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Novel Amdovirus in Gray Foxes

Technical Appendix

Splice donor site			Branch site		Splice acceptor site		
A/C AG GT Pu AGT			PuAPy	Py ri	ch 👔	AG G]
	4	— I	ntron —			→	
NS1	AAATGGCTAA	GTACATO	GGGATACTT	'TAC <mark>AG</mark>	GAGA	GACTAC	:
NS2	AAGACCTAAG	GTTAGTO	GTTCTACTT	TACAG	GAGA	GACTAC	:
NS3	AAGACCTAAG	GTTAGTO	GTTCGCAAT	CAAAG	GAGT	CACAGI	!
VP1	ATGAGTAAAA	GTAAGC	AACCTTTAC	TTTAG	TTCC	TCAGCA	

Technical Appendix Figure 1. Nucleotide sequence around the predicted RNA splicing sites in the gray fox amdovirus genome. Splice donor and receptor are shown in pink boxes. NS, nonstructural; VP, viral protein.

GFADV AMDV MVM BPV AAV2	1 MAQAQIAEQKIEQALFEQEKKEIADGEGLAWEFQQKAYTDGDNKPTKETPPLRTTSEDLRLVFDSIEEN
GFADV	72 SNTDCUSNNENNFCKLTLGKTUSSUDKHIKSHRWNANNLQFIWQVEKGKTKHLHTHCLVGYSDSTADKKDISKS
AMDV	72 ASNEHITNNETNFCKLTLGKTULITDKHVKSHRWDSNKVNLIWQIEKGKTQQFHTHCCLGYFDKNEDFKDVQKS
MVM	81 NENVQUNGKDUGWNSYKKELQEDEUKSUQRGAETTWDQSEDMEWETTVDEMTKKQVFUFDSLVKKCLFEVLNTKNIFPGD
BPV	69
AAV2	59
GFADV AMDV MVM BPV AAV2	146 LSWFIKKINGELATIWSNHHCTLODIGRPEDR - QQNLNVWLQDGITKPYKYFNGQTRQEYNKQVNLREYHLIYLEDGNNG 146 LGWEMKRLNKDLAVIYSNHHCDIQDIGDPEDR - AKNLKVWIEDGPTKPYKYFNGQTKQDYNKPVHLRDYFFIYLENKDK 161 VMEVQHEWGKDQGWHCHVFIGGKDFSQAQGKWWRRQLNVYWSRWLVTACNVQLTPAERIKLREIAEDNEWVTLLTYKHK 69 GTLVAQAINGTEFTTYMLPKNR
GFADV	224 INEKGMDGYFAAGNGGFIDNMTEKERKIMRKMYLDEQCSDMADDSQDWDDSQEPPKTEPPKVTTETISNVTYVDSAVVQP
AMDV	224 INTDSMDGYFAAGNGGIVDNLTNKERKTIRKMYLDEQSSDIMDANIDWEDGQDAPKVTDQTDSATTKT
MVM	241 QMKKDYTKCVLFGNMIAYYFITKKKISTSPPRDGGYFISSDSGWKTNFLKEGERHVSKL
BPV	110 STWGKTYGFAVCNGETVSEFTRKDLWKVTYNIYTAHPAENMLNSNLKEGEPSV
AAV2	137 TRNGAGGGNKVVDECYIPNYLLPMTQPELQWAWTNMEQYLSACLNLTERKRLVAQ
GFADV	304 GUSTIWASCSTKATKPKTITETAKQPSKKLTTAKSTLDSLFDIGCFTPEDMILKLSDTYLELSLEANGTNKILTLLHMNQ
AMDV	292 GUSLIWKSCATKVTSKKEVANPVQQPSKKLYSAQSTLDALFNVGCFTPEDMIKQSDKYLELSLEPNGPQKINTLLHMNQ
MVM	301 YDDMRPETVETTVTTAQETKRGRIGTKKEVSIKTTLKELVHKRVTSPEDWMMMQPDSYLEMMAQPGCENLIKNTLEICT
