

MULTIPLE SEQUENCE ALIGNMENT

k1fst/pep_msa/SNOAR.p Tue Feb 1 14:37:18 2022

Pavo_muticus	-MEAPEYLDLDEIDFSDDIS-----	19
Pavo_cristatus	-MEAPEYLDLDEIDFSDDIS-----	19
Gallus_gallus	-MEAPEYLDLDEIDFSDDIS-----	19
Anolis_carolinensis	-MEAPEYLDLDEIDFSDDIS-----	19
Mus_musculus	-MEAPEYLDLDEIDFSDDIS-----	19
Rattus_norvegicus	-MEAPEYLDLDEIDFSDDIS-----	19
Homo_sapiens	-MEAPEYLDLDEIDFSDDIS-----	19
Pan_troglodytes	-MEAPEYLDLDEIDFSDDISDNRSGNRLQKLGLEDTDREDAMGFSSHRAKLTVVAALGA	59
Macaca_mulatta	-MEAPEYLDLDEIDFSDDISDNRSGNRLQKLGLEDTDREDALGFGSHRAKLTVVAALGA	59
Callithrix_jacchus	-MEAPEYLDLDEIDFSDDISDNRSGNRLQKLGLEDTGRGDALGFGSCRAKLTVVAALGD	59
Canis_lupus_familiaris	-MEAPEYLDLDEIDFSDDIS-----	19
Felis_catus	-MEAPEYLDLDEIDFSDDIS-----	19
Equus_caballus	-MEAPEYLDLDEIDFSDDTS-----	19
Bos_taurus	-MEAPEYLDLDEIDFSDDIS-----	19
Heterocephalus_glaber	-MEAPEYLDLDEIDFSDDIS-----	19
Latimeria_chalumnae	-----	
Xenopus_tropicalis	MMEAPEYLDLDEIDFSDDIS-----	20
Rhinatrema_bivittatum	-MEAPEYLDLDEIDFSDDIS-----	19
	1.....10.....20.....30.....40.....50.....60	

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Pavo_muticus	-----	YSITSLKTIPELCRRCD	SQNE	DRS	-----	VSSSSWNCGGSTLIG						58
Pavo_cristatus	-----	YSITSLKTIPELCRRCD	SQNE	DRS	-----	VSSSSWNCGGSTLIG						58
Gallus_gallus	-----	YSITSLKTIPELCRRCD	SQNE	DRS	-----	VSSSSWNCGGSALIG						58
Anolis_carolinensis	-----	YSVTSLKTIPELHRKCD	SQNE	DRT	-----	VSGTNWSLG VATLLG						58
Mus_musculus	-----	YSVTSLKTIPALCRRCD	SQNE	DRS	-----	VSSSGWNCGVSTLIT						58
Rattus_norvegicus	-----	YSVTSLKTIPALCRRCD	SQNE	DRP	-----	VSSSSWNCGVSTLIT						58
Homo_sapiens	-----	YSVTSLKTIPELCRRCD	TQNE	DRS	-----	VSSSSWNCGISTLIT						58
Pan_troglodytes	CHCPENEYSVTSLKTIPELCRRCD	TQNE	DRS	-----	VSSSSWNCGISTLIT							105
Macaca_mulatta	CHCPENEYSVTSLKTIPELCRRCD	TQNE	DRS	-----	VSSSSWNCGISTLIT							105
Callithrix_jacchus	CHCPENEYSVTSLKTIPELCRRCD	TQNE	DKS	-----	VSSSSWNCGISTLIT							105
Canis_lupus_familiaris	-----	YSVTSLKTIPELCRRCD	SQSE	DRS	-----	VSSSSWNCVSALIT						58
Felis_catus	-----	YSVTSLKTIPELCRRCD	AQSE	DRS	-----	VSSSSWNCVSALIT						58
Equus caballus	-----	YSVTSLKTIPELCRRCD	SQSE	DRSVDOHCKTS	PSSVKIV	VSSSSWNCGVSTLIT						72
Bos_taurus	-----	YSVTSLKTIPELCRRCD	SQNE	DRS	-----	VSSSGWNCGVSTLIT						58
Heterocephalus_glaber	-----	YSVTSLKTIPELCRRCD	SQNE	DRS	-----	VSSSSWNCGISTLIT						58
Latimeria_chalumnae	-----				-----	MAVSNNSWSCAVSTLIG						17
Xenopus_tropicalis	-----	YSITSLKTIPELCRRCD	PONDDRS	-----	VSSNTWSCGVSTLIG							59
Rhinatrema_bivittatum	-----	YSVTSLKTIPELCRRCD	SQNE	DRS	-----	VSNISWNCGVSTLIG						58
	.....	70	.....	80	.....	90	.....	100	.....	110	.....	120

