

SEQUENCE LISTING

<110> Replimune Limited

<120> ALTERED VIRUS

<130> N409771W0

<140>

<141> 2018-01-09

<150> GB 1700350.0

<151> 2017-01-09

<160> 46

<170> PatentIn version 3.5

<210> 1

<211> 108

<212> PRT

<213> Homo sapiens

<400> 1

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
1 5 10 15

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Gly Ser Ser Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
35 40 45

Tyr Gly Ala Phe Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg

100

105

<210> 2
 <211> 215
 <212> PRT
 <213> Homo sapiens

<400> 2

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Gly Ser Ser
 20 25 30

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
 35 40 45

Ile Tyr Gly Ala Phe Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser
 50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
 65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro
 85 90 95

Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
 100 105 110

Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
 115 120 125

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
 130 135 140

Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
 145 150 155 160

Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
165 170 175

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

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
195 200 205

Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 3
<211> 118
<212> PRT
<213> Homo sapiens

<400> 3

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Thr Phe Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Thr Gly Trp Leu Gly Pro Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 4
<211> 103
<212> PRT
<213> Homo sapiens

<400> 4

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Pro Lys Ser Cys
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<210> 5
<211> 227
<212> PRT
<213> Homo sapiens

<400> 5

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
50 55 60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
115 120 125

Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser

210

215

220

Pro Gly Lys
225

<210> 6
<211> 448
<212> PRT
<213> Homo sapiens

<400> 6

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Thr Phe Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Thr Gly Trp Leu Gly Pro Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
180 185 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
195 200 205

Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp Lys Thr
210 215 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225 230 235 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
260 265 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
275 280 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
290 295 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305 310 315 320

Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
325 330 335

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
340 345 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
355 360 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 7
<211> 21
<212> PRT
<213> Mus musculus

<400> 7

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
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Gly Ser Thr Gly Asp
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<210> 8
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> (Gly4Ser)3 linker

<400> 8

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 9
<211> 489
<212> PRT
<213> Homo sapiens

<400> 9

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser
20 25 30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
35 40 45

Val Gly Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala
50 55 60

Pro Arg Leu Leu Ile Tyr Gly Ala Phe Ser Arg Ala Thr Gly Ile Pro
65 70 75 80

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
85 90 95

Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr
100 105 110

Gly Ser Ser Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
115 120 125

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
130 135 140

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
145 150 155 160

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
165 170 175

Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
180 185 190

Thr Phe Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val
195 200 205

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
210 215 220

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Ile Tyr Tyr Cys
225 230 235 240

Ala Arg Thr Gly Trp Leu Gly Pro Phe Asp Tyr Trp Gly Gln Gly Thr
245 250 255

Leu Val Thr Val Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
260 265 270

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
275 280 285

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
290 295 300

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
305 310 315 320

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
325 330 335

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
340 345 350

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
 355 360 365

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
 370 375 380

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
 385 390 395 400

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
 405 410 415

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
 420 425 430

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
 435 440 445

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
 450 455 460

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
 465 470 475 480

Lys Ser Leu Ser Leu Ser Pro Gly Lys
 485

<210> 10
 <211> 1470
 <212> DNA
 <213> Homo sapiens

<400> 10
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 ctgtcttgta gagccagcca gtctgtggga agctcctacc tggcttggtg tcagcagaag 180
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aatacactgt acctgcagat gaacagcctg cgggccgagg atactgctat ctactattgc	720
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tccgtgttcc tgtttccacc caagcctaaa gacaccctga tgatcagccg gacacctgaa	900
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aagtctctga gtctgtcacc cggcaaatga	1470

<210> 11
 <211> 127
 <212> PRT
 <213> Mus musculus

 <400> 11

Ile Arg Arg Ala Asp Ile Val Met Thr Gln Thr Thr Leu Ser Leu Pro
1 5 10 15

Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
20 25 30

Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys
35 40 45

Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe
50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75 80

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr
85 90 95

Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys
100 105 110

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

<210> 12
<211> 134
<212> PRT
<213> Mus musculus

<400> 12

Glu Ala Lys Leu Gln Glu Ser Gly Pro Val Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Tyr Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Val Ile Asn Pro Tyr Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Tyr Tyr Gly Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu
100 105 110

Ile Thr Val Ser Thr Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu
115 120 125

Ala Pro Arg Ser Ser Arg
130

<210> 13
<211> 356
<212> PRT
<213> Mus musculus

<400> 13

Glu Ala Lys Leu Gln Glu Ser Gly Pro Val Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Tyr Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Val Ile Asn Pro Tyr Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Tyr Tyr Gly Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu
100 105 110

Ile Thr Val Ser Thr Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu
115 120 125

Ala Pro Arg Ser Ser Arg Gly Cys Lys Pro Cys Ile Cys Thr Val Pro
130 135 140

Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu
145 150 155 160

Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Ile Ser
165 170 175

Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asp Val Glu
180 185 190

Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu Gln Phe Asn Ser Thr
195 200 205

Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln Asp Trp Leu Asn
210 215 220

Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe Pro Ala Pro
225 230 235 240

Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg Pro Lys Ala Pro Gln
245 250 255

Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys Asp Lys Val
260 265 270

Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val
275 280 285

Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln
290 295 300

Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn
305 310 315 320

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

Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser His
340 345 350

Ser Pro Gly Lys
355

<210> 14
<211> 519
<212> PRT
<213> Mus musculus

<400> 14

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Ile Arg Arg Ala Asp Ile Val Met Thr Gln Thr
20 25 30

Thr Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys
35 40 45

Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
50 55 60

Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys
65 70 75 80

Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly
85 90 95

Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp
100 105 110

Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe
115 120 125

Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala Pro Thr
130 135 140

Val Ser Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
145 150 155 160

Gly Gly Ser Glu Ala Lys Leu Gln Glu Ser Gly Pro Val Leu Val Lys
165 170 175

Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe
180 185 190

Thr Asp Tyr Tyr Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu
195 200 205

Glu Trp Ile Gly Val Ile Asn Pro Tyr Asn Gly Asp Thr Ser Tyr Asn
210 215 220

Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser
225 230 235 240

Thr Ala Tyr Met Glu Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val
245 250 255

