

SEQUENCE LISTING

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 <120> Novel murine parvovirus and uses thereof
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<212> PRT
<213> Murine Kidney Parvovirus

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20           25           30

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Glu Ile Ile Ser Pro Glu Asn Leu Lys Gln Ile Met Leu Asn Trp Asp
35           40           45

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Ser Arg Val Trp Gln Ala Cys Val Leu Gly Ile Trp Asp Thr Val Pro
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Val Arg Asp Pro Arg Pro Tyr Cys Phe Leu Leu Thr Asn Ile Pro Ser
 65 70 75 80

Val Lys Lys Trp Leu Ile Cys Ala Glu Glu Asp Ser Asn Glu Gln Thr
 85 90 95

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

Arg Thr Leu Glu Lys Thr Trp Lys Gln Val Ala Ile Val Ala Met Ser
 115 120 125

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

Cys His Lys Pro Ser Ser Leu Leu Ala Tyr Met Ala Lys Asp Pro His
 145 150 155 160

Trp Ile Ala Ala Asn Asp Met Gln Thr Leu Gly Ile Phe Glu Ser Val
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Tyr Ala His Asp Trp Gly Gln Arg Phe Arg Glu Lys Gln Thr Leu Asp
 180 185 190

Lys Ala Lys Lys Thr Asp Pro Thr Thr Ser Gln Met His Thr Ile Thr
 195 200 205

Ala Glu Ile Thr Glu Val Ile Met Gln His Asn Cys Lys Ser Val Glu
 210 215 220

Asp Cys Met Lys Ala Ala Pro Thr Val Ile Ala Lys His Leu His Arg
 225 230 235 240

Ala Gly Leu Gly Thr Ile Ile Gln Asn Cys Ile Ser Trp Val Thr Ala
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Thr Gly Gly Gly Trp Ser Leu Pro Ser Ile Gly Ala Lys His Pro Pro
 260 265 270

Glu Pro Glu Ala Ile His Thr Ile Leu Leu His Gln Gly Ile Ser Pro
 275 280 285

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

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

Asn Ser Asn Thr Phe Ala Phe Glu Ala Leu Ile Asn Ala Gln Leu Gly
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Val Trp Glu Glu Pro Leu Ile Ser Pro Glu Leu Ala Glu Lys Ala Lys
355 360 365

Gln Ile Phe Glu Gly Met Glu Thr Ser Ile Pro Val Lys Tyr Arg Lys
370 375 380

Pro Val Lys Leu Pro Arg Ile Pro Ile Ile Ile Thr Thr Asn His Ala
385 390 395 400

Pro Trp Arg Phe Cys Thr Lys Glu Glu Glu Met Phe Arg Asn Arg Met
405 410 415

Tyr Ile Phe Thr Trp Ser Gln Asn Met His Asp Thr Pro Phe Ile Cys
420 425 430

Arg Ala Ser Glu Tyr Ser Cys Gln Cys Arg Val Cys Gln Thr Ser Arg
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Gly Gly Gln Ala Cys Ala Gly Gly Gln Ser Ala Gly Ser Leu Gln Arg
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Lys Glu Gln Ser Val Ser Glu Leu Val Gln Pro Glu Pro Ser Ser Ser
465 470 475 480

Tyr Val Ser Thr Arg Ser Leu Pro Val Ser Arg Glu Glu Thr Pro Leu
485 490 495

Pro Ala Ala Glu Gly Leu Gly Ser His His Gln Arg His Cys Ser Ser
500 505 510

Pro Gly Gly Glu Ser Ile Glu Arg Thr His Ser Pro Arg Pro Ser Cys
515 520 525

Ser Thr Gly Ser Ser Thr Ser Asp Ser Leu Arg Pro Ser Gly Glu His

530 535 540
 Arg Ser Ser Asp Pro Gly Ala Gly Ile Ser Cys Ser Phe Ser Gly Ser
 545 550 555 560
 Leu Glu Cys Val Glu Ser Pro Leu Ser Gly Gly Asp Asp Gly Asp Asp
 565 570 575
 Leu Pro Arg Asp Arg Met Gly Glu Pro Thr Ser Pro Asp Ser Ser Thr
 580 585 590
 Gly Ser Ser Asp Ile Ser Arg Pro Arg Gly Lys Arg Arg His Ser Gln
 595 600 605
 Glu Met Val Val Leu Gly Glu Thr Gln Ser Lys Lys Thr Arg Asp Gln
 610 615 620
 Val Ser Thr Ala Val Thr Gly Met Gly Arg Asp Leu Gly Thr Leu Asn
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His Tyr Gly

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 Gly Leu Ser Glu Ala Thr Arg Gly Ala Gln Glu Asp Val Pro Asp Leu
 35 40 45
 Thr Glu Pro Asp Thr Pro Asp Ser Ala Asp Ser Ser Ala Ala Lys Arg
 50 55 60
 Pro Arg Leu Glu Gly Glu Gly Gly Glu Ser Glu Ser Asp Ser Val Pro
 65 70 75 80

