

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPEDData Tue Feb 1 11:46:44 2022

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      *      *  :: *  :   : * *  :
Pavo_muticus      MVCGHGPRCRRLCRPPFLLALVVAVCLFCQTLTPLMTNSFLSAVVNGISPKNQSKTRQ-   59
Pavo_cristatus    MVCGHGPRCRRLCRPPFLLALVVAVCLFCQTLTPLMTNSFLSAVVNGISPKNQSKTRQ-   59
Gallus_gallus     MVCGHGPRCRRLCRPPFLLALVVAVCLFCQTLTPLMTNSFLSAVVNGISPKNQSKTRQ-   59
Chelonia_mydas    MVCGQILSRLRLCRPPFLLVLVGVYLCYQILPPIRTKRLFLAVNGSPPNKLAESQQ-   59
Mus_musculus      MVCRPGFCLRRRFCPRPFVLVGLVVAICLFYQTLT-LRGTKKIAADVSGTVPHTPSQTQA-   58
Rattus_norvegicus MVCRPGFCLRRRFCPRPFVLVGLVVAICLFYQTLT-LRGTKKIAAEVSGTVPHTPSQTQA-   58
Homo_sapiens      MVCRPVFPFCRRRFCPRPFVLVGLVVAICLFYQTLT-LRGSRKLTAAAPGAVPHISTETQA-   58
Pan_troglodytes   MVCRPVFPFCRRRFCPRPFVLVGLVVAICLFYQTLT-LRGSRKLTAAAPGAVPHISTETQA-   58
Macaca_mulatta    MVCRPVFPFCRRRFCPRPFVLVGLVVAICLFYQTLT-LRGTRKLTAAAPGAVPHISTESQA-   58
Callithrix_jacchus MVCRPVFPFCRRRFCPRPFVLVGLVVAICLFYQTLT-LRGTRKLTAAAPGAVPHISTETQA-   58
Bos_taurus        MICRLMFLCRRRFCSRPFVLVGLVVAICLFYQTLT-LWGTKKLAAAGPGAAPNIPITKTQA-   58
Equus_caballus    MVCRPVLLCRRRFCPRPFVLVGLVVAICLFYQTLT-LRGTRKLTAAVSGAAPNIPITDQA-   58
Canis_lupus_familiaris MPCRPGPPCRRR-CPRPFLLGLLVAIGLCYQSLT-LRRITGKP----PSAAPSAPPEPQA-   53
Heterocephalus_glaber MLCRPVFLCRRRLCTRPFVLVGLVVAICLFYQTLT-IRGRKLTGAVPGAARPTPTESLA-   58
Latimeria_chalumnae MICRQLLGCRRRYCPRLPLLVLVVAICLFYQTLTFIGGGRFLSVLINGIAELQAPAEAGER   60
Rhinatrema_bivittatum MPGRQLWGCRRRCRLRPVVVALAVLLCLSYQSLT-LIGRKIFP--LPGASRSKILDQEVSS-   56
Xenopus_tropicalis -----MGWRRRYCPSPAIIGLALAACVFYQSLILLWRRASWKFEFYASDIKPADLNT-   53
1.....10.....20.....30.....40.....50.....60

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      .      :      :      :
Pavo_muticus      -----GRYKEVSASDTHCFFPISDSHRLKKIEDTVLQYFGS-RTRRAILYAPPAHS   109
Pavo_cristatus    -----GRYKEVSASDTHCFFPISDSHRLKKIEDTVLQYFGS-RTRRAILYAPPAHS   109
Gallus_gallus     -----GRYKEVSASDTHCFFPISDSHTLKKIEDTILQYFGS-HTRRAILYAPPAHS   109
Chelonia_mydas    -----ERYKEVSSRYTHCFLPSSNSQTVNKIEDSILKYFGS-HTRRAILYVPPSCG   109
Mus_musculus      -----SRCEEGYRQDKQCFLLSASTOETRKIEESIERHFGS-LSRRRAVLHRPPSSS   108
Rattus_norvegicus -----SRCEKDYQDKRCFLLSANAQEIIRKIEELIERHFGG-RSRRRAVLHRPPSSS   108
Homo_sapiens      -----SRCKKGFSDQDKQCFLLSGNAQETRKVKESMETHFGS-HGRRAILYRPPFFYS   108
Pan_troglodytes   -----SRCKKGFSDQDKQCFLLSGNAQETRKVKESMETHFGS-HGRRAILYRPPFFYS   108
Macaca_mulatta    -----SRCKKGFSDQDKQCFLLSGNAQETRKVEESMETHFGS-HGRRAILYRPPFFYS   108
Callithrix_jacchus -----GRCKKGFSDQDKQCFLLSGNAQETRKIQESMETHFGS-QGRRRAVLHRPPFFYS   108
Bos_taurus        -----SRCTKEFFLDKQCFLLSDIAQEIIGKIEQSVETHFSS-HGRRRAVLHRPPSSS   108
Equus_caballus    -----SRCQKGFSSVEEQCFLLSGNAQEIIRKIEESIEETHFVS-HGRRALLYRPPFFYS   108
Canis_lupus_familiaris -----RRCAAGSPGRRWCPLPGDAREVRKIQKSIETHFGG-HDRRAILYRPPSFS   103
Heterocephalus_glaber -----NRCENSSTDQDKCFHFSNAQEIIRKIEESMETHFGG-DGRQAVLYRPPSYS   108
Latimeria_chalumnae GKSRQNLKEDRHSHGSDALGHSLLALDGLQALQEIFSQFKNLGN-QKKTVIDDGSHSVS   119
Rhinatrema_bivittatum -----PKSLPCTFSSDNLQTAETKDSILKHFDHRKRRRAIVYAHPSLG   100
Xenopus_tropicalis -----LNREDCVLAIRLYKRLKEFGESIQRDLISRPTRRIFLYVHPSLG   98
.....70.....80.....90.....100.....110.....120

