SEQUENCE LISTING

<110> NOVARTIS AG

<120> RSV F PREFUSION TRIMERS

<130> PAT055275-WO-PCT

<140>
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<150> 61/890,086
<151> 2013-10-11

<150> 61/728,498
<151> 2012-11-20

<160> 41

<170> PatentIn version 3.5

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

<400> 1
Met Glu Leu Leu Ile Leu Lys Ala Asn Ala Ile Thr Thr Ile Leu Thr
1 5 10 15

Ala Val Thr Phe Cys Phe Ala Ser Gly 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 Lys
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 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
130 135 140

Gly Ser Ala Ile Ala Ser Gly Val 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

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                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 Ser 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 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
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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 Asn 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> 574
<212> PRT
<213> Respiratory syncytial virus

<400> 2
Met Glu Leu Leu Ile His Arg Ser Ser Ala Ile Phe Leu Thr Leu Ala
1 5 10 15

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

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

```
Gln Tyr Met Asn Tyr Thr Ile Asn Thr Thr Lys Asn Leu Asn Val Ser
        115                 120                 125

Ile 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 Asn 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 Asn Asn Arg Leu Leu Pro Ile Val Asn
        195                 200                 205

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

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

Ala Gly Val Thr Thr Pro Leu 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 Ser 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

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

Leu Cys Thr Thr Asn Ile 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 Asp 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 Ser Leu Cys Asn Thr
    370                 375                 380
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Asp Ile Phe Asn Ser Lys Tyr Asp Cys Lys Ile Met Thr Ser Lys Thr
385                 390                 395                 400

Asp Ile 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 Leu Glu Gly
    450                 455                 460

Lys Asn Leu Tyr Val Lys Gly Glu Pro Ile Ile Asn Tyr 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 Arg Ser Asp Glu Leu
            500                 505                 510

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

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

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

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


<210> 3
<211> 51
<212> PRT
<213> Respiratory syncytial virus

<400> 3
Thr Pro Ala Thr Asn Asn Arg Ala Arg Lys Glu Leu Pro Arg Phe Met
1               5                   10                  15

Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr Leu Ser Lys
            20                  25                  30

Lys Arg Lys Lys Lys Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
        35                  40                  45

Ile Ala Ser
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50

<210> 4
<211> 48
<212> PRT
<213> Respiratory syncytial virus

<400> 4
Thr Pro Ala Thr Asn Asn Arg Ala Arg Gln Glu Leu Pro Arg Phe Met
1 5 10 15

Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr Leu Ser Lys
20 25 30

Lys Arg Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala Ile Ala Ser
35 40 45

<210> 5
<211> 51
<212> PRT
<213> Respiratory syncytial virus

<400> 5
Thr Pro Ala Thr Asn Asn Gln Ala Gln Asn Glu Leu Pro Arg Phe Met
1 5 10 15

Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr Leu Ser Gln
20 25 30

Asn Gln Asn Gln Asn Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
35 40 45

Ile Ala Ser
50

<210> 6
<211> 51
<212> PRT
<213> Respiratory syncytial virus

<400> 6
Thr Pro Ala Thr Asn Asn Gln Ala Gln Asn Glu Leu Pro Gln Phe Met
1 5 10 15

Asn Tyr Thr Leu Asn Asn Ala Asn Asn Thr Asn Val Thr Leu Ser Gln
20 25 30

Asn Gln Asn Gln Asn Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
35 40 45

Ile Ala Ser
50

<210> 7
<211> 51
<212> PRT

<213> Respiratory syncytial virus

<400> 7