Tyr Tyr Cys Ala Arg Tyr Tyr Gly Ser Trp Phe Ala Tyr Trp Gly Gln
260 265 270

Gly Thr Leu Ile Thr Val Ser Thr Ala Lys Thr Thr Pro Pro Ser Val

275

280

285

Tyr Pro Leu Ala Pro Arg Ser Ser Arg Gly Cys Lys Pro Cys Ile Cys
 290 295 300

Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro Lys
 305 310 315 320

Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val
 325 330 335

Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp
 340 345 350

Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu Gln Phe
 355 360 365

Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln Asp
 370 375 380

Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe
 385 390 395 400

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg Pro Lys
 405 410 415

Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys
 420 425 430

Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp
 435 440 445

Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys
 450 455 460

Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val Tyr Ser
 465 470 475 480

Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr
485 490 495

Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser
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Leu Ser His Ser Pro Gly Lys
515

<210> 15

<211> 1560

<212> DNA

<213> Mus musculus

<400> 15

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<210> 16
 <211> 1574
 <212> DNA
 <213> Mus musculus

<400> 16	
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caggtgtaca ccatccctcc acccaaggag cagatggcta aggataaggt ggcctgacc	1320
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cctgccgaga actacaagaa caccagcca atcatggaca cagatggctc ttacttcgtg	1440
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<210> 17
 <211> 1484
 <212> DNA
 <213> Homo sapiens

<400> 17	
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cagaagccag gccaggcacc caggctgctg atctacggag ctttcagccg ggccactggc	240
attccagaca gggtctctgg aagtggctca gggaccgact tcaccctgac catcagccga	300
ctggagcccc aagacttcgc cgtgtactat tgccagcagt acggctctag tccttgact	360

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<210> 18
 <211> 426
 <212> DNA
 <213> Mus musculus

<400> 18	
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aacctcctgg atgacatgcc tgtcacattg aatgaagagg tagaagtcgt ctctaacgag	180
ttctccttca agaagctaac atgtgtgcag acccgctga agatattcga gcagggtcta	240
cggggcaatt tcaccaaact caagggcgcc ttgaacatga cagccagcta ctaccagaca	300
tactgcccc caactccgga aacggactgt gaaacacaag ttaccaccta tgcggatttc	360
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aaatga	426

<210> 19
 <211> 426
 <212> DNA
 <213> Mus musculus

<400> 19	
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aacctgctgg acgatatgcc agtgacctg aacgaggagg tggagggtgg gagcaacgag	180
ttctccttta agaagctgac ctgcgtgcag acaaggctga agatcttcga gcagggcctg	240
agaggaaact ttaccaagct gaagggcgcc ctgaacatga ccgcttctta ctaccagaca	300
tactgcccc ctacccccga gacagactgt gagacacagg tgaccacata cgccgacttc	360
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aagtaa	426

<210> 20
 <211> 435
 <212> DNA
 <213> Homo sapiens

<400> 20	
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cgtctcctga acctgagtag agacactgct gctgagatga atgaaacagt agaagtcac	180
tcagaaatgt ttgacctcca ggagccgacc tgcctacaga cccgcctgga gctgtacaag	240

cagggcctgc ggggcagcct caccaagctc aagggcccct tgaccatgat ggccagccac	300
tacaagcagc actgccctcc aaccccggaa acttcctgtg caaccagat tatcaccttt	360
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<210> 21
 <211> 435
 <212> DNA
 <213> Homo sapiens

<400> 21	
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cccgctccagg agtaa	435

<210> 22
 <211> 141
 <212> PRT
 <213> Mus musculus

<400> 22

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Ser	Ala	Pro	Thr	Arg	Ser	Pro	Ile	Thr	Val	Thr	Arg	Pro	Trp	Lys	His
			20					25					30		

Val	Glu	Ala	Ile	Lys	Glu	Ala	Leu	Asn	Leu	Leu	Asp	Asp	Met	Pro	Val
		35					40					45			

Thr Leu Asn Glu Glu Val Glu Val Val Ser Asn Glu Phe Ser Phe Lys
50 55 60

Lys Leu Thr Cys Val Gln Thr Arg Leu Lys Ile Phe Glu Gln Gly Leu
65 70 75 80

Arg Gly Asn Phe Thr Lys Leu Lys Gly Ala Leu Asn Met Thr Ala Ser
85 90 95

Tyr Tyr Gln Thr Tyr Cys Pro Pro Thr Pro Glu Thr Asp Cys Glu Thr
100 105 110

Gln Val Thr Thr Tyr Ala Asp Phe Ile Asp Ser Leu Lys Thr Phe Leu
115 120 125

Thr Asp Ile Pro Phe Glu Cys Lys Lys Pro Val Gln Lys
130 135 140

<210> 23
<211> 144
<212> PRT
<213> Homo sapiens

<400> 23

Met Trp Leu Gln Ser Leu Leu Leu Leu Gly Thr Val Ala Cys Ser Ile
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Ser Ala Pro Ala Arg Ser Pro Ser Pro Ser Thr Gln Pro Trp Glu His
20 25 30

Val Asn Ala Ile Gln Glu Ala Arg Arg Leu Leu Asn Leu Ser Arg Asp
35 40 45

Thr Ala Ala Glu Met Asn Glu Thr Val Glu Val Ile Ser Glu Met Phe
50 55 60

Asp Leu Gln Glu Pro Thr Cys Leu Gln Thr Arg Leu Glu Leu Tyr Lys
65 70 75 80

Gln Gly Leu Arg Gly Ser Leu Thr Lys Leu Lys Gly Pro Leu Thr Met
85 90 95

Met Ala Ser His Tyr Lys Gln His Cys Pro Pro Thr Pro Glu Thr Ser
100 105 110

Cys Ala Thr Gln Ile Ile Thr Phe Glu Ser Phe Lys Glu Asn Leu Lys
115 120 125

Asp Phe Leu Leu Val Ile Pro Phe Asp Cys Trp Glu Pro Val Gln Glu
130 135 140

<210> 24
<211> 2010
<212> DNA
<213> Gibbon leukemia virus

<400> 24
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aatgatagga taagtgcagt taaaatttaa	2010

