

## Multiple alignements

### Thymidylate synthase (AmFV\_28)

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Published research using this software should cite  
Multiple sequence alignment with hierarchical clustering  
F. CORPET, 1988, Nucl. Acids Res., 16 (22), 10881-10890  
Symbol comparison table: blosum62  
Gap weight: 12  
Gap length weight: 2  
Consensus levels: high=90% low=50%  
Consensus symbols:  
! is anyone of IV  
\$ is anyone of LM  
% is anyone of FY  
# is anyone of NDQEBZ

MSF: 380 Check: 0 ..  
Name: AmFV Len: 380 Check: 4788 Weight: 1.08  
Name: WSSV Len: 380 Check: 244 Weight: 0.23  
Name: herpesvirus Len: 380 Check: 316 Weight: 0.23  
Name: nudivirus Len: 380 Check: 1060 Weight: 0.44  
Name: entomopoxvirus Len: 380 Check: 655 Weight: 0.67  
Name: iridovirus Len: 380 Check: 2222 Weight: 0.88  
Name: SGHV Len: 380 Check: 3859 Weight: 0.94  
Name: phage Len: 380 Check: 1022 Weight: 1.17  
Name: mimivirus Len: 380 Check: 4179 Weight: 1.40  
Name: phycovirus Len: 380 Check: 9399 Weight: 2.95  
Name: Consensus Len: 380 Check: 579 Weight: 0.00

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1
AmFV
WSSV
herpesviru MPEGSTGRPA CLGEQAGSGG DRGRRGRRRR RRGRADARSY LAACRALPLP ADADRPVNP
nuditvirs ERLYLGQLCH ILGHGIERAD RTGVTLSVF GMHARYSLRG E-FPLLTKR VYWRGVVEEL
entomopoxv MQTNWE EHQYLNLTIRS ILETGNRRMD RTKVGTLSHF GVMHRYSLRD NNLPLLTKT VFV
iridovirus MEITSSD EYQYLGISE ILSNGRITKN RTGVDTKTVY GLTMKYKL-D DSFPLFTTKS
SGHV M EENYLNLVNE VIQTDGYRVD RTKIGTFSLF GKQLEFDLSG GTIPLLTKK IVYTNILKEL
phage MLRLTG ERGYLTIVRR VLRDGTLSN RTGVDTKYIF GDQLRYDLRD NRIAMLTKK VF
mimivirus MTHA DLEYLNLVKK IVKEGHKKED RTGTGTISLF GPQMEFDLSK G-FPLLTKK
phycovirus ENQYIELVKR IMEKGIVKQT RNSI-TKSIF GYQLKYDLSK G-YPIQTIKR
Consensus MSAKLISVS KPVIEGVNTA EQLIAYAARV SNPENQINN TAAGLLKYCI ..y..lv...g..k..Rtgi.t..lf g....%dl.. ..p..t.k. ....i..#1 lw.i.g.td.
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131
AmFV KILERRGVHI WTEHATRDVL TKRGFPSSRE GDIGPLYGFQ WRHFGALRYTN CEANYAAQKR TRGYDQIAYI LDELTARPHS RRILINSWNV ADIAEMVLPP CHVMFQLFA-
WSSV KELAKKKIHI WTANGSREFL DSRGLYDRAE GDLGPVYGFQ WRHFGAEBYD CSDSYTGK-- --GIDQLANI LKTLRENPPD RRMIMTAWN MDLHLMALPP CHMTAQFVY-
herpesviru RRLSERGVKI WANGSKEFL TARGLGHRRE GDLGPVYGFQ WRHFGATYED ADADYSGR-- --GVDQLAYI LDLIKNNHPCD RRMVMSAWN VDIKPKMALPP CHVLCQFVY-
nuditvirs KELSRRGVHI WSGNSSRSVL DSLGFTDRQE GDLGPVYGFQ WRHSGTKYVD CETDYSQG-- --GVDQLQTI IDTLKNTPTD RRIVMCSWNP ADLHQMALPP CHCLAQFYS-