Thr Pro Ala Thr Asn Asn Gln Ala Gln Asn Glu Leu Pro Gln Phe Met
1               5                   10                  15

Asn Tyr Thr Leu Asn Asn Ala Gln Gln Thr Asn Val Thr Leu Ser Gln
            20                  25                  30

Asn Gln Asn Gln Asn Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
        35                  40                  45

Ile Ala Ser
    50

<210> 8
<211> 30
<212> PRT
<213> Respiratory syncytial virus

<400> 8
Thr Pro Ala Thr Asn Asn Gln Ala Gln Asn Gln Asn Gln Asn Gln Asn
1               5                   10                  15

Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala Ile Ala Ser
            20                  25                  30

<210> 9
<211> 28
<212> PRT
<213> Respiratory syncytial virus

<400> 9
Thr Pro Ala Thr Asn Asn Gln Ala Gln Asn Gln Asn Gln Asn Phe Leu
1               5                   10                  15

Gly Phe Leu Leu Gly Val Gly Ser Ala Ile Ala Ser
            20                  25

<210> 10
<211> 30
<212> PRT
<213> Respiratory syncytial virus

<400> 10
Thr Pro Ala Thr Asn Asn Arg Ala Arg Gln Gln Asn Gln Gln Gln Arg
1               5                   10                  15

Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala Ile Ala Ser
            20                  25                  30

<210> 11
<211> 28
<212> PRT
<213> Respiratory syncytial virus

<400> 11
Thr Pro Ala Thr Asn Asn Arg Ala Arg Gln Gln Gln Gln Arg Phe Leu

1 5 10 15

Gly Phe Leu Leu Gly Val Gly Ser Ala Ile Ala Ser
20 25

<210> 12
<211> 51
<212> PRT
<213> Respiratory syncytial virus

<400> 12
Thr Pro Ala Thr Asn Asn Arg Ala Arg Arg Glu Leu Pro Gln Phe Met
1 5 10 15

Asn Tyr Thr Leu Asn Asn Ala Gln Gln Thr Asn Val Thr Leu Ser Gln
20 25 30

Asn Gln Asn Gln Asn Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
35 40 45

Ile Ala Ser
50

<210> 13
<211> 51
<212> PRT
<213> Respiratory syncytial virus

<400> 13
Thr Pro Ala Thr Asn Asn Gln Ala Gln Asn Glu Leu Pro Gln Phe Met
1 5 10 15

Asn Tyr Thr Leu Asn Asn Ala Gln Gln Thr Asn Val Thr Leu Ser Lys
20 25 30

Lys Arg Lys Arg Arg Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
35 40 45

Ile Ala Ser
50

<210> 14
<211> 51
<212> PRT
<213> Respiratory syncytial virus

<400> 14
Thr Pro Ala Thr Asn Asn Ile Glu Gly Arg Glu Leu Pro Arg Phe Met
1 5 10 15

Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr Leu Ser Lys
20 25 30

Lys Ile Glu Gly Arg Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
35 40 45

Ile Ala Ser
    50

<210> 15
<211> 41
<212> PRT
<213> Respiratory syncytial virus

<400> 15
Thr Pro Pro Thr Asn Asn Arg Ala Arg Arg Glu Leu Pro Arg Phe Met
1               5                   10                  15

Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr Leu Ser Lys
            20                  25                  30

Lys Arg Lys Arg Arg Ala Ile Ala Ser
        35                  40

<210> 16
<211> 300
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 16
Met His His His His His His Gly Ser Met Ser Pro Ile Leu Gly Tyr
1               5                   10                  15

Trp Lys Ile Lys Gly Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr
            20                  25                  30

Leu Glu Glu Lys Tyr Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp
        35                  40                  45

Lys Trp Arg Asn Lys Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu
    50                  55                  60

Pro Tyr Tyr Ile Asp Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile
65                  70                  75                  80

Ile Arg Tyr Ile Ala Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys
                85                  90                  95

Glu Arg Ala Glu Ile Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg
            100                 105                 110

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

Val Asp Phe Leu Ser Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp
    130                 135                 140

```
Arg Leu Cys His Lys Thr Tyr Leu Asn Gly Asp His Val Thr His Pro
145                 150                 155                 160

Asp Phe Met Leu Tyr Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro
                165                 170                 175

Met Cys Leu Asp Ala Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile
            180                 185                 190