<210> 25
 <211> 2013
 <212> DNA
 <213> Gibbon leukemia virus

<400> 25	
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100

105

110

Pro Asp Ser Asp Tyr Thr Ala Ala Tyr Lys Gln Ile Thr Trp Gly Ala
 115 120 125

Ile Gly Cys Ser Tyr Pro Arg Ala Arg Thr Arg Met Ala Ser Ser Thr
 130 135 140

Phe Tyr Val Cys Pro Arg Asp Gly Arg Thr Leu Ser Glu Ala Arg Arg
 145 150 155 160

Cys Gly Gly Leu Glu Ser Leu Tyr Cys Lys Glu Trp Asp Cys Glu Thr
 165 170 175

Thr Gly Thr Gly Tyr Trp Leu Ser Lys Ser Ser Lys Asp Leu Ile Thr
 180 185 190

Val Lys Trp Asp Gln Asn Ser Glu Trp Thr Gln Lys Phe Gln Gln Cys
 195 200 205

His Gln Thr Gly Trp Cys Asn Pro Leu Lys Ile Asp Phe Thr Asp Lys
 210 215 220

Gly Lys Leu Ser Lys Asp Trp Ile Thr Gly Lys Thr Trp Gly Leu Arg
 225 230 235 240

Phe Tyr Val Ser Gly His Pro Gly Val Gln Phe Thr Ile Arg Leu Lys
 245 250 255

Ile Thr Asn Met Pro Ala Val Ala Val Gly Pro Asp Leu Val Leu Val
 260 265 270

Glu Gln Gly Pro Pro Arg Thr Ser Leu Ala Leu Pro Pro Pro Leu Pro
 275 280 285

Pro Arg Glu Ala Pro Pro Pro Ser Leu Pro Asp Ser Asn Ser Thr Ala
 290 295 300

Leu Ala Thr Ser Ala Gln Thr Pro Thr Val Arg Lys Thr Ile Val Thr
305 310 315 320

Leu Asn Thr Pro Pro Pro Thr Thr Gly Asp Arg Leu Phe Asp Leu Val
325 330 335

Gln Gly Ala Phe Leu Thr Leu Asn Ala Thr Asn Pro Gly Ala Thr Glu
340 345 350

Ser Cys Trp Leu Cys Leu Ala Met Gly Pro Pro Tyr Tyr Glu Ala Ile
355 360 365

Ala Ser Ser Gly Glu Val Ala Tyr Ser Thr Asp Leu Asp Arg Cys Arg
370 375 380

Trp Gly Thr Gln Gly Lys Leu Thr Leu Thr Glu Val Ser Gly His Gly
385 390 395 400

Leu Cys Ile Gly Lys Val Pro Phe Thr His Gln His Leu Cys Asn Gln
405 410 415

Thr Leu Ser Ile Asn Ser Ser Gly Asp His Gln Tyr Leu Leu Pro Ser
420 425 430

Asn His Ser Trp Trp Ala Cys Ser Thr Gly Leu Thr Pro Cys Leu Ser
435 440 445

Thr Ser Val Phe Asn Gln Thr Arg Asp Phe Cys Ile Gln Val Gln Leu
450 455 460

Ile Pro Arg Ile Tyr Tyr Tyr Pro Glu Glu Val Leu Leu Gln Ala Tyr
465 470 475 480

Asp Asn Ser His Pro Arg Thr Lys Arg Glu Ala Val Ser Leu Thr Leu
485 490 495

Ala Val Leu Leu Gly Leu Gly Ile Thr Ala Gly Ile Gly Thr Gly Ser

500

505

510

Thr Ala Leu Ile Lys Gly Pro Ile Asp Leu Gln Gln Gly Leu Thr Ser
515 520 525

Leu Gln Ile Ala Ile Asp Ala Asp Leu Arg Ala Leu Gln Asp Ser Val
530 535 540

Ser Lys Leu Glu Asp Ser Leu Thr Ser Leu Ser Glu Val Val Leu Gln
545 550 555 560

Asn Arg Arg Gly Leu Asp Leu Leu Phe Leu Lys Glu Gly Gly Leu Cys
565 570 575

Ala Ala Leu Lys Glu Glu Cys Cys Phe Tyr Ile Asp His Ser Gly Ala
580 585 590

Val Arg Asp Ser Met Lys Lys Leu Lys Glu Lys Leu Asp Lys Arg Gln
595 600 605

Leu Glu Arg Gln Lys Ser Gln Asn Trp Tyr Glu Gly Trp Phe Asn Asn
610 615 620

Ser Pro Trp Phe Thr Thr Leu Leu Ser Thr Ile Ala Gly Pro Leu Leu
625 630 635 640

Leu Leu Leu Leu Leu Leu Ile Leu Gly Pro Cys Ile Ile Asn Lys Leu
645 650 655

Val Gln Phe Ile Asn Asp Arg Ile Ser Ala Val Lys Ile
660 665

<210> 27

<211> 759

<212> DNA

<213> Artificial Sequence

<220>

<223> Human-Mouse hybrid

<400> 27
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<210> 28
<211> 252
<212> PRT
<213> Artificial Sequence

<220>
<223> Human-Mouse hybrid

<400> 28

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Ile Thr Gln Met Ile Gly Ser Ala Leu Phe Ala Val Tyr Leu His Arg
35 40 45

