

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Xenopus_tropicalis	-----MORRETDTEASNSSDGGPGAEVQ	24
Latimeria_chalumnae	-----MOVGNMRGTPEGPEQPGSESVRD	24
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	-----MSRAEPLPEPQPQPELELGA	20
Anas_platyrhynchos	-----MSLTEPPPPSGAAEPGA	17
Chelonia_mydas	-----MSQKEPPAGEAQGSARA	17
Homo_sapiens	-----MFEDKPHAEGAAVVAAAGE	19
Pan_troglodytes	-----MFEDKPYAEGAAVVAAAGE	19
Macaca_mulatta	MTKHPRNCKFSRALAQVVVGSAAPGREKEVGGRGAPPAGPEGMFEDESHAEGVAVVAAAGE	60
Callithrix_jacchus	-----MFEDEPHAEGAAVVAAAGE	19
Bos_taurus	-----MDEDDPHAEGAAVVAAAGE	19
Equus_caballus	-----MFENEPHAEGAAVVAAARE	19
Pteropus_alecto	-----MFEDEPHADGAADVAAAGE	19
Heterocephalus_glaber	-----MFEDAPHAEGAAVVAAAGE	19
Mus_musculus	-----MFEDEPHAEGAAVVAAARE	19
Rhinatrema_bivittatum	-----MPKLATGEIEQEDRAVAQ	18
Ornithorhynchus_anatinus	-----MFEGGGDGAASSSA	15
	1.....10.....20.....30.....40.....50.....60	

Xenopus_tropicalis	QLETLCRELNLDOETGAETIRDFTRWSYSLEGEVVKHWLACALYAAACRKGVIPTVGKGI	84
Latimeria_chalumnae	TLEWLCQELNMDERSGREALEAFRGIWDTYSLEGEVVHWWLACALYVACRKSVPVTVGKGV	84
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	AIERLCRELNLDAASAAEALRDFTALRGTYSLGDAQHWLACALYAAACRRSVLPVTVGSGV	80
Anas_platyrhynchos	AIERLCQELNLDAASAAEALRDFTALRGTYSLGEALHWWLACALYVACRKSVPVTVGSGV	77
Chelonia_mydas	VIDRLCQDLNLDAASAAEALRDFTALRGTYSLGEVVHWWLACALYVACRKSILPVTGSGV	77
Homo_sapiens	ALQALCQELNLDEGSAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSIIPTVVGKGI	79
Pan_troglodytes	ALQALCQELNLDEGSAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSIIPTVVGKGI	79
Macaca_mulatta	ALQALCQELNLDEGSAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSIIPTVVGKGI	120
Callithrix_jacchus	ALQALCQELNLDEGSAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSVPVTVGKGI	79
Bos_taurus	ALQALCQELNLDEGSAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSIIPTVVGKGI	79
Equus_caballus	ALQALCQELNLDEGSAAEALDDFAAIRGKYSLEGEVTHWLACSLYVACRKSIIPTVVGKGI	79
Pteropus_alecto	VLQALCQELNLDEGSAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSIIPTVVGKGI	79
Heterocephalus_glaber	ALQALCQELNLDEESAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSIIPTVGRGI	79
Mus_musculus	ALQALCQELNLDEGSAAEALDDFTAIRGNYSLEGEVTHWLACSLYVACRKSIIPTVVGKGV	79
Rhinatrema_bivittatum	ALRILCQELNMDEETAEEAFSNFTIITWDTYTLGEVGHWWLACALYVACRKSVPVTVGRGI	78
Ornithorhynchus_anatinus	VLRLCQELNLDEGSAAEALGNFTAIRQTYSLGDDVHWWLACALYVACRKSLLPVTGKGV	75
	.....70.....80.....90.....100.....110.....120	