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      :      :  : *      :      .      *  ::  .      *
Pavo_muticus      KTEHQLCQRILAKHGYAVTVLENRRRLVEDLRHEGYPYHSSIRPWDLLICLSSSTKDDDTSCI   169
Pavo_cristatus    KTEHQLCQRILAKHGYAVTVLENRRRLVEDLRHEGYPYHSSIRPWDLLICLSSSTKDDDTSCI   169
Gallus_gallus     KTERQLCORMLAKHGYAVTVLENRRRLVEDMRHEGPNHSSISPWDLLICLSSSTRDDDTSCI   169
Chelonia_mydas    KKEQLQYQIRILAQYGYTVTVLEDRKLNVRGREHHYQDELSSWDLLICLSSSGKTDDTDTCF   169
Mus_musculus      RAQLQIHQHLLAQHGYSVVTVEER-LGGGLGPPELLDQGGNLNSWDLFICLPSREADGKPCI   167
Rattus_norvegicus GAELQTHQNLQAQHGYSVVTVEER-LGGNPGLELLDQGGNLNSWDLFICLPSREADGKPCI   167
Homo_sapiens      KTELQLHQHILTOHGYTVVIAEER-LNAGLGPGLLEQGDLSWDLLICLSSSKKAEGTPCI   167
Pan_troglodytes   KTELRLHQHILTOHGYTVVIAEER-LNAGLGLLLEQGDLSWDLLICLSSSKKAEGTPCI   167
Macaca_mulatta    KTELRLHQHILTOHGYTVVIAEER-HNAGLGLALLEQGDLSWDLLICLSSSKKAKGKPCI   167
Callithrix_jacchus KTELRLHQHILTOHGYTVVIAEER-LNTGLGLGRREQDLASWDLLICLSSSKKAEKGKPCI   167
Bos_taurus        QRELQLHRSILTQHHTTVVISEER-LGADP--GLLEKGDLSWDLLICLSSSKTPGGKPCI   165
Equus_caballus    KKELRLLQHILTOHRYTVVITEER-LDADPGLGLEKGDLSWDLLICLSSSRKTGGKPCI   167
Canis_lupus_familiaris ETELRLHQHILTOHRYTVVIAEER-LEAGLGPRLLEKGDLSWDLLICLSSSRKAGGKPCI   162
Heterocephalus_glaber KTELRLYQHILTEHQYSVVITEEK-FSAGQGLRLLEQGNLDSWDLLICLPSRKTDGKPCV   167
Latimeria_chalumnae EAELQLHQHILMQHGFNVLLSQDS--QGSFTARQEKPGGFNTWDLICLSSSK--NSSCI   175
Rhinatrema_bivittatum RKERQLYQIRILTOQGYNATMLETRLGAALKQEPFL-GNTQLWDLILLCTHAGAHSDRNCM   159
Xenopus_tropicalis SEEHIVYKDILSPFGNIVLTEEIKDVKADVT---KNQGLVNTEDIFIXIPNNSSSESDCR   155
.....130.....140.....150.....160.....170.....180

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Pavo_muticus	QRDDLH	QLEL	FQKVN	LLPEI	QYFL	CSKEGL	CQIT	KA	FS	DLQL	SL	AT	PE	CS	SWHGL	SR	DST	229
Pavo_cristatus	QRDDLH	QLEL	FQKVN	LLPEI	QYFL	CSKEGL	CQIT	KA	FS	DLQL	SL	AT	PE	CS	SWHGL	SR	DST	229
Gallus_gallus	QRDDLH	QLEL	FQKVN	LLPEI	QYFL	CSKEGL	CQIT	KA	FS	DLQL	SL	AT	PE	CS	SWHGL	SR	DST	229
Chelonia_mydas	PIDDFH	QLEL	FQKVN	LLPEI	QHLL	CRKEGL	CQIT	RA	FP	GL	PL	IT	FG	CLD	QYVLS	SK	SN	229
Mus_musculus	PREHMC	RSL	SLHQR	VNVL	PEI	QPLCR	KEGL	CEI	IR	RF	PEL	RL	PV	SS	SVCL	DQ	ET	227
Rattus_norvegicus	PREHMC	RSL	SLHQR	VNVL	PEI	QPLCR	KEGL	CEI	IR	RF	PEL	RL	PV	SS	SVCL	DQ	ET	227
Homo_sapiens	SKEVMC	QLGL	HQKAN	RLPEI	QPLCR	KEGL	CQIV	RR	FP	EL	QL	PV	SP	SVCL	DQ	GM	LP	227
Pan_troglodytes	SKEVMC	QLGL	HQKAN	ILPEI	QPLCR	KEGL	CMV	RR	FP	EL	QL	PV	SP	SVCL	DQ	GM	LP	227
Macaca_mulatta	SKEVMC	QLGL	HQKAN	ILPEI	QPLCR	KEGL	CQIV	RR	FP	EL	QL	PV	SP	SVCL	DQ	GI	LP	227
Callithrix_jacchus	SKDIMC	QLGL	HQKAN	ILPEI	QPLCR	KEGL	CQIV	RR	FP	EL	QL	PV	SP	SVCL	DQ	QI	LP	227
Bos_taurus	SKEDMC	QLNL	HQKVN	MLPEI	QHQL	CRKEGL	CQIK	RR	FP	EL	RL	LV	SP	SVCL	NQ	SI	KL	225
Equus_caballus	SKEDIC	QLGL	HQKVN	ILPEI	QHQL	CRKEGL	CQIK	RR	FP	EL	RL	LV	SP	SVCL	DQ	ST	PL	227
Canis_lupus_familiaris	SKEDMC	LLGL	HQKVN	ILPEI	QHQL	CRKEGL	CQIK	RR	FP	EL	RL	PV	SP	SVCL	DQ	SI	SK	222
Heterocephalus_glaber	SKEDMC	QLGL	HQKIN	ILPEI	YQ-L	CRKEGL	CQIK	RR	FP	EL	RL	PV	SP	SVCL	DQ	GA	FO	226
Latimeria_chalumnae	ETEDF	QY	KL	YQ	KVN	MV	PGL	Q	Q	TL	CR	KN	LC	Q	IT	ER	FP	235
Rhinatrema_bivittatum	EKNEL	SQ	LP	QH	KVN	IL	PEI	KEL	C	Q	KE	GL	CL	IA	RT	FP	EL	219
Xenopus_tropicalis	KEK---	ELYQ	F	KK	VN	IL	VEI	Q	LL	CR	K	ET	IC	EM	S	G	K	204
	.....	190	.....	200	.....	210	.....	220	.....	230	.....	240						