	.....130.....140.....150.....160.....170.....180	
Pavo_muticus	NAQKPTGIADASNKFRPVKRVSPCLKHOPESSENESDDQKNQK-----GEYQKGGESQ	111
Pavo_cristatus	NAQKPTGIADASNKFRPVKRVSPCLKHOPESSENESDDQKNQK-----GEYQKGGESQ	111
Gallus_gallus	NAQKPTGIADACNKFRPVKRVSPCLKHOPESSENESDDQKNQK-----GEYQKGGESQ	111
Anolis_carolinensis	NGQKPTGIAEVYSKFRPVKRVSPCLKHOPESSENESDDQKNQK-----VEYKKDGDSP	111
Mus_musculus	NPQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNEDQKNNT-----VEYQKGGETD	111
Rattus_norvegicus	NPQKPTGIADVYSKFRPVKRVSPCLKHOPETLESNESDDQKNNT-----VEYQKGGETD	111
Homo_sapiens	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNQKV-----VEYQKGGESD	112
Pan_troglodytes	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNQKV-----VEYQKGGESD	159
Macaca_mulatta	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNQKV-----VEYQKGGESD	159
Callithrix_jacchus	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNQKV-----VEYQKGGESD	159
Canis_lupus_familiaris	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNQK-----VEYQKGGDPD	111
Felis_catus	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLDNNESSDDQKNQK-----VEYQKGGSDSE	111
Equus_caballus	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNQK-----TEYQKGGESD	125
Bos_taurus	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNQK-----AEYQKGNDDPD	111
Heterocephalus_glaber	NTQKPTGIADVYSKFRPVKRVSPCLKHOPETLENNESDDQKNHK-----VEYQKEGDDPD	111
Latimeria_chalumnae	TGQKPTGIADVYSKFRPVKRVSPCLKHOPENENEDSSVQODQKEDYHDKEDYHKGDVSE	77
Xenopus_tropicalis	NTQKPTGIADVYSKFRPVKRVSPCLKHOPESPOINESDDQKEEK-----EENQKNQD-P	111
Rhinatrema_bivittatum	NAQKPTGITDVYNKFRPVKRVSPCLKHOPESPNESDDQKEEK-----EDYQKNSNCK	111

ep_ms2

a/SNCE

AdFe.pTu

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 PAPPNDDQSPGEGEN-LKSKNIEPTVLLGGELEHYDLDMEILDVPIYIKSNQQLVPFTKVA
 PAPPNDDQSPGEGEN-LKSKNIEPTVLLGGELEHYDLDMEILDVPIYIKSNQQLVPFTKVA
 PAPPNDDQSPGEGEN-LKSKNIEPTVLLGGELEHYDLDMEILDVPIYIKSNQQLVPFTKVA
 SAAQTGNQTLGSGES-LKAKCVEPGVLLGGELEHYDLDMEILDVPIYIKSSQQLAAYTKAA
 QGPQPEELSPEDGVGGLPGKGSEPSQALGELEHYDLDMEILDVPIYIKSSQQLAPLTKVT
 QGPQPEELSPEDGVGGLPGKGSEPSQALGELEHYDLDMEILDVPIYIKSSQQLAPLTKVT
 LGPQPQELGPGDGVGGPPGKSSSEPSTSLGGELEHYDLDMEILDVPIYIKSSQQLASFTKVT
 LGPQPQELGPGDGVGGPPGKSSSEPSTSLGGELEHYDLDMEILDVPIYIKSSQQLASFTKVT
 LGPQPPEELSPGDGVGGPPGKSSSEPSTSLGGELEHYDLDMEILDVPIYIKSSQQLASFTKV
 LGHQPEDLSPDGLGSGPPGKNSESEPSTPLGGELEHYDLDMEILDVPIYIKSSQQLASFTKVT
 PGQPPEELSPDGENGPQNKSSSEPSTLLGGELEHYDLDMEILDVPIYIKSSQQLASFTKVT
 PGPPPPEELSPDGDGSGPQSKSTEPSTLLGGELEHYDLDMEILDVPIYIKSSQQLAPFTKVT
 PGQPPEELSPDREGIPQSKSTEPSTLLGGELEHYDLDMEILDVPIYIKSNQQLASFTKVT
 PGQPPEELGPRAVEGSPQRKSTEPSTLLGGELEHYDLDMEILDVPIYIKSSQQLASFTKAT
 QGPQTEELGPEDGVGGLPGKSSSEPSSALGGELEHYDLDMEILDVPIYIKSSQQLASFskVT
 NTPQPSSQCLGDRQG-FKAKEVGASTLLGDLEHYDLDMEILDVPIYIKSNQQLTPFTKVA
 DKSSTTENIPADDDG-YKTKSIEASVLLGGEIEHYDLDMEILDVPIYIKSSQQLSLFTKVA
 NVNPQTCELCPGDEQG-LKDKSIEPGVSLGGELEHYDLDMEILDVPIYIKSNQQLAPCSKVA
190.....200.....210.....220.....230.....240

