SEQUENCE LISTING

<110> ALTERNATIVE GENE EXPRESSION, S.L. (ALGENEX)
<110> INSTITUTO NACIONAL E TECNOLOGIA AGROPECUARIA (INTA)
<120> Monomeric VHH domain derived from anti-VP6 camelid antibodies, dimeric domain, immunisation method, rotavirus detection method, composition, prevention and treatment methods for rotavirus infections
<130> 123
<160> 24
<170> PatentIn version 3.2
<210> 1
<211> 129
<212> PRT
<213> Lama glama
<400> 1

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Gly Val Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val
35 40 45
Ala Ala Val Ser Gly Ser Gly Gly Ser Lys Tyr Tyr Gly Asp Ser Val
50 55 60
Gln Gly Arg Phe Thr Ile Ser Lys Asp Asp Ala Lys Asn Thr Val Tyr
65 70 75 80
Leu Gln Met Asn Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Val Arg Arg Thr Tyr Ser Gly Ser Asn Leu Trp His Arg Ser Asp
100 105 110
Glu Tyr Asp Ser Trp Gly Pro Gly Thr Gln Val Thr Val Ser Ser Gly
115 120 125
Arg

<210> 2
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<212> PRT
<213> Lama glama
<400> 2

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Ser Tyr Ser Ile Gly Trp Phe Arg Gln Gly Pro Gly Lys Glu Arg Glu
35 40 45
Phe Val Ala Thr Ile Ser Ser Ser Asp Ser Pro Trp Tyr Gly Glu Pro
50 55 60
Ala Lys Gly Arg Phe Thr Val Ala Arg Val Asn Ala Lys Asn Thr Ala
65 70 75 80
Tyr Leu His Leu Asn Arg Leu Lys Pro Glu Asp Thr Ala Thr Tyr Tyr
85 90 95
Cys Ala Ala Gly Ser Val Gln His Met Ala Asn Glu Asn Glu Tyr Val
100 105 110
Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Arg
115 120 125

<210> 3
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<213> Lama glama
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35 40 45
Phe Val Ser Ala Ile Arg Phe Arg Ser Asn Ser Pro Phe Tyr Gly Asp
50 55 60

Pro Gly Lys Gly Arg Phe Thr Ile Ala Arg Asp Ser Ala Lys Asp Thr
65 70 75 80
Val Tyr Leu His Met Tyr Arg Leu Arg Pro Asp Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Ala Val Gly Asp Gly Ala Leu Val Asn Arg Ala Ser Asp Tyr
100 105 110
Thr Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Gly Arg
115 120 125

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35 40 45
Phe Val Gly Ala Ile Arg Trp Ser Glu Asp Ser Thr Trp Tyr Gly Asp
50 55 60
Ser Met Lys Gly Arg Ile Leu Ile Ser Arg Asn Asn Ile Lys Asn Thr
65 70 75 80
Val Asn Leu Gln Met Phe Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr
85 90 95
Val Cys Ala Ala Gly Ala Gly Asp Ile Val Thr Thr Glu Thr Ser Tyr
100 105 110
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115 120 125

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<212> DNA

<213> Lama glama
<400> 5

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ccagggaaag agcgtgaatt tgtggcagct gtgagcggga gtggtggttc gaaatattat 180
ggagactccg tacagggccg attcaccatc tccaaagacg acgccaagaa cacggtgtat 240
ctgcaaatga acaacctgaa acctgaggac acggccgttt attactgtgc agtccggaga 300
acctatagtg gtagtaacct ttggcacaga tcggatgagt atgactcctg gggcccgggg 360
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cagggtccag ggaaggagcg tgagttcgtg gctactatca gttcgagtga tagtccgtgg 180
tatggagagc ccgcgaaggg ccgattcacc gtcgccagag ttaacgccaa gaatacggcg 240
tatctgcact tgaacaggtt gaaacctgag gacacggcca cttattattg tgcagccggt 300
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caggctccag ggaaggagcg tgaatttgta tcagctatta ggttcaggag taacagccca 180
ttttatggcg accccgggaa gggccgattc accatcgcca gagacagcgc caaggacacg 240
gtgtatctgc acatgtaccg cctgagacct gacgacacgg ccgtatatta ctgtgccgta 300
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gtcaccgtct ccagcggccg ccaccaccat caccatcact aatag 405

