

2014009263
SEQUENCE LISTING

<110> CureVac GmbH
<120> Respiratory syncytial virus (RSV) vaccine
<130> CU01P151W01
<160> 37
<170> PatentIn version 3.5
<210> 1
<211> 574
<212> PRT
<213> respiratory syncytial virus
<400> 1

Met Glu Leu Pro Ile Leu Lys Ala Asn Ala Ile Thr Thr Ile Leu Ala
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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
 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

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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

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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 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

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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

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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

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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

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

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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

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

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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

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

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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

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Ile Leu Asp Asp Phe Lys Val Ser Leu Glu Ser Ile Gly Ser Leu Thr
900 905 910

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

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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

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

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

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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

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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

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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

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

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

Thr Thr

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

<400> 8

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

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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

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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

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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

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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
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Leu Ser Glu Leu Leu Gly Phe Asp Leu Asn Pro
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<210> 11

<211> 124

<212> PRT

<213> respiratory syncytial virus

<400> 11

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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

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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

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

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uuuaguuaua ucaaggaaaa uaguguaau ggaacagaug cuaagguaaa auugauaaac 240
caagaauuag auaaaauaua aaauugcugua acagaauugc aguugcucuu gcaaagcaca 300
acagcagcaa acaaucgagc cagaagagaa cuaccaaggu uuauagaaua uacacucaac 360
aaauacaaaa aaaccaaugu aacauuaagc aagaaaagga aaagaagauu ucuugguuuu 420
uuuuuaggug uuggaucugc aaucgccagu ggcauugcug uaucuaaggu ccugcacuuu 480
gaaggagaag ugaacaagau caaaagugcu cuacuaucca caaacaaggc cguagucagc 540
uuaucaaaug gaguuagugu cuuaaccagc aaaguguuag accucaaaaa cuauauagau 600
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auagaguucc aacaaaagaa caacagacua cuagagauua ccagggaauu uaguguuaau 720
gcagguguaa cuacaccugu aagcacuuac auguuuacua auagugaauu auugucuuu 780
aucaaugaua ugccuauaac aaauagucag aaaaaguuaa uguccaaca uguucaaua 840
guuagacagc aaaguuauc uaucaugucc auauaaaaag aggaagucuu agcauauua 900
guacaauuac cacuaauagg ugugauagau acaccuuguu ggaaauuaca cacaucccu 960
cuauguaca ccaacacaaa agaaggguca acaucuguu uacaagaac ugacagagga 1020

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uuaguauucc	ccucugauga	auuugaugca	ucaauaucuc	aagucaauga	gaagauuaac	1500
cagaguuuag	cauuuauucg	uaauuccgau	gaauuuuac	aucauguaaa	ugcugguaaa	1560
ucaaccacaa	auaucaugau	aacuacuaua	auuauaguga	uuauaguaau	auuguuauca	1620
uuauuugcug	uuggacugcu	ccuauacugu	aaggccagaa	gcacaccagu	cacacuaagc	1680
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<210> 13
 <211> 897
 <212> RNA
 <213> respiratory syncytial virus

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aucuuuuuac	uauagcacia
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aucacauuau	ccauucuggc
aaugauaauc	ucaacuucac
uuauauuuac	agccaucaua
180	
uucauagccu	cggcaaacca
caaagucaca	cuaacaacug
caucauaca	agaugcaaca
240	
agccagauca	agaacacaac
cccaacauac	cucacucagg
auccucagcu	uggaaucagc
300	
uucuccaauc	ugucugaaa
uacauacaaa	accaccacca
uacuagcuuc	aacaacacca
360	
ggagucaagu	caaaccugca
accacaaca	gucaagacua
aaaacacaac	aacaacccaa
420	
acacaaccca	gcaagcccac
uacaaaacaa	cgccaaaaca
aaccacaaaa	caaacccaau
480	
aaugauuuuc	acuucgaagu
guuuuacuuu	guaccucugca
gcauauugcag	caacaaucca
540	
accugcuggg	cuaucugcaa
aagaauacca	aacaaaaaac
caggaaagaa	aaccaccacc
600	