Ser Leu Glu Gly Ser Pro Thr Ala Glu Glu Leu Val Asn Ile Ala Ala
85 90 95

Asn Ala Ala Phe Val Lys Gln Val Glu Ala Ala Arg Leu Val Leu Val
100 105 110

Gly Asn Gln Leu Ala Ala Cys Arg Glu Arg Asn Asn Pro Phe Gln Asn
115 120 125

Trp Phe Ser Pro Asn Pro Arg Gln Ala Met Phe Gln Pro Asp Pro Cys
130 135 140

Leu Tyr Leu Glu Lys Lys His His Tyr Leu Gln Gln Lys Val Ser Gly
145 150 155 160

Ala Thr Thr Ser Asp Ile Ala Ala Val Gln Glu Gly Ser Arg Ser Asn
165 170 175

Ala Pro Thr Ala Gln Asp Leu Ala Ala Ala Pro Ala Pro Gln Leu Ala
180 185 190

Thr Ala Tyr Asp Pro Val Gly Asn Thr Asp Pro Ala Ile Pro Glu Gln
195 200 205

Glu Tyr His Val Pro Ser Pro Gly Ala Leu Ser Val Trp Ser Pro Leu
210 215 220

Ser Leu Glu Glu Thr Met Glu Met Ile Ser Gln Glu Ile Glu Trp Glu
225 230 235 240

Asn Leu Gln Ala Gln Ile Ala Arg Gln Val Ala Gln Ile Leu Ala Asp
245 250 255

Leu Glu Glu Asn Ala Asp Ile Ala Lys Lys Trp Trp Cys Trp Gly Lys
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Pro Lys Ala Lys Lys His Gly Ile Arg Phe Gln Pro Pro Ser Gln Ala
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Trp Val Gly Ile Trp Ala Pro
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Glu Cys Thr Phe Ser Pro Gly Leu Lys Ile Cys Met Ile His His Leu
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Phe Ala Glu Leu Val Asn Ile Ala Ala Asn Ala Ala Phe Val Lys Gln
35          40          45

Val Glu Ala Ala Arg Leu Val Leu Val Gly Asn Gln Leu Ala Ala Cys
50          55          60

Arg Glu Arg Asn Asn Pro Phe Gln Asn Trp Phe Ser Pro Asn Pro Arg
65          70          75          80

Gln Ala Met Phe Gln Pro Asp Pro Cys Leu Tyr Leu Glu Lys Lys His
85          90          95

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

Ala Val Gln Glu Gly Ser Arg Ser Asn Ala Pro Thr Ala Gln Asp Leu
115         120         125

Ala Ala Ala Pro Ala Pro Gln Leu Ala Thr Ala Tyr Asp Pro Val Gly
130         135         140

Asn Thr Asp Pro Ala Ile Pro Glu Gln Glu Tyr His Val Pro Ser Pro
145         150         155         160

Gly Ala Leu Ser Val Trp Ser Pro Leu Ser Leu Glu Glu Thr Met Glu
165         170         175

Met Ile Ser Gln Glu Ile Glu Trp Glu Asn Leu Gln Ala Gln Ile Ala
180         185         190

Arg Gln Val Ala Gln Ile Leu Ala Asp Leu Glu Glu Asn Ala Asp Ile
195         200         205

Ala Lys Lys Trp Trp Cys Trp Gly Lys Pro Lys Ala Lys Lys His Gly
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Ile Arg Phe Gln Pro Pro Ser Gln Ala Trp Val Gly Ile Trp Ala Pro
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Ala Phe Val Lys Gln Val Glu Ala Ala Arg Leu Val Leu Val Gly Asn
 20 25 30

Gln Leu Ala Ala Cys Arg Glu Arg Asn Asn Pro Phe Gln Asn Trp Phe
 35 40 45

Ser Pro Asn Pro Arg Gln Ala Met Phe Gln Pro Asp Pro Cys Leu Tyr
 50 55 60

Leu Glu Lys Lys His His Tyr Leu Gln Gln Lys Val Ser Gly Ala Thr
 65 70 75 80

Thr Ser Asp Ile Ala Ala Val Gln Glu Gly Ser Arg Ser Asn Ala Pro
 85 90 95

Thr Ala Gln Asp Leu Ala Ala Ala Pro Ala Pro Gln Leu Ala Thr Ala
 100 105 110

Tyr Asp Pro Val Gly Asn Thr Asp Pro Ala Ile Pro Glu Gln Glu Tyr
 115 120 125

His Val Pro Ser Pro Gly Ala Leu Ser Val Trp Ser Pro Leu Ser Leu
 130 135 140

Glu Glu Thr Met Glu Met Ile Ser Gln Glu Ile Glu Trp Glu Asn Leu
 145 150 155 160

Gln Ala Gln Ile Ala Arg Gln Val Ala Gln Ile Leu Ala Asp Leu Glu
 165 170 175

Glu Asn Ala Asp Ile Ala Lys Lys Trp Trp Cys Trp Gly Lys Pro Lys
 180 185 190

Ala Lys Lys His Gly Ile Arg Phe Gln Pro Pro Ser Gln Ala Trp Val
 195 200 205

Gly Ile Trp Ala Pro
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<213> Murine Kidney Parvovirus