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PEKKIFGV CSTVNGVSGKTCSTESTEP A--GVTQFCVLSPVKGSQ L RKTQPIVL DQH KHL
PEKKIFGV CSTVNGVSGKTCSTESTEP A--GVTQFCVLSPVKGSQ L RKTQPIVL DQH KHL
PEKKTFGV SSTVNGVSGKTCSTESTEP A--GVTQFCVLSPVKGSQ L RKTQPIVL DQH KHL
PEKRILGVYSTLNGLSNKLYSAGNTEKAPTGTTFQFCVLSPVKSSQLRKAQPIVPDQHTL
SEKRILGLCTTINGLSAKTCPIASTENSTPNMTPFCVLSPVKSPHLRKAPTALRDQHKLS
SEKRILGLCTTVNGLSAKTCPIVSAETSTPNMAPLCVLSPVKSPHLRKVPSVLRDQHKLP
SEKRILGLCTTINGLSGKACSTGSSSESSSNMAPFCVLSPVKSPHLRKASAVIHDQHKLS
SEKRILGLCTTINGLSGKACSTGSSSESSSNMAPFCVLSPVKSPHLRKASAVIHDQHKLS
SEKRILGLCTTINGLSGKACSTGSSSESSSNMAPFCVLSPVKSPHLRKASAVIRDQHKLA
SEKRILGLCTSI NGLSGKVCSTGSSSESSSNMAPFCVLSPLKSPHLRKASAVIRDQHKLS
SDKRILGLCTTINGLSGKACSPGSAESSPSNMTPFCVLSPVKSPHLRKASSVIRDQPKLS
SDKRILGLCTTINGLSGKACSPGSAESSPSLTLPFCVLSPVKSPHLRKASSIIRDQQKLS
SEKRILGLCTTINGLSGKACSTGTPENSPSNMTPFCVLSPVKSPHLRKASSVVRDQQKLS
SEKRILGLCTSI NGLSGKACPTGSAESSPSNMTPFCVLSPVKSPHLRKASSVVDQQKLS
SEKRILGLCTTINGLSGKACSTGTSTENSSSNMTPFCVLSPVKSPHLRKASAVLRDPHKLS
PEKRILGVCS SSGKGHG NKTCSVVS PENLPVSATQFCVLSPVKSSSEL RKAHAIVPDQHKHS
AEKRTSNIYPLVKG---KTGTIGNVENLSNGAQFCVLSPVKNP---AQPSVL DQNRHS
PEKRTSVACSTVTG---KSCSGGSAENSQSSMSQFCVLSPVKSSSEL RKTQPIVL DQHRHS
.....250.....260.....270.....280.....290.....300

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 TEELELSQPLAKCSSAHESETQGKGFLCRTFVGPQAHKTEKTMP-NCHLRTFHLQTAVAE
 TEELELSQPLAKCSSAHESETQGKGFLCRTFVGPQAHKTEKTMP-NCHLRTFHLQTAVAE
 TEELELSQPLAKCSSVHETEAQGKGFLCRTFVGPQAHKTEKTMP-NCHLRTFHLQTTVAE
 VEGFEFPRPLVKVCGSQPEAQTGKFLNRTFG---DNMEKTLHSOLRTFHLQAAVTE
 TEDSESSPALGKCGPAYESENHSDKDFLNKVFSDPHSRKIEKSGP-DCKLRSFHLQSSAAG
 AEESSENSPAPGKCGPAFESENHSDKDFLNKVFSDPHSRKAEKSGP-DCKLRPFRLQSSAAG
 TEETEISPLPLVKCGSAYEPENQSKDFLNKTFSDPHGRKVEKTTT-DCQLRAFHLQSSAAE
 TEETEISPLPLVKCGSAYEPENQSKDFLNKTFSDPHGRKVEKTTT-DCQLRAFHLQSSAAE
 TEETEISPLPLVKCGSAYEPENQSKDFLNKTFSDPHGRKVEKTTT-DCQLRAFHLQSSAAE
 TEEPEISPLPLVKCGSAYE--NQSKDFLNKTFSDSHGRKVEKATTP-DCQLRAFHLQSSAAE
 TEESESSPLPLVKCGSAYEPENQSKDFLNKTFSDPHGRKREKATTP-DCQLRAFHLQSSATE
 AEESSESSPLPLVKCGSAYEPENQSKDFLNKTFSDPHSRKREKAMP-DCQLRDFHPQSSATE
 TEEAESSPLPLVKCGSAYEPENQSKDFLNKTFSDPHSRKVEKAMP-DCQLRAFHLQSSATE
 PEESESSPLPLVKSAYSAYEPENQKDFLHKTFSDPHSRKVDKAMAPDCQLRAFHLQSSATD
 TGESESSPPPIKCGSAYEPESQNKDFLNKAFNDPRNRKIEKTMP-DCQLRAFHVQSSATE
 AGGLELSQALVKCGSIHERETQSVGFLNRTCADSHVHKTDKTMP-NCQPRTFHLQMTTTD
 SGGLELSQSGIQSGSVHEPEYQNKGFLNRTLSDSHAQKLEKNMP-NCQLRAFHLQGAATD
 AGGVKPSQLFVVKCSASHEPEAQNKGFNFNRTFADSHQKAEKTMP-SCQLRAFHLQAAATE
310.....320.....330.....340.....350.....360

