala
2075 2080 2085

Gly Arg Asn Glu Val Phe Ser Asn Lys Leu Ile Asn His Lys His
2090 2095 2100

Met Asn Ile Leu Lys Trp Phe Asn His Val Leu Asn Phe Arg Ser
2105 2110 2115

Thr Glu Leu Asn Tyr Asn His Leu Tyr Met Val Glu Ser Thr Tyr
2120 2125 2130

Pro Tyr Leu Ser Glu Leu Leu Asn Ser Leu Thr Thr Asn Glu Leu
2135 2140 2145

Lys Lys Leu Ile Lys Ile Thr Gly Ser Leu Leu Tyr Asn Phe His
2150 2155 2160

Asn Glu
2165

<210> 7
<211> 194

<212> PRT
<213> respiratory syncytial virus

<400> 7

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Met Ser Arg Arg Asn Pro Cys Lys Phe Glu Ile Arg Gly His Cys Leu
1               5                  10                  15

Asn Gly Lys Arg Cys His Phe Ser His Asn Tyr Phe Glu Trp Pro Pro
            20                  25                  30

His Ala Leu Leu Val Arg Gln Asn Phe Met Leu Asn Arg Ile Leu Lys
        35                  40                  45

Ser Met Asp Lys Ser Ile Asp Thr Leu Ser Glu Ile Ser Gly Ala Ala
    50                  55                  60

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

Glu Ser Tyr Ile Gly Ser Ile Asn Asn Ile Thr Lys Gln Ser Ala Cys
                85                  90                  95

Val Ala Met Ser Lys Leu Leu Thr Glu Leu Asn Ser Asp Asp Ile Lys
            100                 105                 110

Lys Leu Arg Asp Asn Glu Glu Leu Asn Ser Pro Lys Ile Arg Val Tyr
        115                 120                 125

Asn Thr Val Ile Ser Tyr Ile Glu Ser Asn Arg Lys Asn Asn Lys Gln
    130                 135                 140

Thr Ile His Leu Leu Lys Arg Leu Pro Ala Asp Val Leu Lys Lys Thr
145                 150                 155                 160

Ile Lys Asn Thr Leu Asp Ile His Lys Ser Ile Thr Ile Asn Asn Pro
                165                 170                 175

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

Thr Thr
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<210> 8
<211> 90
<212> PRT
<213> respiratory syncytial virus

<400> 8

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Met Thr Met Pro Lys Ile Met Ile Leu Pro Asp Lys Tyr Pro Cys Ser
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Ile Thr Ser Ile Leu Ile Thr Ser Arg Cys Arg Val Thr Met Tyr Asn
20 25 30

Arg Lys Asn Thr Leu Tyr Phe Asn Gln Asn Asn Pro Asn Asn His Met
35 40 45

Tyr Ser Pro Asn Gln Thr Phe Asn Glu Ile His Trp Thr Ser Gln Asp
50 55 60

Leu Ile Asp Thr Ile Gln Asn Phe Leu Gln His Leu Gly Val Ile Glu
65 70 75 80

Asp Ile Tyr Thr Ile Tyr Ile Leu Val Ser
85 90

<210> 9
<211> 241
<212> PRT
<213> respiratory syncytial virus

<400> 9

Met Glu Lys Phe Ala Pro Glu Phe His Gly Glu Asp Ala Asn Asn Arg
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Ala Thr Lys Phe Leu Glu Ser Ile Lys Gly Lys Phe Thr Ser Pro Lys
20 25 30