entomopoxv NILKNKIHI WDENGSLKYI KKRGFNDRKE GDLGPVYGFQ WRHFGAKYID MDNTYTNQ-- --GFDQLTHI INKIKNKPES RNIILTAWN IDVENMVI PP CHCFVQFHV-
iridovirus KQLNDIGVKV WNDNGSREFL DLGCFTERKE GDLGPIYGFQ WRHAGAQYID CDTDYTGQ-- --GVDQLSQT INTLHNNPEN RRILINSWDV PQLDKMVLPP CHTLVQFVY-
SGHV ANLAAGVNI WRGNSTREYL DSRKLPYPEH ESLGPIYGFQ WRHFGARYID CDTDYTGQ-- --GVDQLAQC MHQIQYEPSS RRMIMTAWN NDLDKMLVPP CHMSIQFVS-
phage KTLLDKNIHI WTPDAYRFYR ESGGTLSYE- ----VFVEK AKEDGDFDLGF IYGAQWGRWG DRHNDQLGFEV IEIKNNPDS RRMVSTWNP TDLSKMALPP CHTMSQFVY-
mimivirus SILQKKGVHV WDKNSSKDFL SKYNLP-YEE GDIGPGYGFQ MRYWGAEBYD CKTSYQGQ-- --GIDQLNKC IESIQNNPHD RRIMINLWNC SDLDKMLALP CHFVCMFGVD LYEVPTTSGK KGRNLNCHLVQ
phycovirus DTVSEEEQTV WNTQEKLQY QSVLDLYNKA- --LEKGIKAE CARFVLPYST TTTIYMSG-- --TIRDWIHY IELRTANGTQ KEHIELANAC KDIFVEEFPN IAKALDWI
Consensus ..l...g.h. W.....yl .s.l..... .lgp.ygfg .r.fg.y. .t.y.gq. ..gid#1... ie.....np. re.....awn. .dl..m.lpp ch...qf.v. ....l.c.l.g
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261
AmFV   RSADIGLGLP FNIASYAILL HAIIAKKVGRT AKTLKVIIGD AHIYNDHIDA --MTEIAARE PRPSPRVYID SRSFDKPLHE YSTDF----- ---FHLFNYH PHEP-VRMRV SV
WSSV   RSGDVLGLVP FNIASYSLLT HLMASMVGLK PGEFILTLGD AHIYNTHIEV --LKKQLCRA PRPFPKLRI- -LMAPEKIED FTIDM----- ---FYLEGYQ PHSGNLQMKM AV
herpesviru RSGDMGLGVP FNIASYALLT YMIAHVSGLR PGELIHVLGD AHIYKNHIEA --VKVQLSRE PRPFPRLHI- -VRTVSSIED FTVDD----- ---FSLEGYD PHPA-IRMDM AV
nuditvirs RSADMGLGVP FNIASYSLMT HMIAHITGLK AHEFVHTIGD AHVYLNHIEP --LKVQLERE PRPFPKLEF- -ARKVENIDS FKYED----- ---FIKGYD PYPK-IPMVL AV
entomopoxv RSADMGLGVP FNVASYSLLT YMIAH-TNLK PYEFIHNIGN AHIYVNHING --LKKQLERT PNPFPKLKI- -KRQVDNIDD FKFD----- ---FELIDYN -HLGKIKLDM VV
iridovirus RSADLGLGVP YNIGFYSFLT LVLKWCNLT PGKFIHTFGD VHVYSNHVEP --LKVQLKRR PYSPFNVKFI GLFSLNDLDN QSLQECCSEW CNSFKVENYT THPF-IKMQM AI
SGHV     RSADLMLGVP FNLVYSLML HILAHKFKGLK AGELVTSYGD LHIYVPHIKN --AMRQVSRL PYASFPQIEL- KFGDRDKRVEE LTVDD----- ---FAVKNYR HHSQ-LEYEM AA
phage     RSGDAFLGIP FNIASYALLT HIIAKMTGLK VGKFIHTLGD AHLYSNHLDS --AFEQLKRE PRELPKLEV- -KTIHEDIRD YTIDD----- ---FELIGYD PHPV-IGKGL SVGLKDGGEK
mimivirus RSWDVLG-- WNTTTAALLT YLIANHCOLD PGILVHSISD AHIYQSHIDS GAISQLLQRK CRKFPNLVI- -RNKKEKIDD YEFDD----- ---LITIENY PCPS-ISAEM IA
phycovirus
Consensus rs.d..lg.p .n...y..lt ..ia....l. ....gd ah.y..hi.. ....l.r. p...p..... ....d.          f....y. .h.. ....

