

## SEQUENCE LISTING

<110> Fraunhofer-Gesellschaft zur Förderung der angewandten  
Forschung e.V.  
 <120> Methods for PRRSV Detection  
 <130> 144-012P  
 <150> 09 012 930.5  
 <151> 2009-10-13  
 <160> 28  
 <170> PatentIn version 3.3  
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 <211> 168  
 <212> PRT  
 <213> Artificial  
 <220>  
 <223> aa 33-201 of the GP5 protein of the the European strain of PRRSV  
(Lelystad Virus)  
 <400> 1  
 Gly Asn Gly Asn Ser Ser Thr Tyr Gln Tyr Ile Tyr Asn Leu Thr Ile  
 1 5 10 15  
 Cys Glu Leu Asn Gly Thr Asp Trp Leu Ser Ser His Phe Gly Trp Ala  
 20 25 30  
 Val Glu Thr Phe Val Phe Tyr Pro Val Ala Thr His Ile Leu Ser Leu  
 35 40 45  
 Gly Phe Leu Thr Thr Ser His Phe Phe Asp Ala Leu Gly Leu Gly Ala  
 50 55 60  
 Val Ser Thr Ala Gly Phe Val Gly Gly Arg Tyr Val Leu Cys Ser Val  
 65 70 75 80  
 Tyr Gly Ala Cys Ala Phe Ala Ala Phe Val Cys Phe Val Ile Arg Ala  
 85 90 95  
 Ala Lys Asn Cys Met Ala Cys Arg Tyr Ala Arg Thr Arg Phe Thr Asn  
 100 105 110  
 Phe Ile Val Asp Asn Arg Gly Arg Val His Arg Trp Lys Ser Pro Ile  
 115 120 125  
 Val Val Glu Lys Leu Gly Lys Ala Glu Val Asp Gly Asn Leu Val Thr  
 130 135 140

Ile Lys His Val Val Leu Glu Gly Val Lys Ala Gln Pro Leu Thr Arg  
 145 150 155 160

Thr Ser Ala Glu Gln Trp Glu Ala  
 165

<210> 2  
 <211> 504  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of aa 33-201 of the GP5 protein of the  
 the European strain of PRRSV (Lelystad Virus)

<400> 2  
 ggcaacggca acagctcgac ataccaatac atatataact tgacgatatg cgagctgaat 60  
 gggaccgact ggttgccag ccattttggt tgggcagtcg agaccttgt gttttacccg 120  
 gttgccactc atatcctctc actgggtttt ctcaacaac gccatttttt tgacgcgctc 180  
 ggtctcggcg ctgtatccac tgcaggattt gttggcgggc ggtatgtact ttgcagcgtc 240  
 tacggcgctt gtgctttcgc agcggttcgta tgttttgtca tccgtgctgc taaaaattgc 300  
 atggcctgcc gctatgcccg taccgggttt accaacttca ttgtagacaa ccgggggaga 360  
 gttcatcgat ggaagtctcc aatagtggta gaaaaattgg gcaaagccga agtcgacggc 420  
 aacctcgtca ccatcaaaca tgctgcctc gaaggggtta aagctcaacc cttgacgagg 480  
 acttcggctg agcaatggga ggcc 504

<210> 3  
 <211> 32  
 <212> PRT  
 <213> artificial

<220>  
 <223> aa 33-66 of the GP5 protein of the the European strain of PRRSV  
 (Lelystad Virus)

<400> 3

Gly Asn Gly Asn Ser Ser Thr Tyr Gln Tyr Ile Tyr Asn Leu Thr Ile  
 1 5 10 15

Cys Glu Leu Asn Gly Thr Asp Trp Leu Ser Ser His Phe Gly Trp Ala  
 20 25 30

<210> 4  
 <211> 96  
 <212> DNA

<213> artificial

<220>

<223> cDNA for the expression of aa 33-66 of the GP5 protein of the the European strain of PRRSV (Lelystad Virus)

<400> 4

ggcaacggca acagctcgac ataccaatac atatataact tgacgatatg cgagctgaat 60

gggaccgact ggttggtccag ccatttttggg tgggca 96

<210> 5

<211> 184

<212> PRT

<213> artificial

<220>

<223> aa 55-238 of the GP3 protein of the the European strain of PRRSV (Lelystad Virus)