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/SNCAIR.p Tue Feb 14:37:18 2022

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Pavo_muticus      SKQ-LEELNMSWSSAGGPEERSEEVKKFKSILNIVKEGQISLLPHLAADNLDKIHDECDN 346
Pavo_cristatus    SKQ-LEELNMSWSSAGGPEERSEEVKKFKSILNIVKEGQISLLPHLAADNLDKIHDECDN 346
Gallus_gallus     SKQ-LEELNMSWSSAGGPEERSEEVKKFKSILNIVKEGQISLLPHLAADNLDKIHDECDN 346
Anolis_carolinensis NKQDESSSNANWNSSGGLERNENMKKNKSILNIVKEGQISLLHHLAVDNLDKIHDENGN 345
Mus_musculus      AKTEEPINGMNWNTTQGTERTYLLKKVRSILNIVNEGQISLLPHLAADNLDKIHDENGN 350
Rattus_norvegicus AKPEEQVNGVSWASAGAEERTYLLKKVRSILNIVNEGQISLLPHLAADNLDKIHDENGN 350
Homo_sapiens      SKPEEQVSGLNRTSSQGPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDENGN 351
Pan_troglodytes   SKPEEQVSGLNRTSSQGPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDENGN 398
Macaca_mulatta    SKPEEQVSGLNRTSSQGPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDENGN 398
Callithrix_jacchus SKQEEQVSSMNWPSQSPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDENGN 396
Canis_lupus_familiaris PKLEEQIGGMNWTSSQGPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDESGN 350
Felis_catus       PKVEEQIGGVSWTSSQGPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDETN 350
Equus_caballus    TKLEEQIGGMNWTSSQGPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDENGN 364
Bos_taurus        PKLEEQIGGMNWTSSQGPEERSEYLLKKVKSILNIVKEGQISLLPHLAADNLDKIHDESGN 351
Heterocephalus_glaber PKLDEQVNGMNWTSSQGLEERNEYLKKVKSILNIVKEGQISLLPHLAADNLDKIHDENGN 350
Latimeria_chalumnae SKLDEVNSNTNWNTRGGPGERNEEDLKKVKSILNIVKEGQISLLPHLAADNLDKIHDENGN 315
Xenopus_tropicalis TQLDGINGNLNWNFS---EERSEDMKKIKSIINIVKEGQISLLPHIAVDNLDKIHDENGN 339
Rhinatrema_bivittatum TKTDELNSSMNWNPN---EEKSEDAKKIKSIFNIVKEGQISLLPHITVDNLDKIHDENRN 343
.....370.....380.....390.....400.....410.....420

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Pavo_muticus      NLLHVAASKGHAECLOHLTSLMGEDCLNERNMEQLTPAGLAIKNGQLECVRWMVSETEAI 406
Pavo_cristatus    NLLHVAASKGHAECLOHLTSLMGEDCLNERNMEQLTPAGLAIKNGQLECVRWMVSETEAI 406
Gallus_gallus     NLLHVAASKGHAECLOHLTSLMGEDCLNERNIEQLTPAGLAIKNGQLECVRWMVSETEAI 406
Anolis_carolinensis NLLHVAASQGHAECLQHLTSLMGEDCLNERNSEQLTPAGLAIKNGQLECVRWMVSETEAI 405
Mus_musculus      NLLHIAASKGHAECLOHLTSLMGEDCLNERNTEQLTPAGLAIKNGQLECVRWMVSETEAI 410
Rattus_norvegicus NLLHVAASKGHAECLOHLTSLMGEDCLNERNAEQLTPAGLAIKNGQLECVRWMVSETEAI 410
Homo_sapiens      NLLHIAASQGHAECLQHLTSLMGEDCLNERNTEKLTPAGLAIKNGQLECVRWMVSETEAI 411
Pan_troglodytes   NLLHIAASQGHAECLQHLTSLMGEDCLNERNTEKLTPAGLAIKNGQLECVRWMVSETEAI 458
Macaca_mulatta    NLLHIAASQGHAECLQHLTSLMGEDCLNERNTEKLTPAGLAIKNGQLECVRWMVSETEAI 458
Callithrix_jacchus NLLHIAASQGHAECLQHLTSLMGEDCLNERNTEKLTPAGLAIKNGQLECVRWMVSETEAI 456
Canis_lupus_familiaris NLLHVAASQGHAECLQHLTSLMGEDCLSERNAEKLTPAGLAIKNGQLECVRWMVSETEAI 410
Felis_catus       NLLHVAASQGHAECLQHLTSLMGEDCLSERNAERLTPAGLAIKNGQLECVRWMVSETEAI 410
Equus_caballus    NLLHIAASQGHAECLQHLTSLMGEDCLSERNAEKLTPAGLAIKNGQLECVRWMVSETEAI 424
Bos_taurus        NLLHVAASQGHAECLQHLTSLMGEDCLNERNVEKLTPAGLAIKNGQLECVRWMVSETEAI 411
Heterocephalus_glaber NLLHITASRGHVECLQHLTSLMGEDCLNERNAEKLTPAGLAIKNGQLECVRWMVSETEAI 410
Latimeria_chalumnae NLLHIAASQGHAECLQHLTSLMGEDCLNERNNEKLTPAGLAIKNGQLECVRWMVSETEAI 375
Xenopus_tropicalis NLLHIAASQGHAECLQHLTSLMGEDCLSERNDEKLTPAGLAIKRGQLECVRWMVSETEAI 399
Rhinatrema_bivittatum NLLHLAASQGHAECLQHLTSLMGEDCLNERNEDLTPAGLAIKNGQLECVRWMVSETEAI 403
.....430.....440.....450.....460.....470.....480

