

Gene Name	Protein Name	Length (aa)	Virus	Virus family	Genome	Location	Pattern	UniProt ID
<b>FGDF</b>								
DNBI_HHV11	Major DNA-binding protein	1196	HHV-1 Human herpes simplex virus 1	Herpesviridae	dsDNA	1144 - 1147	AGEVFN <b>FGDF</b> GC <b>EDD</b> NA	<a href="#">P04296</a>
DNBI_HHV1F	Major DNA-binding protein	1196	HHV-1 Human herpes simplex virus 1 (strain F)	Herpesviridae	dsDNA	1144 - 1147	AGEVFN <b>FGDF</b> GC <b>EDD</b> NA	<a href="#">P17469</a>
DNBI_HHV1K	Major DNA-binding protein	1196	HHV-1 Human herpes simplex virus 1 (strain KOS)	Herpesviridae	dsDNA	1144 - 1152	AGEVFN <b>FGDF</b> GC <b>EDD</b> NA	<a href="#">P17470</a>
DNBI_HHV2	Major DNA-binding protein	1197	HHV-2 Human herpes simplex virus 2	Herpesviridae	dsDNA	1144 - 1147	AGEVFN <b>FGDF</b> GD <b>ADD</b> HA	<a href="#">P36384</a>
DNBI_HHV2H	Major DNA-binding protein	1196	HHV-2 Human herpes simplex virus 2 (strain HG52)	Herpesviridae	dsDNA	1144 - 1147	AGEVFN <b>FGDF</b> GD <b>EDD</b> HA	<a href="#">P89452</a>
HELI_EBVB9	DNA replication helicase	809	Epstein-Barr virus (strain B95-8)	Herpesviridae	dsDNA	479 - 482	CGYTGT <b>FGDF</b> MD <b>TL</b> E <b>AD</b>	<a href="#">P03214</a>
POLN_AURAV	Non-structural polyprotein	2498	Aura virus	Togaviridae	+ssRNA	1845 - 1848 1865 - 1868	LSMPIT <b>FGDF</b> A <b>EGE</b> L <b>DR</b> PSPTPT <b>FGDF</b> S <b>Q</b> E <b>EMDR</b>	<a href="#">Q86924</a>
POLN_BFV	Non-structural polyprotein	2410	Barmah Forest virus	Togaviridae	+ssRNA	1760 - 1763 1778 - 1781	MHPGFT <b>FGDF</b> G <b>HE</b> V <b>EE</b> TASPLT <b>FGDF</b> A <b>EGE</b> I <b>QG</b>	<a href="#">P87515</a>
POLN_CHIK3	Non-structural polyprotein	2474	Chikungunya virus (strain 37997)	Togaviridae	+ssRNA	1812 - 1815 1830 - 1833	ETFPIT <b>FGDF</b> D <b>E</b> G <b>E</b> I <b>ES</b> SSELLT <b>FGDF</b> S <b>P</b> G <b>E</b> V <b>DD</b>	<a href="#">Q5XXP4</a>
POLN_MAYAB	Non-structural polyprotein	2436	Mayaro virus strain	Togaviridae	+ssRNA	1804 - 1807	EESDIT <b>FGDF</b> S <b>AS</b> E <b>W</b> E <b>T</b>	<a href="#">Q8QZ73</a>
POLN_MIDDV	Non-structural polyprotein	994	Middelburg virus	Togaviridae	+ssRNA	364 - 367	INDDL <b>T</b> <b>FGDF</b> G <b>AG</b> E <b>F</b> E <b>R</b>	<a href="#">P03318</a>
POLN_ONNVG	Non-structural polyprotein	2514	O'nyong-nyong virus (strain Gulu)	Togaviridae	+ssRNA	1852 - 1855 1870 - 1873	TLEPIT <b>FGDF</b> A <b>EGE</b> I <b>DN</b> LTGALT <b>FGDF</b> E <b>P</b> G <b>E</b> V <b>EE</b>	<a href="#">P13886</a>
POLN_RRVN	Non-structural polyprotein	2479	Ross river virus (strain NB5092)	Togaviridae	+ssRNA	1843 - 1846	EDVDI <b>Q</b> <b>FGDF</b> E <b>T</b> P <b>D</b> KI <b>Q</b>	<a href="#">P13887</a>
POLN_SFV	Non-structural polyprotein	2432	Semliki Forest virus	Togaviridae	+ssRNA	1787 - 1790 1804 - 1807	NKLLPL <b>T</b> <b>FGDF</b> D <b>E</b> H <b>E</b> V <b>DA</b> LASGIT <b>FGDF</b> D <b>D</b> V <b>L</b> R <b>L</b> G	<a href="#">P08411</a>
THYX_BPMLS	Probable thymidylate synthase	243	Mycobacterium phage L5	Siphoviridae	dsDNA	36 - 39	KDEDPY <b>FGDF</b> D <b>A</b> D <b>E</b> L <b>A</b> E	<a href="#">Q05259</a>
VP12_BPPRD	Single-stranded DNA-binding protein	160	Enterobacteria phage PRD1	Tectiviridae	dsDNA	44 - 47	KVGQST <b>FGDF</b> IK <b>F</b> E <b>G</b> E <b>F</b>	<a href="#">P17637</a>
YL032_MIMIV	Putative Kila-N domain-containing protein L32	372	Acanthamoeba polyphaga mimivirus	Mimiviridae	dsDNA	157 - 160	KFAIGK <b>FGDF</b> E <b>V</b> I <b>N</b> R <b>D</b>	<a href="#">Q5UPA5</a>