Glu Ala Ile Pro Gln Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile
        195                 200                 205

Ala Trp Pro Leu Gln Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His
    210                 215                 220

Pro Pro Lys Ser Asp Leu Val Pro Arg Gly Ser Gly Ser Leu Glu Val
225                 230                 235                 240

Leu Phe Gln Gly Pro Gly Gly Ser Ala Gly Ser Gly Leu Glu Gly Glu
                245                 250                 255

Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val
            260                 265                 270

Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu
        275                 280                 285

Lys Asn Tyr Ile Asp Lys Gln Leu Leu Pro Ile Val
    290                 295                 300


<210> 17
<211> 290
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 17
Met His His His His His His Gly Ser Met Ser Pro Ile Leu Gly Tyr
1               5                   10                  15

Trp Lys Ile Lys Gly Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr
            20                  25                  30

Leu Glu Glu Lys Tyr Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp
        35                  40                  45

Lys Trp Arg Asn Lys Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu
    50                  55                  60
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```
Pro Tyr Tyr Ile Asp Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile
65                  70                  75                  80

Ile Arg Tyr Ile Ala Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys
                85                  90                  95

Glu Arg Ala Glu Ile Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg
            100                 105                 110

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

Val Asp Phe Leu Ser Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp
    130                 135                 140

Arg Leu Cys His Lys Thr Tyr Leu Asn Gly Asp His Val Thr His Pro
145                 150                 155                 160

Asp Phe Met Leu Tyr Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro
                165                 170                 175

Met Cys Leu Asp Ala Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile
            180                 185                 190

Glu Ala Ile Pro Gln Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile
        195                 200                 205

Ala Trp Pro Leu Gln Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His
    210                 215                 220

Pro Pro Lys Ser Asp Leu Val Pro Arg Gly Ser Gly Ser Leu Glu Val
225                 230                 235                 240

Leu Phe Gln Gly Pro Gly Gly Ser Ala Gly Ser Gly Leu Glu Gly Glu
                245                 250                 255

Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val
            260                 265                 270

Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu
        275                 280                 285

Lys Asn
    290
```

<210> 18
<211> 337
<212> PRT
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 18

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Met His His His His His His Gly Ser Met Ser Pro Ile Leu Gly Tyr
1               5                   10                  15

Trp Lys Ile Lys Gly Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr
            20                  25                  30

Leu Glu Glu Lys Tyr Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp
        35                  40                  45

Lys Trp Arg Asn Lys Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu
    50                  55                  60

Pro Tyr Tyr Ile Asp Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile
65                  70                  75                  80

Ile Arg Tyr Ile Ala Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys
                85                  90                  95

Glu Arg Ala Glu Ile Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg
            100                 105                 110

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

Val Asp Phe Leu Ser Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp
    130                 135                 140

Arg Leu Cys His Lys Thr Tyr Leu Asn Gly Asp His Val Thr His Pro
145                 150                 155                 160

Asp Phe Met Leu Tyr Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro
                165                 170                 175

Met Cys Leu Asp Ala Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile
            180                 185                 190

Glu Ala Ile Pro Gln Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile
        195                 200                 205

Ala Trp Pro Leu Gln Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His
    210                 215                 220

Pro Pro Lys Ser Asp Leu Val Pro Arg Gly Ser Gly Ser Leu Glu Val
225                 230                 235                 240

Leu Phe Gln Gly Pro Gly Gly Ser Ala Gly Ser Gly Arg Leu Lys Asn
                245                 250                 255
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```
Pro Pro Lys Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe
            260                 265                 270

Val Pro Cys Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys
        275                 280                 285

Lys Thr Ile Pro Gly Gly Ser Ala Gly Ser Gly Leu Glu Gly Glu Val
    290                 295                 300

Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser
305                 310                 315                 320

Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys
                325                 330                 335

Asn
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<210> 19
<211> 337
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 19

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Met His His His His His His Gly Ser Met Ser Pro Ile Leu Gly Tyr
1               5                   10                  15

Trp Lys Ile Lys Gly Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr
            20                  25                  30

Leu Glu Glu Lys Tyr Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp
        35                  40                  45

Lys Trp Arg Asn Lys Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu
    50                  55                  60

Pro Tyr Tyr Ile Asp Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile
65                  70                  75                  80

Ile Arg Tyr Ile Ala Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys
                85                  90                  95

Glu Arg Ala Glu Ile Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg
            100                 105                 110

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

Val Asp Phe Leu Ser Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp
```

