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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: 1273 Check: 0 ..
Name: China1\_YP\_0097 Len: 1273 Check: 7592 Weight: 1.00
Name: Italy\_QIA98554 Len: 1273 Check: 7592 Weight: 1.00
Name: USA1\_QH060594. Len: 1273 Check: 7592 Weight: 1.00
Name: Nepal\_QIB84673 Len: 1273 Check: 7592 Weight: 1.00
Name: India\_QIA98583 Len: 1273 Check: 7970 Weight: 1.00
Name: Consensus Len: 1273 Check: 7592 Weight: 0.00

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1
China1\_YP\_ MFVFLVLLPL VSSQCVNLT RTQLPPAYTN SFTRGVVYYP KVFRSSVLHS TQDLFLPFFS NVTWFHAIHV SGTNGTKRFD NPVLPFNDGV YFASTEKSNIRGWIIFGTTLSKTSQSLIV NNATNVVIVK CEFQFCNDPF LGVYYHKNNK SWMESEFRVY SSANNCTFEY VSQPFLMDLE 180
Italy\_QIA9 MFVFLVLLPL VSSQCVNLT RTQLPPAYTN SFTRGVVYYP KVFRSSVLHS TQDLFLPFFS NVTWFHAIHV SGTNGTKRFD NPVLPFNDGV YFASTEKSNIRGWIIFGTTLSKTSQSLIV NNATNVVIVK CEFQFCNDPF LGVYYHKNNK SWMESEFRVY SSANNCTFEY VSQPFLMDLE
USA1\_QH060 MFVFLVLLPL VSSQCVNLT RTQLPPAYTN SFTRGVVYYP KVFRSSVLHS TQDLFLPFFS NVTWFHAIHV SGTNGTKRFD NPVLPFNDGV YFASTEKSNIRGWIIFGTTLSKTSQSLIV NNATNVVIVK CEFQFCNDPF LGVYYHKNNK SWMESEFRVY SSANNCTFEY VSQPFLMDLE
Nepal\_QIB8 MFVFLVLLPL VSSQCVNLT RTQLPPAYTN SFTRGVVYYP KVFRSSVLHS TQDLFLPFFS NVTWFHAIHV SGTNGTKRFD NPVLPFNDGV YFASTEKSNIRGWIIFGTTLSKTSQSLIV NNATNVVIVK CEFQFCNDPF LGVYYHKNNK SWMESEFRVY SSANNCTFEY VSQPFLMDLE
India\_QIA9 MFVFLVLLPL VSSQCVNLT RTQLPPAYTN SFTRGVVYYP KVFRSSVLHS TQDLFLPFFS NVTWFHAIHV SGTNGTKRFD NPVLPFNDGV YFASTEKSNIRGWIIFGTTLSKTSQSLIV NNATNVVIVK CEFQFCNDPF LGVYYHKNNK SWMESEFRVY SSANNCTFEY VSQPFLMDLE
Consensus MFVFLVLLPL VSSQCVNLT RTQLPPAYTN SFTRGVVYYP KVFRSSVLHS TQDLFLPFFS NVTWFHAIHV SGTNGTKRFD NPVLPFNDGV YFASTEKSNIRGWIIFGTTLSKTSQSLIV NNATNVVIVK CEFQFCNDPF LGVYYHKNNK SWMESEFRVY SSANNCTFEY VSQPFLMDLE

181
China1\_YP\_ GKQGNFKNLR EFVFKNIDGY FKIYSKHTPI NLVRDLPOGF SALEPLVDLP IGINITRFQT LLALHRSYLT PGDSSSGWTA GAAAYVGYL QPRTFLLKYN ENGTITDAVD CALDPLSETK CTLKSFTVEK GIYQTSNFRV QPTESIVRFP NITNLCPFGE VFNATRFASV YAWNKRKISN 360