	ASNI	TH	GG	KS	---	NI	KH	TH	IA	HL	QYL	WS	QT	NG	AG	LN	QV	SA	SS	SD	HK	NI	KA	QD	LS	VI	IK	AY	V		
Pavo_muticus	ASNI	TH	GG	KS	---	NI	KH	TH	IA	HL	QYL	WS	QT	NG	AG	LN	QV	SA	SS	SD	HK	NI	KA	QD	LS	VI	IK	AY	V	286	
Pavo_cristatus	ASNI	TH	GG	KS	---	NI	KH	TH	IA	HL	QYL	WS	QT	NG	AG	LN	QV	SA	SS	SD	HK	NI	KA	QD	LS	VI	IK	AY	V	286	
Gallus_gallus	ASNI	IH	GS	KS	---	NV	KH	TH	IA	HL	QFL	WS	QT	NG	AG	LN	QV	SA	SS	SE	HD	HR	NI	KA	QD	LS	VI	IK	AY	V	286
Chelonia_mydas	AS	GP	SQ	PV	KS	RE	GD	ER	IN	SA	HL	WY	LW	NW	TS	NA	Q	SS	PA	AD	HK	QF	LA	QD	LS	II	IK	AY	V	289	
Mus_musculus	SSH	L	SK	AE	KP	---	---	---	---	---	HW	KP	PR	DW	HR	-	KQ	LN	LT	TV	VP	AP	HE	AI	SRA	EEL	SV	IL	KAY	V	276
Rattus_norvegicus	SSH	L	SK	AE	KP	---	---	---	---	---	RI	WK	PW	NW	QR	-	EQ	LN	QT	TV	LA	PH	ET	IF	RA	EEL	SV	IL	KAY	V	276
Homo_sapiens	SSH	L	L	K	T	V	K	P	---	---	RV	WK	PG	DW	SR	-	EQ	LN	ET	TV	LA	PH	ET	IF	RA	ED	LS	VI	LKAY	V	276
Pan_troglodytes	SSH	L	L	K	T	V	K	P	---	---	RV	WK	PG	DW	RR	-	EQ	LN	EM	TV	LA	PH	ET	IF	RA	ED	LS	VI	LKAY	V	276
Macaca_mulatta	SSH	L	L	K	T	V	K	P	---	---	RM	WK	PE	DW	RH	-	EQ	LN	ET	TV	LA	PH	ET	IF	RA	ED	LS	VI	LKAY	V	276
Callithrix_jacchus	SSH	L	L	K	T	V	K	S	---	---	HM	WK	PG	DR	RR	-	EHL	NK	TT	AL	QA	HE	AI	FR	AE	DL	SV	IL	KAY	V	276
Bos_taurus	SSH	L	L	K	T	L	K	S	---	---	Q	M	WK	PG	DW	RR	-	EQ	LN	QT	TAL	AP	QET	LL	RA	KD	LS	VI	LKAY	V	274
Equus_caballus	SSH	L	L	K	T	V	K	P	---	---	HM	WK	PW	DW	RR	-	EQ	LN	QT	TV	LA	PH	ET	IF	RA	ED	LS	VI	LKAY	V	276
Canis_lupus_familiaris	SSH	L	L	K	AV	K	P	---	---	---	HM	WK	PW	DW	RR	-	EQ	LN	QT	TV	LA	PH	DT	IF	RT	EEL	SV	IL	KAY	V	271
Heterocephalus_glaber	SSH	L	L	K	T	V	K	R	---	---	HM	RK	PW	DW	QR	-	EQ	LN	QT	TV	LV	PH	ET	IF	RA	ED	LS	VI	LKAY	V	275
Latimeria_chalumnae	ST	EE	FM	SS	RL	VG	---	KG	VF	ST	IL	FO	RK	NH	LR	RWD	PH	QS	VAP	IAL	Q	RP	GV	TE	DS	SG	IL	KAY	V	292	
Rhinatrema_bivittatum	SE	DG	ES	RR	GA	---	---	---	---	---	AQ	PR	DG	SQ	PS	STR	WAW	PPP	GLE	OGL	VR	PP	DF	SV	LI	KAY	V	269			
Xenopus_tropicalis	AS	FR	TR	VV	T	P	---	---	---	---	F	SP	SK	FR	KA	HT	SP	V	FK	LL	SD	HF	Q	N	LP	-	VI	RAY	V		