130 135 140

Arg Leu Cys His Lys Thr Tyr Leu Asn Gly Asp His Val Thr His Pro
145 150 155 160

Asp Phe Met Leu Tyr Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro
165 170 175

Met Cys Leu Asp Ala Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile
180 185 190

Glu Ala Ile Pro Gln Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile
195 200 205

Ala Trp Pro Leu Gln Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His
210 215 220

Pro Pro Lys Ser Asp Leu Val Pro Arg Gly Ser Gly Ser Leu Glu Val
225 230 235 240

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

Pro Pro Ser Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe
260 265 270

Val Pro Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys
275 280 285

Lys Arg Ile Pro Gly Gly Ser Ala Gly Ser Gly Leu Glu Gly Glu Val
290 295 300

Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser
305 310 315 320

Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys
325 330 335

Asn

<210> 20
<211> 333
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 20
Met His His His His His His Gly Ser Met Ser Pro Ile Leu Gly Tyr
1 5 10 15

```
Trp Lys Ile Lys Gly Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr
            20                  25                  30

Leu Glu Glu Lys Tyr Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp
        35                  40                  45

Lys Trp Arg Asn Lys Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu
    50                  55                  60

Pro Tyr Tyr Ile Asp Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile
65                  70                  75                  80

Ile Arg Tyr Ile Ala Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys
                85                  90                  95

Glu Arg Ala Glu Ile Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg
            100                 105                 110

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

Val Asp Phe Leu Ser Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp
    130                 135                 140

Arg Leu Cys His Lys Thr Tyr Leu Asn Gly Asp His Val Thr His Pro
145                 150                 155                 160

Asp Phe Met Leu Tyr Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro
                165                 170                 175

Met Cys Leu Asp Ala Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile
            180                 185                 190

Glu Ala Ile Pro Gln Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile
        195                 200                 205

Ala Trp Pro Leu Gln Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His
    210                 215                 220

Pro Pro Lys Ser Asp Leu Val Pro Arg Gly Ser Gly Ser Leu Glu Val
225                 230                 235                 240

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

Pro Pro Lys Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe
            260                 265                 270

Val Pro Cys Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys
        275                 280                 285
```

```
Lys Thr Ile Pro Gly Gly Ser Ala Gly Ser Gly Pro Ser Asp Glu Phe
    290                 295                 300

Asp Ala Ser Ile Ser Gln Val Asn Glu Lys Ile Asn Gln Ser Leu Ala
305                 310                 315                 320

Phe Ile Arg Lys Ser Asp Glu Leu Leu His Asn Val Asn
                325                 330

<210> 21
<211> 333
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 21
Met His His His His His His Gly Ser Met Ser Pro Ile Leu Gly Tyr
1               5                   10                  15

Trp Lys Ile Lys Gly Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr
            20                  25                  30

Leu Glu Glu Lys Tyr Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp
        35                  40                  45

Lys Trp Arg Asn Lys Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu
    50                  55                  60

Pro Tyr Tyr Ile Asp Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile
65                  70                  75                  80

Ile Arg Tyr Ile Ala Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys
                85                  90                  95

Glu Arg Ala Glu Ile Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg
            100                 105                 110

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

Val Asp Phe Leu Ser Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp
    130                 135                 140

Arg Leu Cys His Lys Thr Tyr Leu Asn Gly Asp His Val Thr His Pro
145                 150                 155                 160

Asp Phe Met Leu Tyr Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro
                165                 170                 175
```

```
Met Cys Leu Asp Ala Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile
            180                 185                 190

Glu Ala Ile Pro Gln Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile
        195                 200                 205

Ala Trp Pro Leu Gln Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His
    210                 215                 220

Pro Pro Lys Ser Asp Leu Val Pro Arg Gly Ser Gly Ser Leu Glu Val
225                 230                 235                 240

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

Pro Pro Ser Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe
            260                 265                 270

Val Pro Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys
        275                 280                 285

Lys Arg Ile Pro Gly Gly Ser Ala Gly Ser Gly Pro Ser Asp Glu Phe
    290                 295                 300

Asp Ala Ser Ile Ser Gln Val Asn Glu Lys Ile Asn Gln Ser Leu Ala
305                 310                 315                 320

Phe Ile Arg Lys Ser Asp Glu Leu Leu His Asn Val Asn
                325                 330
```