Arg Leu Asp Lys Ile Glu Asp Glu Arg Asn Leu His Glu Asp Phe Val
50 55 60

Phe Met Lys Thr Ile Gln Arg Cys Asn Thr Gly Glu Arg Ser Leu Ser
65 70 75 80

Leu Leu Asn Cys Glu Glu Ile Lys Ser Gln Phe Glu Gly Phe Val Lys
85 90 95

Asp Ile Met Leu Asn Lys Glu Glu Thr Lys Lys Asp Glu Asp Pro Gln
100 105 110

Ile Ala Ala His Val Val Ser Glu Ala Asn Ser Asn Ala Ala Ser Val
115 120 125

Leu Gln Trp Ala Lys Lys Gly Tyr Tyr Thr Met Lys Ser Asn Leu Val
130 135 140

Thr Leu Glu Asn Gly Lys Gln Leu Thr Val Lys Arg Gln Gly Leu Tyr
145 150 155 160

Tyr Ile Tyr Ala Gln Val Thr Phe Cys Ser Asn Arg Glu Ala Ser Ser
165 170 175

Gln Ala Pro Phe Ile Val Gly Leu Trp Leu Lys Pro Ser Ser Gly Ser
180 185 190

Glu Arg Ile Leu Leu Lys Ala Ala Asn Thr His Ser Ser Ser Gln Leu
195 200 205

Cys Glu Gln Gln Ser Ile His Leu Gly Gly Val Phe Glu Leu Gln Pro
210 215 220

Gly Ala Ser Val Phe Val Asn Val Thr Asp Pro Ser Gln Val Ser His
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<210> 29
 <211> 1416
 <212> DNA
 <213> Homo sapiens

<400> 29
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<210> 30
 <211> 471
 <212> PRT
 <213> Homo sapiens

<400> 30

Met Leu Pro Phe Leu Ser Met Leu Val Leu Leu Val Gln Pro Leu Gly
 1 5 10 15

Asn Leu Gly Ala Glu Met Lys Ser Leu Ser Gln Arg Ser Val Pro Asn
 20 25 30

Thr Cys Thr Leu Val Met Cys Ser Pro Thr Glu Asn Gly Leu Pro Gly
 35 40 45

Arg Asp Gly Arg Asp Gly Arg Glu Gly Pro Arg Gly Glu Lys Gly Asp
 50 55 60

Pro Gly Leu Pro Gly Pro Met Gly Leu Ser Gly Leu Gln Gly Pro Thr
 65 70 75 80

Gly Pro Val Gly Pro Lys Gly Glu Asn Gly Ser Ala Gly Glu Pro Gly
 85 90 95

Pro Lys Gly Glu Arg Gly Leu Ser Gly Pro Pro Gly Leu Pro Gly Ile
 100 105 110

Pro Gly Pro Ala Gly Lys Glu Gly Pro Ser Gly Lys Gln Gly Asn Ile
 115 120 125

Gly Pro Gln Gly Lys Pro Gly Pro Lys Gly Glu Ala Gly Pro Lys Gly
 130 135 140

Glu Val Gly Ala Pro Gly Met Gln Gly Ser Thr Gly Ala Lys Gly Ser
145 150 155 160

Thr Gly Pro Lys Gly Glu Arg Gly Ala Pro Gly Val Gln Gly Ala Pro
165 170 175

Gly Asn Ala Gly Ala Ala Gly Pro Ala Gly Pro Ala Gly Pro Gln Gly
180 185 190

Ala Pro Gly Ser Arg Gly Pro Pro Gly Leu Lys Gly Asp Arg Gly Val
195 200 205

Pro Gly Asp Arg Gly Ile Lys Gly Glu Ser Gly Leu Pro Asp Ser Ala
210 215 220

Ala Leu Arg Gln Gln Met Glu Ala Leu Lys Gly Lys Leu Gln Arg Leu
225 230 235 240

Glu Val Ala Phe Ser His Tyr Gln Lys Ala Ala Leu Phe Pro Asp Gly
245 250 255

His Arg Arg Leu Asp Lys Ile Glu Asp Glu Arg Asn Leu His Glu Asp
260 265 270

Phe Val Phe Met Lys Thr Ile Gln Arg Cys Asn Thr Gly Glu Arg Ser
275 280 285

Leu Ser Leu Leu Asn Cys Glu Glu Ile Lys Ser Gln Phe Glu Gly Phe
290 295 300

Val Lys Asp Ile Met Leu Asn Lys Glu Glu Thr Lys Lys Glu Asn Ser
305 310 315 320

Phe Glu Met Gln Lys Gly Asp Gln Asn Pro Gln Ile Ala Ala His Val
325 330 335

Ile Ser Glu Ala Ser Ser Lys Thr Thr Ser Val Leu Gln Trp Ala Glu

340

345

350

Lys Gly Tyr Tyr Thr Met Ser Asn Asn Leu Val Thr Leu Glu Asn Gly
 355 360 365

Lys Gln Leu Thr Val Lys Arg Gln Gly Leu Tyr Tyr Ile Tyr Ala Gln
 370 375 380

Val Thr Phe Cys Ser Asn Arg Glu Ala Ser Ser Gln Ala Pro Phe Ile
 385 390 395 400

Ala Ser Leu Cys Leu Lys Ser Pro Gly Arg Phe Glu Arg Ile Leu Leu
 405 410 415

Arg Ala Ala Asn Thr His Ser Ser Ala Lys Pro Cys Gly Gln Gln Ser
 420 425 430

Ile His Leu Gly Gly Val Phe Glu Leu Gln Pro Gly Ala Ser Val Phe
 435 440 445

Val Asn Val Thr Asp Pro Ser Gln Val Ser His Gly Thr Gly Phe Thr
 450 455 460

Ser Phe Gly Leu Leu Lys Leu
 465 470

<210> 31
 <211> 1412
 <212> DNA
 <213> Mus musculus

<400> 31
 atgctgccct tcctgagcat gctggtgctg ctggtgcagc ctctgggcaa tctgggcgcc 60
 gagatgaagt ccctgtctca gaggagcgtg ccaaacacct gcacactggt catgtgctct 120
 ccaaccgaga atggactgcc aggaagggac ggaagagatg gaagggaggg accaagggga 180
 gagaagggcg accctggact gcctggacca atgggactgt ccggactgca gggaccaaca 240
 ggccctgtgg gaccaaaggg agagaatgga agcgccggag agccaggacc taagggagag 300