Italy\_QIA9 GKQGNFKNLR EFVFKNIDGY FKIYSKHTPI NLVRDLPOGF SALEPLVDLP IGINITRFQT LLALHRSYLT PGDSSSGWTA GAAAYVGYL QPRTFLLKYN ENGTITDAVD CALDPLSETK CTLKSFTVEK GIYQTSNFRV QPTESIVRFP NITNLCPFGE VFNATRFASV YAWNKRKISN
USA1\_QH060 GKQGNFKNLR EFVFKNIDGY FKIYSKHTPI NLVRDLPOGF SALEPLVDLP IGINITRFQT LLALHRSYLT PGDSSSGWTA GAAAYVGYL QPRTFLLKYN ENGTITDAVD CALDPLSETK CTLKSFTVEK GIYQTSNFRV QPTESIVRFP NITNLCPFGE VFNATRFASV YAWNKRKISN
Nepal\_QIB8 GKQGNFKNLR EFVFKNIDGY FKIYSKHTPI NLVRDLPOGF SALEPLVDLP IGINITRFQT LLALHRSYLT PGDSSSGWTA GAAAYVGYL QPRTFLLKYN ENGTITDAVD CALDPLSETK CTLKSFTVEK GIYQTSNFRV QPTESIVRFP NITNLCPFGE VFNATRFASV YAWNKRKISN
India\_QIA9 GKQGNFKNLR EFVFKNIDGY FKIYSKHTPI NLVRDLPOGF SALEPLVDLP IGINITRFQT LLALHRSYLT PGDSSSGWTA GAAAYVGYL QPRTFLLKYN ENGTITDAVD CALDPLSETK CTLKSFTVEK GIYQTSNFRV QPTESIVRFP NITNLCPFGE VFNATRFASV YAWNKRKISN
Consensus GKQGNFKNLR EFVFKNIDGY FKIYSKHTPI NLVRDLPOGF SALEPLVDLP IGINITRFQT LLALHRSYLT PGDSSSGWTA GAAAYVGYL QPRTFLLKYN ENGTITDAVD CALDPLSETK CTLKSFTVEK GIYQTSNFRV QPTESIVRFP NITNLCPFGE VFNATRFASV YAWNKRKISN

361
China1\_YP\_ CVADYSVLYN SASFSTFKCY GVSPTKLNLD CFTNVYADF VIRGDEVRQI APGQTGKIAD YNYKLPDDFT GCVIAWNSNN LDSKVGNGYN YLYRFRKSN LKPFERDIST EIYQAGSTPC NGVEGFNCYF PLQSYGFQPT NGVGYQPYRV VVLSFELLHA PATVCGPKKS TNLVKNKCVN 540
Italy\_QIA9 CVADYSVLYN SASFSTFKCY GVSPTKLNLD CFTNVYADF VIRGDEVRQI APGQTGKIAD YNYKLPDDFT GCVIAWNSNN LDSKVGNGYN YLYRFRKSN LKPFERDIST EIYQAGSTPC NGVEGFNCYF PLQSYGFQPT NGVGYQPYRV VVLSFELLHA PATVCGPKKS TNLVKNKCVN
USA1\_QH060 CVADYSVLYN SASFSTFKCY GVSPTKLNLD CFTNVYADF VIRGDEVRQI APGQTGKIAD YNYKLPDDFT GCVIAWNSNN LDSKVGNGYN YLYRFRKSN LKPFERDIST EIYQAGSTPC NGVEGFNCYF PLQSYGFQPT NGVGYQPYRV VVLSFELLHA PATVCGPKKS TNLVKNKCVN
Nepal\_QIB8 CVADYSVLYN SASFSTFKCY GVSPTKLNLD CFTNVYADF VIRGDEVRQI APGQTGKIAD YNYKLPDDFT GCVIAWNSNN LDSKVGNGYN YLYRFRKSN LKPFERDIST EIYQAGSTPC NGVEGFNCYF PLQSYGFQPT NGVGYQPYRV VVLSFELLHA PATVCGPKKS TNLVKNKCVN