Asp Pro Lys Lys Lys Asp Ser Ile Ile Ser Val Asn Ser Ile Asp Ile
35 40 45

Glu Val Thr Lys Glu Ser Pro Ile Thr Ser Asn Ser Thr Ile Ile Asn
50 55 60

Pro Thr Asn Glu Thr Asp Asp Asn Ala Gly Asn Lys Pro Asn Tyr Gln
65 70 75 80

Arg Lys Pro Leu Val Ser Phe Lys Glu Asp Pro Ile Pro Ser Asp Asn
85 90 95

Pro Phe Ser Lys Leu Tyr Lys Glu Thr Ile Glu Thr Phe Asp Asn Asn
100 105 110

Glu Glu Glu Ser Ser Tyr Ser Tyr Glu Glu Ile Asn Asp Gln Thr Asn
115 120 125

Asp Asn Ile Thr Ala Arg Leu Asp Arg Ile Asp Glu Lys Leu Ser Glu
130 135 140

Ile Leu Gly Met Leu His Thr Leu Val Val Ala Ser Ala Gly Pro Thr
145 150 155 160

Ser Ala Arg Asp Gly Ile Arg Asp Ala Met Val Gly Leu Arg Glu Glu

165 170 175

Met Ile Glu Lys Ile Arg Thr Glu Ala Leu Met Thr Asn Asp Arg Leu
180 185 190

Glu Ala Met Ala Arg Leu Arg Asn Glu Glu Ser Glu Lys Met Ala Lys
195 200 205

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

Asn Leu Leu Glu Gly Asn Asp Ser Asp Asn Asp Leu Ser Leu Glu Asp
225 230 235 240

Phe

<210> 10
<211> 139
<212> PRT
<213> respiratory syncytial virus

<400> 10

Met Gly Ser Asn Ser Leu Ser Met Ile Lys Val Arg Leu Gln Asn Leu
1 5 10 15

Phe Asp Asn Asp Glu Val Ala Leu Leu Lys Ile Thr Cys Tyr Thr Asp
20 25 30

Lys Leu Ile His Leu Thr Asn Ala Leu Ala Lys Ala Val Ile His Thr
35 40 45

Ile Lys Leu Asn Gly Ile Val Phe Val His Val Ile Thr Ser Ser Asp
50 55 60

Ile Cys Pro Asn Asn Asn Ile Val Val Lys Ser Asn Phe Thr Thr Met
65 70 75 80

Pro Val Leu Gln Asn Gly Gly Tyr Ile Trp Glu Met Met Glu Leu Thr
85 90 95

His Cys Ser Gln Pro Asn Gly Leu Ile Asp Asp Asn Cys Glu Ile Lys
100 105 110

Phe Ser Lys Lys Leu Ser Asp Ser Thr Met Thr Asn Tyr Met Asn Gln
115 120 125

Leu Ser Glu Leu Leu Gly Phe Asp Leu Asn Pro
130 135

<210> 11
<211> 124

<212> PRT
<213> respiratory syncytial virus

<400> 11

Met Asp Thr Thr His Asn Asp Thr Thr Pro Gln Arg Leu Met Ile Thr
1 5 10 15

Asp Met Arg Pro Leu Ser Leu Glu Thr Thr Ile Thr Ser Leu Thr Arg
20 25 30

Asp Ile Ile Thr His Arg Phe Ile Tyr Leu Ile Asn His Glu Cys Ile
35 40 45

Val Arg Lys Leu Asp Glu Arg Gln Ala Thr Phe Thr Phe Leu Val Asn
50 55 60

Tyr Glu Met Lys Leu Leu His Lys Val Gly Ser Thr Lys Tyr Lys Lys
65 70 75 80

Tyr Thr Glu Tyr Asn Thr Lys Tyr Gly Thr Phe Pro Met Pro Ile Phe
85 90 95

Ile Asn His Asp Gly Phe Leu Glu Cys Ile Gly Ile Lys Pro Thr Lys
100 105 110

His Thr Pro Ile Ile Tyr Lys Tyr Asp Leu Asn Pro
115 120

<210> 12
<211> 1725
<212> RNA
<213> respiratory syncytial virus

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agcaaaggcu aucuuagugc ucuaagaacu gguugguaua cuaguguuau aacuauagaa 180

uuaaguaaua ucaaggaaaa uaaguguaau ggaacagaug cuaagguaaa auugauaaac 240

caagaauuag auaaauauaa aaaugcugua acagaauugc aguugcucau gcaaagcaca 300

acagcagcaa acaaucgagc cagaagagaa cuaccaaggu uuaugaauua uacacucaac 360

aauaccaaaa aaaccaaugu aacauuaagc aagaaaagga aaagaagauu ucuugguuuu 420

uuguuaggug uuggaucugc aaucgccagu ggcauugcug uaucuaaggu ccugcacuua 480

gaaggagaag ugaacaagau caaaagugcu cuacuaucca caaacaaggc cguagucagc 540

uuaucaaaug gaguuagugu cuuaaccagc aaaguguuag accucaaaaa cuauauagau 600

aaacaauugu uaccuauugu gaauaagcaa agcugcagaa uaucaaauau agaaacugug 660

auagaguucc aacaaaagaa caacagacua cuagagauua ccagggaauu uaguguuaau 720

gcagguguaa cuacaccugu aagcacuuac auguuaacua auagugaauu auugucauua 780

aucaaugaua ugccuauaac aaaugaucag aaaaaguuaa uguccaacaa uguucaaaua 840

guuagacagc aaaguuacuc uaucaugucc auaauaaaag aggaagucuu agcauaugua 900

guacaauuac cacuauaugg ugugauagau acaccuuguu ggaaauuaca cacaucccu 960

cuauguacaa ccaacacaaa agaaggguca aacaucuguu uaacaagaac ugacagagga 1020

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caaucgaauc gaguauuuug ugacacaaug aacaguuuaa cauuaccaag ugaaguaaau 1140

cucugcaaug uugacauauu caaucccaaa uaugauugua aaauuaugac uucaaaaaca 1200

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aagcaagaag gcaaaagucu cuauguaaaa ggugaaccaa uaauaaauuu cuaugaccca 1440

uuaguauucc ccucugauga auuugaugca ucaauaucuc aagucaauga gaagauuaac 1500

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aaggaucaac ugagugguau aaauaauauu gcauuuagua acuga 1725

