

Fig. S1

ApHZ-VirB6-3 ML-SRSLLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADHKRPVTYWVHSGYRVGEKDELKITVDRTIDLCPLDTKAKPVAIKMYPEHFST--
 ApDog1-VirB6-3 ML-SRSLLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADHKRPVTYWVHSGYRVGEKDELKITVDRTIDLCPLDTKAKPVAIKMYPEHFST--
 ApDog2-VirB6-3 ML-SRSLLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADHKRPVTYWVHSGYRVGEKDELKITVDRTIDLCPLDTKAKPVAIKMYPEHFST--
 ApJM-VirB6-3 ML-SRSLLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADHKRPVTYWVHSGYRVGEKDELKITVDRTIDLCPLDTKAKPVAIKMYPEHFST--
 ApMRK-VirB6-3 ML-SRSLLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADHKRPVTYWVHSGYRVGEKDELKITVDRTIDLCPLDTKAKPVAIKMYPEHFST--
 ApNorV2-VirB6-3 MLRLRLLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADHNRPTYWVHSGYRVGEKDELKITVDRTIDLCPLDTKAKPVAIKMYPEHFST--
 ApVar1-VirB6-3 ML-L-RLFLLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADQKRPVTYWVNSGHRVGEKDELKITVDRTIDLCPLDTKAKPAVIRMYPEHFST--
 ApNorV1-VirB6-3 MML-RLLLVIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADQKRPVTYWVHSGHRVGEKDEIKITVDRTIDLCPLDTKAKPAVIRMYPEHLSISI
 Consensus/80% ML..R.LLFFIAIVVLSSCGGTCIEPGAGVSSSSQEVQVPVYPDGADpKRPVTYWVHSGaRVGEKDELKITVDRTIDLCPDLDTKAKPssI+MYPEHFST..

ApHZ-VirB6-3 -PSTEFYDITYIDVQEGDQLRFSVLYDLSFPDCKEISREHSPVIFHNNEVIERDEACKKTVAIEELCLSGATSEVLGDGSKKGLLHVKDAKGECKEVPAG
 ApDog1-VirB6-3 -PSTEFYDITYIDVQEGDQLRFSVLYDLSFPDCKEISREHSPVIFHNNEVIERDEACKKTVAIEELCLSGATSEVLGDGSKKGLLHVKDAKGECKEVPAG
 ApDog2-VirB6-3 -PSTEFYDITYIDVQEGDQLRFSVLYDLSFPDCKEISREHSPVIFHNNEVIERDEACKKTVAIEELCLSGATSEVLGDGSKKGLLHVKDAKGECKEVPAG
 ApJM-VirB6-3 -PSTEFYDITYIDVQEGDQLRFSVLYDLSFPDCKEISREHSPVIFHNNEVIERDEACKKTVAIEELCLSGATSEVLGDGSKKGLLHVKDAKGECKEVPAG
 ApMRK-VirB6-3 -PSTEFYDITYIDVQEGDQLRFSVLYDLSFPDCKEISSEHSPVIFHNNEVIERDEACKKTVAIEELCLSGATSEVLGDGSKKGLLHVKDAKGECKELPAG
 ApNorV2-VirB6-3 -PSTEFYDITYIDVQEGDQLRFSVLYDLSFPDCKEISSEHSPVIFHNNEVIERDEACKKTVAIEELCLSGATSEVLGDGSKKGLLHVKDAKGECKELPAG
 ApVar1-VirB6-3 -PSTEFYDITYIDVQEGDQLRFGAVLYDLNFPNCKEISSEHSPVIFHNNEVIERQDSSCKKVAIEELCLSGATSEVLGDGSKKGLLHVKDAKGECKELPAG
 ApNorV1-VirB6-3 EPSTEFYDITYIDVQEGDQLRFGAVLYDLNFPNCKEISSEHSPVIFHNNEVIERDGAACKKVAIEELCLSGALSEKVGEE--KKGLLYVKDSKGECKQALPES
 Consensus/80% .PSTEFYDITYIDVQEGDQLRfttVLYDLSFPsCKEISpEHSPVIAhNNEVIFpDptCKKsV.hEELCLSGATSEVLGDGSKKGLLaVKDAKGECKELPAG