Xenopus_tropicalis	MEGNCVSLTRILRSAKLSLIQFFNMKKWMDMSNLPQEFRRERVERLERLNFVATVIFKKF	144
Latimeria_chalumnae	MEGNCVSLTRILRTAKLSLIQFFNMKKWMDMSNLPQEFRRARVERLERLNFVSTVIFKKF	144
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	MEGNCVSLTRILRSARLSLIQFFSKMKKWMDMSNVLPQEFRRERVERLERLNFVSTVIFRKF	140
Anas_platyrhynchos	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERVERLERLNFVSTVIFKKF	137
Chelonia_mydas	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSDLQEFRRERMERLERLNFVSTVIFRKF	137
Homo_sapiens	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERIERLERLNFVSTVIFKKY	139
Pan_troglodytes	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERIERLERLNFVSTVIFKKY	139
Macaca_mulatta	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERIERLERLNFVSTVIFKKY	180
Callithrix_jacchus	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERIERLERLNFVSTVIFKKF	139
Bos_taurus	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERIERLERLNFVSTVIFKKF	139
Equus_caballus	MEGNCVSLTRILRSAKLSLIQFFNMKKWMDMSNMPQEFRRERIERLERLNFVSTVIFKKF	139
Pteropus_alecto	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERIERLERLNFVSTVIFKKF	139
Heterocephalus_glaber	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMLNLPQEFRRERIERLERLNFVSTVIFKKF	139
Mus_musculus	MEGNCVSLTRILRSAKLSLIQFFSKMKKWMDMSNLPQEFRRERIERLERLNFVSTVIFKKF	139
Rhinatrema_bivittatum	MEGNCVSLTRILRSAKLSLIQFFNMKKWMDMSNLSQEFRRVESLERLNFVSTVIFKKF	138
Ornithorhynchus_anatinus	VEGNCVSLTRILRSVKSLSLIQFFNMKMTWMDMTDLPQEFRRERMGRLERLNFVSTVIFRKF	135
	.....130.....140.....150.....160.....170.....180	

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Xenopus_tropicalis	EPIFREIFONPHEEPPR-LPRSRKQRRVLC	SAKDLFSFCWTLFVYSKGNFCLIGDDL	203
Latimeria_chalumnae	EPIFLDLDFQSPHEDPPR-LQSRKHRRVPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	203
Pavo_muticus	-----		
Pavo_cristatus	-----		
Gallus_gallus	EPIFLDIFONPNEETLK-PQSRKQRRVLC	GVKDLFNFCTWTLFVYTKGNFRMIGDDL	199
Anas_platyrhynchos	EPIFLDVFNPFEEETSK-PQSRKQRRVPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	196
Chelonia_mydas	EPIFLDVFNPNYEETPK-PQSRKQRRK-	CSVKELFNFCTWTLFVYTKGNFRMIGDDL	195
Homo_sapiens	EPIFLDIFONPYEEPPK-LPRSRKQRRIPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	198
Pan_troglodytes	EPIFLDIFONPYEEPPK-LPRSRKQRRIPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	198
Macaca_mulatta	EPIFLDIFONPYEEPPK-LLRSRKQRRIPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	239
Callithrix_jacchus	QPIFLDIFONPYEKPPK-L-RSRKQRRIPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	197
Bos_taurus	EPIFLDIFONPYEEPPK-LPRSRKQRRIPC	SVKELFNFCTWTLFVYTKGNFRMIGDDL	198
Equus_caballus	EPIFLDIFONPYEEPPK-LPRSRKQRRIPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	198
Pteropus_alecto	QPIFLDIFONPYEESKLFPRSRKQRRIPC	SVKELFNFCTWTLFVYTKGNFRMIGDDL	199
Heterocephalus_glaber	EPIFLDIFONPFEELPK-LPRSRKQRRIPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	198
Mus_musculus	EPIFLDIFONPYEEPPK-LPRSRKQRRIPC	SVKDLFNFCTWTLFVYTKGNFRMIGDDL	198
Rhinatrema_bivittatum	EPIFLDIFONPYEDPPK-LQSRKQRRMPC	SAKDLFNFCTWTLFVYTKGNFRMIGDDL	197
Ornithorhynchus_anatinus	EPVFLDVFRSPYEEPLR-APRSRKQRRIPC	GVKDLFNFCTWTLFAYTRGNFHTIGDDL	194
	.....190.....200.....210.....220.....230.....240		