<210> 22
<211> 543
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 22

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

Ala Val Thr Phe Cys Phe Ala Ser Gly 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 Lys
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 Pro Ala Thr Asn Asn Arg Ala Arg Gln Gln Gln Gln
            100                 105                 110

Arg Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala Ile Ala Ser Gly
        115                 120                 125

Val Ala Val Ser Lys Val Leu His Leu Glu Gly Glu Val Asn Lys Ile
    130                 135                 140

Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn
145                 150                 155                 160

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

Asp Lys Gln Leu Leu Pro Ile Val Asn Lys Gln Ser Cys Ser Ile Ser
            180                 185                 190

Asn Ile Glu Thr Val Ile Glu Phe Gln Gln Lys Asn Asn Arg Leu Leu
        195                 200                 205

Glu Ile Thr Arg Glu Phe Ser Val Asn Ala Gly Val Thr Thr Pro Val
    210                 215                 220

Ser Thr Tyr Met Leu Thr Asn Ser Glu Leu Leu Ser Leu Ile Asn Asp
225                 230                 235                 240

Met Pro Ile Thr Asn Asp Gln Lys Lys Leu Met Ser Asn Asn Val Gln
                245                 250                 255

Ile Val Arg Gln Gln Ser Tyr Ser Ile Met Ser Ile Ile Lys Glu Glu
            260                 265                 270

Val Leu Ala Tyr Val Val Gln Leu Pro Leu Tyr Gly Val Ile Asp Thr
        275                 280                 285

Pro Cys Trp Lys Leu His Thr Ser Pro Leu Cys Thr Thr Asn Thr Lys
    290                 295                 300

Glu Gly Ser Asn Ile Cys Leu Thr Arg Thr Asp Arg Gly Trp Tyr Cys
305                 310                 315                 320

Asp Asn Ala Gly Ser Val Ser Phe Phe Pro Gln Ala Glu Thr Cys Lys
                325                 330                 335
```

```
Val Gln Ser Asn Arg Val Phe Cys Asp Thr Met Asn Ser Leu Thr Leu
            340                 345                 350

Pro Ser Glu Val Asn Leu Cys Asn Val Asp Ile Phe Asn Pro Lys Tyr
        355                 360                 365

Asp Cys Lys Ile Met Thr Ser Lys Thr Asp Val Ser Ser Ser Val Ile
    370                 375                 380

Thr Ser Leu Gly Ala Ile Val Ser Cys Tyr Gly Lys Thr Lys Cys Thr
385                 390                 395                 400

Ala Ser Asn Lys Asn Arg Gly Ile Ile Lys Thr Phe Ser Asn Gly Cys
                405                 410                 415

Asp Tyr Val Ser Asn Lys Gly Val Asp Thr Val Ser Val Gly Asn Thr
            420                 425                 430

Leu Tyr Tyr Val Asn Lys Gln Glu Gly Lys Ser Leu Tyr Val Lys Gly
        435                 440                 445

Glu Pro Ile Ile Asn Phe Tyr Asp Pro Leu Val Phe Pro Ser Asp Glu
    450                 455                 460