<400> 5

Met Pro Cys Ser Thr Ser Gln Ala Ala Arg Gln Arg Leu Glu Pro Gly  
1 5 10 15

Arg Asn Met Trp Cys Lys Ile Gly Tyr Asp Arg Cys Glu Glu Arg Asp  
20 25 30

His Asp Glu Leu Leu Met Pro Ile Pro Ser Gly Tyr Asp Asn Leu Lys  
35 40 45

Leu Glu Gly Tyr Tyr Ala Trp Leu Ala Phe Leu Ser Phe Ser Tyr Ala  
50 55 60

Ala Gln Phe His Pro Glu Leu Phe Gly Ile Gly Asn Val Ser Arg Val  
65 70 75 80

Phe Val Asp Lys Arg His Gln Phe Ile Cys Ala Glu His Asp Gly Gln  
85 90 95

Asn Ser Thr Val Ser Thr Gly His Asn Ile Ser Ala Leu Tyr Ala Ala  
100 105 110

Tyr Tyr His His Gln Ile Asp Gly Gly Asn Trp Phe His Leu Glu Trp  
115 120 125

Leu Arg Pro Leu Phe Ser Ser Trp Leu Val Leu Asn Ile Ser Trp Phe  
130 135 140

Leu Arg Arg Ser Pro Val Ser Pro Val Ser Arg Arg Ile Tyr Gln Ile  
145 150 155 160

Leu Arg Pro Thr Arg Pro Arg Leu Pro Val Ser Trp Ser Phe Arg Thr  
                   165                                  170                                  175

Ser Ile Val Ser Asp Leu Thr Gly  
                   180

<210> 6  
 <211> 552  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of aa 55-238 of the GP3 protein of the  
           the European strain of PRRSV (Lelystad Virus)

<400> 6  
 atgccctggt ctaccagtca agcggctcgc caaaggctcg agcccggtcg taacatgtgg 60  
 tgcaaaatag ggtatgacag gtgtgaggag cgtgaccatg atgagttggt aatgcccata 120  
 ccgtccgggt acgacaacct caaacttgag gggtattatg cttggctggc ttttttgtcc 180  
 ttttctacg cggcccaatt ccatccggag ttgttcggga tagggaatgt gtcgcgcgtc 240  
 ttcgtggaca agcgacacca gttcatttgt gccgagcatg atggacagaa ttcaaccgta 300  
 tctaccggac acaacatctc cgcattatat gcggcatatt accaccacca aatagacggg 360  
 ggcaattggt tccatttgga atggctgcgg ccactctttt cctcctggct ggtgctcaat 420  
 atatcatggt ttttgaggcg ttcgcctgta agccctgttt ctcgacgcat ctatcagata 480  
 ttgagaccaa cagcaccgag gctgccggtt tcatggctct tcaggacatc aattgtctcc 540  
 gacctcacgg gg 552

<210> 7  
 <211> 74  
 <212> PRT  
 <213> artificial

<220>  
 <223> aa 100-173 of the M protein of the the European strain of PRRSV  
           (Lelystad Virus)

<400> 7

Ala Cys Cys Leu Gly Arg Arg Tyr Ile Leu Ala Pro Ala His His Val  
 1                  5                                  10                                  15

Glu Ser Ala Ala Gly Leu His Ser Ile Ser Ala Ser Gly Asn Arg Ala  
           20                                  25                                  30

Tyr Ala Val Arg Lys Pro Gly Leu Thr Ser Val Asn Gly Thr Leu Val

35                                      40                                      45

Pro Gly Leu Arg Ser Leu Val Leu Gly Gly Lys Arg Ala Val Lys Arg  
       50                                      55                                      60

Gly Val Val Asn Leu Val Lys Tyr Gly Arg  
       65                                      70

<210> 8  
 <211> 222  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of aa 100-173 of the M protein of the the  
       European strain of PRRSV (Lelystad Virus)