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Pavo_muticus	LVTSLTPLRAFLHS	AATVWHPPKKKHFS	VKLRFFEMFFKSS	SSPQQAFNNMKEA	INKLLL		346
Pavo_cristatus	LVTSLTPLRAFLHS	AATVWHPPKKKHFS	VKLRFFEMFFKSS	SSPQQAFNNMKEA	INKLLL		346
Gallus_gallus	LVTSLTPLRAFLHS	AATVWHPPKKKHFS	VKLRFFEMFFKSS	SSPQQAFNNMKEA	ISKLLL		346
Chelonia_mydas	LVTSLTPLRAFIHST	AIWVLPPTKHF	SVKLRFFETFFKSS	SSPQQAFDNMKE	TISKLLL		349
Mus_musculus	LVTSLRPLRAFIHST	GTWSPPKKKRFT	IVKLQMFETFLRTSS	PLQALDSMKEA	ISKLLL		336
Rattus_norvegicus	LVTSLRPLRAFIHST	GTWVSPPKKKRFT	IVKLQMFETFLRTSS	PLQALDSLKEA	ISKLLL		336
Homo_sapiens	LVTSLTPLRAFIHST	GTWVNNPPKKKRFT	IVKLQTFETFLRASS	PQAFDIMKEA	IGKLLL		336
Pan_troglodytes	LVTSLTPLRAFIHST	GTWVNNPPKKKRFT	IVKLQTFETFLRASS	PQAFDIMKEA	IGKLLL		336
Macaca_mulatta	LVTSLTPLRAFIHST	GTWVNNPPKKKRFT	IVKLQTFETFLRASS	PHQAFDIMKEA	IGKLLL		336
Callithrix_jacchus	LVTSLTPLRAFIHST	GTWVNNPPKKKRFT	IVKLQTFETFLRASS	PHQAFDIMKEA	IGKLLL		336
Bos_taurus	LVTSLTPLRAFIHST	GTWVNNPPKKKRFT	IVKLQTFETFLRASS	PLQAFDTMREAI	SKLLL		334
Equus_caballus	LVTSLTPLRAFIHST	GTIWNPPKKKRFT	IVKLQTFETFLRASS	PLQAFEMKEA	ISKLLL		336
Canis_lupus_familiaris	LVTSLSPRAFIHST	GTWVNNPPKKKRFT	IVKLQTFETFLTASS	PLQAFDNMKEA	ISKLLL		331
Heterocephalus_glaber	LVTSLTPLRAFIHST	GTWVIPPKKKRFT	IVKLQTFETFLRASS	PLQALDTMKEA	ISKLLL		335
Latimeria_chalumnae	LVTSLTPLRAFIHST	GLAWSEPNQYFAT	KLQTFEKF	FRGAGPSEQAF	EKLKEAITKLLL		352
Rhinatrema_bivittatum	LVTSLTPLRAFIHST	GAVVHPPNKKYF	SVKLGFFEFKFF	HASLAVQAFDN	LKDAITKLLL		329
Xenopus_tropicalis	LLTSSSPRAFLHS	VAIVQHHPYQFV	PIKLKVFEYKFF	KWNPLQAFITMKEA	IGKFL		311
310.....320.....330.....340.....350.....360	

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Pavo_muticus      ITEVLSESSASGPGSFN---QCSQCFQMLTFDVGFSSTSIHPVVLQVHKNFDFODEEESN 402
Pavo_cristatus    ITEVLSESSASGPGSFN---QCSQCFQMLTFDVGFSSTSIHPVVLQVHKNFDFODEEESN 402
Gallus_gallus     ITEVLSESSASGPGSFN---QCSQCFQMLTFDVGFSSTSIHPVVLQVHKNFDFODEEESN 402
Chelonia_mydas    VAEAFSESPDVGPKTFNRFNFRCSLCFQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 409
Mus_musculus      VAEVFSDSSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 392
Rattus_norvegicus VAEVFSDSSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 392
Homo_sapiens      AAEVFSETSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 392
Pan_troglodytes   AAEVFSETSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 392
Macaca_mulatta    AAEVFSETSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 392
Callithrix_jacchus AAEVFSETSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 392
Bos_taurus        AAEVFSETSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 390
Equus_caballus    AAKVFSESPSTGPKAFN---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 392
Canis_lupus_familiaris AAEVFSETSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 387
Heterocephalus_glaber AAEVFSETSTLGPKTFFH---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 391
Latimeria_chalumnae TAEVVAEASTIGPKAQS---RCVLCFQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 408
Rhinatrema_bivittatum AAEVFSEMASSGPNPYK---RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 385
Xenopus_tropicalis SFGGLSETFSLPVIS-----RCRHCFCQMLTFDVGFSSTSTYPVVLQVHEHDFQVDDDLN 361
.....370.....380.....390.....400.....410.....420

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Pavo_muticus      LQDQTFKEVIFEDTFKFLSNKSSSSSFIEALQNIYGSTVGKDGIFLKEDGQCLSLSEEMN 462
Pavo_cristatus    LQDQTFKEVIFEDTFKFLSNKSSSSSFIEALQNIYGSTVGKDGIFLKEDGQCLSLSEEMN 462
Gallus_gallus     LQDQTFKEVIFEDTFKFLSNKSSSSSFIEALQNIYGSTVGKDGIFLKEDGQCLSLSEEMN 462
Chelonia_mydas    FEDQTVKQFLLEDTFKFLSNKSSASSVFEALQNIYRLAVIKDENYQKEYEQCLSLSEEMN 469
Mus_musculus      AEDQNAENIILRDTDFDLFSNASSLSMVSEMLQRDSAGAFVDGNYEKELNQCLSFEEIH 452
Rattus_norvegicus VEDQNTERRILLRDTDFDLFSNASSLSMVSEMLQRDSAGAFVDGNYEKELNQCLSFEEIH 452
Homo_sapiens      FEDQNTREEFLNDTFNLFPSNESSLSIFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEMN 452
Pan_troglodytes   FEDQNTREEFLNDTFNLFPSNESSLSIFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEMN 452
Macaca_mulatta    FEDQNTREEFLNDTFNLFPSNESSLSIFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEMN 452
Callithrix_jacchus FEDQNTREEFLNDTFNLFPSNESSLSMFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEDIN 452
Bos_taurus        FEDQNTREEFLNDTFNLFPSNESSLSMFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEDIN 450
Equus_caballus    FEDQNTREEFLNDTFNLFPSNESSLSMFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEDIN 452
Canis_lupus_familiaris FEDQNTREEFLNDTFNLFPSNESSLSMFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEDIN 447
Heterocephalus_glaber FEDQNTREEFLNDTFNLFPSNESSLSMFSEIFQRLYRSDVFKGENYQKELNQCLSLSEEDIN 451
Latimeria_chalumnae FGDQITKEFLIDDTYRFLSNVSAASLRDILKNVDKSGIMKDRNCQQQHDHCLSLSEEDIS 468
Rhinatrema_bivittatum FQDQALKEGLLDALSFLSSNLADAGLLRLKNMHRSLVTKRAACREQRNRLSABQLP 445
Xenopus_tropicalis ADNMMKVKKQILKEAFTFILRNTSS--SILQALEVLLLELFFKKKDVCKANPILKDLRWEEIS 420
.....430.....440.....450.....460.....470.....480