<210> 13
<211> 897
<212> RNA
<213> respiratory syncytial virus

<400> 13
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aucacauuau ccauucuggc aaugauaauc ucaacuucac uuauaauuac agccaucaua 180

uucauagccu cggcaaacca caaagucaca cuaacaacug caaucauaca agaugcaaca 240

agccagauca agaacacaac cccaacauac cucacucagg auccucagcu uggaaucagc 300

uucuccaauc ugucugaaau uacaucacaa accaccacca uacuagcuuc aacaacacca 360

ggagucaagu caaaccugca acccacaaca gucaagacua aaaacacaac aacaacccaa 420

acacaaccca gcaagcccac uacaaaacaa cgccaaaaca aaccaccaaa caaacccaau 480

aaugauuuuc acuucgaagu guuuaacuuu guacccugca gcauaugcag caacaaucca 540

accugcuggg cuaucugcaa aagaauacca aacaaaaaac caggaaagaa aaccaccacc 600

aagccuacaa aaaaaccaac cuucaagaca accaaaaaag aucucaaacc ucaaaccacu 660

aaaccaaagg aaguacccac caccaagccc acagaagagc caaccaucaa caccaccaaa 720

acaaacauca caacuacacu gcucaccaac aacaccacag gaaauccaaa acucacaagu 780

caaauggaaa ccuuccacuc aaccuccucc gaaggcaauc uaagcccuuc ucaagucucc 840

acaacauccg agcacccauc acaacccuca ucuccaccca acacaacacg ccaguag 897

<210> 14
<211> 195
<212> RNA
<213> respiratory syncytial virus

<400> 14
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auacacauga ucacaacaau aaucucuuug cuaaucauaa ucuccaucau gacugcaaua 120

cuaaacaaac uuugugaaua uaacguauuc cauaacaaaa ccuuugaguu accaagagcu 180

cgagucaaca cauag 195

<210> 15
<211> 771
<212> RNA
<213> respiratory syncytial virus

<400> 15
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ucaucuaugc cagcagauuu acuuauaaaa gaacuagcua augucaacau acuagugaaa 180

caaauaucca cacccaaggg accuucacua agagucauga uaaacucaag aagugcauug 240

cuagcacaaa ugcccagcaa auuuaccaua ugugcuaaug uguccuugga ugaaagaagc 300

aaacuggcau augauguaac cacacccugu gaaaucaagg cauguagucu aacaugccua 360

aaaucaaaaa auauguuaac uacaguuaaa gaucucacua ugaagacacu caaccccaca 420

caugauauua uugcuuuaug ugaauuugaa aacauaguaa caucaaaaaa agucauaaua 480

ccaacauacc uaagauccau cagugucaga aauaaagauc ugaacacacu ugaaaauaua 540

acaaccacug aauucaaaaa ugccaucaca aaugcaaaaa ucaucccuua cucaggauua 600

cuauuaguca ucacagugac ugacaacaaa ggagcauuca aauacauaaa gccgcaaagu 660

caauucauag uagaucuugg agcuuaccua gaaaaagaaa guauauauua uguuaccaca 720

aauuggaagc acacagcuac acgauuugca aucaaaccca uggaagauua a 771

<210> 16
<211> 1176
<212> RNA
<213> respiratory syncytial virus

<400> 16
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cagaaacaca ucaauaaguu auguggcaug uuauuaauca cagaagaugc uaaucauaaa 180

uucacugggu uaauagguau guuauaugcu augucuaggu uaggaagaga agacaccaua 240

aaaauacuca gagaugcggg auaucaugua aaagcaaaug gaguagaugu aacaacacau 300

cgucaagaca ucaaugggaa agaaaugaaa uuugaagugu uaacauuggc aagcuuaaca 360

acugaaauuc aaaucaacau ugagauagaa ucuagaaaau ccuacaaaaa aaugcuaaaa 420

gaaaugggag agguagcucc agaauacagg caugauucuc cugauugugg gaugauaaua 480

uuauguauag cagcauuagu aauaaccaaa uuggcagcag gggauagauc uggucuuaca 540

gccgugauua ggagagcuaa uaauguccua aaaaaugaaa ugaaacguua caaaggcuua 600

cuacccaagg auauagccaa cagcuucuau gaaguguuug aaaaacaucc ccacuuuaua 660

gauguuuuug uucauuuugg uauagcacaa ucuuccacca gagguggcag uagaguugaa 720

gggauuuuug caggauuguu uaugaaugcc uauggugcag ggcaaguaau gcuacggugg 780

ggagucuuag caaaaucagu uaaaaauauu auguuaggac augcuagugu gcaagcagaa 840

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uaccauauau ugaacaaccc aaaagcauca uuauuaucuu ugacucaauu uccucacuuu 960

uccaguguag uauuaggcaa ugcugcuggc cuaggcauaa ugggagagua cagagguaca 1020

ccgaggaauc aagaucuaua ugaugcagca aaggcauaug cugaacaacu caaagaaaau 1080

ggugugauua acuacagugu auuagacuug acagcagaag aacuagaggc uaucaaacau 1140

cagcuuaauc caaaagauaa ugauguagag cuuuga 1176

<210> 17
<211> 6498
<212> RNA
<213> respiratory syncytial virus

<400> 17
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gguguuaucu cuuucucaga guguaaugcu uuaggaaguu acauauucaa ugguccuuau 120