aggggcctgt cccgcccccc tggcctgcct ggcatcccag gccccgccgg caaggagggc	360
ccttctggca agcagggcaa catcggacca cagggcaagc ctggaccaa gggagaggca	420
ggaccaaagg gagaagtggg agcaccggc atgcagggca gcaccggagc aaagggatcc	480
accggcccta agggagagag aggagcacct ggagtgcagg gcgccccagg caatgcagga	540
gcagcaggac cagcaggacc tgcaggccca caggcgccc caggcagccg gggcccaccc	600
ggcctgaagg gcgacagggg agtgccaggc gataggggca tcaagggaga gtccggactg	660
ccagactctg ccgccctgag gcagcagatg gaggccctga agggcaagct gcagaggctg	720
gaggtggcct tctcccacta ccagaaggcc gccctgtttc cagacggaca caggagactg	780
gataaggtgg aggaggagg gaacctgcac gaggatttcg tgttcatcaa gaagctgaag	840
aggtgcaaca agggcgaggg cagcctgtcc ctgctgaatt gtgaggagat gcggcgccag	900
ttcgaggacc tggatgaagga tatcacctg aacaaggagg agaagaagga gaattctttt	960
gagatgcaga gggcgacga ggatcctcag atcgcagcac acgtggtgtc cgaggcaaac	1020
tctaatagccg ccagcgtgct gcagtgggcc aagaagggt actataccat gaagtctaac	1080
ctggtcatgc tggagaatgg caagcagctg acagtgaaga gagagggcct gtactacgtg	1140
tacaccagg tgacattctg cagcaacaga gagcccagct cccagcggcc ttttatcgtg	1200
ggcctgtggc tgaagccctc tatcggaagc gagaggatcc tgctgaaggc agccaatacc	1260
cactctagct cccagctgtg cgagcagcag tccgtgcacc tgggaggcgt gttcgagctg	1320
caggcaggag caagcgtgtt cgtgaacgga cagaggccag ccaggatcatc cacagagtgg	1380
gcttctctag ctttggcctg ctgaagctgt ga	1412

<210> 32
 <211> 470
 <212> PRT
 <213> Mus musculus

<400> 32

Met	Leu	Pro	Phe	Leu	Ser	Met	Leu	Val	Leu	Leu	Val	Gln	Pro	Leu	Gly
1				5					10					15	