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acaaacauca	caacuacacu	gcucaccaac	aacaccacag	gaaauccaaa	acucacaagu	780
caaauaggaaa	ccuuccacuc	aaccuccucc	gaaggcaauc	uaagcccuuc	ucaagucucc	840
acaacaucg	agcacccauc	acaaccuca	ucuccaccca	acacaacacg	ccaguag	897

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

<400> 14		
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ucuccaucau	gacugcaaua	
cuaaacaac	uuugugaaua	180
uaacguauuc	cauaacaaaa	
ccuuugagu	accaagagcu	
cgagucaaca	cauag	195

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

<400> 15		
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uaugggugcc	cauguuccaa	
ucaucuaugc	cagcagauuu	180
acuuauaaaa	gaacuagcua	
augucaacau	acuagugaaa	
caaauaucca	caccaagggg	240
accuucacua	agagucauga	
uaaacucaag	aagugcauug	
cuagcacaaa	ugcccagcaa	300
auuuaccaua	ugugcuauug	
uguuccuugga	ugaaagaagc	
aaacuggcau	augauguaac	360
cacaccugug	gaaaucaagg	
cauguagucu	aacaugccua	
aaaucaaaaa	auauguuuac	420
uacaguuaaa	gaucucacua	
ugaagacacu	caacccccaca	
caugauauua	uugcuuuuug	480
ugaauuugaa	aacauaguua	
caucaaaaaa	agucauaaua	
ccaacauacc	uaagauccau	540
cagugucaga	aauaaagauc	
ugaacacacu	ugaaaauaua	
acaaccacug	aauucaaaaa	600
ugccaucaca	aaugcaaaaa	
ucaucccuua	cucaggauua	

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cuauuaguca ucacagugac ugacaacaaa ggagcauucca aaucacauaaa gccgcaaagu	660
caauucauag uagauucugg agcuuaccua gaaaaagaaa guauauauua uguuaccaca	720
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<210> 16
 <211> 1176
 <212> RNA
 <213> respiratory syncytial virus

<400> 16 auggcucuua gcaaagucua guugaugau acacucaaca aagaucacu ucugucaucu	60
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cagaaacaca ucaauaagu auguggcaug uuauuaauca cagaagaugc uaaucauaaa	180
uucacugggu uauuagguau guuauaugcu augucuaggu uaggaagaga agacaccaua	240
aaaauacuca gagaugcggg auaucaugua aaagcaaaug gaguagaugu aacaacacau	300
cgucaagaca ucaaugggaa agaaaugaaa uuugaagugu uaacauuggc aagcuuaaca	360
acugaaaauuc aaaucaacau ugagauagaa ucuagaaaau ccuacaaaaa aaugcuaaaa	420
gaauggggag agguagcucc agaauacagg caugauucuc cugauugugg gaugauaaua	480
uuanguauag cagcauuagu aaauaccaa uuggcagcag gggauagauc uggucuuaca	540
gccgugauua ggagagcuua uaauguccua aaaaugaaa ugaaacguua caaaggcuua	600
cuaccaagg auauagcaa cagcuucua gaaguguuug aaaaacaucc ccacuuuaua	660
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uccaguguag uauuaggcaa ugcugcuggc cuaggcauaa ugggagagua cagagguaca	1020
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<210> 17
 <211> 6498
 <212> RNA
 <213> respiratory syncytial virus

<400> 17
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 cucaaaaaug auuauacca cuuaauuagu agacaaaauc cauuaauaga acacaugaa 180
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ucuuuagugc	acaauagcac	aucacuuuau	ugcaugcuuc	cuuggcauca	uauuaauaga	5460
uucaauuuug	uauuuaguuc	uacagguugu	aaaauuagua	uagaguauau	uuuaaaagac	5520
cuuaaaauua	aagauccuaa	uuguauagca	uucuuaggug	aaggagcagg	gaauuuauua	5580
uugcguacag	ugguggaacu	ucauccugac	auaagauaua	uuuacagaag	ucugaaagau	5640
ugcaaugauc	auaguuuacc	uauugaguuu	uuuaggcuau	acaauaggaca	uaucaacauu	5700
gauuauuggug	aaaauuugac	cauuccugcu	acagaugcaa	ccaacaacau	ucauuggucu	5760
uauuuacaua	uaaaguugc	ugaaccuau	agucuuuuug	uauugaugc	cgaauugccu	5820
guaacaguca	acuggaguua	aaauuaaua	gaauggagca	agcauguaag	aaaauugcaag	5880
uacuguuccu	caguuaaua	auguacguua	auaguaaaa	aucaugcuca	agaugauauu	5940
gauuucaau	uagacaauau	aacuauaua	aaaacuuaug	uauugcuagg	caguaaguua	6000