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## Ribonucleotide reductase IgC domain (AmFV\_116)

[Go directly to Alignment](#)

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 Consensus symbols:  
 ! is anyone of IV  
 \$ is anyone of LM  
 % is anyone of FY  
 # is anyone of NDQEBZ

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MSF: 1027 Check: 0 ..
Name: AmFV Len: 1027 Check: 7111 Weight: 2.07
Name: baculovirus Len: 1027 Check: 6582 Weight: 0.31
Name: SGHV Len: 1027 Check: 5437 Weight: 0.31
Name: phycovirus Len: 1027 Check: 6171 Weight: 0.59
Name: herpesvirus Len: 1027 Check: 4830 Weight: 0.66
Name: nudivirus Len: 1027 Check: 7544 Weight: 0.74
Name: poxvirus Len: 1027 Check: 7187 Weight: 1.52
Name: WSSV Len: 1027 Check: 8143 Weight: 1.81
Name: Consensus Len: 1027 Check: 2184 Weight: 0.00

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1
AmFV
baculoviru MSYDHY IKRDRGRKEAV FMYKIKCRIE KLCY----GL DMNFVNPTSV AVRVDQGIYS GVTTAELDNL IAETAAAMTI DHSDYSLAA RLAVSNLHKE TKDSFFDVII DMYEAI DPKT GVKTPMISNF
SGHV MLPNNTKLFV TKRGGFVQDI VFDKIRKRIE SLCY----NL NADYVHPSTI VVKVVAGLYP GVTTAELDTL AAETAASMMT LHPDYGVLLA RIAISNMHKQ TDDSFARTMK ELYA----- ----GLISMF
phycovirus MEV IKRNGTSESV QLDKIMKRLK NLSY----GL D--HVDPAVV SIKVVQGLYD GVTTVQLDNL AVETATYLTM THPDYSLAA RIAVSSLHKM TSNKFSSVME SLINYVNTKT GQWSPLIADD
herpesviru MDSAMTV IKRDGSVVVF DIGKVAERVV KC----- EIDSVDCCELL AQVQVQAGIHN GCKTAEIDVL LAHTAASMTT KHPNYGLLAA KVSVSNLHLQ TVPEFSKTCE KLWKNINPDL DVEAPLISDE
nuditvirs MSQNPRMI VKRNGSVERF DPSKLYARIE RCMTMSEPRL TTAFINIAGI VADVEKGLYD RVSTLEIDTL LSETCASMTT AHPDHSILAA RIAMQALHKK TRSKFSETIR DLYE----- ---ANIVPQY
poxvirus
WSSV
Consensus .....

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131

130

260

LAS CYLLTISED S IQGIFETLSR CAFVSQSSGG

baculoviru HYNIIAANAY RLNSAIVHNR DF-NYDYFGF KTMQRSYLFK INGVTV-ERP QYMMMRVAIG IHGEDIDAAI DTYNLMSNGY FTHASPTLFS AATPKAQ~~MSS~~ CFLVATK~~EDS~~ IEGIDYDLKQ CAMISKSGGG  
SGHV HYDVVCRHGR TLDDEAIVHAN DF-NYSYFGI KTLERSYLMH IKDLRV-ERP QYLMLRCALG IHGENIDAVI ETYNYMSRHY FTHATPTLFS AATPKPQL~~SS~~ CYLLTIK~~GDS~~ IDGIFRTVAD CAAISKTAGG  
phycovirus IIECIRSNNAV VLDDVINYEK DL-EYDIFGY KTMESKSYLSR INGDIV-ERP QHMLMRVALG IHCPCDVDAI ETYKLLSARV FTHATPTMYN AGTRNPQM~~SS~~ CFLLKM~~KDD~~ IEGIFD~~TLKN~~ CALISK~~NAGG~~  
herpesviru IFKLSQEHAE ELDDAALHGN DH-TYSYFGF KTLERSYLLK GPKGPI-ERP QHMLMRVALG IHKHDIPSVL MHKHDIPSVL SGSSRPQL~~SS~~ CFLLNL~~TDD~~ MAGIMETVRR CAMISK~~YAGG~~  
nuditvirus YFDLVQEHAD TLDISAIVDDR DFQSLTYFAY KTLERTYLIK LADGKICERV QHMYMRTALG IHGRDIESVI ETYNLLSNRY YVHSPTPLCH AATNRSNYAS CYLLEL~~KEDS~~ IGGVMD~~TLKD~~ AATISK~~HCGG~~  
poxvirus ~~MSS~~ CFLLNM~~IDD~~ IEGIDYDL~~KR~~ CALISK~~MAGG~~  
WSSV ~~LSS~~ CFLLGL~~QDD~~ IEGIDYDL~~KE~~ AATISK~~TAGG~~  
Consensus .....~~\$s~~ C%LL...~~#DS~~ IeGI.#Tlkr CA.!Sk.aGG

261 390  
AmFV VGLNISNVRA SGTPIRSTNG RSGGIIPMIR VFNNVARYVD QCGGKRPGAF TIYLEPWHAD IERFLLLSDK TCTEELIARD IYTAVMCCDL FMRRVERDET WSLMCPNLSP GLVDSW~~CDEF~~ EKLYLE~~YERA~~  
baculoviru IGFHVHNVRA KGSSVAGVGG ASNGLVPMLR VYNNNTARYVD QCGGNKRPAGF AVYLEPWHAD VLD~~FLLDKKN~~ TGKEEV~~RARE~~ LFYALWIPDL FMRRVENDSM WSLMCPMQSP GLADCYGAEF DALYQR~~YEEE~~  
SGHV IGLNVHDIRA RGSPIDGTNG KSNGLVPMLR VFNNVARYVD QCGGKRMGSF AIYLEPWHAD IFEF~~LDLRKN~~ HGIEE~~QRRD~~ LFYALWIPDL FMRRVQDGD WSLMCPHKCP CLSEVW~~GESF~~ EHL~~YEHYERK~~  
phycovirus IGVSIHNVRA QNSYIIRGTGS YSNGLVPMLR VFDNTARYVD QGGGKRKGAF AMYLEPHHAD IFEF~~LDLRKN~~ TGKBE~~LARD~~ LFYALWVSDH FMKRVEAGKN WSLFCP~~HCCP~~ GLSDVW~~GDDY~~ VALYE~~KYSE~~  
herpesviru IGLSM~~SNLRA~~ SGSYIAGTNG QSNGLVPVLR IFNMVARLVD QGG-KRPGAF AIYMEPWHAD IFD~~FLDLRKN~~ SGVDER~~TRD~~ LFTALWV~~PDL~~ FMQVRV~~DDG~~ WSLMCPASCP GLDRVW~~GHEF~~ NELYE~~QYEA~~  
nuditvirus IGLSVHKLRC KSNSTIHTNG NASGLVPMLR MYNAMSRYVT QGGNKRPGAI AVYLEPWHAD VDFDIEMRKN SGFEE~~ARARD~~ LFYALWV~~PDL~~ FMKRVDNDGGY WSLMCPDSSP GLSDC~~WGEF~~ EAKYTAYE~~Q~~  
poxvirus IGLSISNIRA SGSYISGTNG TSNGIIPMLR VYNNNTARYID QGGNKRPGVM AIYLEPWHSD IMA~~FLLDKKN~~ TGNEE~~HRTRD~~ LFTALWIPDL FMKRVD~~DGE~~ WSLMCPD~~CCP~~ GLDDVW~~GDEF~~ ERLYTQ~~YERE~~  
WSSV LGTHFHDIRA KGSPISWSG IFTNVSVKVS QGGDKRRGAA IYISD~~WHL~~ DFLPAIWVSDL FMERVKAGKN WSLMCP~~HCCP~~ GLSDVH~~GEEF~~ KALYE~~KYEA~~  
Consensus .GL.is#.RA sgspi.stng .s.GL.pmlr !%Nn.ary!d QGG.KRPGa. a!YlepWHad !.Fldlrkn TG.E#lraRD l%.ALW..DL FM.RV..d.. WSLMCP..cp GL.#vwGd#F e.LY..YE.e