BPV	158 WGDLPRVSANRIDADDAEARSRPIKLSRKQKIMAEVIQRATDGLLLTYNDLVVHLSDLMLMGEGPGGSKTAEQIITMIH
AAV2	192 HLTHVSQTQEQNKENQNPNSDAPVIRSKTSARYMELVGWIVDKGITSEKQWIQEDQASYISFNAASNSRSQIKAALDNAG
GFADV	384 VETASILNAFECIMKFNDDEDEKPLINIINQMELMEKVLKNIIATVLTKOS <mark>GKRG</mark> IWFYGEGGTGKT
AMDV	372 VETSTMITAFDCIIKFNEEEDDKPLLATIKDMELNEQYLKKVLCTILTKOCGKRGIWFYGEGGTGKT
MVM	381 LTLARTKTAFDLILEKAETSKLTNFSLPDTRTCRIFAFHEMNYVKVCHAICCVLNROCGKRNTVLEHGPASTGKS
BPV	238 IELCAKYNAYEFMLMKTPATQNMNPGAPHYDCQGNLVFKLLNLOGYNPWQVGHWLVMMLSEKTGKRNTLFYGFASTGKT
AAV2	272 KIMSLTKTAPDYLVGQQPVEDISSNRIYKTLELNGYDPQYAASVFLGWASVFLGWR
GFADV	452 LLANLICTAVKNEGMVITSNONFEWTDCGNRNMIWLEECGNLGNFIEDEKAITGGGDIKVDTKNKQPQAIKG-VTVITSN
AMDV	440 LLASIICKATVNYGMVITSNPNFPWTDCGNRNIIWAEECGNFGNWVEDEKAITGGGDVKVDTKNKQPQSIKG-CVIVITSN
MVM	456 IIAQAIAQAVGNVGCYNAANVNEPENDCTNKNLIWVEEAGNFGQQVNQEKAICSGQTIRIDQKGKGSKQIEETEVIMTTN
BPV	318 NLAKAICHAVGLYGCVNHNNKOFPENDCTNKNLIWWEECIMTTDYVEAAKCVLGGTHVRVDVKHKDSRELPQIPVILSSN
AAV2	342 NLAEAICHAVGLYGCVNWTNENFFENDCVDKWVIWWEEGKMTAKVVESAKAILGGSKVRVDQKCKSSAQIDFTPVIVTSN
GFADV	531 KDITKVTIGAVETNVHSEPLKQRIVKIRCVKTINPTTKITP
AMDV	519 TNITKVTVGCVETNAHAEPLKQRMIKIRCVKTINPKTKITP
MVM	536 ENITYVRIGCEERPEHTQPIRDRMINIHLTHTIPGDEGLVDK
BPV	398 HDVYTVVGGNATFGVHAAPLKERITQMNFMKQLPNTFGEITPGMISNWLSHCAHIHQEHLSLEGFAIKWDVQSVGNSFPL
AAV2	422 TNMCAVIDGNSTFFHQQPLQDRMFFFELTRRLDHDFGKVTK
GFADV	572 GMLKKW LSTWEG KPTQENHEMENLYRSK
AMDV	560 GMLKRW LNTWDR QPIQLSHEMPELYLGKCRW
MVM	599 YCAKWGKVPDM SENWAEPKVPTPINLGSARSPFTTPKSTPLSQN
BPV	478 QTLCPGHSQNWTFSENGVCWHCGGFIQPTPESDID SDGDDPDDGAVAGD SDTSANSESTVSFSSNDSGLGSVTSSAPSVP
AAV2	485 YVKKGGAKKRP
GFADV AMDV MVM BPV AAV2	644
GFADV AMDV MVM BPV AAV2	686 QDGQLSPTWSEIEEDLR 638 EPWDGTQPITEGDWIDFESRQKRRRLEREEKGGEDEDMEVQESDPSAWGEKLGIVEKPGEEPIVLYCFETLPESDEEGDS 572 FPVSESQPVSVVKKAYQKLCYIHHIMGKVPDACTACDLVNVDLDDCIFEQ
GFADV AMDV MVM BPV AAV2	718 DKENKTHTV

Technical Appendix Figure 2. Conservative domain in the left open reading frame of gray fox amdovirus and representative parvoviruses. GKRN region is marked in red.

