

eolf-seq1.txt
SEQUENCE LISTING

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      SYNCYTIAL VIRUS (RSV) VACCINE

<130>  BNI14747PCT

<140>  Not yet assigned
<141>  2013-03-15

<150>  US 61/678,367
<151>  2012-08-01

<150>  EP 12005594.2
<151>  2012-08-01

<160>  43

<170>  PatentIn version 3.5

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<213>  Human Respiratory Syncytial Virus (hRSV), strain A2

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eo1f-seq1.txt

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Ile Ile₅₀ Ser Thr Ser Leu Ile₅₅ Ile Ala Ala Ile Ile₆₀ Phe Ile Ala Ser

Ala Asn His Lys Val Thr₇₀ Pro Thr Thr Ala Ile₇₅ Ile Gln Asp Ala Thr₈₀

Ser Gln Ile Lys Asn₈₅ Thr Thr Pro Thr Tyr₉₀ Leu Thr Gln Asn Pro₉₅ Gln

Leu Gly Ile Ser₁₀₀ Pro Ser Asn Pro Ser₁₀₅ Glu Ile Thr Ser Gln₁₁₀ Ile Thr

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Asn Asp Phe His Phe₁₆₅ Glu Val Phe Asn Phe₁₇₀ Val Pro Cys Ser Ile₁₇₅ Cys

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Lys Pro Gly₁₉₅ Lys Lys Thr Thr Thr₂₀₀ Lys Pro Thr Lys Lys₂₀₅ Pro Thr Leu

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Thr Asn Ile Ile Thr₂₄₅ Thr Leu Leu Thr Ser₂₅₀ Asn Thr Thr Gly Asn₂₅₅ Pro

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eof-seq1.txt

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Gln Glu Leu Asp Lys Tyr Lys Asn Ala Val Thr Glu Leu Gln Leu Leu
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Glu Gly Glu Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys
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Gln Lys Asn Asn Arg Leu Leu Glu Ile Thr Arg Glu Phe Ser Val Asn

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510

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 355 360 365
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 385 390 395 400
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Gly Met Leu Leu Ile Thr Glu Asp Ala Asn His Lys Phe Thr Gly Leu
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eo1f-seq1.txt

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Val Ala Pro Glu Tyr Arg His Asp Ser Pro Asp Cys Gly Met Ile Ile
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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
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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
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Ser Ser Val Val Leu Gly Asn Ala Ala Gly Leu Gly Ile Met Gly Glu
325 330 335

eo1f-seq1.txt

Tyr Arg Gly Thr Pro Arg Asn Gln Asp Leu Tyr Asp Ala Ala Lys Ala
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Tyr Ala Glu Gln Leu Lys Glu Asn Gly Val Ile Asn Tyr Ser Val Leu
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<210> 12
<211> 18
<212> PRT
<213> FMDV

<400> 12

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Gly Pro

<210> 13
<211> 585
<212> DNA
<213> hRSV strain A2

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eo1f-seq1.txt

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 <213> hRSV strain A2

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 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
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Thr Thr

<210> 15
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 <212> DNA
 <213> hRSV strain A2

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eof-seq1.txt

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<210> 16
 <211> 524
 <212> PRT
 <213> hRSV strain A2

<400> 16

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Tyr Gln Ser Thr Cys Ser Ala Val Ser Lys Gly Tyr Leu Ser Ala Leu
 Page 15

35

40

45

Arg Thr Gly Trp Tyr Thr Ser Val Ile Thr Ile Glu Leu Ser Asn Ile
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 Lys Glu Asn Lys Cys Asn Gly Thr Asp Ala Lys Val Lys Leu Ile Lys
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 Met Gln Ser Thr Pro Ala Ala Asn Asn Arg Ala Arg Arg Glu Leu Pro
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 Arg Phe Met Asn Tyr Thr Leu Asn Asn Thr Lys Lys Thr Asn Val Thr
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 Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val
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 Lys Gln Ser Cys Arg Ile Ser Asn Ile Glu Thr Val Ile Glu Phe Gln
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 Gln Lys Asn Asn Arg Leu Leu Glu Ile Thr Arg Glu Phe Ser Val Asn
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 Val Gly Val Thr Thr Pro Val Ser Thr Tyr Met Leu Thr Asn Ser Glu
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eolf-seq1.txt																
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Asp 385	Ile	Phe	Asn	Pro	Lys 390	Tyr	Asp	Cys	Lys	Ile 395	Met	Thr	Ser	Lys	Thr 400	
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Tyr	Gly	Lys	Thr 420	Lys	Cys	Thr	Ala	Ser 425	Asn	Lys	Asn	Arg	Gly 430	Ile	Ile	
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Glu	Lys	Ile	Asn 500	Gln	Ser	Leu	Ala	Phe 505	Ile	Arg	Lys	Ser	Asp 510	Glu	Leu	
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<212> DNA
<213> Artificial

<220>
<223> cDNA encoding fusion protein comprising full-length N protein from hRSV strain A2 fused to the protease 2A fragment from FMDV fused to full-length M2 protein from hRSV strain A2.