Xenopus_tropicalis	YHLLLCCLDLIYAHVLQCPNKEDLLNPSFTA	KLPALDPS---EDAPCIIRALCELYDG	259
Latimeria_chalumnae	YHLLLCCLDLVFANALKCPNRRDLLNPSFK	GLPVDFTAEYGLPEETPCIIDELCALHDG	263
Pavo_muticus	-----		
Pavo_cristatus	-----		
Gallus_gallus	YHLLLCCLDLVFANAILCPNRRDLLNPSFK	GLPADFHAPEMKASEDPPCIIATLCELHDG	259
Anas_platyrhynchos	YHLLLCCLDLVFANALLCPNRRDLLNPSFK	GLPEDFHATEIKVSEDPPCIIATLCELHDG	256
Chelonia_mydas	YHLLLCCLDLIFANALLYPDRRELLNPAFK	GLPADFHAEVKASEEPPCIIATLCELHDG	255
Homo_sapiens	YHLLLCCLDLIFANAIMCPNRQDLLNPSFK	GLPSDFHTADFTASEEPPCIIAVLCELHDG	258
Pan_troglodytes	YHLLLCCLDLIFANAIMCPNRQDLLNPSFK	GLPSDFHTADFRASEEPPCIIAVLCELHDG	258
Macaca_mulatta	YHLLLCCLDLIFANAIMCPNRQDLLNPSFK	GLPSDFHTADFRASEEPPCIIAVLCELHDG	299
Callithrix_jacchus	YHLLLCCLDLIFANAIMCPNRQDLLNPSFK	GLPSDFHSADFRASEEPPCIIAVLCELHDG	257
Bos_taurus	YHLLLCCLDLIFANAIMCPNRQELLNPSFK	GLPSNFTADFRASEEPPCIIIVLCELHDG	258
Equus_caballus	YHLLLCCLDLIFANAIICPNRRDLLNPSFK	GLPSDFHTADFRASEEPPCIIISVLCELHDG	258
Pteropus_alecto	YHLLLCCLDLIFANAIICPNRRDLLNPSFK	GLPSDFPNADFRASEEPPCIIAILCELHDG	259
Heterocephalus_glaber	YHLLLCCLDLVFANAIMCPNRQDLLNPSFK	GLPSDFHTADFRASEEPPCIIAILCELHDG	258
Mus_musculus	YHLLLCCLDLIFANAIMCPNRQDLLNPSFK	GLPSDFHAPDFKAAEPPCIIAVLCELHDG	258
Rhinatrema_bivittatum	YHLLLCCLDLIYANVLLCPNRKDLLNPSF	RALPTDP-AADCRPSEEPSIIISLCELHDG	256
Ornithorhynchus_anatinus	YHLLLCCLDLYALAVSCPNRQDLLNPSFO	GLPDPFGSAEFRAPARAPCIIAALCALHDG	254
	.....250.....260.....270.....280.....290.....300		

Xenopus_tropicalis	LFVEAKGIKEHYFKPYISKLYDKKILKG---	ACLLDVSSFTDNNKSLNKEYEEYVLTGVD	316
Latimeria_chalumnae	LVVEAKGIKEHYFKPYVTKLFRKVLKGENLL	GLLDVNCFTENNKSLNKEYEEYVLTGVD	323
Pavo_muticus	-----		
Pavo_cristatus	-----		
Gallus_gallus	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLCNFTENNKANLKEYEEYVLTGVD	316
Anas_platyrhynchos	LMVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLCNFTENNKANLKEYEEYVLTGVD	313
Chelonia_mydas	LLVEAKGIKEHYFKPYISKLFDRKILKG---	DCLLDLCSFADNNKANLKEYEEYVLTGVD	312
Homo_sapiens	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLSSFTDNSKAVNKEYEEYVLTGVD	315
Pan_troglodytes	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLSSFTDNSKAVNKEYEEYVLTGVD	315
Macaca_mulatta	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLSSFTDNSKAVNKEYEEYVLTGVD	356
Callithrix_jacchus	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLSSFTDNSKAVNKEYEEYVLTGVD	314
Bos_taurus	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLCSFTDNSKAVNKEYEEYVLTGVD	315
Equus_caballus	LLVEAKGIKEHYFKPYISKLFDRKILKG---	DCLLDLSSFTDNSKAVNKEYEEYVLTGVD	315
Pteropus_alecto	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLSSFTDNSKAVNKEYEEYVLTGVD	316
Heterocephalus_glaber	LLIEAKGIKEHYFKPYIAKLFDRKVLKG---	ECLLDLSSFTDNSKAVNKEYEEYVLTGVD	315
Mus_musculus	LLVEAKGIKEHYFKPYISKLFDRKILKG---	ECLLDLSSFTDNSKAVNKEYEEYVLTGVD	315
Rhinatrema_bivittatum	LTVEAKGIKEHYFKPYISKLFDRKILKG---	DCLLDLSSFTIDNNKANLKEYEEYVLTGVD	313
Ornithorhynchus_anatinus	LLVEAKGIKEYYFKPYVARLAHRKILKG---	VCVDPSPGFAENSRAINKEYEEYVLTGVD	311
	.....310.....320.....330.....340.....350.....360		