ApHZ-VirB6-3 VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKINMSPKLDQESCELLKGSNITLRLSNIDSIDQLKDRDAHNKHERSY
 ApDog1-VirB6-3 VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKINMSPKLDQESCELLKGSNITLRLSNIDSIDQLKDRDAHNKHERSY
 ApDog2-VirB6-3 VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKINMSPKLDQESCELLKGSNITLRLSNIDSIDQLKDRDAHNKHERSY
 ApJM-VirB6-3 VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKINMSPKLDQESCELLKGSNITLRLSNIDSIDQLKDRDAHNKHERSY
 ApMRK-VirB6-3 VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKINMSPKLDHESCELLKGSNITLRLSNIDSVDQLKDRDAHNKHERSY
 ApNorV2-VirB6-3 VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKINMSPKLDHESCELLKGSNITLRLSNIDSVDQLKDRDAHNKHERSY
 ApVar1-VirB6-3 VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKMNMSPKLDQESCELLKGSNITLRLSNIDSVDQLKDRDAHNKHERSY
 ApNorV1-VirB6-3 VQIPRVGGSIIQTSRMQYPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKMNMSPKLDQESCELLKGSNITLRLSNIDSVDQLKDRDAHNKHRSY
 Consensus/80% VQIPRVGGSIIQTPRMQFPLGYIGVVDSSVSGELSFSYNNVITNGRIHDARVPKbNMSPKLDpESCELLKGSNITLRLSNIDSIDQLKDRDAHNKHERSY

ApHZ-VirB6-3 TYGSNKAFITTKRFSGKPS.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNQVDDDCIRSIVTMDGNVVCPTQTKFNGKDHEDAGNQOHNIP
 ApDog1-VirB6-3 TYGSNKAFITTKRFSGKPS.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNQVDDDCIRSIVTMDGNVVCPTQTKFNGKDHEDAGNQOHNIP
 ApDog2-VirB6-3 TYGSNKAFITTKRFSGKPS.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNQVDDDCIRSIVTMDGNVVCPTQTKFNGKDHEDAGNQOHNIP
 ApJM-VirB6-3 TYGSNKAFITTKRFSGKPS.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNQVDDDCIRSIVTMDGNVVCPTQTKFNGKDHEDAGNQOHNIP
 ApMRK-VirB6-3 TYGSNKAFITTKRFSGKPS.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNQVDDDCIRSIVTMDGNVVCPTQTKFNGKDHEDAGNQOHNIP
 ApNorV2-VirB6-3 TYGSNKAFITTKRFSGKPLE.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNQVDDDCIRSIVTMDGNVVCPTQTKFNGKDHEDAGNQOHNIP
 ApVar1-VirB6-3 TYGSNKPFITTKRFSGKPS.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNHVDDDCIRSIVTMDGNVVCPTQTKFNGKDDKDA-SQOHNIP
 ApNorV1-VirB6-3 TDGDSKPFITTKRFSGKQLE.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYITCKPSDKIDGSGVRSIVTMDGNVVCPTQTKFNSKDDDEGAIKQOHNIP
 Consensus/80% TYGSNKsFTTKRFftKP.EE.EEKKQREKEEKIAALLSEYTEYDLNCHCGYVCKPSNPVDDDCIRSIVTMDGNVVCPTQTKFNGKDC.EEDAhsQQHNIP