cucaaaaaug auuauaccaa cuuaauuagu agacaaaauc cauuaauaga acacaugaau 180

cuaaagaaac uaaauauaac acaguccuua auaucuaagu aucauaaagg ugaaauaaaa 240

uuagaagagc cuacuuauuu ucagucauua cuuaugacau acaagaguau gaccucguug 300

gaacagauug cuaccacuaa uuuacuuaaa aagauaauaa gaagagcuau agaaauaagu 360

gaugucaaag ucuaugcuau auugaauaaa cuagggcuua aagaaaagga caagauuaaa 420

uccaacaaug gacaggauga agacaacuca guuauuacga ccauaaucaa agaugauaua 480

cuuucagcug uuaaggauaa ucaaucucau cuuaaagcag acaaaaauca cucuacaaaa 540

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ccaucauggu uaauacauug guuuaauuua uacacaaaau uaaacaacau auuaacacag 660

uaucgaucaa augagguuaa aaaccauggg uuuauauuga uagauaauca aacucuuagu 720

ggauuucaau uuauuuugaa ucaauauggu uguauaguuu aucauaagga acucaaaaga 780

auuacuguga caaccuauaa ucaauucuug acauggaaag auauuagccu uaguagauua 840

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ucucuaauuu uaaauauaac agaagaagau caauucagaa aacgauuuua uaauaguaug 1080

cucaacaaca ucacagaugc ugcuaauaaa gcucagaaaa aucugcuauc aagaguaugu 1140

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uuaagaggug ccuuuauaua uagaauuaua aaaggguuug uaaauaauua caacagaugg 1440

ccuacuuuaa gaaaugcuau uguuuuaccc uuaagauggu uaacuuacua uaaacuaaac 1500

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auauuggcag agaaaaugau agcugaaaac auuuuacaau ucuuuccuga aagucuuaca 1980

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ccuauaacaa aaaaaggaau uaauacugca uugucaaaac uaaagagugu uguuagugga 6240