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Pavo_muticus      SIITFIKEVKNLGQFELLYPSAAPKIQTLRLDLYHMVDPMRRLSSVLTVHWLLSSLLQOF 522
Pavo_cristatus    SIITFIKEVKNLGQFELLYPSAAPKIQTLRLDLYHMVDPMRRLSSVLTVHWLLSSLLQOF 522
Gallus_gallus     SMITFVKEVKNLGQFELLYPSAAPKIQTLRLDLYHMVDPMRRLSSVLTVHWLLSSLLQOF 522
Chelonia_mydas    SMITFVKEVKNLGQFELLYPSAAPKIQTLRLDLYHMVDPMRRLSSVLTVHWLLSSLLQOF 529
Mus_musculus      SIRTfVKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 508
Rattus_norvegicus SIRTfVKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 508
Homo_sapiens      SIMTfIKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 512
Pan_troglodytes   SVMTfIKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 512
Macaca_mulatta    SIMTfIKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 512
Callithrix_jacchus SILTfIKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 512
Bos_taurus        SIMTfIKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 510
Equus_caballus    SIMTfIKELGSLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 512
Canis_lupus_familiaris SIMTfIQELGNLQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 507
Heterocephalus_glaber SIKTfIKELASLGQFQLLFPSTTPGQSLMHEFYDVANPVGPNPGSVLTQYWSLLNVFEQF 511
Latimeria_chalumnae RTLSFIRELKNLGPFLLYPTAPLKYQALLLDLYDKLDQTKGADTVRGLHLFLSELLEQF 528
Rhinatrema_bivittatum LMIDFVKELRGLGHFELLFPSPKLLHALLPOLYGGAVASRNLSVPMHLLFLSNVLEQF 505
Xenopus_tropicalis MLLSSTQQHVVHVEAFELIYPTSDKLETILRSKLHSMITDKMLN--PDMHLLLSQLLKDF 478
.....490.....500.....510.....520.....530.....540

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      .. :::
Pavo_muticus      QFMTKESHDTLSEWRRKKGSRKSSPTAMKWLQPRNSSQENVIPKQNFHFHLRKNHEALRY 582
Pavo_cristatus    QFMTKESHDTLSEWRRKKGSRKSSPTAMKWLQPRNSSQENVIPKQNFHFHLRKNHEALRY 582
Gallus_gallus     QFMTKEAHTDLSVWRRKKSSRKSSPTAMKWLEPRNSSQENVIPKQKFHFRLRKNHEALRY 582
Chelonia_mydas    QFMNKEARPNLSCGWKIKKSSRNSSRTTMKWSKPRNSFPPEKEGVKQRTPFNVMMKNQKELHF 589
Mus_musculus      WLMNKKAAQLQPLEWN-----SPTRNTEIEEPSPRSLEGIC-----SGKDAAPRV 551
Rattus_norvegicus WLVNKKAAQLHSLEWN-----SSTRNQTVKEKPHRSLEAIC-----SKKAAVPOV 551
Homo_sapiens      QFMNKKTPHPLEWN-----SFTEDKNIEKPQVPFDAIE-----NKKAAVPOI 555
Pan_troglodytes   QFMNKKTPHPLEWN-----SFTEDKNIEKPQVPFDAIE-----NKKATVPOI 555
Macaca_mulatta    QFMNKKTPHPLEWD-----SFTEDKNIEKPQVRFDAIE-----NKKAAVPOI 555
Callithrix_jacchus QFMNKKTQLYPLEWN-----SFTEDKNIEKPQVPFDATE-----NKK--VLQI 553
Bos_taurus        QLLNKKAEHPLEWN-----SFTEDGNIKKPRVPFDAIE-----NKKAVVPOI 553
Equus_caballus    QLLNKKAAQLHPLEWN-----SFSQDENVEKPQVPFDATE-----NKKAAVPOI 555
Canis_lupus_familiaris QLLNKKAAQLHPLEWN-----SFTEDENIEKSQVPLNATE-----NKKAAIROI 550
Heterocephalus_glaber WLMNKKAAQLHPLEWN-----SFMADVNFEEKPQMSLDATE-----SKKAPVTQI 554
Latimeria_chalumnae QLLNKQTGIEKASWN-----IITEKGDTAKTPLNVPE-----KYKREOD 567
Rhinatrema_bivittatum QIFDQEAPLP-----RSSLVGNQPLRHGPSFN-----RNAELENR 540
Xenopus_tropicalis QLLMNKASHLYPTVS-----NAYQTAYQYEQSALS-----GSIHGL 514
      .....550.....560.....570.....580.....590.....600