GFADV AMDV MVM BPV AAV2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
GFADV AMDV MVM BPV AAV2	1
GFADV AMDV MVM BPV AAV2	26 KKKQHSNPAVSHQEDTIEEMDSNETEQMDISEQQ-QVAEHGGGVGKSTGGFNNTTEEKVTNN-EVII 38 KKKQ-TNPAVYHGEDTIEEMDSTEAEQMDTEQATNQTAEAGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
GFADV	91 TCNATRVHINQASTDEVLIFNAGRE ID-KTPKGSLNLEFFMFDDFHQQVMTPWFLVDSNAWGVMMSFKDFQQMKVLCSE
AMDV	116 TCHATRMVHINQADTDEVLIFNAGRTDTKTHQQKLNLEFFVYDDFHQQVMTPWYIVDSNAWGVMMSFKDFQQMKTLCSE
MVM	206 TALATRLVHUNMPKSENYCRIRVHNTTDTSVKGNMAKDDAHEQIWTPWSLVDANAWGVWLQFSDWGYICNTMSQ
BPV	195 VVTKNTRQFTCDIKNGHLYKSEVLNTGDTAHRQYAITTPWSYFNFNQYSSHFSFNDWQHLVNDYER
AAV2	239 VITTSTRTWALPTYNNHLYKQISSQSGASNDNHYFGYSTFWGYFDFNCHFSPRDWQRLINNNWG
GFADV	170 IELVSLEQEIDNVVIKTVTETTQGGTSVIQ <mark>YNN</mark> DLTASLQVALDTNNILPYTPAAPLQETLGEVPWRATKPTQYRYYHPS
AMDV	196 ISLVTLEQEIDNVTIKTVTETNQGNASTKOPNNDLTASLQVALDTNNILPYTPAAPLGETLGFVPWRATKPTQYRYYHPC
MVM	280 LNLVSLDQEIPNVVIKTVTEQDLGGQAIKIYNNDLTACMMVAVDSNNILPYTPAANSMETLGFYPWRPTIASPYRYY
BPV	261 FRPKAMIVRVYNLQTKQIMTDGAMGTVYNNDLTAGMHIFCDGDHRYPYVQHPWDDQCMPELPNSTWELPQYAYIPAP
AAV2	306 FRPKR <mark>L</mark> NFKLFNIQVKEVTQNDGTTTIANNLTSTVQVFTDSEYQLFSAQGCLPPFPADVFMVPQYGYLTLN
GFADV	250 YIYNRYPNIQKKSQEQSTYTAIQDDYFSVDQDYENFITTENNNPHEILRTGDNEHTGRYEFKSKPCKLTMSYQSTRCLGL
AMDV	276 YIYNRYPNIQKVATETLTWDAVQDDYLSVDEQYENFITTENNIPHNILRTGDNEHTGLYEFNSKPCKLTLSYQSTRCLGL
MVM	357 FCVDRDLSVTYENQEGTVEHNVMGTPKGMNSQFE TIENTQQHTLLRTGDEEATGTYYEDTNSVKLTHTWQTNRQLGQ
BPV	338 ISVVDN-NTTNTVEEHLLKGVPLYMLENSDHEVLRNGRIYR-HYDQWRLRMDRKQ - HHIQHASDDVQSTGQKQKNLLI
AAV2	382 NGSQAVGRSSFYCLEYFPSQMLRTGNNFTFSYTEEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTNTPEGTTTQSRLQ
