

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	-DLSPIESNPKQARTNN-VVNVEQTINTDPV-----	141
Pavo_cristatus	-DLSPIESNPKQARTNN-VVNVEQTINTDPV-----	141
Gallus_gallus	-DLSPIESNPKQARTNN-VVNVEQAINTPV-----	141
Chelonia_mydas	PTASPIESCCKQARTNNNLIDAEHTLNTDLV-----	175
Mus_musculus	CRNSPLPVHSKKTTRSHI-VTDSEPIVNG-----	140
Rattus_norvegicus	CKNSPLPVHSKKTTRGHL-VTDSDQIVNG-----	140
Homo_sapiens	YKDSLILLANSKKTRNYI-AIDGCKVLNS-----	139
Pan_troglodytes	YKDSLILLANSKKTRNYI-AIDGCKVLNS-----	139
Macaca_mulatta	YKDSFLLANSKKTRNHI-VTHGEQVLNS-----	139
Callithrix_jacchus	YKDSLILLANSKKTRNYI-VTDTEQILNS-----	139
Heterocephalus_glaber	YKDSLILLANSKKTRTYI-VTDDKQILNS-----	164
Canis_lupus_familiaris	CKDASLLANAKKTKSHI-VTVGEQVLNS-----	139
Equus_caballus	YKDSPVVACSKKTKSRV-VIDGEQVLNS-----	139
Bos_taurus	CEDSPLLAGSKKTKNHR-GIDSEQVLNS-----	139
Rhinatrema_bivittatum	-----SSEPCSKQLRTDT-SIGADCTLNAELT-----	146
Xenopus_tropicalis	VTTNCVKHKHTDSFVSGEYISENLFLSAQNKGYKSMSPCLPKESHTSVPGPSENGQDERS	183
	.....190.....200.....210.....220.....230.....240	

Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	QQQYGMCKVSAACNSASPHGDRAPSVFEALRDSNQPNHPQALNAFHEEAVONQVMGMTIA.....250.....260.....270.....280.....290.....300	243

Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	SINGPSPLKWNVPATKDMHTLSQSVNAANDPPTCINQKIDAGIAEVLNGFTKAEANMCHS	303
310.....320.....330.....340.....350.....360	

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Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	VSVLSTCAPLGSPLRLSALKEGHKQSDIRASACSSACLEKVASETALAAMSDSNMKKED.....370.....380.....390.....400.....410.....420	363

Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	SFNMAFELLPSPPPLHSFFGASQNVHTSEESSLLGTVGOTKENTISVKSIGSSNVVLNE.....430.....440.....450.....460.....470.....480	423

Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	GKGETSQFTILSKSHSEVEDVQKVCVRLPSSPLLETALQMKAYAHSDKLSAFNNNPCLEK490.....500.....510.....520.....530.....540	483

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Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	VLPEATPVVLSETYREVQDCFGSLPSSDLHENEPPLEERSLVDKSNSSRNYTCLEKVVPE	543
	.....550.....560.....570.....580.....590.....600	

Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	ATLLLLKEYFSESCSKVQDDEKCFGSLPSSALQKNPLIEKNGPSDKSSASSNNVCLLEE.....610.....620.....630.....640.....650.....660	603

Pavo_muticus	-----	141
Pavo_cristatus	-----	141
Gallus_gallus	-----	141
Chelonia_mydas	-----	175
Mus_musculus	-----	140
Rattus_norvegicus	-----	140
Homo_sapiens	-----	139
Pan_troglodytes	-----	139
Macaca_mulatta	-----	139
Callithrix_jacchus	-----	139
Heterocephalus_glaber	-----	164
Canis_lupus_familiaris	-----	139
Equus_caballus	-----	139
Bos_taurus	-----	139
Rhinatrema_bivittatum	-----	146
Xenopus_tropicalis	PEAVPLLEDCKSQTLVVPSTCSQLSITDKIANSLGVHNSSDSCQLISEIHHDHPSDGNLI670.....680.....690.....700.....710.....720	663

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Pavo_muticus	-----VKSCGDSLCPQSSACDVLENGQ	164
Pavo_cristatus	-----VKSCGDSLCPQSSACDVLENGQ	164
Gallus_gallus	-----VKSCGDSLCPQSRVCDVLENGQ	164
Chelonia_mydas	-----LKYNQYNLCMTQPCLPDLSDDDQ	198
Mus_musculus	-----KYNQEVCDDFSASF PDT--SAH	160
Rattus_norvegicus	-----ECNQEVCDFSASFPGD--SAH	160
Homo_sapiens	-----KHNGEVYDETSSNLPDS--SGQ	159
Pan_troglodytes	-----KHNGEVYDETSSNLPDS--SGQ	159
Macaca_mulatta	-----KHNEEVYDESSNLPDS--SSQ	159
Callithrix_jacchus	-----KCNGEVYDETSSNLPDS--SSQ	159
Heterocephalus_glaber	-----EQNGDVSDETSSNLLLG--SSQ	184
Canis_lupus_familiaris	-----KDNGEAYDKTSSHL PDL PQTGP	161
Equus_caballus	-----KQNEAACDETSSDLPDVLHSGQ	161
Bos_taurus	-----NHNGGEYDGTSPDLPGSLSYSGQ	161
Rhinatrema_bivittatum	-----SEKNGMNLQKSEPCSLDLLQDIQ	169
Xenopus_tropicalis	TVSHIAFNVGADKINKVKSLOVITPLPEVISTELCRGKSNSQSTCEPPSVPVLSCKLSSE	723
	.....730.....740.....750.....760.....770.....780	

Pavo_muticus	QKSN-NEESIDQKVDFFETTS-----	183
Pavo_cristatus	QKSN-NEESIDQKVDFFETTS-----	183
Gallus_gallus	QKSN-SEESINQKVDFFETTS-----	183
Chelonia_mydas	QKPNRTAESLEHNVDAAVI-----	218
Mus_musculus	QDPASTAASVEQSEALEADD-----	180
Rattus_norvegicus	QDPARTAAASVGNGTLEANDN-----	181
Homo_sapiens	QNPIRTADSLERNEILEADT-----	179
Pan_troglodytes	QNPIRTADSLERNEILEADT-----	179
Macaca_mulatta	QNPVRTADSLERNEILEADT-----	179
Callithrix_jacchus	QSPIRTTDSLEPNEILEADS-----	179
Heterocephalus_glaber	HDSVRTAESLIGONEILEADN-----	204
Canis_lupus_familiaris	QNPVRTADSLSEQTEILEADT-----	181
Equus_caballus	QKPGRTADSLSEQGEILEANI-----	181
Bos_taurus	QNPVRTAGCWEQNEALEADT-----	181
Rhinatrema_bivittatum	LEHYEPGVSLSEQSMAVEAACT-----	190
Xenopus_tropicalis	QKDEGTLMLSSSLHSETTEEEECGNKMALGSSSTLDGEISDYKKLNSQIKPLPQAIESLV	783
	.....790.....800.....810.....820.....830.....840	