Phe Asp Ala Ser Ile Ser Gln Val Asn Glu Lys Ile Asn Gln Ser Leu
465                 470                 475                 480

Ala Phe Ile Arg Lys Ser Asp Glu Leu Leu His Asn Leu Glu Gly Glu
                485                 490                 495

Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val
            500                 505                 510

Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu
        515                 520                 525

Lys Asn Gly Gly Ser Ala Gly Ser Gly His His His His His His
    530                 535                 540


<210> 23
<211> 543
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 23
Met Glu Leu Leu Ile Leu Lys Ala Asn Ala Ile Thr Thr Ile Leu Thr
1               5                   10                  15

Ala Val Thr Phe Cys Phe Ala Ser Gly 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 Lys
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 Pro Ala Thr Asn Asn Arg Ala Arg Gln Gln Gln Gln
            100                 105                 110

Arg Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala Ile Ala Ser Gly
        115                 120                 125

Val Ala Val Ser Lys Val Leu His Leu Glu Gly Glu Val Asn Lys Ile
    130                 135                 140

Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn
145                 150                 155                 160

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

Asp Lys Gln Leu Leu Pro Ile Val Asn Lys Gln Ser Cys Ser Ile Ser
            180                 185                 190

Asn Ile Glu Thr Val Ile Glu Phe Gln Gln Lys Asn Asn Arg Leu Leu
        195                 200                 205

Glu Ile Thr Arg Glu Phe Ser Val Asn Ala Gly Val Thr Thr Pro Val
    210                 215                 220

Ser Thr Tyr Met Leu Thr Asn Ser Glu Leu Leu Ser Leu Ile Asn Asp
225                 230                 235                 240

Met Pro Ile Thr Asn Asp Gln Lys Lys Leu Met Ser Asn Asn Val Gln
                245                 250                 255

Ile Val Arg Gln Gln Ser Tyr Ser Ile Met Ser Ile Ile Lys Glu Glu
            260                 265                 270

Val Leu Ala Tyr Val Val Gln Leu Pro Leu Tyr Gly Val Ile Asp Thr
        275                 280                 285