391 520  
AmFV -GRFVRQVPA KKIWNMTVMR QLETGMPFLL HKDHINARSN QRHRGTIRGS NLCTEITLHT SAQEVAVCNL ASISLTPLTR DATREECKLC RTFDQDHLTN DFSIYGYRDD CTMCSGGFNF RELYHITRLV  
baculoviru -GRYVRRVHA QTMWRAIES QVETGTPYML YKDSNCRKSN QSNLGTIKCS NLCTEIVEYT SKDEVAVCNL ASIAV~~NKFVL~~ QSGV-----Y -----~~DF~~ EK~~LKITKIV~~  
SGHV -GRAVVRTYKA RALWHAIIES QVETGTPYMM YKDACNKRKN QNLGTIRCS NLCTEIVEYT APDEIAVCNL ASIALPKFVV SGTPDRPKHF -----~~DF~~ EQ~~LRIHVHV~~  
phycovirus -GKARKTIPA QKLWFAIMDS QIETGTPYML YKDSNCRKSN QNLGTIQQS NLCTEIIYTT APDEIAVCNL ASIALPAFVK DGS-----F -----~~DH~~ QQLYDV~~TYHA~~  
herpesviru PGAVRRVVKVA RYLWSQILVS QLETGSPYML YKDSANAKSN HQNLGTIRCS NLCTEIMEYT DSQEVAVCNL ASIALPEFVQ DGGYV-----F -----~~NH~~ EYLAHV~~TKVA~~  
poxvirus -GRYVRRVDA RELWKAIVTA QVETGTPYIL YKDTVNRNSN QRHLGTIKGS NLCTEIVEYA SPDEIAVCNL ASVNL~~PKFVE~~ GKV-----F -----~~NL~~ NLLAKT~~VRLV~~  
WSSV -KRYKSIIKA RLVWKAIIIES QIETGTPYIL YKDACNKRKN QNLGTIKCS NLCTEIIQYA DANEVAVCNL ASVALNM~~FVI~~ DGR-----F -----~~DF~~ LKLK~~DVVKVI~~  
Consensus -GKGKEVKA RALFDQINSA RIETGTPYVC FKDTNRKSN QENVGIKSS NLCTEIVQYS DSEETAVCNL ASIAV~~NKFVK~~ YSIPISLRPY -----~~VDY~~ REMKR~~VVKIM~~  
gr..r.!ka r.lw..i... g.ETGdP%.l ykd..N.ykSN Q.nlgvIk.S NLCTEI..y. ..#vAvCNL ASIAL..v. d..... #f ..\$.!vk..