Pavo_muticus	-----HTNG	187
Pavo_cristatus	-----HTNG	187
Gallus_gallus	-----NTNG	187
Chelonia_mydas	-----TVCG	222
Mus_musculus	-----VVVA	184
Rattus_norvegicus	-----VVMA	185
Homo_sapiens	-----VDMA	183
Pan_troglodytes	-----VDMA	183
Macaca_mulatta	-----VDMA	183
Callithrix_jacchus	-----VDVA	183
Heterocephalus_glaber	-----VDVA	208
Canis_lupus_familiaris	-----IDLA	185
Equus_caballus	-----VDVA	185
Bos_taurus	-----VDVA	185
Rhinatrema_bivittatum	-----IDVA	194
Xenopus_tropicalis	MDTCDSNLCNNINLKDSSKLIISEEATVPHCFQPEQHVVYSHPMSPPAVTCVTHGTGSEMK	843
850.....860.....870.....880.....890.....900	

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Pavo_muticus	HOEGPPKNFSSRTQLLPNSAHSSTTSEVLLRDNNCSTNNNTGLC-----	230
Pavo_cristatus	HOEGPPKNFSSRTQLLPNSAHSSTTSEVLLRDNNCSTNNNTGLC-----	230
Gallus_gallus	HOESPKNFSSRTQLLPNSTHSSTASEVLLRDNNCSTNNNTGLC-----	230
Chelonia_mydas	AQESP--DSNSKTQLLPDSELCSIKSEILHADSKPSLFMGHLC-----	263
Mus_musculus	ATEDPATVSVT-----SELEMPAKSRCLPLCOTLC-----	214
Rattus_norvegicus	TTEDPAAVGVT-----PELEMPSESRCLSLSCPLC-----	215
Homo_sapiens	TTKDPATVDVSGTGRPSPONEGCTSKLEMPLESKCTSFPQALC-----	226
Pan_troglodytes	TTKDPATVDVSGTGRPSPONEGCTSKLEMPLESKCTSFPQOTLC-----	226
Macaca_mulatta	TTKDPATVDVSGTGGPSPONEGCTSKPEMPLESKYTSFPQOTLC-----	226
Callithrix_jacchus	TTKDPATGDVSGTGGPSLQSEGCTSKLEMPLEKCTSFPQOTLC-----	226
Heterocephalus_glaber	T-EGPATVDVSRIGGISONEGCTSEFEMPWERTCSSFCHTSC-----	250
Canis_lupus_familiaris	AEGYPSTVDVSGTGGISPONEGCMSELEMPLESKCTSLCQSLC-----	228
Equus_caballus	AEEDPATIDVSRIGGTSPONEGCTSGLEMPLENRCTSLCOTLC-----	228
Bos_taurus	SEEDAPMVDVSGTEGTRPQNERCTSELEKPLESKHTSLCQTSF-----	228
Rhinatrema_bivittatum	PEISPENIQSTSELLSPKLELCNVQSQVAEKIPRSQVLPPTFF-----	237
Xenopus_tropicalis	ALDTPRKESNPFVCKELRERNVNPMEKELYISLNNAPTDLSNLSLSDTTNVEESRDATANAS	903
	.....910.....920.....930.....940.....950.....960	

Pavo_muticus	-----	230
Pavo_cristatus	-----	230
Gallus_gallus	-----	230
Chelonia_mydas	-----	263
Mus_musculus	-----	214
Rattus_norvegicus	-----	215
Homo_sapiens	-----	226
Pan_troglodytes	-----	226
Macaca_mulatta	-----	226
Callithrix_jacchus	-----	226
Heterocephalus_glaber	-----	250
Canis_lupus_familiaris	-----	228
Equus_caballus	-----	228
Bos_taurus	-----	228
Rhinatrema_bivittatum	-----	237
Xenopus_tropicalis	SLSNGETILHLYHKTTSSPALVDPKAEANTVLGLCDSVLSKNSTMGSSDSINQEKAIATTFA	963
	.....970.....980.....990.....1000.....1010.....1020	

Pavo_muticus	-----	230
Pavo_cristatus	-----	230
Gallus_gallus	-----	230
Chelonia_mydas	-----	263
Mus_musculus	-----	214
Rattus_norvegicus	-----	215
Homo_sapiens	-----	226
Pan_troglodytes	-----	226
Macaca_mulatta	-----	226
Callithrix_jacchus	-----	226
Heterocephalus_glaber	-----	250
Canis_lupus_familiaris	-----	228
Equus_caballus	-----	228
Bos_taurus	-----	228
Rhinatrema_bivittatum	-----	237
Xenopus_tropicalis	HPGQS ¹⁰³⁰ VLFSHGASTIT ¹⁰⁴⁰ VSPLGFHSAVQALD ¹⁰⁵⁰ SDIPELGCSPVCKEPT ¹⁰⁶⁰ TVQDKSDGSFDT ¹⁰⁷⁰ TS ¹⁰⁸⁰	1023

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Pavo_muticus	-----	230
Pavo_cristatus	-----	230
Gallus_gallus	-----	230
Chelonia_mydas	-----	263
Mus_musculus	-----	214
Rattus_norvegicus	-----	215
Homo_sapiens	-----	226
Pan_troglodytes	-----	226
Macaca_mulatta	-----	226
Callithrix_jacchus	-----	226
Heterocephalus_glaber	-----	250
Canis_lupus_familiaris	-----	228
Equus_caballus	-----	228
Bos_taurus	-----	228
Rhinatrema_bivittatum	-----	237
Xenopus_tropicalis	LGHFEREKONESFETDSSVMLTDDHIKDPKDQDVVLSLPEGSLEDCCPKKKSNCSNMHV	1083
	.....1090.....1100.....1110.....1120.....1130.....1140	

			:	**:	***:	*	
Pavo_muticus	-----	LOWRNKYNLCWLDCVLSALVHLEALKFALVEE	--	DD			264
Pavo_cristatus	-----	LOWRNKYNLCWLDCVLSALVHLEALKFALVEE	--	DD			264
Gallus_gallus	-----	LOWRNKYNLCWLDCVLSALVHLEALKFALVEE	--	DD			264
Chelonia_mydas	-----	LOWRNVYALCWLDCILSALVHLKTLRIAVTEA	--	CT			297
Mus_musculus	-----	VQWKNTQALCWLDCILSALVHLEVLRLKTVLEAC	--	SR			249
Rattus_norvegicus	-----	VQWRNTQALCWLDCILSALVHLEVLRLDAVLEVC	--	SR			250
Homo_sapiens	-----	VQWKNAAYALCWLDCILSALVHSEELKNTVITGLC	--	SK			261
Pan_troglodytes	-----	VQWKNAAYALCWLDCILSALVHSEELKNTVITGLC	--	IK			261
Macaca_mulatta	-----	VQWKNAAYALCWLDCILSALVHSEELKNTVITGLC	--	SK			261
Callithrix_jacchus	-----	VQWKNAAYALCWLDCILSALVHLEELKSTVITGLC	--	SK			261
Heterocephalus_glaber	-----	VQWRNANALCWLDSILTALVHLEALKNIVTDLC	--	PK			285
Canis_lupus_familiaris	-----	VQWKNAALCWLDCILSALVHLEGLKNTATDLC	--	PN			263
Equus_caballus	-----	VQWKNAAYALCWLDCILSALVHLEGLKNTVTDLC	--	SK			263
Bos_taurus	-----	VQWKNAHALCWLDCILSALVHLEGLKSTVTDLC	--	SK			263
Rhinatrema_bivittatum	-----	LOWONKYSLCWLDCILSALVQSVILKKVTVEAY	--	PD			273
Xenopus_tropicalis	-----	ALKGTSTNPISLELGSHDAPCEKKLLQWRNTLFLCWLDCILAALVHSASLNSIVAQR	--	VA			1142
	.....1150.....1160.....1170.....1180.....1190.....1200						