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      * * : : : * : * * * * . * : * * * * : : * : :
Pavo_muticus      SSKTKEIQCSY-DKDTLSHIROIFTSPQLDLNPQFNPKIKEYYAEVFPDVTVKIGAEPA 641
Pavo_cristatus    SSKTKEIQCSY-DKDTLSHIROIFTSPQLDLNPQFNPKIKEYYAEVFPDVTVKIGAEPA 641
Gallus_gallus     SSKTKEIQCSH-DKDTLSHIROIFTSPQLDLNPQFNPKIKEYYAEVFPDVTVKIGAEPS 641
Chelonia_mydas    SNETKERHCSH-DKDTLSHIROIFTCPPLDLNPKFNPKIKEYYTEVFPDVTVKIGAEPS 648
Mus_musculus      LFENKDIHCSH-EEDVLCHIKKIITHPRLELSPEFNPKIKEYYCEVFPDVTVRIGAETS 610
Rattus_norvegicus LYEDKDKHCSH-EEDVLCQIKKIIVTTPRLELSPEFNPKIKDYCEVFPDVTVRIRAETS 610
Homo_sapiens      KLENKEIHCSH-DENTPCHIKQIFTHPHLELNPDPFHPKIKDYCEVFPDVTVTIGVETP 614
Pan_troglodytes   KLENKEIHCSH-DKNTPCHIKQIFTHPHLELNPDPFHPKIKDYCEVFPDVTVTIGVETP 614
Macaca_mulatta    KLENKEIHCSHADKNTPCHIKQIFTHPRLELNPDPFNPKIKDYSEVPDVTVTIGVETP 615
Callithrix_jacchus KLENKEIHCSH-DKDTPCHIKQIFTHPNLELNPDPFNPKIKDYSEVPDVTVTIGVETP 612
Bos_taurus        MNETKEMHCHN-DKDAQCHIKQIFTHPRLELNPDPFNPKIKDYSEVPDVTVTIGAEETS 612
Equus_caballus    MNETKELHCNN-DRDTQCHIKQIFTHPHLKLNPDPFNPKIKDYSEVPDVTVTIGAEETS 614
Canis_lupus_familiaris MNETKEVHCNN-D-DTQCYIKQILTHPRLELNPDPFNPKIKDYSEVPDVTVTIGAEETS 608
Heterocephalus_glaber LLENKDTLCSN-DGDTLCHLTWIFTHPHLDLNPDPFPRIRDYSEVPDVTVMVTIGVKTS 613
Latimeria_chalumnae PGKSKGTACSH-DKQTMASHIAQIFTSPHLELNPDPFSPKIRQYSEVPDVTVKIEVEAA 626
Rhinatrema_bivittatum IAMTKDTSCSN-DRDALSHIRIFTSPSLDLSPEFNPKIKEYYSEVPDVTVTIGAEETS 599
Xenopus_tropicalis KAGIKEKNCSH-DDDDLPHIRYIFSNPQLVLVPAFSPTIKDYVEVPDVTMVEIGAEAA 573
      .....610.....620.....630.....640.....650.....660

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      :. * :. * : :. * : * : * : :. :. :. :. :. * : : : * * : * :
Pavo_muticus      NCQCQVHLDDEMKGPSIANYPGLGLGNKIVVLVTDDSQSPQVVSYSYKIKIYREDRPSLPL 701
Pavo_cristatus    NCQCQVHLDDEMKGPSIANYPGLGLGNKIVVLVTDDSQSPQVVSYSYKIKIYREDRPSLPL 701
Gallus_gallus     NCQCQVHLDDEVKGPSIANYPGLGLGNKIVVLVTDDSQSPQVVSYSYKIKIYREDRPSLPV 701
Chelonia_mydas    NCQCQVHLDDEKGPSVANYPLGLGINKITILVTDNAQSDPEVVSYSYKITIYREDRPSLPL 708
Mus_musculus      KCQCKAHLQEAGPSFATYPLGIGMNRISVLVVDESHAGGAALTYYKLTIIYREDRPSLPF 670
Rattus_norvegicus KCQCKVHLQEQTGPSFANYPLGLGMNRISMLVVDESHAGGALTYYKLTIIYREDRPSLPF 670
Homo_sapiens      KCLCKVHLYEQAGPSFASYPLGLGMNKISIFVVDESHAGGETLITYKLTIIYREDRPSLPL 674
Pan_troglodytes   KCQCKVHLYEQAGPSFASYPLGLGMNKISIFVVDESHAGGETLIMYKLTIIYREDRPSLPL 674
Macaca_mulatta    KCQCKVHLYEQAGPRFASYPLGLGMNKISIFVVDESHAGGETLITYKLTIIYREDRPSLPL 675
Callithrix_jacchus KCQCKVHLYEQAGPSFASYPLGLGMNKISIFVVDESHAGSEALITYKLTIIYREDRPSLPL 672
Bos_taurus        KSQCRVYLQERAGPSFANYSLGLGMNKISVLVVDKSPQGETLITYKLTIIYREDRPSLPL 672
Equus_caballus    KCQCKVYLRLERAGPSFSGSYPLGLGMNKISMLAVDESPAQGETLITYKLTIIYREDRPSLPL 674
Canis_lupus_familiaris KCQCKVYLHDDRARPSFANYPLGLGMNKISMLVVDSPAQGETLITYKLTIIYREDRPSLPL 668
Heterocephalus_glaber NCQCQVHLHERAGPSFAKYPLGLGMNKISIVVVDKSPAEGKTLITYKLSIYREDRPSLPF 673
Latimeria_chalumnae NCHCQVHLDEIKGPRFANYPLGLGDNRIIFVINDSQGEAIVVGTYLINIYRETRPSLPL 686
Rhinatrema_bivittatum HCECQVHLDERKGPRFAKYPLGLGINQIIILVTDEAKLPQVVSYSYRLTVYREERPSMPL 659
Xenopus_tropicalis HCDCKVRLEEKGQGTVAFALGLGINQIIITYVTDKSELTPIVLRSYRISVHREERPSLPL 633
      .....670.....680.....690.....700.....710.....720