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aaggggaucgg agguuuacuu aguccuuaca auagguccug caaaauauuu uccaguauuu	6060
aauguaguac aaaaugcuua auugauacua ucaagaacca aaaauuucan caugccuaag	6120
aaagcugaua aagagucua ugaugcaaa auuuuuuuuu ugauacccuu uuuuuuuuac	6180
ccuauaaca aaaaaggaau uauuacugca uugucuaaac uaaagagugu uguuagugga	6240
gauauacuau cauauucuau agcuggacgg aaugaaguuu ucagcaauaa acuuauuuuu	6300
cauaagcaua ugaacauuu aaagugguuc aaucaguuuu uaaauuucag aucaacagaa	6360
cuuaacuua accauuuua uaugguagaa ucuacauuc cuuaccuaag ugaauuuuu	6420
aacagcuuga caacuauga acuuuuuuuu cugauuuuuu ucacagguag ucuguuuuac	6480
aacuuucaua augaauaa	6498

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

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ugucauuuuu gucauaauua uuuugaauug ccaccccaug cacugcucgu aagacaaaac	120
uuuauuuuaa acagaauacu uaagucuaug gauaaaagua uagauaccuu aucagaaaua	180
aguggagcug cagaguugga cagaacagaa gaguaugcuc uugguguagu uggagugcua	240
gagaguuaa uaggaucaau aaauauuaa acuaaacaau cagcaugugu ugccaugagc	300
aaacuccuca cugaacuaa uagugaugau aucaaaaaac ugagagacaa ugaagagcua	360
aaucaccca agauaagagu guacaauacu gucauaucau auauugaaag caacaggaaa	420
aacaauaaac aaacuauca ucuguuuuuu agauugccag cagacguuu gaagaaaacc	480
aucaaaaaca cauuggauau ccacaagagc auaaccauca acaacccaaa agaauuacu	540
guuagugaua caaauagacca ugccaaaaau aaugauacua ccuga	585

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

<400> 19

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augaccaugc caaaaaauau gauacuaccu gacaaaauauc cuuguaguau aacuuccaua	60
cuaauaacia guagauguag agucacuaug uauaaucgaa agaacacacu auauuucaau	120
caaaacaacc caaauaacca uauguacuca ccgaaucaaa cauucaauga aauccauugg	180
accucacaag acuugauuga cacaauuca aauuuucua agcaucuagg uguuauugag	240
gauauauaua caauauauau auuagugua uaa	273

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

<400> 20	
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cuagaaucaa uaaagggcaa auucacauca ccuaaagauc ccaagaaaaa agauaguauuc	120
auaucuguca acucaauaga uauagaagua accaaagaaa gcccuauaac aucaaaauca	180
accuuuuua acccaacaaa ugagacagau gauaaugcag ggaacaagcc cauuuaucaa	240
agaaaaccuc uaguaaguuu caaagaagac ccuauacca gugauaauc cuuuucaaaa	300
cuauacaaag aaaccuauaga gacauuugau aacaaugaag aagaaucuag cuauucuuu	360
gaagaaauaa augaucagac gaacgauaua auaacugcaa gauuagauag gauugaugaa	420
aaauuaagug aaauacuagg aaugcuucac acuuuaguag uagcaagugc aggaccuaca	480
ucugcuaggg augguauaag agaugccaug guugguuuaa gagaagaaau gauagaaaaa	540
aucagaacug aagcauuuau gaccaaugac agauuagaag cuauggcaag acucaggaau	600
gaggaaagug aaaagauggc aaaagacaca ucagaugaag ugucucucua uccaacauca	660
gagaaauuga acaaccuguu ggaagggaau gauagugaca augaucuau acuuagaagau	720
uucuga	726