India\_QIA9 CVADYSVLYN SASFSTFKCY GVSPTKLNLD CFTNVYADF VIRGDEVRQI APGQTGKIAD YNYKLPDDFT GCVIAWNSNN LDSKVGNGYN YLYRFRKSN LKPFERDIST EIYQAGSTPC NGVEGFNCYF PLQSYGFQPT NGVGYQPYRV VVLSFELLHA PATVCGPKKS TNLVKNKCVN
Consensus CVADYSVLYN SASFSTFKCY GVSPTKLNLD CFTNVYADF VIRGDEVRQI APGQTGKIAD YNYKLPDDFT GCVIAWNSNN LDSKVGNGYN YLYRFRKSN LKPFERDIST EIYQAGSTPC NGVEGFNCYF PLQSYGFQPT NGVGYQPYRV VVLSFELLHA PATVCGPKKS TNLVKNKCVN

541
China1\_YP\_ FNFNGLTGTG VLTESNKKFL PFQQFGRDIA DTTDAVRDPQ TLEILDITPC SFGGVSVITP GTNTSNQVAV LYQDVNCTEV PVAIHADQLT PTVRVYSTGS NVFQTRAGCL IGAEHVNNSY ECDIPIGAGI CASYQTQTN PRRARVASQ SIIAYTMSLG AENSVAYSNN SIAIPTNFTI 720
Italy\_QIA9 FNFNGLTGTG VLTESNKKFL PFQQFGRDIA DTTDAVRDPQ TLEILDITPC SFGGVSVITP GTNTSNQVAV LYQDVNCTEV PVAIHADQLT PTVRVYSTGS NVFQTRAGCL IGAEHVNNSY ECDIPIGAGI CASYQTQTN PRRARVASQ SIIAYTMSLG AENSVAYSNN SIAIPTNFTI
USA1\_QH060 FNFNGLTGTG VLTESNKKFL PFQQFGRDIA DTTDAVRDPQ TLEILDITPC SFGGVSVITP GTNTSNQVAV LYQDVNCTEV PVAIHADQLT PTVRVYSTGS NVFQTRAGCL IGAEHVNNSY ECDIPIGAGI CASYQTQTN PRRARVASQ SIIAYTMSLG AENSVAYSNN SIAIPTNFTI
Nepal\_QIB8 FNFNGLTGTG VLTESNKKFL PFQQFGRDIA DTTDAVRDPQ TLEILDITPC SFGGVSVITP GTNTSNQVAV LYQDVNCTEV PVAIHADQLT PTVRVYSTGS NVFQTRAGCL IGAEHVNNSY ECDIPIGAGI CASYQTQTN PRRARVASQ SIIAYTMSLG AENSVAYSNN SIAIPTNFTI
India\_QIA9 FNFNGLTGTG VLTESNKKFL PFQQFGRDIA DTTDAVRDPQ TLEILDITPC SFGGVSVITP GTNTSNQVAV LYQDVNCTEV PVAIHADQLT PTVRVYSTGS NVFQTRAGCL IGAEHVNNSY ECDIPIGAGI CASYQTQTN PRRARVASQ SIIAYTMSLG AENSVAYSNN SIAIPTNFTI
Consensus FNFNGLTGTG VLTESNKKFL PFQQFGRDIA DTTDAVRDPQ TLEILDITPC SFGGVSVITP GTNTSNQVAV LYQDVNCTEV PVAIHADQLT PTVRVYSTGS NVFQTRAGCL IGAEHVNNSY ECDIPIGAGI CASYQTQTN PRRARVASQ SIIAYTMSLG AENSVAYSNN SIAIPTNFTI

721
China1\_YP\_ SVTTEILPVS MTKTSVDCTM YICGDSTECs NLLLYQGSFC TQLNRALTGI AVEQDKNTQE VFAVQVKIYK TPKIKDFGGF NFSQILPDPs KPSKRSFIED LLFNKVTLD AGFIKQYGD LGDIAARDLI CAQKFNGLTV LPPLLDemi AQYTSALLAG TITSGWTFGA GAALQIPFAM 900