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*: : *: :****: *: : :*** :.: : : : : * ** :*****:*
FDDYMICGFVQDCGSQIHPEESCGLOPLSHEYLSAISQTVLKTCEGGDAKGQWIVPCLSC
FDDYMICGFVQDCGSQIHPEESCGLOPLSHEYLSAISQTVLKTCEGGDAKGQWIVPCLSC
FDDYMICGFVQDCGSQIHPEESCGLOPLSHEYLSAISQTVLKTCEAGDAKGQWIVPCLSC
FEDYMVCGFVQDCGLIPEESCGLOPLSPEYLSAISQTOFKTCEAGDTKGQWIVPCLSC
FEDFTACGFVQDCGLLIHPEETCGLOPISAEYIKAISQPEIESCPGSDTKGQWIVPCLTC
FEDFTACGFVQDCGLLIHPEETCGLOPISADYIETISQPEIQSCQSGDTKGQWIVPCLTC
FEAFTACGFVQDCGLLIHPEETCGLOPISSDYIEAILQSELKRCPSGDMKGQWIVPCLSC
FEAFTACGFVQDCGLLIHPEETCGLOPISSDYIEAILQSELKRCPSGDMKGQWIVPCLSC
FEAFTACGFVQDCGLLIHPEETCGLOPISSDYIEAILQSELKRCPSGDMKGQWIVPCLSC
FEAFTACGFVQDCGLLIHPEETCGLOPISSDYIEAILQSELKRCPSGDMKGQWIVPCLSC
FEDFTACGFVQDCGLLIQPEETCGLOPISSDYIEAISQPELKTCPSGDTKGQWIVPCLSC
FEDFTACGFVQDCGLLIHPEEACGLQTISSDYIEAISQPELKICPSGDAKGQWIVPCLSC
FEDFTACGFVQDCGLLIHPEESCGLOPISSDYIEAISRPPELKICPSGDTTGQWIVPCLSC
FEDFKACGFVQDCGLLIHPKEACGLQPISSDYIEAISQPELKNCPSGDTKGQWIVPCLSC
FDDYVICGFVQDCGLLIQPKESCGLKPLPSHLSAISQMQFKTCEAGDAKGQWIVPCLSC
FDDYMMCFSFVQDCGLIIPPEESCGLOPLSTEHLMSTAQAEPKTCDTGDEKGQWIVPCLSC
FDHYIICGFVQDCGLLIHSGKPCGLYPLS-----SFPKAPQKKDCSGDAKGQWIVPCLSC
.....730.....740.....750.....760.....770.....780

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[illegible][illegible]

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	:*:*****::*:~::~* **~ : *** ~::~:*****.*::~ *: ~::~*	
Pavo_muticus	VLIVGGVQWLNSNHLKIIQKVLNRENLSNILVIIKSIGMGFHLPVDGIHSLSQAEVONLW	941
Pavo_cristatus	VLIVGGVQWLNSNHLKIIQKVLNRENLSNILVIIKSIGMGFHLPVDGIHSLSQAEVONLW	941
Gallus_gallus	VLIVGGVQWLNSNHLQITIQVNLRENLSNILVIIKSIGMGFHLPVDGIHSLSQAEVONLW	941
Chelonia_mydas	VLVVGGVQWLNSNHLQITIQVKLKRELSNILVVIKSIGMGFHLPVDGIHSLSQTEVONLW	948
Mus_musculus	VLVVGGVQWLNSNHLQIIHKVLKRENLLNILVIKTLGIGFHLPVDGVHFFLTQGEVRNLY	910
Rattus_norvegicus	VLVVGGVQWLNSNHLQIIHKVLKRENLLNILVIKTLGIGFHLPVDGVHFFLTQSEVRNLY	910
Homo_sapiens	VLVVGGVQWLNSNHLQIIHKVLKRENLLNILVIKTLGIGFHLPVDGVHFFLTQSEVONLW	914
Pan_troglodytes	VLVVGGVQWLNSNHLQIIHKVLKRENLLNILVIKTLGIGFHLPVDGVHFFLTQSEVONLW	914
Macaca_mulatta	VLVVGGVQWLNSNHLQIIHKVLKRENLLNILVIKTLGIGFHLPVDGVHFFLTQSEVONLW	915
Callithrix_jacchus	VLVVGGVQWLNSHLLQIIHNVLKRENLLNILVIKTLGIGFHLPVDGVHFFLTQSEVONLW	912
Bos_taurus	VLVVGGVQWLNSNHLQIIHKVLKREDLLNILVIKTLGIGFHLPVDGVHFFLTQNEVONLW	912
Equus_caballus	VLVVGGVQWLNSNHLQIIHKVLKRENLLNILVIKTLGIGFHLPVEGVHFFLTQSEVONLW	914
Canis_lupus_familiaris	VLVVGGVQWLNAHLLQIIHKVLKRENLLNILVIKTLGIGFHLPVDGLHFFLTQSEVONLW	908
Heterocephalus_glaber	VLVVGGVQWLNSNHLQIIHKVLERENLLNILVIKTLGIGFHLPVDGVHYLTQSEVONLW	913
Latimeria_chalumnae	VLVVGGVQWLNTNHLRILQKVLLRENLSNILVAIKSLGMGFHLPVDGIRSLSLSEVONLW	926
Rhinatrema_bivittatum	ILVVGGVQWLNSNHVHIHKVLHRENLLNILVVKSIGMGFHLPVDDGIHSLSAQEVQHLW	899
Xenopus_tropicalis	VLVVGGVQWLNSNHMQLIINNILERENLLDILVIKSLGGMGFHLPVHGHSLSATQVKNLH	867
	.....910.....920.....930.....940.....950.....960	