	:	..	.*:	*.*:	*.*:	:	:	***:	.*	::*																																												
Pavo_muticus	EKCLLQ	RLLT	TKYKQ	ATVLLN	TCR	SKVKD	-----	VLPKAE	LLLL	NEIRN	QIFI	QLOP	315																																									
Pavo_cristatus	EKCLLQ	RLLT	TKYKQ	ATVLLN	TCR	SKVKD	-----	VLPKAE	LLLL	NEIRN	QIFI	QLOP	315																																									
Gallus_gallus	EKCLLQ	RLLT	TKYS	QATVLL	NT	CKR	GKVKD	-----	TLPKAE	LLLL	NEIRN	QIFI	QLOP	315																																								
Chelonia_mydas	EESVIQ	RLFT	TKYNAQ	ATALLN	AC	TNKLK	-----	VLPKAE	HLN	NEIRN	VFIA	QLOP	348																																									
Mus_musculus	EECVF	GRLF	FEMYH	QADELL	LHT	HHLH	GVGTGED	CKKLT	SEIF	TEIDT	CLN	KVRDE	IFAKLOP	309																																								
Rattus_norvegicus	EECVF	GKLF	FETVH	QADKLL	YTHH	LH	GVGTGED	CKKMT	TEIF	TEIDT	SLN	KIRDE	IFAKLOP	310																																								
Homo_sapiens	EESIF	WRLL	TKYNAQ	ANTLLY	TS	LS	SGVKD	GDCKKLT	SEIFA	BIET	CLN	EV	DEIFISLOP	321																																								
Pan_troglodytes	EESIF	WRLL	TKYNAQ	ANTLLY	TN	Q	LS	SGVKD	GDCKKLT	SEIFA	BIET	CLN	EV	DEIFISLOP	321																																							
Macaca_mulatta	EESIF	WRLL	TKYNAQ	ANTLLY	TN	Q	LS	SGVKD	GDCKKLT	SEIFA	BIET	CLN	EV	DEIFISLOP	321																																							
Callithrix_jacchus	EESV	FWRL	FTKYNAQ	ANLLY	TS	LS	GKID	GDKKLT	SEIFA	BIET	CLN	EV	DEIFIRLOP	321																																								
Heterocephalus_glaber	D-SV	FWRL	FEKYNAQ	ANKLLHT	N	Q	SD	EVKGGNY	KKLT	SEIFA	BIET	CLN	EV	DEIFTKLOP	344																																							
Canis_lupus_familiaris	EDSV	FW	OLF	TKYNAQ	ANKLLHT	N	Q	D	GIKD	GDCE	KL	TS	EIFA	KIEACL	NEVRDEIFIRLOP	323																																						
Equus_caballus	EESV	F	CR	LFTKYD	QANKLL	HT	S	Q	D	G	V	E	D	G	CKKLT	SEIFA	KIET	CLN	EV	DEIFIRLOP	323																																	
Bos_taurus	EESV	F	GR	LFT	TRYSE	ANKLL	HT	S	Q	D	G	V	K	D	G	CKKL	P	SEIFA	KIET	CLN	EV	DEIFIRLOP	323																															
Rhinatrema_bivittatum	DES	V	V	Q	K	L	F	T	E	Y	N	K	A	C	A	L	L	G	C	P	---	M	K	A	D	N	T	E	V	S	A	E	R	L	C	O	A	E	M	Y	L	N	E	I	R	R	A	I	F	E	K	L	P	330
Xenopus_tropicalis	ESS	I	I	H	L	L	E	K	Y	E	A	N	A	L	I	K	T	S	R	R	G	R	P	K	N	-----	L	S	Q	A	E	N	I	L	K	V	R	M	T	I	F	D	E	I	K	P	1193							
	1210	1220	1230	1240	1250	1260																																										

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	: **.******:~::~:	* * *	**:::~::~***.	
Pavo_muticus	QLKCELGKEESPVFALPLLKQDQQAELFLHSFSWKFECCCGYKYLDRCRKLTLTFTN			375
Pavo_cristatus	QLKCELGKEESPVFALPLLKQDQQAELFLHSFSWKFECCCGYKYLDRCRKLTLTFTN			375
Gallus_gallus	QLKCELGKEESPVFALPLLKQDQHAEKLFSHSFSWKFECCCGYKYLDRCRKLTLTFTN			375
Chelonia_mydas	QLKCELGKKESPVFAFPPLLLQDPQVETLFLHSFWSMFECILHCGYSHQDRCKLTLTFTN			408
Mus_musculus	KLRCTLGDMESPVFALPVLCLKLEPHVESLFTYSFWNFECSCGHQYONRCVKSLVTFTN			369
Rattus_norvegicus	KLRCTLGDMESPVFALPVLCLKLEPHVENLFTYSFWNFECSCGHQYONRCVKSLVTFTN			370
Homo_sapiens	QLRCTLGDMESPVFAFPPLLLKLETHIEKLFYSFSWDFECSQCCHQYONRHMKSLVTFTN			381
Pan_troglodytes	QLRCTLGDMESPVFAFPPLLLKLEPHIEKLFYSFSWDFECSQCCHQYONRHMKSLVTFTN			381
Macaca_mulatta	QLRCTLGDMESPVFAFPPLLLKLEPHIEKLFYSFSWDFECSQCCHQYONRHMKSLVTFTN			381
Callithrix_jacchus	QLRCTLGDMESPVFAFPPLLLKLEPHVEKLFVSFSWFDFRCSQCCHQYONRCMKSLVTFTN			381
Heterocephalus_glaber	QLRCTLGERESPVFAFPPLLLRTEARVEKLFYTYSFSWEFECSCGHRQYONRCVKNLVTFTN			404
Canis_lupus_familiaris	QLRCTLGDMESPVFALPPLLKMEPLIEKLFMYFSFWNFDCSQCCHKYONRYMKNLVTFTN			383
Equus caballus	QLRCTLGDMESPVFAFPPLLLKIEPHIEKLFYTYSFWNFECSCGCHKYONRCMKNLVTFTN			383
Bos_taurus	QLRCTLGDMESPVFAFPPLLLKIEPHIEQLFYTSFSWNFECSHGCHKYONRCMKNLVTFTN			383
Rhinatrema_bivittatum	QLKCELGNKESPVFAFPPLLLKIEDTWLEKFLHLSFWKFECALCGYKYOQRCKMSLTFTIS			390
Xenopus_tropicalis	LLKCELGDKESPVFALPPLLQLVPETIESCFVHSGVWEFTCKLCGYOYNKHORTIVSTFTIK			1253
	.....1270.....1280.....1290.....1300.....1310.....1320			