GFADV AMDV MVM BPV AAV2	330 PPLCKPKTDT-KLVTSLENGGEMDCYVEGQQHTRKCHFMGEEKAEKNTEINRVRPYNTGYQFPEWIVPAGLQGSYFTG 356 PPLCKPKTDTTHKVTSKENGADL-IYIQGQDNTRLCHFMGEERGKNABMNRIRPYNIGYQYPEWIIPAGLQGSYFAG 434 PPLLSTFPEADTDAGTITAQGSRHGTTQMGVNWVSEAIRTRPAQVGFCQPHNDFEASRAGPFAAP 414 QRTKQDNXQRFQNAALR
GFADV AMDV MVM BPV AAV2	407 GPRQWSDTTKGAGTHSQTVQQNFSTRYVFDRNHGGDNQVDTIDSIPIQERGKYYSEQELQQATTLTATNKAQTGKKWE 433 GPRQWSDTTKGAGTHSQHLQQNFSTRYTYDRNHGGDNEVDLLDGIPIHERSNYYSDNEIEQHTAKQPKLRTPPIHHSKID 499KVPADITQGVDKEANGSVRYSYGKOHGENWASHGPAPERYTWDETSFGSGRD
GFADV	485 SWEEEGWPAASGTHFEDEVLYFDYFNFSGETTKNFPQEVLSDGLQMKKLLNAYQPTVGQDDVGPVYPWG <mark>QIWD</mark> KKPDMDH
AMDV	513 SWEEEGWPAASGTHFEDEVIYLDYFNFSGEQELNFPHEVLDDAAQMKKLLNSYQPTVAQDNVGPVYPWG <mark>QIWD</mark> KKPDMDH
MVM	551TKDGEIQSAPLVVPPPLNGILTNANPIGTKND-IHFSNVFNSYGPLTAFSHPSPVYPQGQIWDKELDLEH
BPV	505QQNPILENAARHTFTEBARTKLITGSNGADGDYKEWWMDPNQMWDSAPISRYNPTWVKVPRVNR
AAV2	564EIRTTNPVATEQYGSVSTNLQRGNRQAATADVNTQGVLPGMVWQDRDVYLQ <mark>PIWA</mark> KIPHTDG
GFADV	565 KPSMNYNAPFVCKNNPPGQLLVKLTENLTDKFN-YDEDPDRIKTYGYETMRGKLTLRGKLGQTSCNNPVKRERIGEPG
AMDV	593 KPSMNNNAPFVCKNNPPGQLFVKLTENITDTFN-YDENPDRIKTYGYETMRGKLVLKGKLSQVTCNNPVKRELIGEPG
MVM	620 KPRLHITAPFVCKNNAPGQMLVRLGPNLTDQYDPNGATLSRIVTYGTEPMKGKLTMRAKLRANTTNNPVYQVSAEDNG
BPV	569 KTLLDTQDGSIPMSHPPGTIFIKLARIPVPGNGDSFLNIYVTGQVSCEVVWEVEKRGTKNMRPEYMHSATNMS
AAV2	627 HFHPSPLMGGFGLKHPPPQILIKNTPVPANPSTTFSAAKFASFTQYSTGQVSVEIEWELQKENSKRNNPEIQYTSN
GFADV	642 VFSKENYHKQIENNRGNFEIGIQYGRSTVKYLY
AMDV	670 VFTKDKYHKQIENNKGNFEIGLQYGRSTIKYIY
MVM	698 NSYMS-VTKWLETATGNMQSVPLITRPVARNTY
BPV	642 VDAYTINNAGVYAGAVQNADVM©TRFNHHKVI-
AAV2	704 YNKSVNVDFTVDTNGVYSEPRPIGTRYLTRNI-

Technical Appendix Figure 3. Conservative domains in the right open reading frame of gray fox amdovirus and representative parvoviruses. PGY region (putative phopholipases A2 domain) is marked in blue and TPW, YNN, and PIW region are marked in red.