Asn Leu Gly Ala Glu Met Lys Ser Leu Ser Gln Arg Ser Val Pro Asn
20 25 30

Thr Cys Thr Leu Val Met Cys Ser Pro Thr Glu Asn Gly Leu Pro Gly
35 40 45

Arg Asp Gly Arg Asp Gly Arg Glu Gly Pro Arg Gly Glu Lys Gly Asp
50 55 60

Pro Gly Leu Pro Gly Pro Met Gly Leu Ser Gly Leu Gln Gly Pro Thr
65 70 75 80

Gly Pro Val Gly Pro Lys Gly Glu Asn Gly Ser Ala Gly Glu Pro Gly
85 90 95

Pro Lys Gly Glu Arg Gly Leu Ser Gly Pro Pro Gly Leu Pro Gly Ile
100 105 110

Pro Gly Pro Ala Gly Lys Glu Gly Pro Ser Gly Lys Gln Gly Asn Ile
115 120 125

Gly Pro Gln Gly Lys Pro Gly Pro Lys Gly Glu Ala Gly Pro Lys Gly
130 135 140

Glu Val Gly Ala Pro Gly Met Gln Gly Ser Thr Gly Ala Lys Gly Ser
145 150 155 160

Thr Gly Pro Lys Gly Glu Arg Gly Ala Pro Gly Val Gln Gly Ala Pro
165 170 175

Gly Asn Ala Gly Ala Ala Gly Pro Ala Gly Pro Ala Gly Pro Gln Gly
180 185 190

Ala Pro Gly Ser Arg Gly Pro Pro Gly Leu Lys Gly Asp Arg Gly Val
195 200 205

Pro Gly Asp Arg Gly Ile Lys Gly Glu Ser Gly Leu Pro Asp Ser Ala

210

215

220

Ala Leu Arg Gln Gln Met Glu Ala Leu Lys Gly Lys Leu Gln Arg Leu
 225 230 235 240

Glu Val Ala Phe Ser His Tyr Gln Lys Ala Ala Leu Phe Pro Asp Gly
 245 250 255

His Arg Arg Leu Asp Lys Val Glu Glu Glu Val Asn Leu His Glu Asp
 260 265 270

Phe Val Phe Ile Lys Lys Leu Lys Arg Cys Asn Lys Gly Glu Gly Ser
 275 280 285

Leu Ser Leu Leu Asn Cys Glu Glu Met Arg Arg Gln Phe Glu Asp Leu
 290 295 300

Val Lys Asp Ile Thr Leu Asn Lys Glu Glu Lys Lys Glu Asn Ser Phe
 305 310 315 320

Glu Met Gln Arg Gly Asp Glu Asp Pro Gln Ile Ala Ala His Val Val
 325 330 335

Ser Glu Ala Asn Ser Asn Ala Ala Ser Val Leu Gln Trp Ala Lys Lys
 340 345 350

Gly Tyr Tyr Thr Met Lys Ser Asn Leu Val Met Leu Glu Asn Gly Lys
 355 360 365

Gln Leu Thr Val Lys Arg Glu Gly Leu Tyr Tyr Val Tyr Thr Gln Val
 370 375 380

Thr Phe Cys Ser Asn Arg Glu Pro Ser Ser Gln Arg Pro Phe Ile Val
 385 390 395 400

Gly Leu Trp Leu Lys Pro Ser Ile Gly Ser Glu Arg Ile Leu Leu Lys
 405 410 415

Ala Ala Asn Thr His Ser Ser Ser Gln Leu Cys Glu Gln Gln Ser Val
 420 425 430

His Leu Gly Gly Val Phe Glu Leu Gln Ala Gly Ala Ser Val Phe Val
 435 440 445

Asn Val Thr Glu Ala Ser Gln Val Ile His Arg Val Gly Phe Ser Ser
 450 455 460

Phe Gly Leu Leu Lys Leu
 465 470

<210> 33
 <211> 786
 <212> DNA
 <213> Homo sapiens

<400> 33
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 atgaaaattt ttatgtattt acttactgtt tttcttatca cccagatgat tgggtcagca 120
 ctttttgctg tgtatcttca tagaagggtg gacaagatag aagatgaaag gaatcttcat 180
 gaagattttg tattcatgaa aacgatacag agatgcaaca caggagaaag atccttatcc 240
 ttactgaact gtgaggagat taaaagccag tttgaaggct ttgtgaagga tataatgtta 300
 aacaaagagg agacgaagaa agaaaacagc tttgaaatgc aaaaaggatga tcagaatcct 360
 caaattgcgg cacatgtcat aagtgaggcc agcagtaaaa caacatctgt gttacagtgg 420
 gctgaaaaaag gatactacac catgagcaac aacttggtta ccctggaaaa tgggaaacag 480
 ctgaccgtta aaagacaagg actctattat atctatgccc aagtcacctt ctgttccaat 540
 cgggaagctt cgagtcaagc tccatttata gccagcctct gcctaaagtc ccccggtaga 600
 ttcgagagaa tcttactcag agctgcaa atccacagtt ccgccaacc ttgcgggcaa 660
 caatccattc acttgggagg agtatttgaa ttgcaaccag gtgcttcggt gtttgtcaat 720
 gtgactgatc caagccaagt gagccatggc actggcttca cgtcctttgg cttactcaaa 780
 ctctga 786

<210> 34
<211> 261
<212> PRT
<213> Homo sapiens

<400> 34

Met Ile Glu Thr Tyr Asn Gln Thr Ser Pro Arg Ser Ala Ala Thr Gly
1 5 10 15

Leu Pro Ile Ser Met Lys Ile Phe Met Tyr Leu Leu Thr Val Phe Leu
20 25 30

Ile Thr Gln Met Ile Gly Ser Ala Leu Phe Ala Val Tyr Leu His Arg
35 40 45

Arg Leu Asp Lys Ile Glu Asp Glu Arg Asn Leu His Glu Asp Phe Val
50 55 60

Phe Met Lys Thr Ile Gln Arg Cys Asn Thr Gly Glu Arg Ser Leu Ser
65 70 75 80

Leu Leu Asn Cys Glu Glu Ile Lys Ser Gln Phe Glu Gly Phe Val Lys
85 90 95

Asp Ile Met Leu Asn Lys Glu Glu Thr Lys Lys Glu Asn Ser Phe Glu
100 105 110

Met Gln Lys Gly Asp Gln Asn Pro Gln Ile Ala Ala His Val Ile Ser
115 120 125

Glu Ala Ser Ser Lys Thr Thr Ser Val Leu Gln Trp Ala Glu Lys Gly
130 135 140

Tyr Tyr Thr Met Ser Asn Asn Leu Val Thr Leu Glu Asn Gly Lys Gln
145 150 155 160

Leu Thr Val Lys Arg Gln Gly Leu Tyr Tyr Ile Tyr Ala Gln Val Thr

165

170

175

Phe Cys Ser Asn Arg Glu Ala Ser Ser Gln Ala Pro Phe Ile Ala Ser
 180 185 190

Leu Cys Leu Lys Ser Pro Gly Arg Phe Glu Arg Ile Leu Leu Arg Ala
 195 200 205

Ala Asn Thr His Ser Ser Ala Lys Pro Cys Gly Gln Gln Ser Ile His
 210 215 220

Leu Gly Gly Val Phe Glu Leu Gln Pro Gly Ala Ser Val Phe Val Asn
 225 230 235 240

Val Thr Asp Pro Ser Gln Val Ser His Gly Thr Gly Phe Thr Ser Phe
 245 250 255

Gly Leu Leu Lys Leu
 260

<210> 35
 <211> 783
 <212> DNA
 <213> Mus musculus

<400> 35
 atgatagaaa catacagcca accttcccc agatccgtgg caactggact tccagcgagc 60
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 ctttttgctg tgtatcttca tagaagattg gataaggctg aagaggaagt aaaccttcat 180
 gaagattttg tattcataaa aaagctaaag agatgcaaca aaggagaagg atctttatcc 240
 ttgctgaact gtgaggagat gagaaggcaa tttgaagacc ttgtcaagga tataacgtta 300
 aacaaagaag agaaaaaaga aaacagcttt gaaatgcaaa gaggtgatga ggatcctcaa 360
 attgcagcac acgttgtaag cgaagccaac agtaatgcag catccgttct acagtgggcc 420
 aagaaaggat attataccat gaaaagcaac ttggtaatgc ttgaaaatgg gaaacagctg 480
 acggttaaaa gagaaggact ctattatgtc tacactcaag tcaccttctg ctctaatacg 540

gagccttcga gtcaacgccc attcatcgtc ggcctctggc tgaagcccag cagtggatct	600
gagagaatct tactcaaggc ggcaaatacc cacagttcct cccagctttg cgagcagcag	660
tctgttcact tgggcggagt gtttgaatta caagctggtg cttctgtgtt tgtcaacgtg	720
actgaagcaa gccaaagtgat ccacagagtt ggcttctcat cttttggctt actcaaactc	780
tga	783

<210> 36
 <211> 260
 <212> PRT
 <213> Mus musculus

<400> 36

Met	Ile	Glu	Thr	Tyr	Ser	Gln	Pro	Ser	Pro	Arg	Ser	Val	Ala	Thr	Gly
1				5					10					15	

Leu	Pro	Ala	Ser	Met	Lys	Ile	Phe	Met	Tyr	Leu	Leu	Thr	Val	Phe	Leu
			20					25					30		

Ile	Thr	Gln	Met	Ile	Gly	Ser	Val	Leu	Phe	Ala	Val	Tyr	Leu	His	Arg
		35					40					45			