521 650  
AmFV VRNLDR~~TIDV~~ MHYPLVEAER ANKLHRPLGI GVQGLANVFA KLRI~~PWNSK~~ ASLLNR~~RIFE~~ TLYRAALHES CDLARVHGM~~P~~ YLTYALS~~PAE~~ RSGMMQ~~HDLF~~ TEWANKFVRN NDNEAGVDAL K~~NVYDEKEEG~~  
baculoviru TRNLNR~~TIDS~~ NWPPLPEAKV SNLKNRP~~IGI~~ GVQGMADAFV MMRM~~PYESA~~ AABLNR~~KIFE~~ TIYYGALEAS CELAAIY~~G-P~~ YETYE~~GSPAS~~ R-GVLQY~~DMW~~ -----~~D-~~ NVTP~~SPD~~  
SGHV TRNLNR~~IIDI~~ NYYPVPEARR SNLNRHR~~PIGI~~ GVQGLADTFV LMGM~~PYESA~~ ARELNR~~RIFE~~ TIYFAALETS CQLAKEE~~G-V~~ YDSFLG~~SPAS~~ I-GTLQ~~QDMW~~ -----~~PV~~ DVDD~~KP~~  
phycovirus TCNLND~~KIDK~~ NYYPPEAER SNMRHR~~PIGL~~ GVQGLADVFM MLKMAF~~DS~~PD ARVLN~~KIFE~~ TMYFAAMTAS CDLAKTKG~~-K~~ YSTYE~~GSPLS~~ K-GKFQ~~FDLW~~ -----~~---~~ NVTP~~PSV~~  
herpesviru TRNLNK~~IIDC~~ NYFPLEECSK SNLNRHR~~PIGI~~ GVQGLADVFO RMMMP~~FTSPE~~ AKKLNR~~EIFE~~ TIYYAALQAS CELAKEH~~G-P~~ YSSYQ~~GSPVS~~ K-GILQ~~FDMW~~ -----~~---~~ NVKD~~EDLSG~~  
nuditvirus TRNLNK~~IIDN~~ ALYPIPSAAK SNFKHR~~PIGI~~ GVQGYADALA MMGIAYE--D SMQLNR~~DIFE~~ TIYHAALTES CQLARVH~~G-V~~ YESYH~~GSPVS~~ R-GELH~~FDRY~~ -----~~---~~ SV---HSQ  
poxvirus VRNLNK~~IIDI~~ NYYPPEAET SNKRHR~~PIGI~~ GVQGLADAFI LLNYFP~~DSLE~~ AQDLNR~~KIFE~~ TIYYGALEAS CELAEKEG~~-P~~ YETTY~~GSYAS~~ N-GILQY~~DLW~~ -----~~---~~ NV---VPSD  
WSSV TRNLND~~KVIDV~~ NFYAVDKTRI SNMKT~~RP~~MGL GVQGLADLFF KLRI~~PFESE~~ AALINK~~RIFE~~ TIYYGALEAS CEIAKEK~~GET~~ YELFEG~~SPLS~~ K-GIFQ~~FDMG~~ -----~~---~~ KENIK~~NRDI~~  
Consensus TRNL#K.ID. n.Yp..eae. SN..hRPiGi GVQGS~~TA#F~~. \$r~~ip~~ts#.E A..lnkrIFE TIYYAAL.aS C#IA...G.p Yet%.gSpas .G..Q.D\$. ....nv.....

651 780  
AmFV AWLTAVCP~~EA~~ WSWTELRN~~QI~~ EEHGLRNSQR LAPMPTASTA QILGNVESIE PLTTNFFSRR VRSGEFAVFN QYLVD~~DLVRL~~ GLWNEK~~MQQR~~ IIRARGSVQN IERLPP~~RLRE~~ VYRTVWEMPQ RLLVD~~LCAAR~~  
baculoviru LW-----D --WSMLKSKI SKHGLRNSLL LAPMPTASTA QILGNNESFE PFTSN~~IYQRR~~ VLSGEFQVFN RHLVKDLTAI GLWND~~TIKNL~~ IHHNNGSVQR IESIPLEIRQ LYKT~~VWEMSM~~ RTLIN~~MAADR~~  
SGHV MW-----N --WDEL~~RHNI~~ EMNGLRNSLL VAPMPTASTA QILGNTESEF PITSNIYVRR VLSGEFQVIN RHLVQH~~LIDL~~ GLWSES~~MRNR~~ IIRARGSVQD IEEIPIEVRR LYKT~~VWEISG~~ RRIID~~MAADR~~  
phycovirus RW-----N --WDTLRSNV KKHGTRNSLV TAPMPTASTA QILGNNECFE PFTSNLYSRR VLSGEFQVFN KYLVKDLSDR GLWGD~~SMKNY~~ IIAANGSVQN IPGF~~PEDLKP~~ IYKT~~VWEISM~~ RTLID~~MAADR~~  
herpesviru RW-----D --WAE~~LRLRI~~ GEHGVNRSLL VAPMPTASTA QILGNNESIE PYTSN~~IYQRR~~ VLSGD~~QIVN~~ PHLVKCLETR GLWNED~~MRLQ~~ LTIHRG~~SVQN~~ IPGF~~PEDLKE~~ IFKT~~VWELSQ~~ RDIID~~MAADR~~  
nuditvirus KC-----D --WSSL~~RKDI~~ ARYGLRNSLL VAPMPTATTS QVFGNAESFE PFTSN~~IYQRR~~ TQSGE~~FLTN~~ VHLVRDLERL NLWND~~DMAQL~~ IMYNGS~~IQN~~ ITIIPEELRR IYKT~~VWEIPT~~ KTLID~~MAADR~~  
poxvirus LW-----D --WESL~~KDKI~~ RSYGLRNSLL VAPMPTASTA QILGNNESVE PYTSN~~IYTRR~~ VLSGEFQVFN PHLLRV~~LTER~~ KLWNEE~~IKNR~~ IMADGGS~~IQN~~ -TNLPED~~IKR~~ VYKT~~IWEIPQ~~ KTIK~~MAADR~~  
WSSV YFNSLPIH~~D~~ --WEQL~~RDDI~~ MKYGVHNSMF VAPMPTASTA QILGNSESFE PLYSVN~~NRN~~ VLSGEFQVFN EYVIRE~~LKIL~~ GBNWSV~~TQKR~~ IMASGGS~~IQT~~ LPNI~~PKSTKE~~ LFKT~~VWEINP~~ RTTLD~~MAIQR~~  
Consensus .w.....#. ..W..Lr..I ..yGlrNSl. VAPMPTASTA QILGN.ES.E P.TsN.%Rr VLSGEFq!~~!N~~ .ylvr.L..l glWne.mk#r Ima..GS!~~IQn~~ i...P..lke .%kt!WEipq rt.id\$~~aadr~~