<400> 8  
 gcatgttgcc ttggccggcg atacattctg gccoctgccc atcacgtaga aagtgctgca 60  
 ggtctccatt caatctcagc gtctggtaac cgagcatacg ctgtgagaaa gcccgacta 120  
 acatcagtga acggcactct agtaccagga cttcggagacc tcgtgctggg cggcaaacga 180  
 gctgttaaac gaggagtggg taacctcgtc aagtatggcc gg 222

<210> 9  
 <211> 175  
 <212> PRT  
 <213> artificial

<220>  
 <223> aa 66-200 of the GP5 protein of the the North American PRRSV  
       strain VR-2332

<400> 9

Ala Val Leu Ala Asn Ala Ser Asn Asp Ser Ser Ser His Leu Gln Leu  
       1                                      5                                      10                                      15

Ile Tyr Asn Leu Thr Leu Cys Glu Leu Asn Gly Thr Asp Trp Leu Ala  
                                     20                                      25                                      30

Asn Lys Phe Asp Trp Ala Val Glu Ser Phe Val Ile Phe Pro Val Leu  
                                     35                                      40                                      45

Thr His Ile Val Ser Tyr Gly Ala Leu Thr Thr Ser His Phe Leu Asp  
                                     50                                      55                                      60

Thr Val Ala Leu Val Thr Val Ser Thr Ala Gly Phe Val His Gly Arg  
       65                                      70                                      75                                      80

Tyr Val Leu Ser Ser Ile Tyr Ala Val Cys Ala Leu Ala Ala Leu Thr  
                     85                    90                    95

Cys Phe Val Ile Arg Phe Ala Lys Asn Cys Met Ser Trp Arg Tyr Ala  
                     100                    105                    110

Cys Thr Arg Tyr Thr Asn Phe Leu Leu Asp Thr Lys Gly Arg Leu Tyr  
                     115                    120                    125

Arg Trp Arg Ser Pro Val Ile Ile Glu Lys Arg Gly Lys Val Glu Val  
                     130                    135                    140

Glu Gly His Leu Ile Asp Leu Lys Arg Val Val Leu Asp Gly Ser Val  
                     145                    150                    155                    160

Ala Thr Pro Ile Thr Arg Val Ser Ala Glu Gln Trp Gly Arg Pro  
                     165                    170                    175

<210> 10  
 <211> 525  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of aa 66-200 of the GP5 protein of the  
       the North American PRRSV strain VR-2332

<400> 10  
 gctgtgctcg ccaacgccag caacgacagc agctcccatc tacagctgat ttacaacttg 60  
 acgctatgtg agctgaatgg cacagattgg ctagctaaca aatttgattg ggcagtggag 120  
 agttttgtca tctttcccg tttgactcac attgtctcct atggtgccct cactaccagc 180  
 catttccttg acacagtcgc tttagtcact gtgtctaccg ccgggtttgt tcacggggcg 240  
 tatgtcctaa gtagcatcta cgcggtctgt gccctggctg cgttgacttg cttcgtcatt 300  
 aggtttgcaa agaattgcat gtcctggcgc tacgcgtgta ccagatatac caactttctt 360  
 ctggacacta agggcagact ctatcgttgg cggtcgcctg tcatcataga gaaaaggggc 420  
 aaagttgagg tcgaaggtca tctgatcgac ctcaaaagag ttgtgcttga tggttccgtg 480  
 gcaacccta taaccagagt ttcagcggaa caatgggggtc gtcct 525

<210> 11  
 <211> 41  
 <212> PRT  
 <213> artificial

<220>  
 <223> aa 26-67 of the GP5 protein of the the North American PRRSV  
       strain VR-2332

<400> 11

Ala Val Leu Ala Asn Ala Ser Asn Asp Ser Ser Ser His Leu Gln Leu  
1 5 10 15

Ile Tyr Asn Leu Thr Leu Cys Glu Leu Asn Gly Thr Asp Trp Leu Ala  
20 25 30

Asn Lys Phe Asp Trp Ala Val Glu Ser  
35 40

<210> 12

<211> 123

<212> DNA

<213> artificial

<220>

<223> cDNA for the expression of aa 26-67 of the GP5 protein of the the North American PRRSV strain VR-2332