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Pavo_muticus      AELSCSKDHPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN TAVHIAAQHG YLG 466
Pavo_cristatus    AELSCSKDHPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN TAVHIAAQHG YLG 466
Gallus_gallus     AELSCSKDHPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN TAVHIAAQHG YLG 466
Anolis_carolinensis AELSCSKDHPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQNGNSAVHVAAQHG YLG 465
Mus_musculus      AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDREGNSAVHVASQHG YLG 470
Rattus_norvegicus AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQEGNSAVHVASQHG YLG 470
Homo_sapiens      AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 471
Pan_troglodytes   AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 518
Macaca_mulatta    AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 518
Callithrix_jacchus AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 516
Canis_lupus_familiaris AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 470
Felis_catus       AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 470
Equus_caballus    AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 484
Bos_taurus        AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 471
Heterocephalus_glaber AELSCSKDFPSLIHYAGCYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 470
Latimeria_chalumnae AELSCCKDHPSLIHYAACYGQEKILLWLLQFMQEQGISLDEVDQYGN SAVHIASQHG YLG 435
Xenopus_tropicalis AELSCSKDHPSLIHYAAGYGQEKILLWLLQFMQEQGISLDEIDKCGNSAVHIASQHG YLG 459
Rhinatrema_bivittatum AELSCSRDYP SLIHYAAGYGQEKILLWLLQFMQEQGISLDEVDQDGN SAVHVASQHG YLG 463
.....490.....500.....510.....520.....530.....540

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	CIQTLVEYGANVTM Q NHVGEKPSQSAERHGHTMCSRYLVVVETCMSLASQVVKLT K QOLKE	526
Pavo_cristatus	CIQTLVEYGANVTM Q NHVGEKPSQSAERHGHTMCSRYLVVVETCMSLASQVVKLT K QOLKE	526
Gallus_gallus	CIQTLVEYGANVTM Q NHVGEKPSQSAERHGHTMCSRYLVVVETCMSLASQVVKLT K QOLKE	526
Anolis_carolinensis	CIQTLVEYGANVTM Q NHAGEKPSQSAERQGHHTMCSRYLVVVETCMSLASQVVKLT K QOLKE	525
Mus_musculus	CIQTLVEYGANVTM Q NHAGEKPSQSAERHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	530
Rattus_norvegicus	CIQTLVEYGANVTM Q NHAGEKPSQSAERHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	530
Homo_sapiens	CIQTLVEYGANVTM Q NHAGEKPSQSAERQGHHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	531
Pan_troglodytes	CIQTLVEYGANVTM Q NHAGEKPSQSAERQGHHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	578
Macaca_mulatta	CIQTLVEYGANVTM Q NHAGEKPSQSAERQGHHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	578
Callithrix_jacchus	CIQTLVEYGANVTM Q NHAGEKPSQSAERQGHHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	576
Canis_lupus_familiaris	CIQTLVEYGANVTM Q NHAGEKPSQSAERHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	530
Felis_catus	CIQTLVEYGANVTM H NHAGEKPSQSAERHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	530
Equus_caballus	CIQTLVEYGANVTM Q NHVGEKPSQSAERHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	544
Bos_taurus	CIQTLVEYGANVTM Q NHAGEKPSQSAERHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	531
Heterocephalus_glaber	CIQTLVEYGANVTM Q NHVGD K PSQSAERHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	530
Latimeria_chalumnae	CIQTLVEYGANVTI H NQAGEKPSQSAEHHGHTTCSRYLVVVETCMSLASQVVKLT K QOLKE	495
Xenopus_tropicalis	CIQTLVEYGANVTM Q NHAGEKPSQSAERQGHHTMCSRYLVVVETCMSLASQVVKLT K QOLKE	519
Rhinatrema_bivittatum	CIQTLVEYGANVTM Q NQAGEKPSQCAEHHGHTLCSRYLVVVETCMSLASQVVKLT K QOLKE	523