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His Thr Met Ser Ala Gly Ala Ile Asn Thr Gly Trp His Ile Ile Pro
35 40 45

Thr Ile Leu Trp Lys His Phe Leu Thr Pro Lys Gln Trp Thr Glu Phe
50 55 60

Thr Ile Asn Tyr Glu Ala Tyr Thr Val Lys Gly Tyr Ser Cys Thr Ile
65 70 75 80

Tyr Asn Pro Ile Pro Met Thr Gln Gln Leu Ala Ile Gln Gly Thr Thr
85 90 95

Ala Phe Thr Ala Phe Asn Asn Thr Ile Tyr Thr Leu Gly Ala Gln Asp
100 105 110

Asp Leu Tyr Glu Thr Ala Tyr His Asn Trp Tyr Ser Asp Asp Ser Thr
115 120 125

Gly Asp Tyr Lys Ala Phe Asn Leu Ser Phe Lys Glu Gly Gln Tyr Lys
130 135 140

Asn Leu Ser Gly Ser Trp Lys Lys Thr Ile Trp Pro Ile Tyr Ser Trp
145 150 155 160

Arg Thr Glu Asn Ala Arg Asn Ala Ser Ser Ser Thr Tyr Ser Tyr Leu
165 170 175

Asn Gly Ile Asp Ser Tyr Ala Val Trp Pro Arg Thr Lys Asp Lys Glu
180 185 190

Leu Ile Pro Thr Gly Val Phe Trp Asp Pro Leu Asn Asp Ala Asn Gly
195 200 205

Ile Leu Glu Leu Arg Pro Gly Lys Asn Ser Met Ser Phe Ser Trp Glu
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Gln His Pro Cys Asp Glu Asn Lys Trp Phe Asn Ile Asp Gln Ile Ala
 225 230 235 240

Lys Trp Phe Pro Tyr Thr Val Asp Thr Pro Tyr Leu Asn Pro Gln Thr
 245 250 255

Tyr Gly Pro Pro Gly Ser Tyr Lys Leu Tyr Gly Glu Asp Asp Pro Asp
 260 265 270

Gln Leu Thr Thr Pro Ser Ser Trp Thr Ala Tyr Ser Ala Lys Asn Asp
 275 280 285

Tyr Thr Ile Pro Asn Leu Leu Asp Met Pro Ile Val Pro Met Gln Trp
 290 295 300

Phe Trp Gln Glu Ile Gln Lys Ser Ile Ala Glu Val Pro Asp Val Lys
 305 310 315 320

Lys Pro Met Leu Tyr Trp Ala Gly Thr Glu Tyr Glu Cys Tyr Lys Tyr
 325 330 335

Gly Pro Thr Gln Cys Phe Leu Lys Gly Ile Pro Leu Phe Asp Asp Asn
 340 345 350

Asp Thr His Val Ala Thr Thr Thr Gln Gly Cys Phe Arg Ile Ser Leu
 355 360 365

His Leu Ala Gly Lys Lys Arg Arg Ser Arg Ile Tyr Ala Pro Thr Trp
 370 375 380

Gly Pro Leu Ser Trp Arg Gln Cys Tyr Ala Thr Asp Thr Pro Phe Ala
 385 390 395 400

Pro Ser Met Val Arg Tyr Arg Thr Gly Gly Ala Arg Arg Thr Trp Thr
 405 410 415

Asn Ile Asn Arg Asp Ala Glu Gly Val His Lys Asp Phe His Tyr Arg
 420 425 430

Glu Asp Pro Tyr Asp Ile Thr Ser Thr Val Pro Asp Thr Arg Gly Thr
 435 440 445

Ala Thr Val Thr Asp Ser Lys Ala Thr Met His Pro Tyr Glu Gln Ala
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Ala Ser Gly Met Tyr Leu Asn His Lys Glu Met Arg Gln Val Arg Ala
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<213> Murine Kidney Parvovirus

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 <211> 723
 <212> DNA
 <213> Murine Kidney Parvovirus

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 ctggcagctt gcagagaaaag gaacaatccg tttcagaatt ggttcagccc gaaccctcgt 240
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 taa 723

<210> 12
 <211> 688
 <212> DNA
 <213> Murine Kidney Parvovirus

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ggcatgggta gggatctggg caccttaa 688

<210> 13

<211> 1491

<212> DNA

<213> Murine Kidney Parvovirus

<400> 13

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aatactggat ggcatataat cccgactatc ctctggaaac atttcctcac acccaagcaa	180
tggacagaat tcactattaa ttatgaagca tatacagtta aaggatattc ctgcaccata	240
tataatccta ttcttatgac acaacagctg gcaatccaag gcactaccgc tttcactgct	300
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<210> 14
<211> 18
<212> PRT
<213> Murine Kidney Parvovirus

<400> 14

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Leu Ala