gauauacuau cauauucuau agcuggacgg aaugaaguuu ucagcaauaa acuuauaaau 6300

cauaagcaua ugaacaucuu aaagugguuc aaucauguuu uaaauuucag aucaacagaa 6360

cuaaacuaua accauuuaua uaugguagaa ucuacauauc cuuaccuaag ugaauuguua 6420

aacagcuuga caacuaauga acuuaaaaaa cugauuaaaa ucacagguag ucuguuauac 6480

aacuuucaua augaauaa 6498

<210> 18
<211> 585
<212> RNA
<213> respiratory syncytial virus

<400> 18
augucacgaa ggaauccuug caaauuugaa auucgagguc auugcuugaa ugguaagaga 60

ugucauuuua gucauaauua uuuugaaugg ccacccccaug cacugcucgu aagacaaaac 120

uuuauguuaa acagaauacu uaagucuaug gauaaaagua uagauaccuu aucagaaaua 180

aguggagcug cagaguugga cagaacagaa gaguaugcuc uugguguagu uggagugcua 240

gagaguuaua uaggaucaau aaauaauaua acuaaacaau cagcaugugu ugccaugagc 300

aaacuccuca cugaacucaa uagugaugau aucaaaaaac ugagagacaa ugaagagcua 360

aauucaccca agauaagagu guacaauacu gucauaucau auauugaaag caacaggaaa 420

aacaauaaac aaacuaucca ucuguuaaaa agauugccag cagacguauu gaagaaaacc 480

aucaaaaaca cauuggauau ccacaagagc auaaccauca acaacccaaa agaauuaacu 540

guuagugaua caaaugacca ugccaaaaau aaugauacua ccuga 585

<210> 19
<211> 273
<212> RNA
<213> respiratory syncytial virus

<400> 19
augaccaugc caaaaauaau gauacuaccu gacaaauauc cuuguaguau aacuuccaua 60

cuaauaacaa guagauguag agucacuaug uauaaucgaa agaacacacu auauuucaau 120

caaaacaacc caaauaacca uauguacuca ccgaaucaaa cauucaauga aauccauugg 180

accucacaag acuugauuga cacaauucaa aauuuucuac agcaucuagg uguuauugag 240

gauauauaua caauauauau auuaguguca uaa 273

<210> 20
<211> 726
<212> RNA
<213> respiratory syncytial virus

<400> 20
auggaaaagu uugcuccuga auuccaugga gaagaugcaa acaacagggc uacuaaauuc 60

cuagaaucaa uaaagggcaa auucacauca ccuaaagauc ccaagaaaaa agauaguauc 120

auaucuguca acucaauaga uauagaagua accaaagaaa gcccuauaac aucaaauuca 180

accauuauua acccaacaaa ugagacagau gauaaugcag ggaacaagcc caauuaucaa 240

agaaaaccuc uaguaaguuu caaagaagac ccuauaccaa gugauaaucc cuuuucaaaa 300

cuauacaaag aaaccauaga gacauuugau aacaaugaag aagaaucuag cuauucauau 360

gaagaaauaa augaucagac gaacgauaau auaacugcaa gauuagauag gauugaugaa 420

aaauuaagug aaauacuagg aaugcuucac acauuaguag uagcaagugc aggaccuaca 480

ucugcuaggg augguauaag agaugccaug guugguuuaa gagaagaaau gauagaaaaa 540

aucagaacug aagcauuaau gaccaaugac agauuagaag cuauggcaag acucaggaau 600

gaggaaagug aaaagauggc aaaagacaca ucagaugaag ugucucucaa uccaacauca 660

gagaaauuga acaaccuguu ggaagggaau gauagugaca augaucuauc acuugaagau 720

uucuga 726

<210> 21
<211> 420
<212> RNA
<213> respiratory syncytial virus

<400> 21
augggcagca auucguugag uaugauaaaa guuagauuac aaaauuuguu ugacaaugau 60

gaaguagcau uguuaaaaau aacaugcuau acugacaaau uaauacauuu aacuaaugcu 120

uuggcuaagg cagugauaca uacaaucaaa uugaauggca uuguguuugu gcauguuauu 180

acaaguagug auauuugccc uaauaauaau auuguaguaa aauccaauuu cacaacaaug 240

ccagugcuac aaaauggagg uuauauaugg gaaaugaugg aauuaacaca uugcucucaa 300

ccuaaugguc uaauagauga caauugugaa auuaaauucu ccaaaaaacu aagugauuca 360

acaaugacca auuauaugaa ucaauuaucu gaauuacuug gauuugaucu uaauccauaa 420

<210> 22
<211> 375
<212> RNA
<213> respiratory syncytial virus

<400> 22
auggacacaa cccacaauga uaccacacca caaagacuga ugaucacaga caugagaccg 60

uugucacuug agacuacaau aacaucacua accagagaca ucauaacaca cagauuuaua 120

uacuuaauaa aucaugaaug cauagugaga aaacuugaug aaagacaggc cacauuuaca 180

uuccugguca acuaugaaau gaaacuauug cacaaaguag gaagcacuaa auauaaaaaa 240

uauacugaau acaacacaaa auauggcacu uucccuaugc cgauauucau caaucaugau 300

ggguucuuag aaugcauugg cauuaagccu acaaagcaua cucccauaau auacaaguau 360

gaucucaauc cauag 375

<210> 23
<211> 42
<212> DNA
<213> Homo sapiens

<400> 23
ggcgctgcct acggaggtgg cagccatctc cttctcggca tc 42

<210> 24
<211> 186
<212> DNA
<213> Homo sapiens

<400> 24
catcacattt aaaagcatct cagcctacca tgagaataag agaaagaaaa tgaagatcaa 60

aagcttattc atctgttttt ctttttcgtt ggtgtaaagc caacaccctg tctaaaaaac 120

ataaatttct ttaatcattt tgcctctttt ctctgtgctt caattaataa aaaatggaaa 180

gaatct 186

<210> 25
<211> 186
<212> DNA
<213> Homo sapiens

<400> 25
catcacattt aaaagcatct cagcctacca tgagaataag agaaagaaaa tgaagatcaa 60

tagcttattc atctcttttt ctttttcgtt ggtgtaaagc caacaccctg tctaaaaaac 120

ataaatttct ttaatcattt tgcctctttt ctctgtgctt caattaataa aaaatggaaa 180

gaacct 186

<210> 26
<211> 110
<212> DNA
<213> Homo sapiens

<400> 26
gctggagcct cggtggccat gcttcttgcc ccttgggcct ccccccagcc cctcctcccc 60

ttcctgcacc cgtacccccg tggtctttga ataaagtctg agtgggcggc 110

<210> 27
<211> 108
<212> DNA
<213> Homo sapiens

<400> 27
gctggagcct cggtagccgt tcctcctgcc cgctgggcct cccaacgggc cctcctcccc 60

tccttgcacc ggcccttcct ggtctttgaa taaagtctga gtgggcag 108

<210> 28
<211> 132
<212> DNA
<213> Homo sapiens

<400> 28
gctcgctttc ttgctgtcca atttctatta aaggttcctt tgttccctaa gtccaactac 60

taaactgggg gatattatga agggccttga gcatctggat tctgcctaat aaaaaacatt 120

tattttcatt gc 132

<210> 29
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Center, alpha-complex-binding portion of the 3'UTR of an alpha-globin gene (muag)

<400> 29
gcccgatggg cctcccaacg ggccctcctc ccctccttgc accg 44

<210> 30
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> particular preferred histone stem-loop sequence

<400> 30
caaaggctct tttcagagcc acca 24

<210> 31
<211> 1942
<212> RNA

<213> Artificial Sequence

<220>
<223> RSV-F long (GC) R1691

<400> 31
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gcggccguga cguucugcuu cgccagcucc cagaacauca ccgaggaguu cuaccagagc 120