Italy\_QIA9 SVTTEILPVS MTKTSVDCTM YICGDSTECs NLLLYQGSFC TQLNRALTGI AVEQDKNTQE VFAVQVKIYK TPKIKDFGGF NFSQILPDPs KPSKRSFIED LLFNKVTLD AGFIKQYGD LGDIAARDLI CAQKFNGLTV LPPLLDemi AQYTSALLAG TITSGWTFGA GAALQIPFAM
USA1\_QH060 SVTTEILPVS MTKTSVDCTM YICGDSTECs NLLLYQGSFC TQLNRALTGI AVEQDKNTQE VFAVQVKIYK TPKIKDFGGF NFSQILPDPs KPSKRSFIED LLFNKVTLD AGFIKQYGD LGDIAARDLI CAQKFNGLTV LPPLLDemi AQYTSALLAG TITSGWTFGA GAALQIPFAM
Nepal\_QIB8 SVTTEILPVS MTKTSVDCTM YICGDSTECs NLLLYQGSFC TQLNRALTGI AVEQDKNTQE VFAVQVKIYK TPKIKDFGGF NFSQILPDPs KPSKRSFIED LLFNKVTLD AGFIKQYGD LGDIAARDLI CAQKFNGLTV LPPLLDemi AQYTSALLAG TITSGWTFGA GAALQIPFAM
India\_QIA9 SVTTEILPVS MTKTSVDCTM YICGDSTECs NLLLYQGSFC TQLNRALTGI AVEQDKNTQE VFAVQVKIYK TPKIKDFGGF NFSQILPDPs KPSKRSFIED LLFNKVTLD AGFIKQYGD LGDIAARDLI CAQKFNGLTV LPPLLDemi AQYTSALLAG TITSGWTFGA GAALQIPFAM
Consensus SVTTEILPVS MTKTSVDCTM YICGDSTECs NLLLYQGSFC TQLNRALTGI AVEQDKNTQE VFAVQVKIYK TPKIKDFGGF NFSQILPDPs KPSKRSFIED LLFNKVTLD AGFIKQYGD LGDIAARDLI CAQKFNGLTV LPPLLDemi AQYTSALLAG TITSGWTFGA GAALQIPFAM

	901																			1080
China1_YP_	QMAYRFNGIG	VTQNVLYENQ	KLIANQFNSA	IGKIQDSLSS	TASALGKLQD	VVNQNAQALN	TLVKQLSSNF	GAISSVLNDI	LSRLDKVEAE	VQIDRLITGR	LQSLQTYVTQ	QLIRAAEIRA	SANLAATKMS	ECVLGQSKRV	DFCGKGYHLM	SFPQSAPHGV	VFLHVTYVPA	QEKNFTTAPA		
Italy_QIA9	QMAYRFNGIG	VTQNVLYENQ	KLIANQFNSA	IGKIQDSLSS	TASALGKLQD	VVNQNAQALN	TLVKQLSSNF	GAISSVLNDI	LSRLDKVEAE	VQIDRLITGR	LQSLQTYVTQ	QLIRAAEIRA	SANLAATKMS	ECVLGQSKRV	DFCGKGYHLM	SFPQSAPHGV	VFLHVTYVPA	QEKNFTTAPA		
USA1_QH060	QMAYRFNGIG	VTQNVLYENQ	KLIANQFNSA	IGKIQDSLSS	TASALGKLQD	VVNQNAQALN	TLVKQLSSNF	GAISSVLNDI	LSRLDKVEAE	VQIDRLITGR	LQSLQTYVTQ	QLIRAAEIRA	SANLAATKMS	ECVLGQSKRV	DFCGKGYHLM	SFPQSAPHGV	VFLHVTYVPA	QEKNFTTAPA		
Nepal_QIB8	QMAYRFNGIG	VTQNVLYENQ	KLIANQFNSA	IGKIQDSLSS	TASALGKLQD	VVNQNAQALN	TLVKQLSSNF	GAISSVLNDI	LSRLDKVEAE	VQIDRLITGR	LQSLQTYVTQ	QLIRAAEIRA	SANLAATKMS	ECVLGQSKRV	DFCGKGYHLM	SFPQSAPHGV	VFLHVTYVPA	QEKNFTTAPA		