cont. Fig. S1

ApHZ-VirB6-3 DIRGDLSP^{EAF}ERSVSSLTGQHF^{GQN}-VAQKDSVISVEKAYELAE^{GVI}AVIVS^{IENGKK}LPSDIAQY^{CNDH}Q^{GKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 ApDog1-VirB6-3 DIRGDLSP^{EAF}ERSVSSLTGQHF^{GQN}-VAQKDSVISVEKAYELAE^{GVI}AVIVS^{IENGKK}LPSDIAQY^{CNDH}Q^{GKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 ApDog2-VirB6-3 DIRGDLSP^{EAF}ERSVSSLTGQHF^{GQN}-VAQKDSVISVEKAYELAE^{GVI}AVIVS^{IENGKK}LPSDIAQY^{CNDH}Q^{GKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 ApJM-VirB6-3 DIRGDLSP^{EAF}ERSVSSLTGQHF^{GQN}-VAQKDSVISVEKAYELAE^{GVI}AVIVS^{IENGKK}LPSDIAQY^{CNDH}Q^{GKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 ApMRK-VirB6-3 DIRGDLSP^{EAF}ERSVSSLTGQHF^{GQN}-VAQKDSVISVEKAYELAE^{GVI}AVIVS^{IENGKK}LPSDIAQY^{CNDH}Q^{GKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 ApNorV2-VirB6-3 DIRGDLSP^{EAF}ERSVSSLTGQRF^{GQND}VAQND^{SVISVEKAYELAE}GVI^{IENGKK}AVIVS^{PEGGEVAKY}CNDH^{QEKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 ApVar1-VirB6-3 DIR-KMSQKDF^{SSVASI}A----^{GQN}-VLPK^{DTISVKTAYELAE}GVI^{VENGKK}AVIVS^{PEGGVAKY}CNDH^{QEKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 ApNorV1-VirB6-3 DVY-NMSP^{EDMKGLGALT}----^{GQN}-VLPK^{DTIGVKTAYELAE}GVI^{VENGKK}AVIVS^{PEGGVAEY}CNDH^{QEKCKYL}PEGIKSLKSSQ^{SGLTFE}KGSL
 Consensus/80% DIR.cbSPEsFA+SVtSLT...GQN.Vh.KDSSISVcpAYELAE^{GVI}AVIVS^{IENGKK}..tSlApY^{CNDH}Q.KCKYLPEGIKSLKstQSGLTFEKGSL

ApHZ-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYF^{GELGKKVKERK}GSEAAVVAAS^{GSSQRGLTVSR}AKNYS^{ENSLLSALA}QRRFFWKQ^{GMS}SG^{SGGFLS}SN^{DAGNTYV}PLS
 ApDog1-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYF^{GELGKKVKERK}GSEAAVVAAS^{GSSQRGLTVSR}AKNYS^{ENSLLSALA}QRRFFWKQ^{GMS}SG^{SGGFLS}SN^{DAGNTYV}PLS
 ApDog2-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYF^{GELGKKVKERK}GSEAAVVAAS^{GSSQRGLTVSR}AKNYS^{ENSLLSALA}QRRFFWKQ^{GMS}SG^{SGGFLS}SN^{DAGNTYV}PLS
 ApJM-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYF^{GELGKKVKERK}GSEAAVVAAS^{GSSQRGLTVSR}AKNYS^{ENSLLSALA}QRRFFWKQ^{GMS}SG^{SGGFLS}SN^{DAGNTYV}PLS
 ApMRK-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYF^{GELGKKVKERK}GSEAAVVAAS^{GSSQRGLTVSR}AKNYS^{ENSLLSALA}QRRFFWKQ^{GMS}SG^{SGGFLS}SN^{DAGNTYV}PLS
 ApNorV2-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYF^{GELGKKVKERK}GSEAAVVAAS^{GSSQRGLTVSR}AKNYS^{ENSLLSALA}QRRFFWKQ^{GMS}SG^{SGGFLS}SN^{DAGNTYV}PLS
 ApVar1-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYSL^{GELGKKVKER}RENNAA--^{VAA}SGSS^{SSQRGLTVSR}AKNYS^{ENSLLSALA}QRRFFWKQ^{YMS}FAS^{SGGFLS}SN^{DAGNTYV}PLS
 ApNorV1-VirB6-3 KLDSDYIAP^{CSGR}LYLAYWPYSL^{GELGKKVKER}ESKAAV^{VASGSSQR}GS^{SVSTK}KYED^{ENSLLSALA}QRRFFWKQ^{YMS}FAS^{SGGFLS}SN^{DAGNTYV}PLS
 Consensus/80% KLDSDYIAPGSGRLYLAYWP.bGELGKKVKERK.scAsVVAASGtSSQRGLTVSRAKNYS^{ENSLLSALA}QRRFFWKQsMS.tSGGFLsSNDAGNsYVsLS