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caggctccag gggcggagcg tgagtttgta ggagctatta gatggtcaga agatagcaca 180
tggtatggag actccatgaa gggccgaatt ctcatctcca gaaacaatat caagaacacg 240
gtgaatctgc aaatgttcaa tctaaaacct gaagacacgg ccgtgtacgt ctgtgcagca 300
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gtcaccgtct cctcacgcgg ccgccaccac catcaccatc actaatag 408

<210> 9
<211> 266
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<213> Lama glama
<400> 9
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Asp Asp Val Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu
35 40 45
Phe Val Ser Ala Ile Arg Phe Arg Ser Asn Ser Pro Phe Tyr Gly Asp
50 55 60
Pro Gly Lys Gly Arg Phe Thr Ile Ala Arg Asp Ser Ala Lys Asp Thr
65 70 75 80
Val Tyr Leu His Met Tyr Arg Leu Arg Pro Asp Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Ala Val Gly Asp Gly Ala Leu Val Asn Arg Ala Ser Asp Tyr
100 105 110

Thr Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Ser Gly Pro
115 120 125
Ser Thr Pro Pro Arg Pro Ser Pro Ser Thr Pro Pro Ser Asp Val Gln
130 135 140
Leu Gln Ala Ser Gly Gly Gly Phe Val Gln Pro Gly Gly Ser Leu Ser
145 150 155 160
Leu Ser Cys Ala Val Ser Gly Arg Ser Phe Gly Asp Asp Val Met Gly
165 170 175
Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ser Ala Ile
180 185 190
Arg Phe Arg Ser Asn Ser Pro Phe Tyr Gly Asp Pro Gly Lys Gly Arg
195 200 205
Phe Thr Ile Ala Arg Asp Ser Ala Lys Asp Thr Val Tyr Leu His Met
210 215 220
Tyr Arg Leu Arg Pro Asp Asp Thr Ala Val Tyr Tyr Cys Ala Val Gly
225 230 235 240
Asp Gly Ala Leu Val Asn Arg Ala Ser Asp Tyr Thr Tyr Trp Gly Gln
245 250 255
Gly Thr Gln Val Thr Val Ser Ser Gly Arg
260 265

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<211> 264
<212> PRT
<213> Lama glama
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35 40 45
Phe Val Ala Thr Ile Ser Ser Ser Asp Ser Pro Trp Tyr Gly Glu Pro
50 55 60

Ala Lys Gly Arg Phe Thr Val Ala Arg Val Asn Ala Lys Asn Thr Ala
65 70 75 80
Tyr Leu His Leu Asn Arg Leu Lys Pro Glu Asp Thr Ala Thr Tyr Tyr
85 90 95
Cys Ala Ala Gly Ser Val Gln His Met Ala Asn Glu Asn Glu Tyr Val
100 105 110
Tyr Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser Ser Gly Pro Ser
115 120 125
Thr Pro Pro Arg Pro Ser Pro Ser Thr Pro Pro Ser Asp Val Gln Leu
130 135 140
Gln Ala Ser Gly Gly Gly Phe Val Gln Pro Gly Asp Ser Leu Ser Leu
145 150 155 160
Ser Cys Ala Ala Ser Gly Gly Thr Phe Ser Ser Tyr Ser Ile Gly Trp
165 170 175
Phe Arg Gln Gly Pro Gly Lys Glu Arg Glu Phe Val Ala Thr Ile Ser
180 185 190
Ser Ser Asp Ser Pro Trp Tyr Gly Glu Pro Ala Lys Gly Arg Phe Thr
195 200 205
Val Ala Arg Val Asn Ala Lys Asn Thr Ala Tyr Leu His Leu Asn Arg
210 215 220
Leu Lys Pro Glu Asp Thr Ala Thr Tyr Tyr Cys Ala Ala Gly Ser Val
225 230 235 240
Gln His Met Ala Asn Glu Asn Glu Tyr Val Tyr Trp Gly Gln Gly Thr
245 250 255
Gln Val Thr Val Ser Ser Gly Arg
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<210> 11
<211> 267
<212> PRT
<213> Lama glama
<400> 11
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20 25 30
Gly Tyr Val Val Gly Trp Phe Arg Gln Ala Pro Gly Ala Glu Arg Glu
35 40 45
Phe Val Gly Ala Ile Arg Trp Ser Glu Asp Ser Thr Trp Tyr Gly Asp
50 55 60
Ser Met Lys Gly Arg Ile Leu Ile Ser Arg Asn Asn Ile Lys Asn Thr
65 70 75 80
Val Asn Leu Gln Met Phe Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr
85 90 95
Val Cys Ala Ala Gly Ala Gly Asp Ile Val Thr Thr Glu Thr Ser Tyr
100 105 110
Asn Tyr Trp Gly Arg Gly Thr Gln Val Thr Val Ser Ser Ser Gly Pro
115 120 125
Ser Thr Pro Pro Arg Pro Ser Pro Ser Thr Pro Pro Ser Asp Val Gln
130 135 140
Leu Gln Ala Ser Gly Gly Gly Leu Ala Gln Ala Gly Asp Ser Leu Thr
145 150 155 160
Leu Ser Cys Ala Ala Ser Gly Arg Thr Phe Ser Gly Tyr Val Val Gly
165 170 175
Trp Phe Arg Gln Ala Pro Gly Ala Glu Arg Glu Phe Val Gly Ala Ile
180 185 190
Arg Trp Ser Glu Asp Ser Thr Trp Tyr Gly Asp Ser Met Lys Gly Arg
195 200 205
Ile Leu Ile Ser Arg Asn Asn Ile Lys Asn Thr Val Asn Leu Gln Met
210 215 220
Phe Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr Val Cys Ala Ala Gly
225 230 235 240
Ala Gly Asp Ile Val Thr Thr Glu Thr Ser Tyr Asn Tyr Trp Gly Arg
245 250 255
Gly Thr Gln Val Thr Val Ser Ser Arg Gly Arg
260 265