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

Phe	Ile	Lys	Lys	Leu	Lys	Arg	Cys	Asn	Lys	Gly	Glu	Gly	Ser	Leu	Ser
65					70					75				80	

Leu	Leu	Asn	Cys	Glu	Glu	Met	Arg	Arg	Gln	Phe	Glu	Asp	Leu	Val	Lys
				85					90					95	

Asp	Ile	Thr	Leu	Asn	Lys	Glu	Glu	Lys	Lys	Glu	Asn	Ser	Phe	Glu	Met
			100					105					110		

Gln	Arg	Gly	Asp	Glu	Asp	Pro	Gln	Ile	Ala	Ala	His	Val	Val	Ser	Glu
		115					120					125			

Ala Asn Ser Asn Ala Ala Ser Val Leu Gln Trp Ala Lys Lys Gly Tyr
130 135 140

Tyr Thr Met Lys Ser Asn Leu Val Met Leu Glu Asn Gly Lys Gln Leu
145 150 155 160

Thr Val Lys Arg Glu Gly Leu Tyr Tyr Val Tyr Thr Gln Val Thr Phe
165 170 175

Cys Ser Asn Arg Glu Pro Ser Ser Gln Arg Pro Phe Ile Val Gly Leu
180 185 190

Trp Leu Lys Pro Ser Ser Gly Ser Glu Arg Ile Leu Leu Lys Ala Ala
195 200 205

Asn Thr His Ser Ser Ser Gln Leu Cys Glu Gln Gln Ser Val His Leu
210 215 220

Gly Gly Val Phe Glu Leu Gln Ala Gly Ala Ser Val Phe Val Asn Val
225 230 235 240

Thr Glu Ala Ser Gln Val Ile His Arg Val Gly Phe Ser Ser Phe Gly
245 250 255

Leu Leu Lys Leu
260

<210> 37
<211> 632
<212> DNA
<213> Artificial Sequence

<220>
<223> CMV promoter

<400> 37
gttgacattg attattgact agttattaat agtaatcaat tacgggggtca ttagttcata 60
gcccatatat ggagttccgc gttacataac ttacggtaaa tggcccgctt ggctgaccgc 120

ccaacgaccc ccgcccattg acgtcaataa tgacgtatgt tcccatagta acgccaatag	180
ggactttcca ttgacgtcaa tgggtggagt atttacggta aactgcccac ttggcagtac	240
atcaagtgtg tcatatgcc agtacgcccc ctattgacgt caatgacggg aaatggcccg	300
cctggcatta tgcccagtac atgaccttat gggactttcc tacttggcag tacatctacg	360
tattagtcac cgctattacc atggtgatgc ggttttggca gtacatcaat gggcgtggat	420
agcggtttga ctcacgggga tttccaagtc tccaccccat tgacgtcaat gggagtttgt	480
tttggcacca aaatcaacgg gactttccaa aatgtcgtaa caactccgcc ccattgacgc	540
aaatgggcgg taggcgtgta cgggtgggagg tctatataag cagagctctc tggctaacta	600
gagaaccac tgcttactgg cttatcgaaa tt	632

<210> 38
 <211> 394
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> RSV promoter

<400> 38	
tgtacgggcc agatatacgc gtatctgagg ggactagggt gtgttttaggc gaaaagcggg	60
gcttcggttg tacgcgggta ggagtcccct caggatatag tagtttcgct tttgcatagg	120
gaggggggaaa tgtagtctta tgcaatacac ttgtagtctt gcaacatggg aacgatgagt	180
tagcaacatg ccttacaagg agagaaaaag caccgtgcat gccgattggg ggaagtaagg	240
tggtagatc gtgccttatt aggaaggcaa cagacaggtc tgacatggat tggacgaacc	300
actgaattcc gcattgcaga gataattgta ttttaagtgc tagctcgata caataaacgc	360
catttgacca ttcaccacat tgggtgtgcac ctcc	394

<210> 39
 <211> 188
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> BGH polyA

<400> 39
ctgtgccttc tagttgccag ccatctgttg tttgcccctc ccccgtcct tccttgaccc 60
tggaagggtgc cactcccact gtcctttcct aataaaatga ggaaattgca tcgcattgtc 120
tgagtaggtg tcattctatt ctgggggggtg ggggtggggca ggacagcaag ggggaggatt 180
gggaagac 188

<210> 40
<211> 249
<212> DNA
<213> Artificial Sequence

<220>
<223> SV40 late polyA

<400> 40
gacatgataa gatacattga tgagtttgga caaaccacaa ctagaatgca gtgaaaaaaaa 60
tgctttatatt gtgaaatttg tgatgctatt gctttatttg tgaaatttgt gatgctattg 120
ctttatttgt aaccattata agctgcaata aacaagttaa caacaacaat tgcattcatt 180
ttatgtttca ggttcagggg gaggtgtggg aggtttttta aagcaagtaa aacctctaca 240
aatgtggta 249

<210> 41
<211> 99
<212> DNA
<213> Artificial Sequence

<220>
<223> Rabbit beta-globulin polyA

<400> 41
gacctctggc taataaagga aatttatattt cattgcaata gtgtgttgga attttttgtg 60
tctctcactc ggaaggacat atgggagggc aaatcattt 99

<210> 42
<211> 723
<212> DNA
<213> Artificial Sequence

<220>

<223> GFP

<400> 42

accatggtga gcaagggcga ggagctgttc accgggggtgg tgcccatcct ggtcgagctg	60
gacggcgacg taaacggcca caagttcagc gtgtccggcg agggcgaggg cgatgccacc	120
tacggcaagc tgaccctgaa gttcatctgc accaccggca agctgcccgt gccctggccc	180
accctcgtga ccaccctgac ctacggcgtg cagtgttca gccgctaccc cgaccacatg	240
aagcagcacg acttcttcaa gtccgcatg cccgaaggct acgtccagga gcgcaccatc	300
ttcttcaagg acgacggcaa ctacaagacc cgcgccgagg tgaagttcga gggcgacacc	360
ctggtgaacc gcatcgagct gaagggcatc gacttcaagg aggacggcaa catcctgggg	420
cacaagctgg agtacaacta caacagccac aacgtctata tcatggccga caagcagaag	480
aacggcatca aggtgaactt caagatccgc cacaacatcg aggacggcag cgtgcagctc	540
gccgaccact accagcagaa ccccccatc ggcgacggcc ccgtgctgct gcccgacaac	600
cactacctga gcacccagtc cgccctgagc aaagaccca acgagaagcg cgatcacatg	660
gtcctgctgg agttcgtgac cgccgccggg atcactctcg gcatggacga gctgtacaag	720
taa	723