Pro Cys Trp Lys Leu His Thr Ser Pro Leu Cys Thr Thr Asn Thr Lys
```

290 295 300

Glu Gly Ser Asn Ile Cys Leu Thr Arg Thr Asp Arg Gly Trp Tyr Cys
305 310 315 320

Asp Asn Ala Gly Ser Val Ser Phe Phe Pro Gln Ala Glu Thr Cys Lys
325 330 335

Val Gln Ser Asn Arg Val Phe Cys Asp Thr Met Asn Ser Leu Thr Leu
340 345 350

Pro Ser Glu Val Asn Leu Cys Asn Val Asp Ile Phe Asn Pro Lys Tyr
355 360 365

Asp Cys Lys Ile Met Thr Ser Lys Thr Asp Val Ser Ser Ser Val Ile
370 375 380

Thr Ser Leu Gly Ala Ile Val Ser Cys Tyr Gly Lys Thr Lys Cys Thr
385 390 395 400

Ala Ser Asn Lys Asn Arg Gly Ile Ile Lys Thr Phe Ser Asn Gly Cys
405 410 415

Asp Tyr Val Ser Asn Lys Gly Val Asp Thr Val Ser Val Gly Asn Thr
420 425 430

Leu Tyr Tyr Val Asn Lys Gln Glu Gly Lys Ser Leu Tyr Val Lys Gly
435 440 445

Glu Pro Ile Ile Asn Phe Tyr Asp Pro Leu Cys Phe Pro Ser Asp Glu
450 455 460

Phe Cys Ala Ser Ile Ser Gln Val Asn Glu Lys Ile Asn Gln Ser Leu
465 470 475 480

Ala Phe Ile Arg Lys Cys Cys Glu Leu Leu His Asn Leu Glu Gly Glu
485 490 495

Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys Ala Val Val
500 505 510

Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu
515 520 525

Lys Asn Gly Gly Ser Ala Gly Ser Gly His His His His His His
530 535 540

<210> 24
<211> 574
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
consensus polypeptide"

<220>
<221> VARIANT
<222> (114)..(114)
<223> /replace="Phe"

<220>
<221> VARIANT
<222> (152)..(152)
<223> /replace="Val"

<220>
<221> VARIANT
<222> (200)..(200)
<223> /replace="Asp"

<220>
<221> VARIANT
<222> (356)..(356)
<223> /replace="Glu"

<220>
<221> VARIANT
<222> (402)..(402)
<223> /replace="Val"

<220>
<221> VARIANT
<222> (477)..(477)
<223> /replace="Phe"

<220>
<221> VARIANT
<222> (537)..(537)
<223> /replace="Ile"

<220>
<221> VARIANT
<222> (544)..(544)
<223> /replace="Val"

<220>
<221> misc_feature
<222> (1)..(574)
<223> /note="Variant residues given in the sequence have no
preference with respect to those in the annotations
for variant positions"

<400> 24
Met Glu Leu Leu 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 Lys
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 Pro Ala Ala Asn Asn Arg Ala Arg Arg Glu Leu Pro
            100                 105                 110

Arg Tyr 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 Asn 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 Asp 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 Ile 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 Cys 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 Tyr 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 Asn Val Asn Ala Gly Lys Ser Thr Thr Asn Ile Met Ile Thr
        515                 520                 525

Thr Ile Ile Ile Val Ile Ile Val Val Leu Leu Ser Leu Ile Ala Ile
    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> 25
<211> 51
<212> PRT
<213> Respiratory syncytial virus

<400> 25
```

```
Thr Pro Ala Thr Asn Asn Arg Ala Arg Arg Glu Leu Pro Arg Phe Met
1               5                   10                  15

Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr Leu Ser Lys
            20                  25                  30

Lys Arg Lys Arg Arg Phe Leu Gly Phe Leu Leu Gly Val Gly Ser Ala
        35                  40                  45

Ile Ala Ser
    50
```

<210> 26
<211> 42
<212> PRT
<213> Respiratory syncytial virus

<400> 26

```
Thr Pro Ala Thr Asn Asn Arg Ala Arg Arg Glu Leu Pro Arg Phe Met
1               5                   10                  15

Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr Leu Ser Lys
            20                  25                  30

Lys Arg Lys Arg Arg Ser Ala Ile Ala Ser
        35                  40
```

<210> 27
<211> 574
<212> PRT
<213> Respiratory syncytial virus

<400> 27

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

Ala Val Thr Phe Cys Phe Ala Ser Gly 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 Lys
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 Pro Ala 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
    130                 135                 140

Gly Ser Ala Ile Ala Ser Gly Val 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 Ser Ile Ser Asn Ile Ala 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 Asn Val Asn Ala Gly Lys Ser Thr Ile 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> 28
<211> 574
<212> PRT
<213> Respiratory syncytial virus

<400> 28
Met Glu Leu Leu Ile His Arg Leu Ser Ala Ile Phe Leu Thr Leu Ala
1               5                   10                  15

Ile Asn Ala Leu Tyr Leu Thr Ser Ser Gln Asn Ile Thr Glu Glu Phe
            20                  25                  30

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

Gln Tyr Met Asn Tyr Thr Ile Asn Thr Thr Lys Asn Leu Asn Val Ser
        115                 120                 125

Ile 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 Asn 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 Asn Asn Gln Leu Leu Pro Ile Val Asn
        195                 200                 205

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

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

Ala Gly Val Thr Thr Pro Leu 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 Ser 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

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

Leu Cys Thr Thr Asn Ile 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 Asp 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 Ser Leu Cys Asn Thr
    370                 375                 380

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

Asp Ile 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 Leu Glu Gly
    450                 455                 460