	::*:~**:*~*~***~*~..*~*~::~:		
Pavo_muticus	VIPDWHPLNAVHVAPCNNCSDRSQRROMILEK-----VP	409	
Pavo_cristatus	VIPDWHPLNAVHVAPCNNCSDRSQRROMILEK-----VP	409	
Gallus_gallus	IIPDWHPLNAVHVAPCNNCSDRSQRROMILEK-----VP	409	
Chelonia_mydas	IIPDWHPLNAIHISPCNNCNDKSQRRKMILEK-----VP	442	
Mus_musculus	IVPEWHPLNAAHFGPCNSCNKSKSQIRKMVLER-----AS	403	
Rattus_norvegicus	VVPEWHPLNAAHFGPCNSCNKSKSQIRKMVLER-----AS	404	
Homo_sapiens	VIPEWHPLNAAHFGPCNNCNSKSKSQIRKMVLEK-----VS	415	
Pan_troglodytes	VIPEWHPLNAAHFGPCNNCNSKSKSQIRKMVLEK-----VS	415	
Macaca_mulatta	VIPEWHPLNAAHFGPCNNCNSKSKSQIRKMVLEK-----VS	415	
Callithrix_jacchus	VIPEWHPLNAAHFGPCNNCNSKSKSQIRKMILEK-----VS	415	
Heterocephalus_glaber	VIPEWHPLNAAHFGPCNSCSSKSKSQRRKMVLER-----MS	438	
Canis_lupus_familiaris	VIPEWHPLNAAHFGPCNNCNSKSKSQIRKMILEK-----VS	417	
Equus_caballus	VIPEWHPLNAAHFGPCNSCNKSKSQIRKMVLEKFWCFITYYLSCLTKAVWALDAKENSKRVS	443	
Bos_taurus	VIPEWHPLKAAHFGPCNNCCKNSKSKSQIRKMVLEK-----VS	417	
Rhinatrema_bivittatum	IIPDWHPLNATHITAPCNCQDKSQRRRMILES-----IS	424	
Xenopus_tropicalis	ILPEWTPLNAIHKAPCNKCLGTDQIRAFRIKK-----IH	1287	
1330.....1340.....1350.....1360.....1370.....1380		

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Pavo_muticus	SILMFHFLEGLPHNNLKSYSFQLEEDIYQITSVIOYEMHKKHFITWSLNPDGTWLECDDL	469
Pavo_cristatus	SILMFHFLEGLPHNNLKSYSFQLEEDIYQITSVIOYEMHKKHFITWSLNPDGTWLECDDL	469
Gallus_gallus	SILMFHFQEGLPNNKLKSYSFQLEEDVYQITSVIOYAVHKKHFITWSLNPDGTWLECDDL	469
Chelonia_mydas	SIFMIHFVEGLPHNELKNYSFQFEGDFYQITAVIOYQDPKHFKTWWLNPDETWLECDDI	502
Mus_musculus	PIILMHFVEGLPRRDLQHYAFHFEGSLYQVTSVIOYQAN-NHFITWFLDADGSWLECDDL	462
Rattus_norvegicus	PIIMLHFVEGLPRKDLQHYAFHFEGSLYQVTSVIOYQAK-NHFITWTVADADGSWLECDDL	463
Homo_sapiens	PIFMLHFVEGLPQNDLQHYAFHFEGCLYQITSVIOYQAN-NHFITWILDADGSWLECDDL	474
Pan_troglodytes	PIFMLHFVEGLPQNDLQHYAFHFEGCLYQITSVIOYQAN-NHFITWILDADGSWLECDDL	474
Macaca_mulatta	PIFMLHFVEGLPQNDLQHYTFHFEGCPYQITSVIOYQAN-NHFITWILDADGSWLECDDL	474
Callithrix_jacchus	PIFMLHFVEGLPQKDLQHYAFHFEGCLYQITSVIOYQAN-NHFITWILEDGGSWLECDDL	474
Heterocephalus_glaber	PIFMLHFVEGLPRSDLQHYAFHFEGCLYQITSVIOYQAN-DHFITWNLHADGSWLECDDL	497
Canis_lupus_familiaris	PVFMMLHFVEGLPRNDLQHSYFHFEGCLYQITSVIOYQAN-NHFITWLLDPDGSWLECDDL	476
Equus_caballus	PIFMVHFVEGLPRDDLQHSYFHFEGCLYQITSVIOYQAN-NHFITWILDADGSWLECDDL	502
Bos_taurus	LVFMLHFVEGLPHNDLQRYSFHSEGCYQVTSVIOYQAN-NHFVTWILDADGSWLECDDL	476
Rhinatrema_bivittatum	SVFMLHFVEGLPHNCLETYSFQFEGDSYQIRTVIOYQID--HFVTWVLNEDGTWLEYDDL	482
Xenopus_tropicalis	DLFILHFVEGLPSNDLGMYSFHFEGCLYEVKTVIOYSED--HFSWIANEDGTWLESDDL	1345
1390.....1400.....1410.....1420.....1430.....1440	

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Pavo_muticus	KGPY	CRRH	KRFV	PPTE	IEHIV	MWEK	KASRL	PEEL	DSQY	QSKN	IEDSS	TNNV	RLKS	-TVLH	528
Pavo_cristatus	KGPY	CRRH	KRFV	PPTE	IEHIV	MWEK	KASRL	PEEL	DSQY	QSKN	IEDSS	TNNV	OLKS	-TVLH	528
Gallus_gallus	KGPY	CRRH	KRFV	PPTE	IEHIV	IWEK	KASRL	PEE	DSQY	QSKN	IEDSS	TNNV	OLKS	-TVLH	528
Chelonia_mydas	KGTY	CERR	ERFE	VP	LS	IEHIV	WERK	ASQV	PD	KMSV	QVQSV	KSEN	PL	ND	562
Mus_musculus	KGPC	AKRH	VTCE	VP	ASEI	HIV	WERK	-SQV	P	IEEA	ACLP	CMKPN	VQV	SVS	521
Rattus_norvegicus	KGPC	AKR	HEACE	VP	ASE	HIV	WERK	-SQV	P	VEGA	ACLP	PHMKL	HV	SVS	517
Homo_sapiens	KGPC	SERH	KKFE	VP	ASE	HIV	WERK	ISQV	TD	KEA	ACLP	PLKK	TND	Q	534
Pan_troglodytes	KGPC	SERH	KKFE	VP	ASE	HIV	WERK	ISQV	TD	KEA	ACLP	PLKK	TND	Q	534
Macaca_mulatta	KGPC	SERH	KKFE	VP	ASE	HIV	WERK	TSQV	TD	KEA	ACLP	PLKK	TND	Q	534
Callithrix_jacchus	KGPC	SERH	KKFE	VP	ASE	HIV	WERK	TSQV	TD	KEA	ACLP	PLKK	TND	Q	534
Heterocephalus_glaber	KGLC	AQR	HEK	LEV	P	ASE	HIV	WERK	TSQ	A	TDEE	AACLP	PLKK	TND	557
Canis_lupus_familiaris	KGLR	SER	REK	FEV	L	GSE	HIV	WERK	TSQ	M	TDK	ASACP	PLKK	SND	536
Equus_caballus	KGSC	SER	HEK	FEV	S	VEI	HIV	WERK	TSQV	I	NKAS	ACP	ALK	KAN	562
Bos_taurus	KGLC	SER	HE	T	FQV	P	ASE	HIV	WERK	TSQ	M	TDK	A	PACH	536
Rhinatrema_bivittatum	KGPY	CCR	HEK	LEV	P	ATKI	HIV	CWERK	IS	AVS	NEL	NSQL	QRE	OT	542
Xenopus_tropicalis	KGYF	CIK	QNC	FEV	P	ASE	HIV	WERK	IS	NS	TGAH	HAME	PETK	NKAL	1405
	1450	1460	1470	1480	1490	1500			