accugcuccg ccgucagcaa gggcuaccug uccgcccucc ggaccgggug guacacgagc 180

gugaucacca ucgagcuguc caacaucaag gagaacaagu gcaacggcac cgacgcgaag 240

gugaagcuga ucaaccagga gcucgacaag uacaagaacg ccgucaccga gcugcagcug 300

cucaugcaga gcacgaccgc cgccaacaac cgcgcgcggc gcgagcugcc gcgguucaug 360

aacuacaccc ugaacaacac caagaagacg aacgugaccc ucuccaagaa gcgcaagcgg 420

cgcuuccugg gguuccugcu cggcgugggg agcgccaucg ccuccggcau cgccgucagc 480

aaggugcugc accuggaggg cgaggugaac aagaucaagu ccgcccuccu gagcaccaac 540

aaggcggucg uguccugag caacggggug uccguccuca ccagcaaggu gcuggaccug 600

aagaacuaca ucgacaagca gcuccugccc aucgugaaca agcaguccug ccggaucagc 660

aacaucgaga cggucaucga guuccagcag aagaacaacc gccugcucga gaucacccgg 720

gaguucagcg ugaacgccgg cgugaccacc cccgucucca cguacaugcu gaccaacagc 780

gagcugcucu cccugaucaa cgacaugccc aucaccaacg accagaagaa gcugaugagc 840

aacaacgugc agaucgugcg ccagcagucc uacagcauca uguccaucau caaggaggag 900

guccucgccu acguggugca gcugccgcug uacgggguca ucgacacccc cugcuggaag 960

cuccacacga gcccccugug caccaccaac accaaggagg gcuccaacau cugccugacg 1020

cggaccgacc gcgggguggua cugcgacaac gccggcagcg uguccuucuu cccccaggcc 1080

gagaccugca agguccagag caaccgggug uucugcgaca ccaugaacuc ccucacgcug 1140

ccgagcgagg ugaaccugug caacgucgac aucuucaacc ccaaguacga cugcaagauc 1200

augaccucca agaccgacgu gagcuccagc gugaucaccu cccucggcgc gaucgucagc 1260

ugcuacggga agacgaagug caccgccagc aacaagaacc gcggcaucau caagaccuuc 1320

uccaacgggu gcgacuacgu gagcaacaag ggcguggaca ccgucuccgu gggcaacacc 1380

cuguacuacg ugaacaagca ggaggggaag agccuguacg ucaagggcga gcccaucauc 1440

aacuucuacg acccccucgu guucccgucc gacgaguucg acgccagcau cucccaggug 1500

aacgagaaga ucaaccagag ccuggccuuc auccggaagu ccgacgagcu gcugcaccac 1560

gucaacgccg ggaagagcac gaccaacauc augaucacca ccaucaucau cgugaucauc 1620

gugauccucc ugucccugau cgcggucggc cuccugcugu acugcaaggc ccgcagcacg 1680

cccgugaccc ucuccaagga ccagcugagc gggaucaaca acaucgccuu cuccaacuga 1740

ggacuaguua uaagacugac uagcccgaug ggccucccaa cgggcccucc uccccuccuu 1800

gcaccgagau uaauaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1860

aaaaaaaaaa aaaaaaaaug cauccccccc cccccccccc cccccccccc ccccaaaggc 1920

ucuuuucaga gccaccagaa uu 1942

<210> 32
<211> 2107
<212> RNA
<213> Artificial Sequence

<220>
<223> RSV-F long (GC) R2510

<400> 32
ggggcgcugc cuacggaggu ggcagccauc uccuucucgg caucaagcuu accauggagc 60

ugcccauccu caaggccaac gccaucacca ccauccuggc ggccgugacg uucugcuucg 120

ccagcuccca gaacaucacc gaggaguucu accagagcac cugcuccgcc gucagcaagg 180

gcuaccuguc cgcccuccgg accggguggu acacgagcgu gaucaccauc gagcugucca 240

acaucaagga gaacaagugc aacggcaccg acgcgaaggu gaagcugauc aaccaggagc 300

ucgacaagua caagaacgcc gucaccgagc ugcagcugcu caugcagagc acgaccgccg 360

ccaacaaccg cgcgcggcgc gagcugccgc gguucaugaa cuacacccug aacaacacca 420

agaagacgaa cgugacccuc uccaagaagc gcaagcggcg cuuccugggg uuccugcucg 480

gcguggggag cgccaucgcc uccggcaucg ccgucagcaa ggugcugcac cuggagggcg 540

aggugaacaa gaucaagucc gcccuccuga gcaccaacaa ggcggucgug ucccugagca 600

acgggguguc cguccucacc agcaaggugc uggaccugaa gaacuacauc gacaagcagc 660

uccugcccau cgugaacaag caguccugcc ggaucagcaa caucgagacg gucaucgagu 720

uccagcagaa gaacaaccgc cugcucgaga ucacccggga guucagcgug aacgccggcg 780

ugaccacccc cgucuccacg uacaugcuga ccaacagcga gcugcucucc cugaucaacg 840

acaugcccau caccaacgac cagaagaagc ugaugagcaa caacgugcag aucgugcgcc 900

agcaguccua cagcaucaug uccaucauca aggaggaggu ccucgccuac guggugcagc 960

ugccgcugua cggggucauc gacacccccu gcuggaagcu ccacacgagc ccccugugca 1020

ccaccaacac caaggagggc uccaacaucu gccugacgcg gaccgaccgc gggugguacu 1080

gcgacaacgc cggcagcgug uccuucuucc cccaggccga gaccugcaag guccagagca 1140

accggguguu cugcgacacc augaacuccc ucacgcugcc gagcgaggug aaccugugca 1200

acgucgacau cuucaacccc aaguacgacu gcaagaucau gaccuccaag accgacguga 1260