781 910  
AmFV QPFVDQSQSL NLYFFVPN-- --FKRLTNA HFYGWRNGLK TGMYYL  
baculoviru GAFIDQSQSF NVYMDLPS-- --YGKLT~~SI~~ HFYAWK~~GLK~~ TGMYYLRTKP AANAQ~~FTVD~~ KTAA----- --F-AACNSC SS  
SGHV GRYIDQSQSL NMHVAEPN-- --YAKLSSM HFYAWRAGLK TGMYYLRTKA AANAQ~~FTVD~~ SSSG----- --V-SSASS TQDGPACTRE -CLSCSS  
phycovirus GAFIDQSQSF NVFMTQPT-- --SAKLTSM HFYGNKSGLK TGAIA~~YHIQ~~ YTHYSIS  
herpesviru APFIDQSQSL NLHLGHEDDQ NIKLK~~KTAM~~ HMHG~~WKG~~GLK TGMYYLRTKA AADPQ~~FTVM~~ PSTKR~~PCPD~~ GEK-RSRKSP KTNIECTDD VCVMCSS  
nuditvirus GVYIDQSQSF NLYVAEP-- --YSRMT~~SI~~ HFYAWNKGLK TGMYYLRTKS ATNAI~~FTVD~~ VNRCAL~~MSQ~~ MKAGRVMAS~~P~~ FTKSL~~LVVEG~~ SSGGVESTTT GSNTSNSTTS SSTSSSNPSS TPSTGT~~KRN~~  
poxvirus GAFIDQSQSM NIHIADPS-- --YSKLTSM HFYGS~~W~~GLK TGMYYL  
WSSV GMFVDQAQSL NLFVEEPE-- --LSKVRSM TMYAWEKGIK T-LYYL  
Consensus g.#!DqsQsl Nl....P. .skltsm hYgW..GlK Tg\$YLL.....

911

1027

AmFV

baculoviru
SGHV
phycovirus
herpesviru
nudivirus LSRTMRSKRS LHHITFMQQI AENPTKAPLK AKIDAANSVE NLSKRKEPSF ELVDSDAKKI CMDIDDKSKD DENNSQMCQL EPKPTEVNES IEPKESIELT GRNQMVCFDD VCTSCSC
poxvirus
WSSV
Consensus

P74 (AmFV\_79)

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MSF: 1227 Check: 0 ..
Name: bracovirus Len: 1227 Check: 4564 Weight: 1.11
Name: nudivirus Len: 1227 Check: 612 Weight: 0.99
Name: SGHV Len: 1227 Check: 3976 Weight: 0.99
Name: baculovirus Len: 1227 Check: 8726 Weight: 1.01
Name: WSSV Len: 1227 Check: 7891 Weight: 0.95
Name: AmFV Len: 1227 Check: 3844 Weight: 0.95
Name: Consensus Len: 1227 Check: 2043 Weight: 0.00

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1 130
bracovirus
nudivirus MSTVPTNLNP NPNPTTPTNP TTTTTTTTTY TQLDIANASK FSYHRKLLML LHKLNEKYPF LASHLKNV- RAATDADYYI PPAMASEAIF VEAEITK--Q LCESISCNSS GVHGP-CKKT DAASYRRLGE
SGHV MSRRFNPP TQLDYSYADL YKYERYKIQQ YNYFLCYRPE IMSHTYIEI- SYNGDLPNND LPWYRKIRFV VRSR--K--K FCSQTSQCIN YPRGKMCQSD DKPRIFKTGD
baculoviru MAVL TAVDLTNASR YAGHMHRLFE INRWRELRPH ILIDYTLR-- PASSDDDDYV PPNLRNRAA VKLAFSR--R GCDSMSCFPF HETGVVSSQT PFA-YTQTSE
WSSV
AmFV M IIPDDAYPSW TNADARDANL YSIHRQLRWF SNYCVSIWPO IFSWIVNVIY PASSEHDYRF EPQFANRAIL VTVDWDRSGR GCRNSKCYAT YPPGNRCTMS EAPIVFPSGN
Consensus ..... t.d...a.. .....p. .... .p..... v..... .c.....c.....g.....
131 260
bracovirus
nudivirus SENFEVQCNP ACFHLFE-TA VHTDDGTDKP HNVRYR---- -WSETSNTCN IVPFAATWME IPRYRSSELY A-PRNLNLDLT GFDY----- -EPSTDT--- ----YHFNKY YCDVYYEAFD
SGHV HDL--EACQF SCYHLYEMTK TPSETKSDEK DDDYMRAPFL IYSYGQCACT IHSNGFFTLG ADDYARTDTH PKPRIDTIGT GFHYVDSGNF FDREDFSPED NQPYRDTEGN ESFRFQVNKY YCDDFQLKFD
baculoviru TSV--AYAQP ACYHLDRAAA MREGAENEVQ SAEFTYTP-- ----NNQCV LVDSTSKMYF NSPYLRTEEH TIMGVDDV-P AFNV----- -RPDPDPLFP ERFKGEFNEA YCRRFGR--D
WSSV MATFTEQDHK NAFLYANEKL RQERIYRLKM SEPSVYAF-I DIKEIENGW- --EKEFGLL VQPGQKLAPP RDISYDSSKL DCDAFSCIPS
AmFV KSNV-VACQP ACFARQRTLR LLKTADQEVs LTDQSGPSRS CPDCAYLNER VAFSTRRWRF GGSDGTRIDV FDSRTKKI-V GVQHERIGRT PVERDEHGSA KLKVDLFNVV WDEKYDNCIV VNDYVYRSVV
Consensus ..... .c..... ..... .....p..... ..... .p..... ..... .cd.....
261 390