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Pavo_muticus	CGFDNAVDNIFAEDHQEDSVRIPDKKQORVAEG---ESSAHCGLENLAHDDFVQTILEET	585		
Pavo_cristatus	CGFDNAVDNIFAEDHQEDSVRIPDKKQORVAEG---ESSAHCGLENLAHDDFVQTILEET	585		
Gallus_gallus	CGFDDAVDNMLAEDHQEDTVRIPDKKQORVAEG---ESSARCGLENLARDGLVTQILEET	585		
Chelonia_mydas	RDGDNAVDEIITVFVHKKEIVSIPVNEQQKVARNDDDENSLLSGLENLAADDVITLTILVEI	622		
Mus_musculus	SLAGTATSEP-SVAHPTSMAGAPQILPEIQAVAH--GDSVLSGAKGMVDS-ILPSALEET	577		
Rattus_norvegicus	SLAGTATSEP-SVAHPTMAVAPQILPATQAVAH--GDSVLSGTGGLLDS-VSPSALEET	573		
Homo_sapiens	SVGDAASAEITASVTHPKDISVAPRTLSQDTAVTH--GDHLLSGPKGLVDN-ILPLTILEET	591		
Pan_troglodytes	SVGDAASAEITASVTHPKDHSVAPRTLSQDTAVTH--GDHLLSGPKGLVDNNILPLTILEET	592		
Macaca_mulatta	SVGDAASAEITASVTHPKDTSVAPHFTSQDTAVTH--GDHLLSGPKGLVDNNILPLTILEET	592		
Callithrix_jacchus	SVGDAASAEITASVTHPKVITSVAHHITLSQDSAVTH--GDHFLSGSKGLVDN-ILPLILEET	591		
Heterocephalus_glaber	SVGQAASAGATSVILPTSLTLAPHTLPQDKAVAH--EDCILSDPKVWVDNNILPLTLQGT	615		
Canis_lupus_familiaris	SVGDTATAGPSSRTLPTDAIAPSSLSQGEAVAC--GHHLFSGPEDLVDSIDILSLTLEE-	593		
Equus caballus	SLGHAASAEITSSGTHPTNMVALNTLAQDEAVAH--ENNLLSGPEDLVDN-ILPLTLEE-	618		
Bos_taurus	SAGEAASAEPPSSGTHPTDVSMVPNTLSQDEAVAP--GRHSILPNLKGSVDSIGILPLTLEE-	593		
Rhinatrema_bivittatum	SDANAEAITKLAVSPKKQVSLSLPINKSQNVNLGK--ANNLLSGLEGGLADDDVITLTIVEV	600		
Xenopus_tropicalis	HLSPSAAPNAAASPRLDPNAS-----SVLSGMEGFHDDDIITLTILIEI	1449		
	.....1510.....1520.....1530.....1540.....1550.....1560		

Pavo_muticus	-----PLDSEGKSM ^{..} PNRKM ^{..} TENN ^{..} LVVEM ^{..} SGREK ^{..} QESAFSPNTPYTGEFIG ^{..} TDLT ^{..} VND	637
Pavo_cristatus	-----PLDSEGKSM ^{..} PNRKM ^{..} TENN ^{..} LVVEM ^{..} SGREK ^{..} QESAFSPNTPYTGEFIG ^{..} TDLT ^{..} VND	637
Gallus_gallus	-----PLDSEGKSMLSRKM ^{..} VENN ^{..} LVVET ^{..} GSQEK ^{..} QESAFSPNTPCTGEFIATDLAMND	637
Chelonia_mydas	-----QVDSEGKPLDNGQMVG ^{..} NHLAET ^{..} GILLKEQESACSDHPTCTEDVCSPTTSTN-	673
Mus_musculus	IQETASVSQVDSKDCILLEDKPVAGSAALVRVLAFO ^{..} QDPSGSSGSSSLVSSSLCEGKLIVAPC	637
Rattus_norvegicus	IQETASVSQIDSKDCILLEDKPVVGSAGPVRLT ^{..} FQDPSLG---SSVLNLC ^{..} EGMLVAPC	630
Homo_sapiens	IQKTASVSQLNSEAFLL ^{..} ENK ^{..} PVAENTGILKINTLLSQESLMAS---SVSAPCNEKLIQDOF	649
Pan_troglodytes	IQKTASVSQLNSEAFLL ^{..} ENK ^{..} PVAENTGILKINTLLSQESLMAS---SVSAPCNEKLIQDOF	650
Macaca_mulatta	IQKITVSQLNSEAFLL ^{..} ESK ^{..} PVAENTGILEINTLLSQESLMAS---SVSAPCHEKLIQDOF	650
Callithrix_jacchus	TQKTASVSRLNSEAFLL ^{..} ENK ^{..} VVAENTGILKKSTLQSQESLMAS---SVSAPLKEKLIQDOF	649
Heterocephalus_glaber	VWKIASVFOVSTEAFLPENMPVAENK ^{..} FEVKINTLQSQKSPVSS---SLSAPCKEKLIAQAF	673
Canis_lupus_familiaris	-----IQINSEHFLNEH---VAENAGVCKINTLSQSQESRVAS---LLSAPCVEKLIQDOV	642
Equus_caballus	-----IQVNPEGFLLLEDKPVVAENAGVIKINTLQSQESLTAS---LVSAPCKEKLITQDOF	669
Bos_taurus	-----VQSNSEGFLL ^{..} EHK ^{..} PVAENAGVVEANILQSEEP ^{..} LIA---LLVAPFEDKLITHNQ-	642
Rhinatrema_bivittatum	-----QVDSEGNPV ^{..} ENSHMSGDLVFERNAQQQQ ^{..} Q ^{..} ENISVP-FSPQASHMGDVQN ^{..} NLT	651
Xenopus_tropicalis	P-----IDASGNVIENNSEAAQQ---PSLIAETHSPVTLKAVADGQCDNLCSGTM	1498
1570.....1580.....1590.....1600.....1610.....1620	

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Pavo_muticus	KDTLSSENSVCLSLRELNPA SITPLP-KKHDPNPSDSSLAQSVG----	DRANLLNGEHG	692
Pavo_cristatus	KDTLSSENSVCLSLRELNPA SITPLP-KKHDPNPSDSSLAQSVG----	DRANLLNGEHG	692
Gallus_gallus	KDMLSENSMCLSLQELNPA SITSSVP-KKHDPNPSDSSLAQSTG----	DRANLNGEHG	692
Chelonia_mydas	MCTPPENACISLHLEQLNLANIASAVPTTNHCSDL SAPSQSQEAE----	AKANPVNTENI	729
Mus_musculus	VDSSFPQS AVSTDLQAVLSQAGDTVVPNPVTDAPVPV--LVQELK----	SLATEKDSQ	689
Rattus_norvegicus	VDSRFPSQAVSTGLQAVPSQAGDTVVVPKPVTDA PVPV--LVQELK----	SMATE-DSQ	681
Homo_sapiens	VDISFPQS VVNTNMQSVQLNTEDTVNTKSVNNTDATG--LIQGVK----	SVEIEKDAQ	701
Pan_troglodytes	VDISFPQS VVNTNMQSVQLNTEDTVNTKSVNNTDATG--LIQGVK----	SVEIEKDAQ	702
Macaca_mulatta	VDISFPQSRVVNTNMQSVQLNTKDTVNTKSVNNTDATG--LLQGVK----	SVEIEKDAQ	702
Callithrix_jacchus	VSISFPQS VVNTNMOPVQLNTEGAVNTKFANNTHATG--LIQGVK----	AVETERDAQ	701
Heterocephalus_glaber	MDLSFPLQIVNNTQLVQLSTEDIAVTQPPNNIYVAG--LIQGIK----	SVEVEKDTQ	725
Canis_lupus_familiaris	MDLSFPSQIVDANMQLAQMNTKD-VITKPVNSTHATDP-PIHGIKPIEVEGTVALE-DTP		699
Equus_caballus	VDLSFPSQFVNINVQLVQLNTEDTVITKSVNVHATD--AMQEVKSVEFEGTVVLEKDAP		727
Bos_taurus	PDLSEFSQLLT--MPSVQVSTEDIAVTQPVNDTQAGG--LIQGVKPVDT	TEGAVALERNAS	698
Rhinatrema_bivittatum	GSESPQFENATACPVLNKF CPTSTAASPGTNIVHLSTSVRVSQAP-----	SQTENPEFK	705
Xenopus_tropicalis	KESSFAGGS LVPVNIS SPAPNIS SPAPNIS PPAPHISSPPAP-----	HISSPPAP	1551
	.....1630.....1640.....1650.....1660.....1670.....1680		