.....550.....560.....570.....580.....590.....600

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Pavo_muticus	QTVERVTLQNLQQLLEAQRSE G KS L PTSTSSP-SSPASGKPQWKPS E ADELS P PKSKLN	585
Pavo_cristatus	QTVERVTLQNLQQLLEAQRSE G KS L PTSTSSP-SSPASGKPQWKPS E ADELS P PKSKLN	585
Gallus_gallus	QTVERVTLQNLQQLLEAQRSE G KS L PTSTSSP-SSPASGKPQWKPS E ADELS P PKSKLN	585
Anolis_carolinensis	QTVEHVTLQNLQQLVLEKQSE V KS L PTSPSSP-SSPISGKPQWKPS D IDDSTL P KNKLN	584
Mus_musculus	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS T KSQWKALD T DEESTG K SKVG	589
Rattus_norvegicus	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS R KSQWKILD A DDDESTG K SKLG	589
Homo_sapiens	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS R KSQWKSPD A DDDSVAKSKPG	590
Pan_troglodytes	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS R KSQWKSPD A EDDSVAKSKPG	637
Macaca_mulatta	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS R KSQWKSPD A DDDSVAKSKPG	637
Callithrix_jacchus	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS R KSQWKSPD A DDDSVAKSKPG	635
Canis_lupus_familiaris	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS R KSQWKPPD V DDDES V AKGKPG	587
Felis_catus	QTMERVTLQNLQQLLEAQRSE G KS L LLSSPSSP-SSPAS R KSQWKSPD A DDDES V AKSKPG	589
Equus_caballus	QTMERVTLQNLQQLLEAQRSE G KS L LLSSPSSP-SSPAS R KSQWKSPD A DDDES V AKSKPG	603
Bos_taurus	QTTQRVTLQNLQQLLEAQRSE G KS L LLSSPSSP-SSPAS R KSQWKSPD A EDES V AKSKSG	590
Heterocephalus_glaber	QTVERVTLQNLQQLLEAQRSE G KS L PSSPSSP-SSPAS R KSQWRVPD I GDESTAKSKLG	589
Latimeria_chalumnae	QTAERVTLQVHLQHLLAQRSE G SLPTSPSSPLISPGSSRPEQKTANLNHSALQKIKTS	555
Xenopus_tropicalis	QTAERINLQTHLQQLLEAHRTEGRSLPTSPSSP-SSPASGSNWK T IDAEDLN-QKGKLN	577
Rhinatrema_bivittatum	QTTERVTLQNLQQLLEAQRSE G KS L LLSSPSSP-SSPASGGLQNMCDADDMSSQKGKPC	582

.....610.....620.....630.....640.....650.....660

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Pavo_muticus	-AQDGIQILGSLGTSNRARAKIKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	639
Pavo_cristatus	-AQDGIQILGSLGTSNRARAKIKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	639
Gallus_gallus	-AQDGIQILGSLGTSNRARAKIKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	639
Anolis_carolinensis	-AQDGIQILGSLGTSNRARAKIKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	638
Mus_musculus	-AQEGIQVLGSLSVSSRRARTKGKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	643
Rattus_norvegicus	-AQEGIQVLG--NLSSRRARTKGKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	641
Homo_sapiens	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	644
Pan_troglodytes	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	691
Macaca_mulatta	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	691
Callithrix_jacchus	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	689
Canis_lupus_familiaris	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	641
Felis_catus	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	643
Equus_caballus	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	657
Bos_taurus	-VQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	644
Heterocephalus_glaber	-IQEGIQVLGSLSSASSRARPAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	643
Latimeria_chalumnae	RTSEALQNVTLNGLAPNKNLLQKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	615
Xenopus_tropicalis	GYSENYQSLNTS-IPSRRLCRALDDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	631
Rhinatrema_bivittatum	SSHNGFSVLGTTGTGRLPSKAKDESDKILRQLLGKEISENVCTQ E KL T LEFOD-----	636