GFADV M20036 X77084 X77085	1 MAQAQIAEQKILQALFEQLKKEIADGEGLAWLFQQKAYTDGDNKFTKETPPLRTTSEDLRLVFDSIEENIKSNTDCL 1 MAQAQIDEQRRLQDLYVQLKKEINDGEGVAWLFQQKTYTDKDNKFTKATPPLRTTSSDLRLAFDSIEENIKSNTDCL 1 MAQAQIDEQRRLQELFEKFKTEVADGEGLAWLFQQKTYTDKDNKFTKATPPLRTTSTDLRLAFDSIEETLKTSNQCL 1 MAQAQLDEQKRLQDLYTQLKKEVADGEGLAWLFQQKTYTDKDNKFTKATPPLRTTSSDLRLAFDSIEETLIASNEWL	TNN TNN
GFADV M20036 X77084 X77085	81 EINFCKLTLGKTLV <mark>SLDKHI</mark> KSHRW <mark>NANNLO</mark> FIWQVEKGKTKHLHIHGLVGYSDSTADKKDISKSLSWFIKKINKEL 81 EINFCKLTLGKTLELIDKHVKSHRWDSNKVNLIWQIEKGKTQOFHIHCCLGYFDKNEDPKDVQKSLGWFMKRLNKDL 81 DINFCKLTLGKTLVLLDKHVRSHRWDANKVNFIWQVEKGKTQOFHIHCCLGYFDKDEDSKDVQKSLGWFIKKLNKDL 81 EINFCKLTLGKTLVLVDKHVKSHRWDANKVNFIWQVEKGKTQHFHIHCCLGYFDKDEDSKDVQKSLGWFIKKLNRDL	AVI AVI
GFADV M20036 X77084 X77085	61 WSNHHCTTQDIKEPEDRQQNLNVWLQDGITKPYKYFNKQTRQEYNKOVNLREYTLIYLFDKNKITEKGMDGYEAAGN 61 YSNHHCDIQDIKDPEDRAKNLKVWIEDGPTKPYKYFNKQTKQDYNKPYHLRDYTFIYLFNKDKINTDSMDGYEAAGN 61 WSNHHCDIGGIODSDGRADNLKIWIEDGPTKPYKYFNKQTKQDYNKPFNLRDYTLIYLFNKDKITCEGMDGYYASGN 61 FSNHHCDGQDIKDFEAKANNLKVWIEDGPTKPYKYFNKQTKQDYNKPTLSVYTIYLFNKDKIHKEGMDGYYASGN	GGI GGI
GFADV M20036 X77084 X77085	41 IDNMTEKERKIMRKMYLDEQCSDMADDSQDWDDSQEPPKTEPPKVTTETISNVTYVDSAVVQPGTSTIWASCSTKAT 41 VDNLTNKERKTLRKMYLDEQSSDIMDANIDWEDGQD APKVTDQT DSATTKTGTSLIWKSCATKVT 41 IDNLTNKERKALRKMYLDEQSQGIDDEDIDWEDSQS APKVTDQT DSATSKTGTSLVWKSCATKVT 41 IDNLTNKERKALRKMYLDEQSSDIMDADIDWEDGQD APKVTDQT DSATSKTGTSLIWKSCATKVT	SKK SKK
GFADV M20036 X77084 X77085	21 TITETAKQPSKKLTTAKSTLDSLFDIGCFTPEDMILKLSDTYLELSLEANGTNKILTLLHMNQVKTASILNAFECIM 09 EVANPVOQPSKKLYSAQSTLDALENVGCFTPEDMIIKQSDKYLELSLEPNGPQKINTLLHMNQVKTSTMITAFDCII 09 EVAIPVKQPSKKMTSAQNTLDDLYMFGCFTPEDMILKMSDRYLEMSLEPNGPQKINTLLHMNQVKTSTMITAFDCII 09 EVANPVQQPSKKLYSAQNTLDALFNVGCFTPEDMIIKQSDKYLELSLEPNGPQKINTLLHMNQVKTSTMMTAFDCII	KFN
GFADV M20036 X77084 X77085	01 DDEDEKPLINIINQMGLNEKVLKNIIATVLTKQSGKRGCIWFYGPGGTGKTLLANLICTAVKNEGMVTTSNQNFPWT 89 EEEDDKPLLATIKDMGLNEQYLKKVLCTILTKQGGKRGCIWFYGPGGTGKTLLASLICKATVNYGMVTTSNPNFPWT 89 EEEDEKPLLDTIKDMGLNEQHLKKVLCTILTKQGGKRGCWFYGPGGTGKTLLASLICKAVNYGMVTTSNPNFPWT 89 EEEDDKPLLATIKDMGLNEQYLKKVLCTILTKQGGKRGCIWFYGPGGTGKTLLASLICKATVNYGMVTTSNPNFPWT	DCG