bracovirus  
nuditivir  
SGHV  
baculoviru  
WSSV  
AmFV  
Consensus  
391  
bracovirus  
nuditivir  
SGHV  
baculoviru  
WSSV  
AmFV  
Consensus  
521  
bracovirus  
nuditivir  
SGHV  
baculoviru  
WSSV  
AmFV  
Consensus  
651  
bracovirus  
nuditivir  
SGHV  
baculoviru  
WSSV  
AmFV  
Consensus  
781  
bracovirus  
nuditivir  
SGHV  
baculoviru  
WSSV  
AmFV  
Consensus  
911  
bracovirus  
nuditivir  
SGHV  
baculoviru  
WSSV  
AmFV  
Consensus  
1041  
bracovirus  
nuditivir  
SGHV  
baculoviru  
WSSV  
AmFV  
Consensus  
1171  
bracovirus  
nuditivir  
SGHV

PDTRTCYTKW YNKLANIIVG DAVIKLINAG LTAMSNNGNK T---LPPEK DPPPAIDDKW TVSGWRKNID PNFKLPPIDV TVSDL---E TMNRVNHRSK RS-PNTI--P MADNVKI--- VRFDDAMMKS  
G--QKCYESV GEKIFGFLV STLYKACQYG VRYAATGVSN TD--VQKLDL PPRPFHVHHE TYDSWKNID PDAFFIDPNV SLDDLGFKDE TMKHCIFTTQ YGYPGRLEV P KATGKNLTGN IVDYEALNRG  
LINGGCSFRW WESLIGFVLG DTIYVTFKML ANNIFSELRD FDYAAPSPLL PPRPAADBSNA VLAQWRVRD RAVDW----- DFEKQ FSEAPTL--- QQLGMDA  
DILHSDNEKR V-GECNFAEH TSVSFPVKNP EGKTL----R HFTACGPGCY RRYKQRDPHT GLPFARGVLM QDHVDHETGN KMCEYLNQSL VMW---AAMP WIRPGDL--T EGYNTTHVPG FAFK--EDDE  
EPIYRDPGVV C-KLTNFEIG DDVEWGFRYA ENSSRVVPNY GFLVKHSSAY CRAFAKDL-T SEGECKQPNW QSALANT IAG DGIVHAIHSL VHYDPPCPEP WRTQENE--R AQTPTQFEAD TVYDLWRRDV  
.....f.....  
391  
MKDRSTT MSLKIQILTL  
KPKPTKPSTS TSTSTTKNQD IEKLLNLVKS LNDTSGADRE LKNALASQTG KQTKFESIIL SLLNELTSAD FAASVAVDVG VTQ--LASQL KTMITVKAIQK LVPLLQKKVA TMAIDTSELV LGASFKVAVR  
RLYQFRYDYN SGRRLIDEYE IYDIYKIYRS NPTNTPDDRD YMQARQNLAE ILHGIISN-L GEVGGMMALG YLIDKGVOQS TNL--IKLST EYLEGKITPT LLHIVERELA SKALNPAIQM FSKAIASVAR  
NGVLMQLSYT AETGFTKTP IAYSARGAVRV ARESRAADRA MSD----- --DDLEAIVA SFLEEYA--- LVFGIATDIG FDM--LLTAF KAMLKKINTA LIPALKRMLV GTSQRVTVRL LGETYKAALV  
RDSKRVKYEN VVISKAYCDF F---KQYYD ADSGSCYRSG WMKFVHLMFG QYFTNLNLYN A---NPKPYN LTGNTWSNV SV---LTDNP IVDAGAAPS- -----RSEM DEIITKKKFN VFPSEQTSAR  
NDKFVLPPIP VTLSDLGINV LLTGNRLYWN SAEIGIISQFA LFRSVTNTPG TLPSPNEPSTT TPNRRNRPLL LDGSGVENERM KYQRYTTKPP KRRWGKRAAF INRLRRETRA NEAMRQHATN VLTEYRDLRL  
.....k.....  
520  
521  
LPEKWNERRI CETMNTSRHL TRVAKKLVEE KGLLSTPESK LGRTITHQML LKIEFYND D EYSALMLGMK D FVSQVQNDG NRHVQKRLV LSNLKELYQC FREIN--PTE KIGFSKFASL RPKHCVLARA  
DLVVLPTVRS LGTI--GVYL TKSLAMASTG VGVVLLITQL FSILLTFWDP L---GFNNM -YTPDYHLQL YENSKMALR- SQLKTNRPVL TFDYV-CSFL LTEEDL---F DASIESYTY YRYLDALEVN  
ISGGLIKTM D VFTTVAGILD LIDVGADFFN MGSVMDTGTV HQYSQMDIDV LRRSYGYGTV EYSPVTFMLT CEMLKLYEKW SEIPLATKRL RNEHTKYKYM IPAEAVTRYH EDDNNSYEWV SEYVFSLRTN  