.....670.....680.....690.....700.....710.....720

fst/pep_msa

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Pavo_muticus	PIVESVE---	SAESLHLMIKKHT	SAAG--	RRFPFGTRASKSV	DGHSPSP	TSESSDP	DNEA	752
Pavo_cristatus	PIVESVE---	SAESLHLMIKKHT	SAAG--	RRFPFGTRASKSV	DGHSPSP	TSESSDP	DNEA	752
Gallus_gallus	PIVESVE---	SAESLHLMIKKHA	SAAG--	RRFPFGTRASKSV	DGHSPSP	TSESSDP	DNEA	752
Anolis_carolinensis	PIVESTE---	STENLHLMIKRHT	SLASG--	RRFPFGMKTSKSL	DGHSPSP	TSESSDP	DNE	750
Mus_musculus	PIVESVENVD	SAESLHLMIKKHT	SLASG--	RRFPFGMKASKSL	DGHSPSP	TSESSDP	DLD	759
Rattus_norvegicus	PIVESVENMD	SAESLHLMIKKH	SVASG--	RRFPFGMKASKSL	DGHSPSP	TSESESP	DLD	757
Homo_sapiens	PIVESVESMD	SAESLHLMIKKHT	SLASGG--	RRFPFSIKASKSL	DGHSPSP	TSESESP	DLE	761
Pan_troglodytes	PIVESVESMD	SAESLHLMIKKHT	SLASGG--	RRFPFSIKASKSL	DGHSPSP	TSESESP	DLE	808
Macaca_mulatta	PIVESVESMD	SAESLHLMIKKHT	SLASGG--	RRFPFSIKTSKSL	DGHSPSP	TSESESP	DLE	808
Callithrix_jacchus	PIVESVESMD	STESLHLMIKKHT	SLASGG--	RRFPFGIKASKSL	DGHSPSP	TSESESP	DLE	806
Canis_lupus_familiaris	PIVGSVESVD	SAESLHLMIKKHT	SLASG--	RRFPFGIKASKSL	DGHSPSP	TSESESP	DVE	757
Felis_catus	PIVGSVESVD	SAESLHLMIKKHT	SLASG--	RRFPFGIKASKSL	DGHSPSP	TSESESP	DLE	759
Equus_caballus	PIVESVESMD	SAESLHLMIKKHT	SLASG--	RRFPFGIKASKSL	DGHSPSP	TSESESP	DLE	773
Bos_taurus	PIVESVEGVD	SAESLHLMIKKHT	SLASG--	RRFPFSIKASKSL	EGHSPSP	TSESESP	DLE	760
Heterocephalus_glaber	PIVESVESMD	STESLHLMIKKH	SLASG--	RRFPFSIKASKSL	DGHSPSP	TSESESP	DLE	759
Latimeria_chalumnae	PIVENME---	CTESLQLMIKKHT	SAAG--	RRFPFSVRSSKS	ADGHSS	SPTSESSDP	DY	730
Xenopus_tropicalis	PIVENVE---	NSENQLLIKKHT	QASAS	RRFPFGLKSKSV	DGHSPSP	TSESSDP	DY	745
Rhinatrema_bivittatum	PIVENTE---	STESLQLMIRKHT	LAAAG--	RRFPFGIRASKSV	DGHNS	SPTSESSDP	DY	750
790.....	800.....	810.....	820.....	830.....	840		

[illegible]

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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***: . :: :*:. *****:*****:***** **
Pavo_muticus      VVQVELAAEAELENEEKDKERKALSRAPPSSGEPSSGDQMKRPFGTFRSIMETLSGNQN--NN 870
Pavo_cristatus    VVQVELAAEAELENEEKDKERKALSRAPPSSGEPSSGDQMKRPFGTFRSIMETLSGNQN--NN 870
Gallus_gallus     VVQVELAAEAELENEEKDK--GKALPRAPASTGEPSSGDQMKRPFGTFRSIMETLSGNQN--NN 868
Anolis_carolinensis VVQVEQTEIGLNGERDKERSKVLORPP---NAETGEQQRPFGTFRSIMETLSGNQN--NN 865
Mus_musculus      VVQMEQTGLELNGEKDKDKGRAPORTS-----ESGEQMKRPFGTFRSIMESLSGNQN--NN 873
Rattus_norvegicus VVQMEQTSLELNGEKDKERGRAPORTS-----ESGEQMKRPFGTFRSIMESLSGNQN--NN 871
Homo_sapiens      VVQMEQPSLELNGEKDKDKGRTLORTST--SNESGDQMKRPFGAFRSIMETLSGNQN--NN 878
Pan_troglodytes   VVQMEQPSLELNGEKDKDKGRTLORTST--SNESGDQMKRPFGAFRSIMETLSGNQN--NN 925
Macaca_mulatta    VVQMEQPSLELNGEKDKDKGRTLORTST--SNESGDQMKRPFGAFRSIMETLSGNQN--NN 925
Callithrix_jacchus VVQMEQPSLELNGEKDKDKGRTLORTST--SNESGDQMKRPFGAFRSIMETLSGNQN--NN 923
Canis_lupus_familiaris VVQMGPSPLELNGEKDKDKGRTLORTST--SSESGDQMKRPFGTFRSIMETLSGNQN--NN 874
Felis_catus       VVQMEQASLEPTGEKDRDKGRTPORTST--GSESGDQMKRPFGTFRSIMETLSGNQN--NN 876
Equus_caballus    VVQMEQTSLELNGEKDRDKGRTFORTST--SSESGDQMKRPFGTFRSIMETLSGNQN--NN 890
Bos_taurus        VVQMEQTSLELNGEKEREKGRTLORTSA--ASESGDQMKRPFGTFRSIMETLSGNQN--NN 877
Heterocephalus_glaber VVQMEQTGLELNGEKDKDKGRTLPRNST--SSESGEQLKRPFGTFRSIMETLSGNQN--NN 876
Latimeria_chalumnae VVQLEQAEFDAACNSGDKESDRAFPAPP--SAESGDSWKRPFGTFRSIMETLSGNQN--NN 846
Xenopus_tropicalis VVQVEHIEDVNEEKEKE--TSKAPQKAP--SNGETGEQQRPFGAFRSIMESFSGNQN--NN 859
Rhinatrema_bivittatum VVQVEQAELLSQENDKDGSSKALQOVQPTSGEAGEQMKRPFGAFRSIMESLSGNQNSNN 869
.....910.....920.....930.....940.....950.....960