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 <211> 602
 <212> PRT
 <213> Artificial

<220>
 <223> Fusion protein comprising full-length N protein from hRSV strain

eo1f-seq1.txt

A2 fused to the protease 2A fragment from FMDV fused to full-length M2 protein from hRSV strain A2.

<400> 18

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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
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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
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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
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Gly Ile Phe Ala Gly Leu Phe Met Asn Ala Tyr Gly Ala Gly Gln Val
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eo1f-seq1.txt

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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 Leu Asn Phe Asp Leu Leu Lys Leu Ala
385 390 395 400

Gly Asp Val Glu Ser Asn Pro Gly Pro Ser Arg Arg Asn Pro Cys Lys
405 410 415

Phe Glu Ile Arg Gly His Cys Leu Asn Gly Lys Arg Cys His Phe Ser
420 425 430

His Asn Tyr Phe Glu Trp Pro Pro His Ala Leu Leu Val Arg Gln Asn
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Phe Met Leu Asn Arg Ile Leu Lys Ser Met Asp Lys Ser Ile Asp Thr
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Leu Ser Glu Ile Ser Gly Ala Ala Glu Leu Asp Arg Thr Glu Glu Tyr
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Ala Leu Gly Val Val Gly Val Leu Glu Ser Tyr Ile Gly Ser Ile Asn
485 490 495

Asn Ile Thr Lys Gln Ser Ala Cys Val Ala Met Ser Lys Leu Leu Thr
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Glu Leu Asn Ser Asp Asp Ile Lys Lys Leu Arg Asp Asn Glu Glu Leu
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eo1f-seq1.txt

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<223> Synthetic peptide.

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<210> 24

<211> 9

<212> PRT

<213> Artificial

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<223> Synthetic peptide.

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<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide.

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 1 5

<210> 26

<211> 9

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<213> Artificial

<220>

<223> Synthetic peptide.

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<210> 27

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide.

<400> 27

Ser Tyr Ile Gly Ser Ile Asn Asn Ile
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<210> 28

<211> 1725

<212> DNA

<213> hRSV strain A2

<400> 28

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eof-seq1.txt

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

Arg Phe Met Asn Tyr Thr Leu Asn Asn Ala 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
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Gly Ser Ala Ile Ala Ser Gly Val Ala Val Ser Lys Val Leu His Leu
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Glu Gly Glu Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys
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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

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210

215

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 Ile 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 Met 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
Page 25

eo1f-seq1.txt

1 5 10 15

Trp Asp Thr Leu₂₀ Asn His Leu Leu Phe₂₅ Ile Ser Ser Cys₃₀ Leu Tyr Lys

Leu Asn Leu₃₅ Lys Ser Val Ala Gln₄₀ Ile Thr Leu Ser Ile₄₅ Leu Ala Met

Ile Ile₅₀ Ser Thr Ser Leu Ile₅₅ Ile Ala Ala Ile Ile₆₀ Phe Ile Ala Ser

Ala Asn His Lys Val Thr₇₀ Pro Thr Thr Ala Ile₇₅ Ile Gln Asp Ala Thr₈₀

Ser Gln Ile Lys Asn₈₅ Thr Thr Pro Thr Tyr₉₀ Leu Thr Gln Asn Pro₉₅ Gln

Leu Gly Ile Ser₁₀₀ Pro Ser Asn Pro Ser₁₀₅ Glu Ile Thr Ser Gln₁₁₀ Ile Thr

Thr Ile Leu₁₁₅ Ala Ser Thr Thr Pro Gly Val Lys Ser Thr₁₂₅ Leu Gln Ser

Thr Thr Val Lys Thr Lys Asn₁₃₅ Thr Thr Thr Thr Gln₁₄₀ Thr Gln Pro Ser

Lys Pro Thr Thr Lys Gln₁₅₀ Arg Gln Asn Lys Pro₁₅₅ Pro Ser Lys Pro Asn₁₆₀

Asn Asp Phe His Phe₁₆₅ Glu Val Phe Asn Phe₁₇₀ Val Pro Cys Ser Ile₁₇₅ Cys

Ser Asn Asn Pro₁₈₀ Thr Cys Trp Ala Ile₁₈₅ Cys Lys Arg Ile Pro₁₉₀ Asn Lys

Lys Pro Gly₁₉₅ Lys Lys Thr Thr Thr₂₀₀ Lys Pro Thr Lys Lys₂₀₅ Pro Thr Leu

Lys Thr Thr Lys Lys Asp Pro₂₁₅ Lys Pro Gln Thr Thr₂₂₀ Lys Ser Lys Glu

Val Pro Thr Thr Lys Pro₂₃₀ Thr Glu Glu Pro Thr₂₃₅ Ile Asn Thr Thr Lys₂₄₀

Thr Asn Ile Ile Thr₂₄₅ Thr Leu Leu Thr Ser₂₅₀ Asn Thr Thr Gly Asn₂₅₅ Pro

Glu Leu Thr Ser₂₆₀ Gln Met Glu Thr Phe₂₆₅ His Ser Thr Ser Ser₂₇₀ Glu Gly

Asn Pro Ser Pro Ser Gln Val Ser Thr Thr Ser Glu Tyr Pro Ser Gln

275

280

285

Pro Ser Ser Pro Pro Asn Thr Pro Arg Gln
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<210> 32
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 <212> DNA
 <213> hRSV strain A2