Lys Asn Leu Tyr Val Lys Gly Glu Pro Ile Ile Asn Tyr 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 Arg Ser Asp Glu Leu
            500                 505                 510

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

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

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

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

<210> 29
<211> 574
<212> PRT
<213> Respiratory syncytial virus

<400> 29
```

```
Met Glu Leu Leu Ile His Arg Leu Ser Ala Ile Phe Leu Thr Leu Ala
1               5                  10                  15

Ile Asn Ala Leu Tyr Leu Thr Ser Ser Gln Asn Ile Thr Glu Glu Phe
            20                  25                  30

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

Gln Tyr Met Asn Tyr Thr Ile Asn Thr Thr Lys Asn Leu Asn Val Ser
        115                 120                 125

Ile 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 Asn 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 Asn Asn Gln Leu Leu Pro Ile Val Asn
        195                 200                 205

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

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

Ala Gly Val Thr Thr Pro Leu 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 Ser 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

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

Leu Cys Thr Thr Asn Ile 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 Asp 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 Ser Leu Cys Asn Thr
    370                 375                 380

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

Asp Ile 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 Leu Glu Gly
    450                 455                 460

Lys Asn Leu Tyr Val Lys Gly Glu Pro Ile Ile Asn Tyr 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 Arg Ser Asp Glu Leu
            500                 505                 510

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

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

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


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


<210> 30
<211> 574
<212> PRT
<213> Respiratory syncytial virus

<400> 30
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
        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> 31
<211> 574
<212> PRT
<213> Respiratory syncytial virus

<400> 31
Met Glu Leu Leu Ile His Arg Ser Ser Ala Ile Phe Leu Thr Leu Ala
1               5                   10                  15

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

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

Gln Tyr Met Asn Tyr Thr Ile Asn Thr Thr Lys Asn Leu Asn Val Ser
        115                 120                 125

Ile 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
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Glu Gly Glu Val Asn Lys Ile Lys Asn 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 Asn Asn Arg Leu Leu Pro Ile Val Asn
        195                 200                 205

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

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

Ala Gly Val Thr Thr Pro Leu 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 Ser 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

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

Leu Cys Thr Thr Asn Ile 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 Asp 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 Ser Leu Cys Asn Thr
    370                 375                 380

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

Asp Ile 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 Leu Glu Gly
    450                 455                 460

Lys Asn Leu Tyr Val Lys Gly Glu Pro Ile Ile Asn Tyr 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 Arg Ser Asp Glu Leu
            500                 505                 510

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

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

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

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


<210> 32
<211> 4
<212> PRT
<213> Respiratory syncytial virus

<400> 32
Arg Ala Arg Lys
1


<210> 33
<211> 4
<212> PRT
<213> Respiratory syncytial virus

<400> 33
Arg Ala Arg Gln
1


<210> 34
<211> 4
<212> PRT
<213> Respiratory syncytial virus

<400> 34
Gln Ala Gln Asn
1


<210> 35
<211> 4
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<212> PRT
<213> Respiratory syncytial virus

<400> 35
Ile Glu Gly Arg
1

<210> 36
<211> 4
<212> PRT
<213> Respiratory syncytial virus

<400> 36
Arg Lys Lys Lys
1

<210> 37
<211> 4
<212> PRT
<213> Respiratory syncytial virus

<400> 37
Gln Asn Gln Asn
1

<210> 38
<211> 4
<212> PRT
<213> Respiratory syncytial virus

<400> 38
Gln Gln Gln Arg
1

<210> 39
<211> 4
<212> PRT
<213> Respiratory syncytial virus

<400> 39
Ile Glu Gly Arg
1

<210> 40
<211> 48
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 40
Leu Glu Gly Glu Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn
1 5 10 15

Lys Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys
20 25 30

Val Leu Asp Leu Lys Asn Tyr Ile Asp Lys Gln Leu Leu Pro Ile Val

35 40 45

<210> 41
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic 6xHis tag"

<400> 41
His His His His His His
1 5