<210> 43

<211> 454

<212> DNA

<213> Artificial Sequence

<220>

<223> MoMuLV LTR

<400> 43

ttaattaagt aacgccatth tgcaaggcat ggaaaaatac ataactgaga atagagaagt	60
tcagatcaag gtcaggaaca gatggaacag ctgaatatgg gccaaacagg atatctgtgg	120
taagcagttc ctgccccggc tcagggccaa gaacagatgg aacagctgaa tatgggccaa	180
acaggatatc tgtggtaagc agttcctgcc ccggctcagg gccaaagaaca gatgggtcccc	240
agatgcgggtc cagccctcag cagtttctag agaaccatca gatgtttcca gggtgcccc	300

aggacctgaa atgaccctgt gccttatttg aactaaccaa tcagttcgct tctcgcttct	360
gttcgcgcgc ttctgctccc cgagctcaat aaaagagccc acaaccctc actcggggcg	420
ccagtcctcc gattgactga gtcgcccgt taag	454

<210> 44
 <211> 1349
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> EF1alpha promoter

<400> 44	
ttaattaaga gtaattcata caaaaggact cgccccctgcc ttggggaatc ccagggaccg	60
tcgttaaact cccactaacg tagaaccag agatcgctgc gttcccgccc cctcaccgcg	120
ccgctctcgt catcactgag gtggagaaga gcatgcgtga ggctccgggtg cccgtcagtg	180
ggcagagcgc acatcgccca cagtccccga gaagttgggg ggaggggtcg gcaattgaac	240
cggcgcctag agaaggtggc gcggggtaaa ctgggaaagt gatgtcgtgt actggctccg	300
cctttttccc gaggggtgggg gagaaccgta tataagtgc gtagtcgccg tgaacgttct	360
ttttcgcaac ggggttgccg ccagaacaca ggtaagtgcc gtgtgtgggtt cccgcgggcc	420
tggcctcttt acgggttatg gcccttgctg gccttgaatt acttccacgc ccctggctgc	480
agtacgtgat tcttgatccc gagcttcggg ttggaagtgg gtgggagagt tcgaggcctt	540
gcgggttaagg agccccctcg cctcgtgctt gagttgaggc ctggcttggg cgctggggcc	600
gccgcgtgcg aatctgggtg caccttcgcg cctgtctcgc tgctttcgat aagtctctag	660
ccatttaaaa tttttgatga cctgctgcga cgcttttttt ctggcaagat agtcttgtaa	720
atgcggggcca agatctgcac actggtatatt cggttttttg ggccgcgggc ggcgacgggg	780
cccgtgcgtc ccagcgcaca tggtcggcga ggccggggcct gcgagcgcgg ccaccgagaa	840
tcggacgggg gtagtctcaa gctggccggc ctgctctggt gcctggcctc gcgccgccgt	900
gtatcgcccc gccctgggcg gcaaggctgg cccggctggc accagttgcg tgagcgga	960
gatggccgct tcccggccct gctgcaggga gctcaaaatg gaggacgcgg cgctcgggag	1020

agcgggcggg tgagtcaccc acacaaagga aaagggcctt tccgtcctca gccgtcgctt	1080
catgtgactc cacggagtac cgggcgccgt ccaggcacct cgattagttc tcgagctttt	1140
ggagtacgtc gtcttttaggt tggggggagg ggttttatgc gatggagttt cccacactg	1200
agtgggtgga gactgaagtt aggccagctt ggcacttgat gtaattctcc ttggaatttg	1260
ccctttttga gtttggatct tggttcattc tcaagcctca gacagtgggtt caaagttttt	1320
ttcttccatt tcaggtgtcg tgacttaag	1349

<210> 45
 <211> 345
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> SV40 enhancer promoter

<400> 45	
gctgtggaat gtgtgtcagt taggggtgtgg aaagtcccca ggctccccag caggcagaag	60
tatgcaaagc atgcatctca attagtcagc aaccaggtgt ggaaagtccc caggctcccc	120
agcaggcaga agtatgcaaa gcatgcatct caattagtca gcaaccatag tcccgccctt	180
aactccgccc atcccgcccc taactccgcc cagttccgcc cattctccgc cccatggctg	240
actaattttt tttatttatg cagaggccga ggccgcctcg gcctctgagc tattccagaa	300
gtagtgagga ggcttttttg gaggcctagg cttttgcaaa aagct	345

<210> 46
 <211> 481
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HGH polyA

<400> 46	
gacgggtggc atccctgtga cccctcccca gtgcctctcc tggccctgga agttgccact	60
ccagtgccca ccagccttgt cctaataaaa ttaagttgca tcattttgtc tgactaggtg	120
tccttctata atattatggg gtggaggggg gtggatatgga gcaaggggca agttgggaag	180

acaacctgta gggcctgcgg ggtctattgg gaaccaagct ggagtgcagt ggcacaatct	240
tggtcactg caatctccgc ctctgggtt caagcgattc tcctgcctca gcctcccgag	300
ttgttgggat tccaggcatg catgaccagg ctcagctaata ttttgTTTTT ttggtagaga	360
cggggTTTca ccatattggc caggctggtc tccaactcct aatctcaggt gatctacca	420
ccttggcctc ccaaattgct gggattacag gcgtgaacca ctgctccctt ccctgtcctt	480
t	481