<400> 12

gctgtgctcg ccaacgccag caacgacagc agctcccatc tacagctgat ttacaacttg 60

acgctatgtg agctgaatgg cacagattgg ctagctaaca aatttgattg ggcagtggag 120

agt 123

<210> 13

<211> 141

<212> PRT

<213> artificial

<220>

<223> aa 61-201 of the GP3 protein of the the North American PRRSV strain VR-2332

<400> 13

Gln Ala Ala Ala Glu Ile Tyr Glu Pro Gly Arg Ser Leu Trp Cys Arg  
1 5 10 15

Ile Gly Tyr Asp Arg Cys Glu Glu Asp Asp His Asp Glu Leu Gly Phe  
20 25 30

Met Val Pro Pro Gly Leu Ser Ser Glu Gly His Leu Thr Ser Val Tyr  
35 40 45

Ala Trp Leu Ala Phe Leu Ser Phe Ser Tyr Thr Ala Gln Phe His Pro  
50 55 60

Glu Ile Phe Gly Ile Gly Asn Val Ser Arg Val Tyr Val Asp Ile Lys  
65 70 75 80

His Gln Leu Ile Cys Ala Glu His Asp Gly Gln Asn Thr Thr Leu Pro  
                   85                                  90                                  95

Arg His Asp Asn Ile Ser Ala Val Phe Gln Thr Tyr Tyr Gln His Gln  
                   100                                  105                                  110

Val Asp Gly Gly Asn Trp Phe His Leu Glu Trp Leu Arg Pro Phe Phe  
                   115                                  120                                  125

Ser Ser Trp Leu Val Leu Asn Val Ser Trp Phe Leu Arg  
           130                                  135                                  140

<210> 14  
 <211> 423  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of aa 61-201 of the GP3 protein of the  
       the North American PRRSV strain VR-2332

<400> 14  
 caagcagccg cagagatcta cgaaccggt aggtctcttt ggtgcaggat agggatatgac 60  
 cgatgtgagg aggatgatca tgacgagcta gggtttatgg taccgcctgg cctctccagc 120  
 gaaggccact tgactagtgt ttacgcctgg ttggcggttct tgtccttcag ctacacggcc 180  
 cagttccatc ccgagatatt cgggataggg aatgtgagtc gagtttatgt tgacatcaaa 240  
 catcaactca tctgcgccga acatgacggg cagaacacca ccttgccctcg tcatgacaac 300  
 atttcagccg tgtttcagac ctattaccaa catcaagtcg acggcgggcaa ttggttttcac 360  
 ctagaatggc ttcgtccctt cttttcctcg tggttggttt taaatgtctc ttggttttctc 420  
 agg 423

<210> 15  
 <211> 78  
 <212> PRT  
 <213> artificial

<220>  
 <223> aa 97-174 of the M protein of the the North American PRRSV strain  
       VR-2332

<400> 15

Ser Arg Cys Arg Leu Cys Leu Leu Gly Arg Lys Tyr Ile Leu Ala Pro  
   1                  5                                  10                                  15

Ala His His Val Glu Ser Ala Ala Gly Phe His Pro Ile Ala Ala Asn



20 25 30

Asp Asn His Ala Phe Val Val Arg Arg Pro Gly Ser Thr Thr Val Asn  
35 40 45

Gly Thr Leu Val Pro Gly Leu Lys Ser Leu Val Leu Gly Gly Arg Lys  
50 55 60

Ala Val Lys Gln Gly Val Val Asn Leu Val Lys Tyr Ala Lys  
65 70 75

<210> 16  
<211> 234  
<212> DNA  
<213> artificial

<220>  
<223> cDNA for the expression of aa 97-174 of the M protein of the the  
North American PRRSV strain VR-2332

<400> 16  
tccagatgcc gtttgtgctt gctaggccgc aagtacattc tggcccctgc ccaccacgtt 60  
gaaagtgccg caggctttca tccgattgcg gcaaatgata accacgcatt tgctgtccgg 120  
cgtcccggct ccactacggt caacggcaca ttggtgcccg ggtaaaaaag cctcgtgttg 180  
ggtggcagaa aagctgttaa acagggagtg gtaaaccttg tcaaatatgc caaa 234