gcuccagcgu gaucaccucc cucggcgcga ucgucagcug cuacgggaag acgaagugca 1320

ccgccagcaa caagaaccgc ggcaucauca agaccuucuc caacgggugc gacuacguga 1380

gcaacaaggg cguggacacc gucuccgugg gcaacacccu guacuacgug aacaagcagg 1440

aggggaagag ccuguacguc aagggcgagc ccaucaucaa cuucuacgac ccccucgugu 1500

ucccguccga cgaguucgac gccagcaucu cccaggugaa cgagaagauc aaccagagcc 1560

uggccuucau ccggaagucc gacgagcugc ugcaccacgu caacgccggg aagagcacga 1620

ccaacaucau gaucaccacc aucaucaucg ugaucaucgu gauccuccug ucccugaucg 1680

cggucggccu ccugcuguac ugcaaggccc gcagcacgcc cgugacccuc uccaaggacc 1740

agcugagcgg gaucaacaac aucgccuucu ccaacugagg acuagugcau cacauuuaaa 1800

agcaucucag ccuaccauga gaauaagaga aagaaaauga agaucaauag cuuauucauc 1860

ucuuuuucuu uuucguuggu guaaagccaa cacccugucu aaaaaacaua aauuucuuua 1920

aucauuuugc cucuuuucuc ugugcuucaa uuaauaaaaa auggaaagaa ccuagaucua 1980

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2040

aaaugcaucc cccccccccc cccccccccc ccccccccca aaggcucuuu ucagagccac 2100

cagaauu 2107

<210> 33
<211> 2044
<212> RNA
<213> Artificial Sequence

<220>
<223> RSV-Fdel554-574 long (GC) R2821

<400> 33
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ugcccauccu caaggccaac gccaucacca ccauccuggc ggccgugacg uucugcuucg 120

ccagcuccca gaacaucacc gaggaguucu accagagcac cugcuccgcc gucagcaagg 180

gcuaccuguc cgcccuccgg accggguggu acacgagcgu gaucaccauc gagcugucca 240

acaucaagga gaacaagugc aacggcaccg acgcgaaggu gaagcugauc aaccaggagc 300

ucgacaagua caagaacgcc gucaccgagc ugcagcugcu caugcagagc acgaccgccg 360

ccaacaaccg cgcgcggcgc gagcugccgc gguucaugaa cuacacccug aacaacacca 420

agaagacgaa cgugacccuc uccaagaagc gcaagcggcg cuuccugggg uuccugcucg 480

gcguggggag cgccaucgcc uccggcaucg ccgucagcaa ggugcugcac cuggagggcg 540

aggugaacaa gaucaagucc gcccuccuga gcaccaacaa ggcggucgug ucccugagca 600

acgggguguc cguccucacc agcaaggugc uggaccugaa gaacuacauc gacaagcagc 660

uccugcccau cgugaacaag caguccugcc ggaucagcaa caucgagacg gucaucgagu 720

uccagcagaa gaacaaccgc cugcucgaga ucacccggga guucagcgug aacgccggcg 780

ugaccacccc cgucuccacg uacaugcuga ccaacagcga gcugcucucc cugaucaacg 840

acaugcccau caccaacgac cagaagaagc ugaugagcaa caacgugcag aucgugcgcc 900

agcaguccua cagcaucaug uccaucauca aggaggaggu ccucgccuac guggugcagc 960

ugccgcugua cggggucauc gacacccccu gcuggaagcu ccacacgagc ccccugugca 1020

ccaccaacac caaggagggc uccaacaucu gccugacgcg gaccgaccgc ggggugguacu 1080

gcgacaacgc cggcagcgug uccuucuucc cccaggccga gaccugcaag guccagagca 1140

accggguguu cugcgacacc augaacuccc ucacgcugcc gagcgaggug aaccugugca 1200

acgucgacau cuucaacccc aaguacgacu gcaagaucau gaccuccaag accgacguga 1260

gcuccagcgu gaucaccucc cucggcgcga ucgucagcug cuacgggaag acgaagugca 1320

ccgccagcaa caagaaccgc ggcaucauca agaccuucuc caacgggugc gacuacguga 1380

gcaacaaggg cguggacacc gucuccgugg gcaacacccu guacuacgug aacaagcagg 1440

aggggaagag ccuguacguc aagggcgagc ccaucaucaa cuucuacgac ccccucgugu 1500

ucccguccga cgaguucgac gccagcaucu cccaggugaa cgagaagauc aaccagagcc 1560

uggccuucau ccggaagucc gacgagcugc ugcaccacgu caacgccggg aagagcacga 1620

ccaacaucau gaucaccacc aucaucaucg ugaucaucgu gauccuccug ucccugaucg 1680

cggucggccu ccugcuguac ugcaaggccc gcugaggacu agugcaucac auuuaaaagc 1740

aucucagccu accaugagaa uaagagaaag aaaaugaaga ucaauagcuu auucaucucu 1800

uuuucuuuuu cguuggugua aagccaacac ccugucuaaa aaacauaaau uucuuuaauc 1860

auuuugccuc uuuucucugu gcuucaauua auaaaaaaug gaaagaaccu agaucuaaaa 1920

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1980

ugcaucccccc ccccccccccc ccccccccccc ccccccaaag gcucuuuuca gagccaccag 2040

aauu 2044

<210> 34
<211> 1558
<212> RNA
<213> Artificial Sequence

<220>
<223> RSV-N (GC) R2831

<400> 34
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acaccaucca gcgcagcacg ggcgacucca ucgacacccc caacuacgac guccagaagc 180