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 tttatgttaa acagaatact taagtctatg gataaaagta tagatacctt atcagaaata 180
 agtggagctg cagagttgga cagaacagaa gagtatgctc ttggtgtagt tggagtgcta 240
 gagagttata taggatcaat aaacaatata actaaacaat cagcatgtgt tgccatgagc 300
 aaactcctca ctgaactcaa tagtgatgat atcaaaaagc tgagggacaa tgaagagcta 360
 aattcaccca agataagagt gtacaatact gtcatatcat atattgaaag caacaggaaa 420
 aacaataaac aaactatcca tctgttaaaa agattgccag cagacgtatt gaagaaaacc 480
 atcaaaaaca cattggatat ccataagagc ataaccatca acaacccaaa agaatcaact 540
 gttagtgata caaatgacca tgccaaaaat aatgatacta cctga 585

<210> 33
 <211> 194
 <212> PRT
 <213> hRSV strain A2

<400> 33

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

eo1f-seq1.txt

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

Thr Thr

<210> 34
<211> 1176
<212> DNA
<213> hRSV strain A2

<400> 34
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cagaaacaca tcaataagtt atgtggcatg ttattaatca cagaagatgc taatcataaa 180
ttcactgggt taataggtat gttatatgcg atgtctaggt taggaagaga agacaccata 240
aaaatactca gagatgcggg atatcatgta aaagcaaagt gagtagatgt aacaacacat 300
cgtcaagaca ttaatggaaa agaaatgaaa tttgaagtgt taacattggc aagcttaaca 360
actgaaattc aaatcaacat tgagatagaa tctagaaaaat cctacaaaaa aatgctaaaa 420
gaaatgggag aggtagctcc agaatacagg catgactctc ctgattgtgg gatgataata 480
ttatgtatag cagcattagt aataactaaa ttagcagcag gggacagatc tgggtcttaca 540
gccgtgatta ggagagctaa taatgtccta aaaaatgaaa tgaaacgtta caaaggctta 600
ctaccaagg acatagccaa cagcttctat gaagtgtttg aaaaacatcc ccactttata 660
gatgtttttg ttcatttttg tatagcacia tcttctacca gaggtggcag tagagttgaa 720
gggatttttg caggattggt tatgaatgcc tatggtgcag ggcaagtgat gttacggtgg 780
ggagtcttag caaaatcagt taaaaatatt atgttaggac atgctagtgt gcaagcagaa 840
atggaacaag ttgttgaggt ttatgaatat gcccaaaaat tgggtggtga agcaggattc 900
taccatatat tgaacaaccc aaaagcatca ttattatctt tgactcaatt tcctcacttc 960
tccagtgtag tattaggcaa tgctgctggc ctaggcataa tgggagagta cagaggtaca 1020
ccgaggaatc aagatctata tgatgcagca aaggcatatg ctgaacaact caaagaaaat 1080
ggtgtgatta actacagtgt actagacttg acagcagaag aactagaggc tatcaaakat 1140

cagcttaatc caaaagataa tgatgtagag ctttga

1176

<210> 35
 <211> 391
 <212> PRT
 <213> hRSV strain A2

<400> 35

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
 Page 30

eo1f-seq1.txt

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> 36
<211> 27
<212> DNA
<213> Artificial

<220>
<223> RT-PCR primer.

<400> 36
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27

<210> 37
<211> 25
<212> DNA
<213> Artificial

<220>
<223> RT-PCR primer.

<400> 37
ttcagctatc attttctctg ccaat

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<210> 38

eo1f-seq1.txt

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<211> 27
<212> DNA
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<220>
<223> RT-PCR probe.

<400> 38
tttgaacctg tctgaacatt cccgggtt 27

<210> 39
<211> 40
<212> DNA
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<220>
<223> Synthetic promoter.

<400> 39
aaaaattgaa attttatttt ttttttttgg aatataaata 40

<210> 40
<211> 104
<212> DNA
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<220>
<223> Synthetic promoter.

<400> 40
tccaaaccca cccgcttttt atagtaagtt tttcacccat aaataataaa tacaataatt 60
aatttctcgt aaaagtagaa aatatattct aatttattgc acgg 104

<210> 41
<211> 73
<212> DNA
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<220>
<223> Synthetic promoter.

<400> 41
taaaaattga aaaaatattc taatttatag gacggttttg attttctttt tttctattct 60
ataaataata aat 73

<210> 42
<211> 227
<212> DNA
<213> Artificial

<220>
<223> Synthetic promoter.

<400> 42
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gaaaaactat tctaatttat tgcacggtcc ggtaaaaatt gaaaaactat tctaatttat 180
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eo1f-seq1.txt

<210> 43
<211> 112
<212> DNA
<213> Artificial

<220>
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<400> 43
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aaataatcat aaataatttc attatcgcga tatccgttaa gtttgtatcg ta 112