GFADV M20036 X77084 X77085	81 NRNMIWLBECGNLGNFIEDFKAITGGGDTKVDTKNKQPQAIKGVTVITSNKDITKVTIGAVETNVHSEPLKQRIVKI 69 NRNIIWAEECGNFGNWVEDFKAITGGGDVKVDTKNKQPQSIKGCVIVTSNTNITKVTVGCVETNAHAEPLKQRMIKI 69 NRNIIWAEECGNIGNYVEDFKAITGGGDVKVDTKNKQPQSIKGCVIVTSNTNITKVTVGCVETNVHAEPLKQRMVKI 69 NRNIIWAEECGNLGNWVEDFKAITGGGDVKVDTKNKQPQSIKGCVIVTSNTNITKVTVGCVETNAHAEPLKQRMIKI	RCM RCM
GFADV M20036 X77084 X77085	61 KTINPHTKITPGMLKKWLRETTGANYPYTSAEKNTGFLQPSTAESAGGANTTKSDTQRK 49 KTINPKTKITPGMLKRWLNTWDROPIOLSHEMPELYLETTGPNSSATTATKNTGNSQPTTAKSAESVNTENCDTPKR 49 KPVNPKTKWTPGMLKTWISTWDRIPIKLSHEMPELYLETSGPNSSATTATKSTGNLQPTTAETAESVNTANCDTPKR 49 KTINPKTKITPGMLKRWLNTWDROPIOLSHEMPELYLETTGPNSSATSATKTTGNSQPTTAKTAESVSTADCDTPKR	SAS GAS
GFADV M20036 X77084 X77085	23 SAFLKAAKRPRHE 29 SVPAKQHKRPRHE 29 SVP ^D KQHKRPRHE 29 SVP ^P KQHKRPRHE	

Technical Appendix Figure 4. Nonstructural protein 1 alignment of gray fox amdovirus and representative amdoviruses. Black highlights 70%–100% similarity, gray highlights 50–70% similarity.

GFADV M20036 GU183265 DQ371395	1 MDSNETEQMDISEQQ-QWAEHGGGVGKSTGGFNNTTEFKVTNNEVIITCNATRWVHINQASTDEYLI 1 MDSTEAEQMDTEQATNQTAEAGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
GFADV	67 FNAGREID KTPKGSLNLEFFMEDDFHQQVMTPWFLVDSNAWGVWMSPKDFQQMKVLCSEIELVSLEQEIDNVVIKTVTE
M20036	81 FNAGRTTDTKTHQQKLNLEFFVYDDFHQQVMTPW <mark>XI</mark> VDSNAWGVWMSPKDFQQMKTLCSEISLVTLEQEIDNVTIKTVTE
GU183265	80 FNAGRTTDTKTAQKKLDLEFFVYDDFHQQVMTPWFLVDSNAWGVWMSPKDFQQMKTLCSEISLVTLEQEIDNVTIKTVTE
DQ371395	81 FNAGRTTDTKTAQKKLNLEFFVYDDFHQQVMTPWFLVDSNAWGVWMSPKDFQQMKTLCSDISLFSLQEIDNVTIKTVTE
GFADV	146 TTQGGTSVIQTNNDLTASLQVALDTNNILPYTPAAPLQETLGFVPWRATKPTQYRYYHPSVIYNRYPNIQKKSQEQSTYT
M20036	161 TNQGNASTKQFNNDLTASLQVALDTNNILPYTPAAPLGETLGFVPWRATKPTQYRYYHPCYIYNRYPNIQKVATETLTWD
GU183265	160 TNQGNASTKQPNNDLTASLQVALDTNNILPYTPAAPLGETLGFDPWRATKPTQYRYYHPCYIYNRYPNIQKTGQQQLEWT
DQ371395	161 TNQGNASTKQFNNDLTASLQVALDTNNILPYTPAAPLGETLGFVPWRATKPTQYRYYHPCYIYNRYPNIQKTG-QELEWT
GFADV	226 AIQDDYESVDQDYFNFITIENNIPIEILRTGDNFHTGRYEFKSKPCKLTMSYQSTRCLGLPPLCKPKTD-TKLVTSLENG