India_QIA9	QMAYRFNGIG	VTQNVLYENQ	KLIANQFNVS	IGKIQDSLSS	TASALGKLQD	VVNQNAQALN	TLVKQLSSNF	GAISSVLNDI	LSRLDKVEAE	VQIDRLITGR	LQSLQTYVTQ	QLIRAAEIRA	SANLAATKMS	ECVLGQSKRV	DFCGKGYHLM	SFPQSAPHGV	VFLHVTYVPA	QEKNFTTAPA		
Consensus	QMAYRFNGIG	VTQNVLYENQ	KLIANQFNsa	IGKIQDSLSS	TASALGKLQD	VVNQNAQALN	TLVKQLSSNF	GAISSVLNDI	LSRLDKVEAE	VQIDRLITGR	LQSLQTYVTQ	QLIRAAEIRA	SANLAATKMS	ECVLGQSKRV	DFCGKGYHLM	SFPQSAPHGV	VFLHVTYVPA	QEKNFTTAPA		
	1081																			1260
China1_YP_	ICHDGKAHFP	REGVFVSNGT	HWFVTQRNFY	EPQIITTDNT	FVSGNCDVVI	GIVNNTVYDP	LQPELDSFKE	ELDKYFKNHT	SPDVLGDIS	GINASVVNIQ	KEIDRLNEVA	KNLNEIDL	QELGKYEYI	KWPWYIWLGF	IAGLIAIVMV	TIMLCCMTSC	CCLKGCCSC	GSCCKFDEDD		
Italy_QIA9	ICHDGKAHFP	REGVFVSNGT	HWFVTQRNFY	EPQIITTDNT	FVSGNCDVVI	GIVNNTVYDP	LQPELDSFKE	ELDKYFKNHT	SPDVLGDIS	GINASVVNIQ	KEIDRLNEVA	KNLNEIDL	QELGKYEYI	KWPWYIWLGF	IAGLIAIVMV	TIMLCCMTSC	CCLKGCCSC	GSCCKFDEDD		
USA1_QH060	ICHDGKAHFP	REGVFVSNGT	HWFVTQRNFY	EPQIITTDNT	FVSGNCDVVI	GIVNNTVYDP	LQPELDSFKE	ELDKYFKNHT	SPDVLGDIS	GINASVVNIQ	KEIDRLNEVA	KNLNEIDL	QELGKYEYI	KWPWYIWLGF	IAGLIAIVMV	TIMLCCMTSC	CCLKGCCSC	GSCCKFDEDD		
Nepal_QIB8	ICHDGKAHFP	REGVFVSNGT	HWFVTQRNFY	EPQIITTDNT	FVSGNCDVVI	GIVNNTVYDP	LQPELDSFKE	ELDKYFKNHT	SPDVLGDIS	GINASVVNIQ	KEIDRLNEVA	KNLNEIDL	QELGKYEYI	KWPWYIWLGF	IAGLIAIVMV	TIMLCCMTSC	CCLKGCCSC	GSCCKFDEDD		
India_QIA9	ICHDGKAHFP	REGVFVSNGT	HWFVTQRNFY	EPQIITTDNT	FVSGNCDVVI	GIVNNTVYDP	LQPELDSFKE	ELDKYFKNHT	SPDVLGDIS	GINASVVNIQ	KEIDRLNEVA	KNLNEIDL	QELGKYEYI	KWPWYIWLGF	IAGLIAIVMV	TIMLCCMTSC	CCLKGCCSC	GSCCKFDEDD		
Consensus	ICHDGKAHFP	REGVFVSNGT	HWFVTQRNFY	EPQIITTDNT	FVSGNCDVVI	GIVNNTVYDP	LQPELDSFKE	ELDKYFKNHT	SPDVLGDIS	GINASVVNIQ	KEIDRLNEVA	KNLNEIDL	QELGKYEYI	KWPWYIWLGF	IAGLIAIVMV	TIMLCCMTSC	CCLKGCCSC	GSCCKFDEDD		
	1261	1273																		
China1_YP_	SEPVLKGVKL	HYT																		
Italy_QIA9	SEPVLKGVKL	HYT																		
USA1_QH060	SEPVLKGVKL	HYT																		
Nepal_QIB8	SEPVLKGVKL	HYT																		
India_QIA9	SEPVLKGVKL	HYT																		
Consensus	SEPVLKGVKL	HYT																		