<210> 17  
<211> 128  
<212> PRT  
<213> artificial

<220>  
<223> ORF7 of the European strain of PRRSV (Lelystad Virus)

<400> 17

Met Ala Gly Lys Asn Gln Ser Gln Lys Lys Lys Lys Ser Thr Ala Pro  
1 5 10 15

Met Gly Asn Gly Gln Pro Val Asn Gln Leu Cys Gln Leu Leu Gly Ala  
20 25 30

Met Ile Lys Ser Gln Arg Gln Gln Pro Arg Gly Gly Gln Ala Lys Lys  
35 40 45

Lys Lys Pro Glu Lys Pro His Phe Pro Leu Ala Ala Glu Asp Asp Ile  
50 55 60

Arg His His Leu Thr Gln Thr Glu Arg Ser Leu Cys Leu Gln Ser Ile

65

70

75

80

Gln Thr Ala Phe Asn Gln Gly Ala Gly Thr Ala Ser Leu Ser Ser Ser  
                     85                    90                    95

Gly Lys Val Ser Phe Gln Val Glu Phe Met Leu Pro Val Ala His Thr  
                     100                    105                    110

Val Arg Leu Ile Arg Val Thr Ser Thr Ser Ala Ser Gln Gly Ala Ser  
                     115                    120                    125

<210> 18  
 <211> 388  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of ORF7 of the European strain of PRRSV  
 (Lelystad Virus)

<400> 18  
 atggccggta aaaaccagag ccagaagaaa aagaaaagta cagctccgat ggggaatggc 60  
 cagccagtca atcaactgtg ccagttgctg ggtgcaatga taaagtccca gcgccagcaa 120  
 cctaggggag gacaggccaa aaagaaaaag cctgagaagc cacattttcc cctggctgct 180  
 gaagatgaca tccggcacca cctcaccag actgaacgct ccctctgctt gcaatcgatc 240  
 cagacggctt tcaatcaagg cgcaggaact gcgtcgcttt catccagcgg gaaggtcagt 300  
 tttcaggttg agtttatgct gccggttgct catacagtgc gcctgattcg cgtgacttct 360  
 acatccgcca gtcaggggtgc aagttaat 388

<210> 19  
 <211> 269  
 <212> PRT  
 <213> artificial

<220>  
 <223> NSp7 of the European strain of PRRSV (Lelystad Virus)

<400> 19

Ser Leu Thr Ala Ala Leu Ala Cys Lys Leu Ser Gln Ala Asp Leu Asp  
 1                    5                    10                    15

Phe Leu Ser Ser Leu Thr Asn Phe Lys Cys Phe Val Ser Ala Ser Asn  
                     20                    25                    30

Met Lys Asn Ala Ala Gly Gln Tyr Ile Glu Ala Ala Tyr Ala Lys Ala  
                     35                    40                    45

Leu Arg Gln Glu Leu Ala Ser Leu Val Gln Ile Asp Lys Met Lys Gly  
 50 55 60  
 Val Leu Ser Lys Leu Glu Ala Phe Ala Glu Thr Ala Thr Pro Ser Leu  
 65 70 75 80  
 Asp Ile Gly Asp Val Ile Val Leu Leu Gly Gln His Pro His Gly Ser  
 85 90 95  
 Ile Leu Asp Ile Asn Val Gly Thr Glu Arg Lys Thr Val Ser Val Gln  
 100 105 110  
 Glu Thr Arg Ser Leu Gly Gly Ser Lys Phe Ser Val Cys Thr Val Val  
 115 120 125  
 Ser Asn Thr Pro Val Asp Ala Leu Thr Gly Ile Pro Leu Gln Thr Pro  
 130 135 140  
 Thr Pro Leu Phe Glu Asn Gly Pro Arg His Arg Ser Glu Glu Asp Asp  
 145 150 155 160  
 Leu Lys Val Glu Arg Met Lys Lys His Cys Val Ser Leu Gly Phe His  
 165 170 175  
 Asn Ile Asn Gly Lys Val Tyr Cys Lys Ile Trp Asp Lys Ser Thr Gly  
 180 185 190  
 Asp Thr Phe Tyr Thr Asp Asp Ser Arg Tyr Thr Gln Asp His Ala Phe  
 195 200 205  
 Gln Asp Arg Ser Ala Asp Tyr Arg Asp Arg Asp Tyr Glu Gly Val Gln  
 210 215 220  
 Thr Thr Pro Gln Gln Gly Phe Asp Pro Lys Ser Glu Thr Pro Val Gly  
 225 230 235 240  
 Thr Val Val Ile Gly Gly Ile Thr Tyr Asn Arg Tyr Leu Ile Lys Gly  
 245 250 255  
 Lys Glu Val Leu Val Pro Lys Pro Asp Asn Cys Leu Glu  
 260 265