M20036	241 AVQDDYLSVDEQYFNFITIENNIPINILRTGDNFHTGLYEFNSKPCKLTLSYQSTRCLGLPPLCKPKTDTTHKVTSKENG
GU183265	240 GTQDDYLSVDEQYFNFITVENNIPINILRTGDNFHTGLYEFKSKPCKLTLSYQSTRCLGLPPLCKPKTDVTHKVTSLQNG
DQ371395	240 GTQDDYLSVDEQYFNFITIENNIPINILRTGDNFHTGLYEFKSKPCKLTFSYQSTRCLGLPPLCKPKTDK
GFADV	305 GEMDCYVEGOOHTRKGHFWGEEKAEKNTEINRVRPYNIGYQEPEWIWPAGLQGSYFTGGPRQWSDTTKGAGTHSQTYQQN
M20036	321 ADL-IYIQGODNTRLGHFWGEERGKKNAEMNRIRPYNIGYQYPEWIIPAGLQGSYFAGGPRQWSDTTKGAGTHSQHLQQN
GU183265	320 ADL-IYIEGODNTRLGHFWGEERGKKNAEMNRVRPYNIGFQYPEWIIPAGLQGSYFAGGPRQWSDTTKGAGTHSQQLQQN
DQ371395	320 ADL-IYIEGODNTRLGHFWGEERGKKNAEMNRVRPYNIGFQYPEWIIPAGLKGSYFAGGPRQWSDTTKGAGTHSQNLQQN
GFADV	385 FSTRYVEDRNHGGDNQVDTIDSIPIQERGKYYSEQELQQATILTATNKAQTGKKWESWEEEGWPAASGTHFEDEVLYF
M20036	400 FSTRYIYDRNHGGDNEVDLLDGIPIHERSNYYSDNEIEQHTAKQPKLRTPPIHHSKIDSWEEEGWPAASGTHFEDEVIYL
GU183265	399 FSTRYIYDRNHGGDNEVDLLDGIPIHERSNYYSDHEIEQHTAKQPKLRTPPIHHSKIDSWEEEGWPAASGTHFEDEVIYL
DQ371395	399 FSTRYIYDRNNGGDKEVNLLDGIPIHERSKYYSDNEIEQHTAKQPKLRTPPIHHSKIDSWEEEGWPAASGTHFEDEVIYL
GFADV	463 DYFNFSGETTKNFFQEVLSDGLQMKKLLNAYQFTVGQDDVGFVYFWGQIWDKKFDMDHKFSMN <mark>W</mark> NAFFVCKNNFFGQLIV
M20036	480 DYFNFSGE <mark>GELNFFHEVLDDAAQMKKLLNSYQFTVAQDNVGFVYFWGQIWDKKFHMDHKFSMNNNAFFVCKNNFFGQLFV</mark>
GU183265	479 DYFNFGGEQTLEFFHEVLDDAAQMKKLLNSYQFTVAQDNVGFVYFWGQIWDKKFDMDHKFSMNNNAFFVCKNNFFGQLFV
DQ371395	479 DYFNFGGETELEFFHEVLDDAAQMKKLLNSYQFTVATDNVGFVYFWGQIWDKKFDMDHKFSMNNSAFFVCKNNFFGQLFV
GFADV	543 KLTENITD <mark>K</mark> FNYDEDPDRIKTYGYFTWRGKL <mark>TLR</mark> GKL <mark>GQTSCWNPVKRER</mark> IGEPGVF <u>SKSNYHKQIPNNR</u> GNFEIGLQYG
M20036	560 KLTENLTDTFNYDENPDRIKTYGYFTWRGKLVLKGKLSQVTCWNPVKRELIGEPGVFTKD <mark>K</mark> YHKQIPNNKGNFEIGLQYG
GU183265	559 KLTENLTDTFNYDENPDRIKTYGYFTWRGKLVLKGKLSQVTCWNPVKRELIGEPGVFTKDNYHKQIPNNKGNFEIGLQYG
DQ371395	559 KLTENLTDTFNYDENPDRIKTYGYFTWRGKLV T KGKLSQVTCW <mark>S</mark> PVKRELIGEPGVFTKDNYHKQIPNNKGN W EIGLQYG
GFADV	623 RSTVKYLY
M20036	640 RSTIKYIY
GU183265	639 RSTIKYIY
DQ371395	639 RSTIKYIY

Technical Appendix Figure 5. Viral protein 2 alignment of gray fox amdovirus and representative amdoviruses. Black highlights 70%–100% similarity, gray highlights 50–70% similarity.