ApHZ-VirB6-3 RDEGIT^{TTISYS}-VASAAT^{PVSAGK}PASERRISVART^{GEDIA}-VQGFYSLN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QGAIP}LDFEKINS^{SKS}-DKEE
 ApDog1-VirB6-3 RDEGIT^{TTISYS}-VASAAT^{PVSAGK}PASERRISVART^{GEDIA}-VQGFYSLN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QGAIP}LDFEKINS^{SKS}-DKEE
 ApDog2-VirB6-3 RDEGIT^{TTISYS}-VASAAT^{PVSAGK}PASERRISVART^{GEDIA}-VQGFYSLN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QGAIP}LDFEKINS^{SKS}-DKEE
 ApJM-VirB6-3 RDEGIT^{TTISYS}-VASAAT^{PVSAGK}PASERRISVART^{GEDIA}-VQGFYSLN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QGAIP}LDFEKINS^{SKS}-DKEE
 ApMRK-VirB6-3 RDEGIT^{TTISYS}-VASAAT^{PVSAGK}PASERRISVART^{GEDIA}-VQGFYSLN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QGAIP}LDFEKINS^{SKS}-DKEE
 ApNorV2-VirB6-3 RDEGIT^{TTISYS}-IASAAMP^{VSAGNTAS}ERRISVART^{GEDIA}-VQGFYSLN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QLGAI}LDFEKINS^{SKG}-DKEE
 ApVar1-VirB6-3 HDEGATTISYS^{TVA}AAAA^{PVSAGKTAS}QARM^{SV}AHTSENT^{TK}VQGFYALN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QGAIP}LDFEKINS^{SKSD}DKEE
 ApNorV1-VirB6-3 HDEGATTISYS^{TVA}AAAA^{PVSAGKTVS}QSH^{ISVAR}NSENT^T-VQGFYSLN^{VHRTC}YATS^{GQKLYMYIGD}TPPTALPGK^{QGAIP}LDFEEM^{NKS}---KKE
 Consensus/80% +DEGhTTISYS.VAtAAsPVSAGKsASppRISVARTtEshs.VQGFYSLNVHRTC^{YATS}GQKLYMYIGDTPPTALPGKQpGAIPLDFEKINSskt.DKEE

ApHZ-VirB6-3 KEWSYKINS^{GA}EKRQ-GYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY
 ApDog1-VirB6-3 KEWSYKINS^{GA}EKRQ-GYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY
 ApDog2-VirB6-3 KEWSYKINS^{GA}EKRQ-GYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY
 ApJM-VirB6-3 KEWSYKINS^{GA}EKRQ-GYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY
 ApMRK-VirB6-3 KEWSYKINS^{GA}EKRQ-GYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY
 ApNorV2-VirB6-3 KEWSYKINS^{GA}KKQ-QGYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY
 ApVar1-VirB6-3 KEWSYKINS^{GA}EKRQ-GYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY
 ApNorV1-VirB6-3 KEWSYKIN^{ADKDH}KQKGYIYF^{GVA}VDPA^{YEANIKKAS}N^{TENY}YS^{VHLWVPKWT}PIFSSFFN^{LQCM}LLH^{VLYG}TDLP^{TMGQ}DT^{RAVEAKA}IG^{KVMS}PEY
 Consensus/80% KEWSYKINS^{GA}-K+Q.GYIYF^{GVDVDP}G^{YEAKIKQ}ANNS^{DNYYAVHLWVPKWT}PIFSSFFN^{FLOQVLLH}VLYG^{TDLP}TMGQ^{DTKAVEASKVIGRAMS}PEY