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

<400> 21	
augggcagca auucguugag uaugauaaaa guuagauuac aaaaauuguu ugacaugau	60

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gaaguagcau uguuuaaaau aacaugcuau acugacaaau uaauacauuu aacuaaugcu	120
uuggcuaagg cagugauaca uacaaucaaa uugaauaggca uuguguuuugu gcauguuuuu	180
acaaguagug auuuuugccc uaauaauaau auuguaguua aauccaauuu cacaacaug	240
ccagugcuac aaaauggagg uuauauaugg gaaaugaugg aaauaacaca uugcucucaa	300
ccuaaugguc uaauagauga caauugugaa auuaaaauucu 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
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uacuuauaa aucaugaug cauagugaga aaacuugaug aaagacaggc cacauuuaca	180
uuccugguca acuaugaaau gaaacuauug cacaaguag gaagcacuaa auauaaaaaa	240
uauacugaau acaacacaaa auauaggcacu uucccuauug cgauuuuau caaucaugau	300
ggguucuuag aaugcauugg cauuagccu 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
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ataaatttct ttaatcattt tgcctctttt ctctgtgctt caattaataa aaaatggaaa 180
 gaatct 186

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

<400> 25
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 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
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 ttcttgcacc cgtacccccg tggcttttga 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 ttgtgtcca atttctatta aaggttcctt tgttccctaa gtccaactac 60
 taaactgggg gatattatga agggccttga gcatctggat tctgcctaata aaaaaacatt 120

tatttttcatt 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

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cgcuuccugg	gguuccugcu	cggcgugggg	agcgccaucg	ccuccggcau	cgccgucagc	480
aaggugcugc	accuggaggg	cgaggugaac	aagaUCAAGU	ccgcccuccu	gagcaccaac	540
aaggcggucg	ugucccugag	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	gccccugug	caccaccaac	accaaggagg	gcuccaaucau	cugccugacg	1020
cggaccgacc	gcggguggua	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
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cccugacccc	ucuccaagga	ccagcugagc	gggaucaaca	acaucgccuu	cuccaACUGA	1740
ggacuaguua	uaagacugac	uagcccgaug	ggccucccaa	cggggccucc	uccccuccuu	1800
gcaccgagau	uaauaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	1860
aaaaaaaaaa	aaaaaaaaaug	cauuuuuuuu	cccccccccc	cccccccccc	ccccaaaggc	1920
ucuuuucaga	gccaccagaa	uu				1942

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

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

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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 acgaccgccc 360
 ccaacaaccg cgcgcgggcg 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 gaacaacgcg cugcucgaga ucacccggga guucagcgug aacgccggcg 780
 ugaccacccc cgucuccagc uacaugcuga ccaacagcga gcugcucucc cugaucaacg 840
 acaugcccau caccaacgac cagaagaagc ugaugagcaa caacgugcag aucgugcgccc 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

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gcuccagcgu gaucaccucc cucggcgcga ucgucagcug cuacgggaag acgaagugca	1320
ccgccagcaa caagaaccgc ggcaucauca agaccuucuc caacgggugc gacuacguga	1380
gcaacaaggg cguggacacc gucuccgugg gcaacacccu guacuacgug aacaagcagg	1440
aggggaagag ccuguacguc aagggcgagc ccaucauca cuucuacgac cccucgugu	1500
ucccguccga cgaguucgac gccagcaucu cccaggugaa cgagaagauc aaccagagcc	1560
uggccuucan ccggaagucc gacgagcugc ugcaccacgu caacgccggg aagagcacga	1620
ccaacaucau gaucaccacc aucaucaucg ugaucaucgu gauccuccug uccugaucg	1680
cggucggccu ccugcuguac ugcaaggccc gcagcacgcc cgugacccuc uccaaggacc	1740
agcugagcgg gaucaacaac aucgccuucu ccaacugagg acuagugcau cacauuuaaa	1800
agcaucucag ccuaccauga gaauaagaga aagaaauga agaucaauag cuuauucauc	1860
ucuuuuucuu uuucguuggu guaaagccaa caccugucu aaaaaacaua aauuucuuua	1920
aucauuuugc cucuuuucuc ugugcuuca uuaauaaaaa auggaaagaa ccuagaucua	1980
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	2040
aaugcaucc 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