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Pavo_muticus      NNCQTANLIKTSSTLPFSSSLGRKTADSKGNPAALT--KGRNKPGPFCFSHTNLSS--STLNEE 928
Pavo_cristatus    NNCQTANLIKTSSTLPFSSSLGRKTADSKGNPAALT--KGRNKPGPFCFSHTNLSS--STLNEE 928
Gallus_gallus     NNCQTANLIKTSSTLPFSSSLGRKAGDSKGNPAALT--KGRNKPGPFCFSYTNLSS--STLNEE 926
Anolis_carolinensis NNYQTSSSLTKTSS--PFTSLGRKATDSKGNANSANSA--KGKNKPAPYSGCVSFST--SMLIED 921
Mus_musculus      NNYQPASQLKTCT--LPLTSLGRKTADAKGNPVSPASKGKNKAAMYSSCIHLPS--NALVEE 931
Rattus_norvegicus NNYQPASQLKTCT--LPLTSLGRKTADAKGNPVSPASKGKNKAAMYSSCIHLPS--NALVEE 929
Homo_sapiens      NNYQAANQLKTST--LPLTSLGRKT--DAKGNPASSASKGKNKAA----- 919
Pan_troglodytes   NNYQAANQLKTST--LPLTSLGRKT--DAKGNPASSASKGKNKAEMYSSCINLSS--NMLIEE 982
Macaca_mulatta    NNYQAANQLKTST--LPLTSLGRKT--DAKGNPASSASKGKNKAEMYSSCINLSS--NTLIEE 983
Callithrix_jacchus NNYQAANQLKTST--LPLTSLGRKTADAKGNPASSASKGKNKAEMYSSCINLSS--NTLIEE 981
Canis_lupus_familiaris NNYQAANQLKTST--LPLTSLGRKT--DAKGNPVSSASKGKNKAEMYGSCVTLSS--NLLTEE 932
Felis_catus       NNYQAANQLKTST--LPLTSLGRKT--DAKGNPVSSASKGKNKAEMYGSCVTLSS--NTLIEE 934
Equus_caballus    NNYQAANQLKTST--LPLTSLGRKTADAKGNPTSSASKGKNKAEMYSSCINLSS--NPLIEE 948
Bos_taurus        NNYQASNQLKTST--LPLTSLGRKVTGKGNVTGSSASKGKNKAEMYGSCINLSS--NTLIEE 935
Heterocephalus_glaber NNYQTAIQLKTST--LPLTSLGRKMTDAKGNPVNSAGKGTKAEMYSSCINLSS--NMLIEE 934
Latimeria_chalumnae NNLHAATAMKTSATLPLSLGRKTAEMRANAVFPT--KIKNKTVSVV----- 891
Xenopus_tropicalis NNCQAANTAKASS--S--FTSLGKKATEAKANPAGPA--KGKNKTESYTCGGSISSTRALLED 916
Rhinatrema_bivittatum NNCQVTNVSKTST--LPFTSLGKKVMDSRANPVSAT--KAKNKADINICYTNFSS--LAMIED 926
.....970.....980.....990.....1000.....1010.....1020

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Pavo_muticus      HPCS-YAWHDNVSRSKSQKSYSQKSSEETELQEFFL----- 962
Pavo_cristatus    HPCS-YAWHDNISRSKSQKSYSQKSSEETELQEFFL----- 962
Gallus_gallus     HLCN-YAWHDNISRSKSQKSYSQKSSEETELQEFFL----- 960
Anolis_carolinensis RLCN-YAWHNDATDRKLQSSYSRSCEFDEPELQEFFL----- 955
Mus_musculus      HLRD-YARHNDIKRNATKTYHMKHTAEPEPELFL----- 965
Rattus_norvegicus HLRD-YARLNDIKRNTKKTYNVKHIAEPEPELFL----- 963
Homo_sapiens      ----- 919
Pan_troglodytes   HLRN-DTRHNDINRKMKKSYSIKHIAEPESKELFL----- 1016
Macaca_mulatta    HLHN-YARHNDINRKMKKSYSIKHIAEPESKELFL----- 1017
Callithrix_jacchus HWRN-YARHNDINRKMKKSYSIKHIAEPESKELFL----- 1015
Canis_lupus_familiaris PLRN-HARSHQOYLQERQTKDLADSWEGEERLSLEGSRGTWK 974
Felis_catus       PLRN-RARHNDINRKMKKSYSIKHIAEPESNELFL----- 968
Equus_caballus    HLRN-SARHNAINRKMKKSYSIKHIAEPESKELFL----- 982
Bos_taurus        HLHN-YARHDDISRKMKKSYSIKHVAEPESKELFL----- 969
Heterocephalus_glaber HLHN-CARHNDINRKMKKSYSIRHIAEPESKELFL----- 967
Latimeria_chalumnae ----- 891
Xenopus_tropicalis LLPNTPAWPNVVDRTVKILLEDINGKEEMKEFFL----- 951
Rhinatrema_bivittatum QLHN-CAWRNGINGRMKNSLDKMGIEDKELQELFL----- 960
.....1030.....1040.....1050.....1060...

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