acaucaacaa gcugugcggg augcugcuca ucaccgagga cgccaaccac aaguucaccg 240

gccugaucgg gaugcuguac gcgaugagcc ggcucggccg cgaggacacg aucaagaucc 300

ugcgggacgc cggguaccac gugaaggcca acggcgugga cgucaccacc caccgccagg 360

acaucaacgg caaggagaug aaguucgagg ugcugacccu cgccucccug acgaccgaga 420

uccagaucaa caucgagauc gagagccgga aguccuacaa gaagaugcug aaggagaugg 480

gggagguggc cccggaguac cgccacgaca gccccgacug cggcaugauc auccucugca 540

ucgcggcccu ggucaucacc aagcuggccg ccggggaccg guccggccuc accgcgguga 600

uccgccgggc caacaacgug cugaagaacg agaugaagcg cuacaagggg cugcucccca 660

aggacaucgc caacagcuuc uacgaggucu ucgagaagca cccccacuuc aucgacgugu 720

ucgugcacuu cggcaucgcc caguccagca cgcggggcgg gucccgcguc gagggcaucu 780

ucgccgggcu guucaugaac gcguacggcg ccggccaggu gaugcugcgg uggggcgugc 840

ucgccaagag cgucaagaac aucaugcugg ggcacgccuc cgugcaggcc gagauggagc 900

agguggucga gguguacgag uacgcgcaga agcugggcgg cgaggccggg uucuaccaca 960

uccucaacaa cccgaaggcc agccugcugu cccucaccca guucccgcac uucagcagcg 1020

ugguccuggg gaacgccgcc ggccuggga ucaugggcga guaccgcggg accccgcgga 1080

accaggaccu cuacgacgcg gccaaggccu acgccgagca gcugaaggag aacggcguga 1140

ucaacuacuc cgugcuggac cucaccgccg aggagcugga ggcgaucaag caccagcuga 1200

accccaagga caacgacguc gagcucugag gacuagugca ucacauuuaa aagcaucuca 1260

gccuaccaug agaauaagag aaagaaaaug aagaucaaua gcuuauucau cucuuuuucu 1320

uuuucguugg uguaaagcca acacccuguc uaaaaaacau aaauuucuuu aaucauuuug 1380

ccucuuuucu cugugcuuca auuaauaaaa aauggaaaga accuagaucu aaaaaaaaaa 1440

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaugcauc 1500

cccccccccc cccccccccc cccccccccc aaaggcucuu uucagagcca ccagaauu 1558

<210> 35
<211> 967
<212> RNA
<213> Artificial Sequence

<220>
<223> RSV-M2-1 (GC) R2833

<400> 35
ggggcgcugc cuacggaggu ggcagccauc uccuucucgg caucaagcuu accaugagcc 60

gccggaaccc cugcaaguuc gagauccgcg gccacugccu gaacgggaag cggugccacu 120

ucucccacaa cuacuucgag uggccgcccc acgcccuccu ggugcgccag aacuucaugc 180

ugaaccggau ccucaagagc auggacaagu ccaucgacac ccugagcgag aucuccggcg 240

ccgcggagcu ggaccgcacc gaggaguacg cccucggggu cgugggcgug cuggagagcu 300

acaucggguc caucaacaac aucacgaagc agagcgccug cgucgccaug uccaagcugc 360

ucaccgagcu gaacagcgac gacaucaaga agcugcggga caacgaggag cucaacuccc 420

ccaagauccg cguguacaac accgugauca gcuacaucga guccaaccgg aagaacaaca 480

agcagaccau ccaccugcug aagcgccucc ccgccgacgu ccugaagaag acgaucaaga 540

acacccugga cauccacaag agcaucacca ucaacaaccc gaaggagcuc accguguccg 600

acacgaacga ccacgcgaag aacaacgaca ccaccugagg acuagugcau cacauuuaaa 660

agcaucucag ccuaccauga gaauaagaga aagaaaauga agaucaauag cuuauucauc 720

ucuuuuucuu uuucguuggu guaaagccaa cacccugucu aaaaaacaua aauuucuuua 780

aucauuuugc cucuuuucuc ugugcuucaa uuaauaaaaa auggaaagaa ccuagaucua 840

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900

aaaugcaucc cccccccccc cccccccccc ccccccccca aaggcucuuu ucagagccac 960

cagaauu 967

<210> 36
<211> 75
<212> DNA
<213> Homo sapiens

<400> 36
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ggagtaactg caaag 75

<210> 37
<211> 24
<212> RNA
<213> Artificial Sequence

<220>
<223> histone stem-loop sequence

<400> 37
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