Pavo_muticus	-LSSGQQINCELPPVEN-IVQKSPDLKGASKIAVHSQVVSSAAGNNSFOPSDKDOKRGFV	750
Pavo_cristatus	-LSSGQQINCELPPVEN-IVQKSPDLKGASKIAVHSQVVSSAAGNNSFOPSDKDOKRGFV	750
Gallus_gallus	-LSSGQQINCELPPVEN-IVQKSPDLTGASKTAVHSQVAASSVDNNSFOPSDKDOKRGFV	750
Chelonia_mydas	ALNPPELLNKKLALMEN-VMQKSNTTRNTSKIVADSQAAALSATNNSTOSLHKDOKRGFV	788
Mus_musculus	TQ-L LPLKTEKLDPEQP-GKSGASNLRKKRETTASKTIVAARSAON---QPRKEDOKRAFV	744
Rattus_norvegicus	TQ-L LPLKTDRLNPGQPPGKTQASNLRKKRENAAASSKPVAARSAON---QPRKDEOKKAFFV	737
Homo_sapiens	LKQFLTPKTEQLKPER--VTSQVSNLKKKETIADSQTITTSKSLQN---QSLKENOKKPFV	756
Pan_troglodytes	LKQFLTPKTEQLKPER--VTSQVSNLKKKEATAADSQTITTSKSLQN---QSLKENOKKPFV	757
Macaca_mulatta	LQQFLTPKTEQLKPEH--VTSQVSNLKKKETIADSQTITTSKSLQN---QSLKENOKKPFV	757
Callithrix_jacchus	LKQFLTPKTEQLKPEH--VTSQVSNLKRKETIADSLTT-SRSLQN---QSLKENOKKPFV	755
Heterocephalus_glaber	LKQSWSWTKLELEPEQP-SISQVSNLKKK-ATADPHSVTASSQN---QPLKENOKKPFV	780
Canis_lupus_familiaris	LKQFLSPKTEKLKPEQP-VTTQVSNLMKNETATIFSQSMIMKPVQN---PTLKETOKKPFV	755
Equus_caballus	LKQFLSPKTEKLKPEQL-VTSQVSNLKKKEETAAFSQTITAKSLQS---PSLKENOKKPFV	783
Bos_taurus	LKQFLVAETEKLNPQH-VTSQVSDWKEKETIAFSQTIVTAKPLQN---PPLKENOKKPFV	754
Rhinatrema_bivittatum	GKPSAPONGITLIPALV----QNSVKLQREKIGDPEPIAPVSPEKN-VCPSSKESOKTGFV	760
Xenopus_tropicalis	HISSPPAPHISSPPAPHISSPPAPHISSPPAPNASPPAPNASASTP-LPNSSSSKKAFV	1609
1690.....1700.....1710.....1720.....1730.....1740	

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Pavo_muticus	GSWVKKLLSKNTSFLPSSALMPKN	---	ERSCKTPSVQKLSDTWLPVKGASNFGGFOGRGE	807
Pavo_cristatus	GSWVKKLLSKNTSFLPSSALMPKN	---	ERSCKTPSVQKLSDTWLPVKGASNFGGFOGRGE	807
Gallus_gallus	GSWVKKLLSKNTSFLPSSALPKN	---	ERSCKTPSVQKLSDTWLPVKGASNFGGFOGRGE	807
Chelonia_mydas	GSWVKGFLSKHNTFMPSSASIHNN	---	KKSYKNPSLLRAADLHLPTKGAANFGGFOAKGT	845
Mus_musculus	GSWVKGLLSRGGAFFMPTCVLS	-----	QSR-AVSDLPQSVKGASNFDGFKTKSI	791
Rattus_norvegicus	GSWVKGLLSRGGAFFMPPCVSA	-----	QSR-AVTDLPQSVKGANNFDGFKTKSI	784
Homo_sapiens	GSWVKGLISRGASFMPPLCVSA	-----	HNRNTIITDLPQSVKGVNFFGGFKTKGI	804
Pan_troglodytes	GSWVKGLISRGASFMPPLCVSA	-----	HNRNTIITDLPQSVKGVNFFGGFKTKGI	805
Macaca_mulatta	GSWVKGLISRGASFMPPLCVSA	-----	HNRNTIITDLPQSVKGVNFFGGFKTKGI	805
Callithrix_jacchus	GSWVKGLISRGASFMPPLCVSA	-----	HNRNTIIDLPQSVKGVNFFGGFKTKGI	803
Heterocephalus_glaber	GSWVKGLLSRGASFMPSCVSA	-----	HSRNTIVTNLPQSVKGANNFGGFKTKSI	828
Canis_lupus_familiaris	GSWVKGLLSKGASFMPPCVSA	-----	HNRNTIVTDLPQSVKGASNFGGFKTKGV	803
Equus_caballus	GSWVKGLLSKGASFMPPCVSA	-----	HNRNTIITDLPQSVKGASNFGGFKTKGI	831
Bos_taurus	GSWVKGLLSKGVSFMPSCVSA	-----	HNRNTIVTDLPQSVKGASNFGGFQTKGS	802
Rhinatrema_bivittatum	GSWVKSLLSKHPSFMPSSALSVSTWSREKKTCRTASLPQLTGVSLPAKGASFDGFKAKGV			820
Xenopus_tropicalis	GSWMKSLLNKNPLFLTNSNVCANKKIVAKTPIREFLLKTIIDLQASTKQAQSFDFGFKAKRV			1669
1750.....1760.....1770.....1780.....1790.....1800			