HSMNRIAKT LT TA--AKAL TRVAIKASSV VGVILILFTL ADLVLAWDP F---GYNM FPREFPDDL RTFLTAYFET LDSNTSREII EFLPEFFADI VETDD----- DATFQSLFHL LDYVAALVN  
QKAENIIRSQ YGDGVEIDPS SVDALMQFVN REGVVGTEKK SDRIMRVADA VMD--AAMRL QVMGLDDQS RRL-LKNMI KMSRNNPEYA RHFSSSLKLI GVTL---AIK RSVFSGGASA KRKETAING  
AKIERFRDRA AMEGREBERQ ERHARFTRSN STTTSASTTL PASTNASDDP ATG--GDSGG DSDRTWDRS HGSFDRRNL RDADIDSKLG RLWRDEVRPL LDRVNNDATG RSVGGYTSK KVVGHDTTDE  
.....r..t.....l tr.a.....g.v.....d. l....gyn..y.....n.....f.....s.....l...  
650  
780  
SGTH TICVCT IHQNFNDCLD MIICETPSVQ CYLGGCNCNP EVDELSNILL TCFENQEIEI IYKYWISKP RSSLETFIKP TEEFIENFCS E---LKVLLP HSFIAKQAK FLKTLKETLK PNEFVICDF  
SDGARINKGN VIDVGSIE-- --FEKILTRA KLFTVQDFEV YESHHKLRRQ AFDTINRYTG IAVGIGVVIL VLRVYLLGVL MLLLSVALVS V-SYANIAFN VWQWITDRIN PFKV  
SNGLDINWSE EQSLPDDV-- --AQYTRID KNLYYQGIDE YATYTSFRK RVQ-FSRY-- VLVAVIIIFV IIAFVYIQVA VPAIFIAAMS T-FY--LVFS YFQ  
SDGQMLALDE SDEIKDFDEA TLVGQALASS SLYTRLEFMQ YTYRQNTLLA MNKNNNKING VLAGLFILNT AVALAAFAIAH KELTFFVYFA I-F---LMLA FYYLVKEPEYE YFKTVDDLFF  
EQHRRSRWSP ETVTEEDALL FARENITEDP KHPAPFVDIL HSPDINSSIK SGSSSIWND ILSRISSTLR LEKASVFEVK NLVVKVVRQF LDILEGKLF S DGYEWDNIP LMIGVDQILR EVIKAASNMC  
ELYSSAVTD DE-EELTSTI YTRAGSVSYT LETNELAAQR YVESRLADDE QRKPKSATAT ATVTVTGTTDT TDKTNIDGGS TATTSSPRLL VPSTARTIGW RSGEAEDP-D LKDLLEHIEQE EIENGASTL  
s.....i.....d.....y.....i.....s.....k.....  
781  
AENYAFVVQN AASGFHWN NN QATVFPVV-- IYYKINDEL HKS LVIISDC NNHDAVAVHV FIKLITDYVK SLPERCNKIY YFSDGAPQQF KNFKNFVNLH YHEDD F DIPA EWHFSATAHG KGPCDGIGGI  
ARFASSALES SLVTGFIDSA SAITSRLAVQ LAARTFSVFL EESVIEFVVA ASL-----RL AIQAFADLAT LAASALT VIG IVIFVIQVLG LILDALGLG WYDHFSPED LKKQVLVFR R EFAKAGNV D  
LQDLGIAVGF EVADRIRKS LKFAFTKISQ ILSRHTSGVI GKSLMKIGMR VGLSKMFGNV AARLTTKVMV MIGQAASIVG LIIDTISFVS LLFDIAELAG WDPGSRNEQ DTHFYDMSV YFAET--LTD  
.....f.....  
910  
1040  
IKRHAARASL QLAVDKQITT PIEFFE  
GVAQPVTPEE IVAINVFLQT EENGEEK--K EEGARKSKID FL--QKYFHS TPLMGKSKSF VYIQEAAQ EY LGGRTMNAFG Q-----RIIT AADSDSTTTT TQEGRRDDET VTKKMSIIL ET---GQTLK  
TQRGLPSPLE MMLIFTTDDT AADGNQKGN NETAVNDNAD NTGTQEESSG TKTQHIDERL RYPKWFNKQF TACFPKNAFD VFNGVNNFS GASNDPEHV I QDSAEIWL VTCMDYLGSL TTNSFGQRIV  
.....t.....  
1170  
1227

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baculoviru
WSSV      DIKTDPRRVG MVQRHVGGA KYNMITDFVS PMLDEIESD
AmFV      TTGGTTTRAL ATTTGTGGGT GTTGTTDKND NNSSTSTEQ TLHYADTLR NFATTLS
Consensus .....

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