<210> 20  
 <211> 807  
 <212> DNA  
 <213> artificial

&lt;220&gt;

&lt;223&gt; cDNA for the expression of NSp7 of the European strain of PRRSV (Lelystad Virus)

&lt;400&gt; 20

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tccctaacgg ctgcttttagc ttgcaagttg tcacaggctg accttgattt tttgtccagc      60
ttaacgaact tcaagtgctt tgtatctgct tcaaacatga aaaatgctgc cggccagtac      120
attgaagcag cgtatgccaa ggccctgcgc caagagttgg cctctctagt tcagattgac      180
aaaatgaaag gagttttgtc caagctcgag gcctttgctg aaacagccac cccgtccctt      240
gacataggtg acgtgattgt tctgcttggg caacatcctc acggatccat cctcgatatt      300
aatgtgggga ctgaaaggaa aactgtgtcc gtgcaagaga cccggagcct aggcggctcc      360
aaattcagtg tttgtactgt cgtgtccaac acaccctggg acgccttgac cggcatccca      420
ctccagacac caaccctct ttttgagaat ggtccgcgtc atcgcagcga ggaagacgat      480
cttaaagtcg agaggatgaa gaaacactgt gtatccctcg gcttcacaaa catcaatggc      540
aaagtttact gcaaaatttg ggacaagtct accggtgaca ccttttacac ggatgattcc      600
cgggtacacc aagaccatgc ttttcaggac aggtcagccg actacagaga cagggactat      660
gaggggtgtg aaaccacccc ccaacaggga tttgatccaa agtctgaaac ccctgttggc      720
actgttgtga tcggcggtat tacgtataac aggtatctga tcaaaggtaa ggaggttctg      780
gtccccaagc ctgacaactg ccttgaa                                     807

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&lt;210&gt; 21

&lt;211&gt; 70

&lt;212&gt; PRT

&lt;213&gt; artificial

&lt;220&gt;

&lt;223&gt; E protein of the European strain of PRRSV (Lelystad Virus)

&lt;400&gt; 21

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Met Gly Ser Leu Trp Ser Lys Ile Ser Gln Leu Phe Val Asp Ala Phe
1              5              10              15

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Thr Glu Phe Leu Val Ser Val Val Asp Ile Val Ile Phe Leu Ala Ile
                20              25              30

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Leu Phe Gly Phe Thr Val Ala Gly Trp Leu Leu Val Phe Leu Leu Arg
35              40              45