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Pavo_muticus	SRTSQ--PLTSVLPR-----SNNAHCLSKFKGFSQGTCLPRNDSAMEGPTWNK	853
Pavo_cristatus	SRTSQ--PLTSVLPR-----SNNAHCLSKFKGFSQGTCLPRNDSAMEGPTWNK	853
Gallus_gallus	RKSSQ--TLTSVLPR-----SNNACQLSKFQGFSGGTCLPRSHSAKEGPTWNK	853
Chelonia_mydas	SKTTEEVPKSAVCGG-----ANIPLLLTNITGPSVHARLPAVNPVVDGPPPLNK	893
Mus_musculus	SRRSKRMSRKAKHME-----ELSPRNSPPLS-WTAAALQAENAT-----SA	833
Rattus_norvegicus	NRRSKRMSRKAKHVE-----EASP-GSPPLSGSTAALPQAAGNAS-----SA	826
Homo_sapiens	NQKASHVSKKARKSA-----SKPPPISKPPAGPPSSNGTAAHPHA---HAASE	849
Pan_troglodytes	NQKASHVSKKARKSA-----SKPPPISKPPAGPPSSNGTAAHPHA---HAASE	850
Macaca_mulatta	NQKSRHVSKKARGSA-----GKPPPISKPPPAGPPSSNGTAAHPHA---HAASE	850
Callithrix_jacchus	NQKASHVSKKARRSA-----TKPPPISKPPPVPSSNGTAAPLHA---HAASE	848
Heterocephalus_glaber	KQKTSHVSKKACRSA-----DKSAFNSNPPGLPLSENIAAHSHTN-ENAASE	875
Canis_lupus_familiaris	NQKANRASRKVNRC-----SKPPTVSNLSLRSPSSGSMTSHVCAANVIADSD	851
Equus_caballus	KQKANRTSKKAHKCS-----SKPPPVSNNPPSLPS-GSPASQLHAS-VIAHSE	877
Bos_taurus	ROKASQASRKAHRR-----AKPPLLNSPPSHQSPSTIASPPRAD-GTGDSE	849
Rhinatrema_bivittatum	TRTVAKPGKVSMPPARKKALHFSVPSTLAGSSPVNSRMVKKPAVTKAPVPVSKAVPTPVKE	880
Xenopus_tropicalis	G-----NSFS-DNCLGVGPTKDNSTAPKPAISSQTFQP	1702
1810.....1820.....1830.....1840.....1850.....1860	

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Pavo_muticus	SGNTLGSSGKTTQVHPPSYNS	-----	VKA	EES	SDSDKTRKLR	LRLKLLKKLN	NAKK	900				
Pavo_cristatus	SGNTLGSSGKTTQVHPPSYNS	-----	VKA	EES	SDSDKTRKLR	LRLKLLKKLN	NAKK	900				
Gallus_gallus	SGNTQGGSGKTTQVHPPSCNS	-----	VKA	EES	SDSDKTRKLR	LRLKLLKKLN	NAKK	900				
Chelonia_mydas	SGISLGITWSEVIQNTPIFSSKPRHGENHKS	-----	DKV	KDES	-AKTH	KLRLKLLKKL	KAKK	952				
Mus_musculus	LLREQE-GSRPAPLRHRS	PGNE	-----	SAIS	PASRGDA	AEDEVHKL	RLKLLKKL	KAKK	885			
Rattus_norvegicus	QLKEQE-GSRAPLSHRPPSDE	-----	SAM	S	PAGRA	EAAEDOVHKL	RLRLKLLKKL	KAKK	878			
Homo_sapiens	VLEKSGSTSCGAQLNHS	SYG	-----	NGIS	SA	NHEDLVEG	QIHKLR	LRLKLRKKL	KA	EK	900	
Pan_troglodytes	VLEKSRSTSCGAQLNHS	SHG	-----	NGIS	SA	NHEDLVEG	QIHKLR	LRLKLRKKL	KA	EK	901	
Macaca_mulatta	VLEKSGSTSCGAQLNHS	SHG	-----	NGL	S	PAN	HEDLVEG	QIHKLR	LRLKLRKKL	KA	EK	901
Callithrix_jacchus	VLEKSGSTSCGAQLNHS	SHG	-----	NGIS	SA	NHEDLVEG	QIHKLR	LRLKLRKKL	KA	EK	899	
Heterocephalus_glaber	LLKKRESTSHGAYLNHP	SHRRE	-----	NGT	SA	NHGD	SAEGQIHKLR	LRLKLLKKL	KAKK	928		
Canis_lupus_familiaris	VLKCCENASYGAHRSHD	SYIKE	-----	NGIS	SA	NHEDS	VEGQIHKLR	LRLKLLKKL	KAKK	904		
Equus_caballus	VLKCCENTSSGAHLNHS	SHGSE	-----	GGV	SA	NHGD	LVEGQIHKLR	LRLKLLKKL	KAKK	930		
Bos_taurus	VWKRCEASCGAYLNHN	SHGNE	-----	NGV	SS	PNHGD	TEGQIHKLR	LRLKLLKKL	KAKK	902		
Rhinatrema_bivittatum	MSPLFRQFSC	TLPEKHGQ	NGDD	-----	HPK	S	VAKQREV	TKEDV	HR	LRLKLLK	RIKAKK	934
Xenopus_tropicalis	LVS	NRLKNGRLGLGNT	KDLAKN	-----	VSL	S	KEDKVL	RLRLKML	KKLKAKK	1748		
1870.....	1880.....	1890.....	1900.....	1910.....	1920						

	1930	1940	1950	1960	1970	1980
Pavo_muticus	KKLASLDRLAVEQVKRGKPVARDVSAPSQTE	SHNDSELLQSFRLREL	946			
Pavo_cristatus	KKLASLDRLAVEQVKRGKPVARDVSAPSQTE	SHNDSELLQSFRLREL	946			
Gallus_gallus	KKLASLDRLAVEQAKRGKPVARDVSAPSQTE	SHNDSELLQSFRLREL	946			
Chelonia_mydas	NKLASLDRLAKTOMCNGSPNARDVEDLLQFG	SHHSESVQNLINEL	998			
Mus_musculus	KKLAAL-----ISSPHREPSLDHSEPAASHCGTPASDQSEPVSHCG	SPNDCESEDLLKEL	941			
Rattus_norvegicus	KKLAAL-----MSSPRREPSVSDHSEPAASHCG	SPNDCDAVEDLLREL	920			
Homo_sapiens	KKLAAL-----MSSPQSRITVRSENLEQVPODG	SPNDCESEDLLINEL	942			
Pan_troglodytes	KKLAAL-----MSSPQSRITVRSENLEQVPODG	SPNDCESEDLLINEL	943			
Macaca_mulatta	KKLAAL-----MSSPQSRITVPSSENLEQVPOGG	SPNDCESEDLLINEL	943			
Callithrix_jacchus	KKLAAL-----MSSPQSGITDPSSENLEQVPOGG	SPNDCESEDLLINEL	941			
Heterocephalus_glaber	KKLAAL-----MSSPQSETLPSENLEHGPPCE	SPNDCESEDLLINEL	970			
Canis_lupus_familiaris	KKLAAL-----MSSPPKKGITLPSEKLEHVSHCG	SRNCESEDLLKEL	946			
Equus_caballus	KKLAAL-----MSSPQNGTHPSSENLEHGSHCG	SPNDCESEDLLKEL	972			
Bos_taurus	KKLASL-----MSSPQNGITLPSEPSEQVSHCG	SPNDESIEGLLOEL	944			
Rhinatrema_bivittatum	NELASLDIKGKAPKSDGALLSDKVKNLSDFK	NHKECDALKDFLDAL	980			
Xenopus_tropicalis	HELAALDMLGKSQAGSDLRS	STSRREQLRGFLQEL	1784			