FGEF								
MREP_SCSVF	Master replication protein	286	Subterranean clover stunt virus (strain F)	Nanoviridae	ssDNA	93 - 97	VEGPWE <b>FGEF</b> K <b>EVLE</b> DK	<a href="#">Q9ICP7</a>
POLG_BVY3	Genome polyprotein	3491	Blackberry virus Y (isolate Blackberry plant/USA Arkansas/C3ARK/2005)	Potyvirdae	+ssRNA	328 - 331	TKTTIN <b>FGEF</b> EV <b>VD</b> GY	<a href="#">A0AUJ5</a>
RDRP_NODAM	RNA-directed RNA polymerase	1043	Nodamura virus (strain Mag115)	Nodaviridae	+ssRNA	239 - 242	VWDWCA <b>FGEF</b> I <b>ET</b> R <b>D</b> AS	<a href="#">Q9IMM4</a>
RDRP_WCCVB	RNA-directed RNA polymerase	616	White clover cryptic virus 1 (isolate Boccardo/2004)	Partitiviridae	dsRNA	152 - 155	LSQRKT <b>FGEF</b> IRM <b>H</b> E <b>Y</b> E	<a href="#">Q64FP0</a>
FGSF								
COAT_BPAR1	Major capsid protein	521	Enterobacteria phage AR1	Myoviridae	dsDNA	59 - 62	EKIAQA <b>FGSFL</b> T <b>E</b> A <b>E</b> IG	<a href="#">Q9ZXI0</a>
COAT_BPT4	Major capsid protein	521	Enterobacteria phage T4	Myoviridae	dsDNA	59 - 62	EKIAQA <b>FGSFL</b> T <b>E</b> A <b>E</b> IG	<a href="#">P04535</a>
COAT_BPT6	Major capsid protein	502	Enterobacteria phage T6	Myoviridae	dsDNA	59 - 62	EKIAQA <b>FGSFL</b> T <b>E</b> A <b>E</b> IG	<a href="#">Q38055</a>
ETF2_MCV1	Early transcription factor 82 kDa subunit	707	Molluscum contagiosum virus subtype 1	Poxviridae	dsDNA	142 - 145	DTPVPE <b>FGSF</b> EE <b>V</b> DANI	<a href="#">Q98277</a>
MVP_LMV0	P3N-PIPO polyprotein	1152	Lettuce mosaic virus (strain O / isolate French)	Potyvirdae	+ssRNA	131 - 134	KCRGLQ <b>FGSF</b> T <b>E</b> L <b>E</b> T <b>S</b> E	<a href="#">P0CJ97</a>
MVP_LMVE	P3N-PIPO polyprotein	1152	Lettuce mosaic virus (strain E)	Potyvirdae	+ssRNA	131 - 134	KCRGLQ <b>FGSF</b> T <b>E</b> L <b>E</b> T <b>S</b> E	<a href="#">P0CW79</a>
POL1_CRLVP	RNA1 polyprotein	2250	Cherry rasp leaf virus (isolate Potato/United States)	Secoviridae	+ssRNA	115 - 118	ASGPCF <b>FGSFG</b> PF <b>EE</b> YY	<a href="#">Q6EWG9</a>
POL1_CRLVP	RNA1 polyprotein	2250	Cherry rasp leaf virus (isolate Potato/United States)	Secoviridae	+ssRNA	115 - 118	ASGPCF <b>FGSFG</b> PF <b>EE</b> YY	<a href="#">Q6EWG9</a>
POLA_CHPVU	Polyprotein p69	622	Cryphonectria hypovirus 1 (strain Euro7)	Hypoviridae	dsRNA	200 - 203	WVGRRS <b>FGSF</b> Q <b>I</b> E <b>E</b> STV	<a href="#">Q9YTU3</a>
POLG_MCFA	Genome polyprotein	3341	Mosquito cell fusing agent CFA flavivirus	Flaviviridae	+ssRNA	2749 - 2752	YKSFKY <b>FGSF</b> V <b>T</b> D <b>D</b> VKV	<a href="#">P33515</a>
POLN_SINDV	Non-structural polyprotein	2512	Sindbis virus	Togaviridae	+ssRNA	1837 - 1840	TDVPMS <b>FGSFD</b> G <b>E</b> I <b>D</b> E ESEPVL <b>FGSFE</b> P <b>G</b> EVNS	<a href="#">P03317</a>

**Table S2**