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Val Val Cys Ser Ala Leu Leu Arg Ser Arg Ser Ala Ile His Ser Pro
50              55              60

```

Glu Leu Ser Lys Val Leu  
65 70

<210> 22  
<211> 210  
<212> DNA  
<213> artificial

<220>  
<223> cDNA for the expression of the E protein of the European strain  
of PRRSV (Lelystad Virus)

<400> 22  
atgggggtcac tgtggagtaa aatcagccag ctgttcgtgg acgccttcac tgagttcctt 60  
gttagtggtg ttgatattgt tattttcctt gccatactgt ttgggttcac cgtcgcagga 120  
tggttactgg tcttccttct cagagtgggt tgctccgcgc ttctccgttc gcgctctgcc 180  
attcactctc ccgagctatc gaaggctcta 210

<210> 23  
<211> 123  
<212> PRT  
<213> artificial

<220>  
<223> ORF7 of the North American PRRSV strain VR-2332

<400> 23

Met Pro Asn Asn Asn Gly Lys Gln Gln Lys Arg Lys Lys Gly Asp Gly  
1 5 10 15

Gln Pro Val Asn Gln Leu Cys Gln Met Leu Gly Lys Ile Ile Ala Gln  
20 25 30

Gln Asn Gln Ser Arg Gly Lys Gly Pro Gly Lys Lys Asn Lys Lys Lys  
35 40 45

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

His His Phe Thr Pro Ser Glu Arg Gln Leu Cys Leu Ser Ser Ile Gln  
65 70 75 80

Thr Ala Phe Asn Gln Gly Ala Gly Thr Cys Thr Leu Ser Asp Ser Gly  
85 90 95

Arg Ile Ser Tyr Thr Val Glu Phe Ser Leu Pro Thr His His Thr Val  
100 105 110

Arg Leu Ile Arg Val Thr Ala Ser Pro Ser Ala  
 115 120

<210> 24  
 <211> 372  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of ORF7 of the North American PRRSV  
 strain VR-2332

<400> 24  
 atgccaaata acaacggcaa gcagcagaat agaaagaagg gggatggcca gccagtcaat 60  
 cagctgtgcc agatgctggg taagatcatc gctcagcaaa accagtccag aggcaaggga 120  
 ccgggaaaga aaaataagaa gaaaaacccg gagaagcccc attttcctct agcgactgaa 180  
 gatgatgtca gacatcactt tacccttagt gagcggcaat tgtgtctgtc gtcaatccag 240  
 accgccttta atcaaggcgc tgggacttgc accctgtcag attcagggag gataagttac 300  
 actgtggagt ttagtttgcc tacgcatcat actgtgcgcc tgattcgcgt cacagcatca 360  
 ccctcagcat ga 372

<210> 25  
 <211> 259  
 <212> PRT  
 <213> artificial

<220>  
 <223> NSp7 of the North American PRRSV strain VR-2332

<400> 25

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

Phe Leu Met Lys Trp Thr Asp Phe Lys Cys Phe Val Ser Ala Ser Asn  
 20 25 30

Met Arg Asn Ala Ala Gly Gln Phe Ile Glu Ala Ala Tyr Ala Lys Ala  
 35 40 45

Leu Arg Val Glu Leu Ala Gln Leu Val Gln Val Asp Lys Val Arg Gly  
 50 55 60

Thr Leu Ala Lys Leu Glu Ala Phe Ala Asp Thr Val Ala Pro Gln Leu  
 65 70 75 80

Ser Pro Gly Asp Ile Val Val Ala Leu Gly His Thr Pro Val Gly Ser  
 85 90 95

Ile Phe Asp Leu Lys Val Gly Ser Thr Lys His Thr Leu Gln Ala Ile  
 100 105 110

Glu Thr Arg Val Leu Ala Gly Ser Lys Met Thr Val Ala Arg Val Val  
 115 120 125

Asp Pro Thr Pro Thr Pro Pro Ala Pro Val Pro Ile Pro Leu Pro  
 130 135 140

Pro Lys Val Leu Glu Asn Gly Pro Asn Ala Trp Gly Asp Glu Asp Arg  
 145 150 155 160

Leu Asn Lys Lys Lys Arg Arg Arg Met Glu Ala Leu Gly Ile Tyr Val  
 165 170 175

Met Gly Gly Lys Lys Tyr Gln Lys Phe Trp Asp Lys Asn Ser Gly Asp  
 180 185 190

Val Phe Tyr Glu Glu Val His Asn Asn Thr Asp Glu Trp Glu Cys Leu  
 195 200 205

Arg Val Gly Asp Pro Ala Asp Phe Asp Pro Glu Lys Gly Thr Leu Cys  
 210 215 220

Gly His Val Thr Ile Glu Asn Lys Ala Tyr His Val Tyr Thr Ser Pro  
 225 230 235 240

Ser Gly Lys Lys Phe Leu Val Pro Val Asn Pro Glu Asn Gly Arg Val  
 245 250 255

Gln Trp Glu

<210> 26  
 <211> 777  
 <212> DNA  
 <213> artificial

<220>  
 <223> cDNA for the expression of NSp7 of the North American PRRSV  
 strain VR-2332

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