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/USPD1068791_1068792.fasta

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Pavo_muticus	QYHIDAADNSSEFSVNS--GCTSHNSSDEILAELLSPSTVASSEVP-KSEDECYMEMV	1003									
Pavo_cristatus	QYHIDAADNSSEFSVNS--GCTSHNSSDEILAELLSPSTVASSEVP-KSEDECYMEMV	1003									
Gallus_gallus	QYHIDAADNSSEFSVNS--GCTSHNSNDEILAELLSPAIVASSEVP-KSEDECYMEMV	1003									
Chelonia_mydas	QYQIDVADSESYYSTSNMSLCSQSNA AFLADLLSPSPVASSELV-KDEECRYLEMV	1057									
Mus_musculus	QQQIDLADSKSGCTSDAPDATSNNSQSHEEILAEELLSP--TAMSEPSE-SGELEIRYLEMG	998									
Rattus_norvegicus	QYQIDLADNKSGCTSDPDGTSCNSQSHEEILAEELLSP--TALSEPSE-SGEPELRYLEMG	977									
Homo_sapiens	PYPIDIAS-ESACTTVPGVS LYSSQT HEEILAEELLSP-TPVSTELSE-NGE GDFR YLG MG	999									
Pan_troglodytes	PYPIDIAN-ESACTTVPGVS LYSSQT HEEILAEELLSP-TPVSTELSE-NGE GDFR YLG MG	1000									
Macaca_mulatta	PYPVDITAS-ESACTTVPGVS LYSGQT HEEILAEELLSP-TTVSTELSE-NGE GDFR YLG MG	1000									
Callithrix_jacchus	PYEIDIAN-ESACTTVPGVS LYGSQT HEEILAEELLSPA TAVSAELSE-NGE GDFR YLG MG	999									
Heterocephalus_glaber	QYQIDIADSKSGCATISSMSSYNNT HEEILAEELLSP-TSISTEFSE-NGETDFR YLE MG	1028									
Canis_lupus_familiaris	QYQIDTDADNKSGCTRFP----YSSQSHEEILAEELLSPA TVVSTE HSE-NGEADFR YLE MG	1001									
Equus caballus	QDQIDIADNKSGGT TAPSIS SYSSQT HEEILAEELLSP TTI VSAELSE-NGEADFR YLE MG	1031									
Bos_taurus	QRQIDIADNKSGCATVPGVSPYGGQT HEEILAEELLSPA TVVSTELSE-NGEADFR YLE MG	1003									
Rhinatrema_bivittatum	QPHGDATDESVC TMSSSTSTGDS P SNAELLAELLSPA TAVASMDLP R DGYDDNR FLE ML	1040									
Xenopus_tropicalis	QEIQDNADTESVCTIMSSCSTICSSP GD AEF FAE LFS P----PPS N APO ESMDDS NFLE MY	1840									
	.....1990.....2000.....2010.....2020.....2030.....2040									

Pavo_muticus	NSSAAPAEPEVKTSSASHAAMTSEDRSYSPVKDSNYER---- <td>1059</td>	1059
Pavo_cristatus	NSSAAPAEPEVKTSSASHAAMTSEDRSYSPVKDSNYER---- <td>1059</td>	1059
Gallus_gallus	NSSAAPAEPAEKTSVSHAAVTSEDRSYGPVKDSNYER---- <td>1059</td>	1059
Chelonia_mydas	DSNTAVPVHSAR-TNLTCTVINEEDHNYSPVKESKYBGHTDSVMNKSCLKRISFESPTK	1116
Mus_musculus	D-STPAQ-APSEFSVVSQNTCLKQDHDYCSPE-KGQREVDLHVSMDSACIRTLNLGSPMK	1055
Rattus_norvegicus	DNSTPTP-APSEFSVVSQNTCLNQHNYCSP-EKSQCEVDLHVSVIDSACVRALNLGSPMK	1035
Homo_sapiens	DSHIPPP-VPSEFNDVSNTHLRQDHNYSPTKKNPCEVQPDSLTNNACVRTLNLESMPK	1058
Pan_troglodytes	DSHIPPP-VPSELNDVSNTHLRQDHNYSPTKKNPCEVQPDSLTNNACVRTLNLESMPK	1059
Macaca_mulatta	DGHIPAP-VPSELNDVSNTHLRQDHNYSPTKKNPCEVQPDSLTNNACVRTLNLESMPK	1059
Callithrix_jacchus	DSISPP-VPSELNDVSNTHLRQDHNYSPTKKNPCEVQPDSLTNNACVKTFLNLESMPK	1058
Heterocephalus_glaber	DDHIPAP-KPTLIDNSNIQLKQEHNYCSPPKRNQCEVQPVSQINNACVRTLNLESMPK	1087
Canis_lupus_familiaris	DDNVAP-VSTELNNIPONTHLRQDHNYSPTKKNQCEVQPDSLTNNVCIRALNLESSMK	1060
Equus_caballus	DNHIPAP-VPSDLNDTPONAHLRQDHNYSPTKKTQSEVQPDFSFINNAGVRTLNLESSMK	1090
Bos_taurus	DSHIPAP-VQNELNSIAHNTHLRQEHNYCSP-KKNQSELPDPSLTNNAFIRTLNLESMPK	1061
Rhinatrema_bivittatum	VDGSIGTLQPNYLNKGSYGTSAG-KVSDICSPGKEIQCAQTDSLANSR-----FENAVK	1093
Xenopus_tropicalis	VDGYNPSCGSYGTISNPSSQKEVSQDSANIQSNLRASDHSN-----NTNV	1885
2050.....2060.....2070.....2080.....2090.....2100	

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Pavo_muticus	DDILEDLFSISAPTTMAGDI-DVPHFDETLFETW	1092			
Pavo_cristatus	DDILEDLFSISAPTTMAGDI-DVPHFDETLFETW	1092			
Gallus_gallus	EDILEDLFSISAPTTMAGDM-DVPHFDETLFETW	1092			
Chelonia_mydas	EDFLEDLFS SAVLNSIAGDI-DLPHFDETLFETC	1149			
Mus_musculus	TDIFDDFF STSALNSLTNDTLDIPHFDDSLFENC	1089			
Rattus_norvegicus	TDIFDDFF PTSALNSLTNDTLDIPHFDDSLFENC	1069			
Homo_sapiens	TDIFDEFF SSSALNALANDTLDLPHFDEYLFENY	1092			
Pan_troglodytes	TDIFDEFF SSSALNALANDTLDLPHFDEYLFENY	1093			
Macaca_mulatta	TDIFDEFF SSSALNALANDTLDLPHFDEYLFENY	1093			
Callithrix_jacchus	NGIFDEFF PSSLNALASDPLDLPHFDEYLF EY-	1091			
Heterocephalus_glaber	TDIFDEFFS -TALTSSANDTLDLPHFDEYLFENY	1120			
Canis_lupus_familiaris	TDIFDEFF STSALNSLANDT-DLPHFDEYLFESC	1093			
Equus_caballus	TDIFDEFF STSALNSLANDTLDLPHFDEYLFESC	1124			
Bos_taurus	TDIFDEFFSASALNSLANDTLDLPHFDEYLFENC	1095			
Rhinatrema_bivittatum	DDIFEDLLSSSTLNTLG-DAEYLPHFDEYLFENF	1126			
Xenopus_tropicalis	GDVFHMDLSTSTMHMLNEDY--FSPFDMMF----	1913			
	.....2110.....2120.....2130....			