<210> 12
<211> 270

<212> PRT
<213> Lama glama
<400> 12

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35 40 45
Ala Ala Val Ser Gly Ser Gly Gly Ser Lys Tyr Tyr Gly Asp Ser Val
50 55 60
Gln Gly Arg Phe Thr Ile Ser Lys Asp Asp Ala Lys Asn Thr Val Tyr
65 70 75 80
Leu Gln Met Asn Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Val Arg Arg Thr Tyr Ser Gly Ser Asn Leu Trp His Arg Ser Asp
100 105 110
Glu Tyr Asp Ser Trp Gly Pro Gly Thr Gln Val Thr Val Ser Ser Ser
115 120 125
Gly Pro Ser Thr Pro Pro Arg Pro Ser Pro Ser Thr Pro Pro Ser Asp
130 135 140
Val Gln Leu Gln Ala Ser Gly Gly Gly Leu Val Gln Ala Gly Asp Ser
145 150 155 160
Leu Arg Leu Ser Cys Val Gln Ser Gly Pro Gly Arg Tyr Gly Val Gly
165 170 175
Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Phe Val Ala Ala Val
180 185 190
Ser Gly Ser Gly Gly Ser Lys Tyr Tyr Gly Asp Ser Val Gln Gly Arg
195 200 205
Phe Thr Ile Ser Lys Asp Asp Ala Lys Asn Thr Val Tyr Leu Gln Met
210 215 220
Asn Asn Leu Lys Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Val Arg
225 230 235 240
Arg Thr Tyr Ser Gly Ser Asn Leu Trp His Arg Ser Asp Glu Tyr Asp
245 250 255

Ser Trp Gly Pro Gly Thr Gln Val Thr Val Ser Ser Gly Arg
260 265 270

<210> 13
<211> 16
<212> PRT
<213> Homo sapiens
<400> 13
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<210> 14
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<212> DNA
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<220>
<223> VHH amplification primer
<400> 14
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<210> 15
<211> 23
<212> DNA
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<220>
<223> primer to amplify VHH
<400> 15
ggtacgtgct gttgaactgt tcc 23

<210> 16
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ggagg 65

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<213> Artificial
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<223> primer to amplify VHH
<400> 17
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<210> 18
<211> 33
<212> DNA
<213> Artificial
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<223> primer to incorporate restriction sites
<400> 18
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<210> 19
<211> 51
<212> DNA
<213> Artificial
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<223> primer to incorporate restriction sites
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<213> Artificial

<220>
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<211> 46
<212> DNA
<213> Artificial
<220>
<223> primer to amplify dimer sequences
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<210> 22
<211> 43
<212> DNA
<213> Homo sapiens
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