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ccagcuccca gaacauacc 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

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ccaacaaccg cgcgcgggcg gagcugccgc gguucaugaa cuacacccug aacaacacca	420
agaagacgaa cgugacccuc uccaagaagc gcaagcggcg cuuccugggg uuccugcucg	480
gcguggggag cgccaucgcc uccggcaucg ccgucagcaa ggugcugcac cuggagggcg	540
aggugaacaa gaucaagucc gccuccuga gcaccaacaa ggcggucgug ucccugagca	600
acgggguguc cguccucacc agcaaggugc uggaccugaa gaacuacauc gacaagcagc	660
uccugcccau cgugaacaag caguccugcc ggaucaagcaa 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 gacacccccc gcuggaagcu ccacacgagc cccugugca	1020
ccaccaacac caaggagggc uccaacauca gccugacgcg gaccgaccgc gggugguacu	1080
gcgacaacgc cggcagcgug uccuucuucc cccaggccga gaccugcaag guccagagca	1140
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gcuccagcgu gaucaccucc cucggcgcgga ucgucagcug cuacgggaag acgaagugca	1320
ccgccagcaa caagaaccgc ggcaucauca agaccuucuc caacgggugc gacuacguga	1380
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ucccguccga cgaguucgac gccagcaucu cccaggugaa cgagaagauc aaccagagcc	1560
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cggucggccu ccugcuguac ugcaaggccc gcugaggacu agugcaucac auuuuuuagc	1740
aucucagccu accaugagaa uaagagaaag aaaaugaaga ucaauagcuu auucaucucu	1800
uuuucuuuuu cguuggugua aagccaacac ccugucuaaa aaacauaaau uucuuuauc	1860
auuuugccuc uuuucucugu gcuucaauua auaaaaaag gaaagaaccu agaucuaaaa	1920

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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1980
ugcauccccc cccccccccc cccccccccc ccccccaaag gcucuuuuca gagccaccag	2040
aaau	2044

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

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

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acaccaucca gcgcagcacg ggcgacucca ucgacacccc caacuacgac guccagaagc	180
acaucaacaa gcugugcggg augcugcuca ucaccgagga cgccaaccac aaguucaccg	240
gccugaucgg gaugcuguac gcgaugagcc ggcucggccg cgaggacacg aucaagauc	300
ugcgggacgc cggguaccac gugaaggcca acggcgugga cgucaccacc caccgccagg	360
acaucaacgg caaggagaug aaguucgagg ugcuagcccu cgccucccug acgaccgaga	420
uccagaucua caucgagauc gagagccgga aguccuacaa gaagaugcug aaggagaugg	480
gggagguggc cccggaguac cgccacgaca gccccgacug cggcaugauc auccucugca	540
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ucgccgggcu guucaugaac gcguacggcg ccggccaggu gaugcugcgg uggggcgugc	840
ucgccaagag cgucaagaac aucaugcugg ggcacgccuc cgugcaggcc gagauggagc	900
agguggucga gguguacgag uacgcgcaga agcugggagg cgaggccggg uucuaccaca	960
uccucaacaa cccgaaggcc agccugcugu ccucaccca guucccgac uucagcagcg	1020
ugguccuggg gaacgccgcc ggccugggga ucaugggcga guaccgcggg accccgcgga	1080

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accaggaccu cuacgacgcg gccaaaggccu acgccgagca gcugaaggag aacggcguga	1140
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accccaagga caacgacguc gagcucugag gacuagugca ucacauuuuaa aagcaucuca	1260
gccuaccaug agaauaagag aaagaaaaug aagaucaaua gcuuauucau cucuuuuucu	1320
uuuucguugg uguaaagcca acaccuguc uaaaaaacau aaauuucuuu aaucuuuuug	1380
ccucuuuuu cuugucuca 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

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gccggaaccc cugcaaguuc gagaucgcgc gccacugccu gaacgggaag cggugccacu	120
ucucccaca cuacuucgag uggccgcccc acgccuccu ggugcgccag aacuucaugc	180
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