	* ** : ** :*****: ***** **::*.*.*****:*	
Pavo_muticus	NENLVILETAKTYGYEVDFTFIITMGRYKEFLRGKCGCHFHEVVKSNPSEESPHITMTLS	1001
Pavo_cristatus	NENLVILETAKTYGYEVDFTFIITMGRYKEFLRGKCGCHFHEVVKSNPSEESPHITMTLS	1001
Gallus_gallus	NENLVILETAKTYGYEVDFTFIITMGRYKEFLRGKCGCHFHEVVKSNPSEESPHITMTLS	1001
Chelonia_mydas	NENLVILDTAKRYGYEVDFTFIITMGRYKEFLGKCGCHFHEVVKSKTSLRHHVITMKLS	1008
Mus_musculus	KENLSILETAKKYGYEVDFTFIITMGRHKEFLGNCGCHFHEVVKSKLSROHHVIMKMRK	970
Rattus_norvegicus	KENLSILEAAKKYGYEVDFTFIITMGRHKEFLGNCGCHFHEVVKSKFARPHHVIKMRK	970
Homo_sapiens	KENLIILDTAKKHGYEVDFTFIITMGRYKEFLGKCGCHFHEVVKSKLSKEYNFIKMRK	974
Pan_troglodytes	KENLIILDTAKKYGYEVDFTFIITMGRYKEFLGKCGCHFHEVVKSKLSKEYNFIKMRK	974
Macaca_mulatta	KENLIILDTAKKYGYEVDFTFIITMGRYKEFLGKCGCHFHEVVKSKLSKEYNFIKMRK	975
Callithrix_jacchus	KENLIILDTAKKYGYEVDFTFIITMGRYKEFLGKCGCHFHEVVKSKLSKEYHFIKMRK	972
Bos_taurus	KKNLIILEDAAKYGYEVDFTFAITMGRHKEFLGTCGCHFHEVVKSKLSKEDHFLKTKQS	972
Equus_caballus	KENLIILDAAKKYGYEVDFTFIITMGRYKEFLGTCGCHFHEVVKSKLSTEYHFIMKPKS	974
Canis_lupus_familiaris	KENVIILDAAKTYGYEVDFTFIITMGRYKEFLGTCGCHFHEVVKSELPREYHFIMKPKS	968
Heterocephalus_glaber	KENMIILDTAKQYGYEVDFTFSITMGRHKEFLGNCGCHFHEVVKSKLSNEHNFIKMRK	973
Latimeria_chalumnae	GENRKILDTAKQYGYEVDFTFSITMGRSKEFLGKCACHFHEVVKSKS---KAHSHRKMKFS	983
Rhinatrema_bivittatum	HKNTAILETAKAYGYEVDFTFSITMGRYKEFLGKCGCHFHEVVKSKLSISHEQHVMKMLK	959
Xenopus_tropicalis	DDNQILINMAKLYGYEVDFTLSITMGRYKEFMGKCGCHFHEVVKSSVSKOHY-QKISLL	926
	.....970.....980.....990.....1000.....1010.....1020	

	: : . *	:	. : ** : ** : ** :	**** . *	
Pavo_muticus	RHYTLGKYFSSQSK	LSQLQDYASNSRSPYHVRGPINQVYSEILLNRLCASKRGLVST	--	1058	
Pavo_cristatus	RHYTLGKYFSSQSK	LSQLQDYASNSRSPYHVRGPINQVYSEILLNRLCASKRGLVST	--	1058	
Gallus_gallus	RHYTLGKYFSSQSK	LSQLQDYASNSQSPYHVRGPINQVYSEILLNRLCTSKRGFVST	--	1058	
Chelonia_mydas	RPYALGKYFNSQSK	LSQLQDYAMNSQSPYHVRGPINQVYSEILLSRICASKSKATDS	--	1065	
Mus_musculus	KNHIVGKYFSSQSK	--LKHNSVPNLHSPYHVRGPINQVCAEILLSRMCASQRSAQAP	--	1026	
Rattus_norvegicus	KNHIVGKYFSSQSK	--LKHNSAPNVHSPYHVRGPINQVCAEILLSRMCVSRSAQAP	--	1026	
Homo_sapiens	RNHIMGRYFSNQSK	---LQOGTVTNFRSPYHVRGPINQVCSEILLSRMCANKRTM	----	1026	
Pan_troglodytes	RNHIMGRYFSNQSK	---LQOGTVTNFRSPYHVRGPINQVCSEILLSRMCANKRTM	----	1026	
Macaca_mulatta	RNHILGRYFSNQSK	---LQOGTVTNFRSPYHVRGPINQVCSEILLSRMCVNKRTM	----	1027	
Callithrix_jacchus	RNHVVGGRYFSNQSK	---LQOGTVTNFQSPYHVRGPINQVCSEILLSRMCCTSKRTM	----	1024	
Bos_taurus	RNHIVGKYFSNQSK	LQQRQDSMTNFQSPFHVRGPINQVCSEILLSRICAPERTVEALQK		1032	
Equus_caballus	RNHIVGKYFSNQSK	---KRQDSMTNFQSPYHVRGPINQVCSEILLSRMCASQRTG	----	1026	
Canis_lupus_familiaris	RNHIVGKYFSNQSK	LQQRQDSMTNFQSPYHVRGPINQVCSEILLSRICAGGRTA	----	1023	
Heterocephalus_glaber	KNHIVGKYFSNQSK	--LQQDSMTNFQSPYHVRGPINQVCSEILLSRMCARGRTM	----	1026	
Latimeria_chalumnae	RHYHLGSYFNNH	SKLELEDLFSVFKLSYHVKGPIQVYSEILLSRICINKKKNYIST		1042	
Rhinatrema_bivittatum	RHYNFGKYFTSENK	LSWLQDYSSNRESYPYHVQGPINQIYSEILLGRMCRSEKSNARV	--	1016	
Xenopus_tropicalis	KNYTFG	---GQIFRLQRFPAEKSPYHVHGPVQVYSEILLSRICATK	----	972	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	-	1058
Pavo_cristatus	-	1058
Gallus_gallus	-	1058
Chelonia_mydas	-	1065
Mus_musculus	-	1026
Rattus_norvegicus	-	1026
Homo_sapiens	-	1026
Pan_troglodytes	-	1026
Macaca_mulatta	-	1027
Callithrix_jacchus	-	1024
Bos_taurus	D	1033
Equus_caballus	-	1026
Canis_lupus_familiaris	-	1023
Heterocephalus_glaber	-	1026
Latimeria_chalumnae	-	1042
Rhinatrema_bivittatum	-	1016
Xenopus_tropicalis	-	972
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