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Xenopus_tropicalis	FDERVFLGVDAEEEEIGSPRKFFVVEFPMGICTPRKQMESNLQOHFERKRSFAPSTPLTGRR	376
Latimeria_chalumnae	FDERVFLGEDADEEEIGTPRKCTPEPPVGKLSARMQVECNLQOHFDKTRSLAPSTPLTGRR	383
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	FDERVFLGADAEEEEIGTPRKFPADLQVGKTAARAHVECHLQOHFEKKRSFAPSTPLTGRR	376
Anas_platyrhynchos	FDERVFLGADAEEEEIGTPRKFPADMPVGKTAARAHVECHLQOHFEKKRSFAPSTPLTGRR	373
Chelonia_mydas	FDERVFLGADAEEEEIGTPRKFAADVPMGKTTTRAHVECHLQOHFEKKRSFAPSTPLTGRR	372
Homo_sapiens	FDERIFLGADEEEEEIGTPRKFTTRDTPGLKLTAAQANVEYNLQOHFEKKRSFAPSTPLTGRR	375
Pan_troglodytes	FDERIFLGADEEEEEIGTPRKFTTRDTPGLKLTAAQANVEYNLQOHFEKKRSFAPSTPLTGRR	375
Macaca_mulatta	FDERIFLGADEEEEEIGTPRKFTGDXPLGKLTAAQANVEYNLQOHFEKKRSFAPSTPLTGRR	416
Callithrix_jacchus	FDERIFLGADEEEEEIGTPRKFTGDTSLGKMAAQANVEYNLQOHFEKKRSFAPSTPLTGRR	374
Bos_taurus	FDERIFLGADEEEEEIGTPRKFTGDXPLGKLTAAQANVECNLQOHFEKKT SFAPSTPLTGRR	375
Equus_caballus	FDERIFLGADEEEEEIGTPRKFTGDAPLGKLTAAQANVECNLQOHFEKKT SFAPSTPLTGRR	375
Pteropus_alecto	FDERIFLGADEEEEEIGTPRKFTGDTPLGKLTAAQVNECNLQOHFAKKT SFAPSTPLTGRR	376
Heterocephalus_glaber	FDERIFLGADEEEEEIGTPRKFTGDTPLGKLTAAQTNVECNLQOHFEKKRSFAPSTPLTGRR	375
Mus_musculus	FDERIFLGADEEEEEIGTPRKFTADTPFGKLTSAQSVNECNLQOHFEKKRSFAPSTPLTGRR	375
Rhinatrema_bivittatum	FDERVFLGEDADEEEIGTPRKFIAMLLAPNMTARMPMECSLQOHFNKKRSFAPSTPLTGRR	373
Ornithorhynchus_anatinus	FDERVFLGAAAAEEIGTPARPPREPPGAGPGAGARGE CRFRQHFKE-----	357
	.....370.....380.....390.....400.....410.....420	

Xenopus_tropicalis	YLKEEPTVITPVSSATQCVSRLOSVMAGLRNAPSEQLIEVFKSCVRNPLENVLNIVRDIG	436
Latimeria_chalumnae	FLKEEAADVTPVSSATQSVSRLOSVMAGLRNTPSEQLLSIFKSCLRDPTETIVSRVKEMG	443
Pavo_muticus	-----HPVTCWLWFLSLLP-----VFSCRS CARSPAESITNRVREIG	37
Pavo_cristatus	-----HPVTCWLWFLSLLP-----VFSCRS CARSPAESITNRVREIG	37
Gallus_gallus	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSELLMAIFESCARNPAESIVNRVREIG	436
Anas_platyrhynchos	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSEQLIAIFESCARNPMESITNRVKEIG	433
Chelonia_mydas	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSEQLIAIFESCVRNPMESILNRVKEIG	432
Homo_sapiens	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSDQLINIFESCVRNPMENIMKILKGIG	435
Pan_troglodytes	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSDQLINIFESCVRNPMENIMKILKGIG	435
Macaca_mulatta	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSDQLTNIFESCVRNPMENIMKILKGIG	476
Callithrix_jacchus	YLREKEALITPVASATQSVSRLOSIVAGLKNAPSEQLLNIFESCVRNPMENIMKILKGIG	434
Bos_taurus	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSEQLINIFESCVRNPMENIMKIVKGIG	435
Equus_caballus	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSEQLINIFESCVRNPMENIMKIVKGIG	435
Pteropus_alecto	YLREKEAVITPVASATQSVSRLOSIVAGLKNAPSEQLINIFESCVRNPMENIMKIVKGIG	436
Heterocephalus_glaber	YLREKETVITPVASATQSVSRLOSIVAGLKNAPSKQLTNIFESCVRNPMENIMKIVKGIG	435
Mus_musculus	YLQKEAVITPVASATQSVSRLOSIVAGLKSAPSEQLLNIFESCVRNPMENIMKIVKGIG	435
Rhinatrema_bivittatum	YLKEKEAVITPVASATQSVSRLOSVMVSLKNAPSEQLINIFKSCVRDPTESIAQRIKNIG	433
Ornithorhynchus_anatinus	-----	357
	.....430.....440.....450.....460.....470.....480	

		: *: : : : *	
Xenopus_tropicalis	RRFCHHYTQSTEDQPGSHIDFAVNRWKLAEILYFKVLETIVVQESKRLHGKDLT-----	490	
Latimeria_chalumnae	EKFCHHYTQSSSEDQPGSHMDFAVNRRLRLAEILYKVLLETVMVQETRRRLHGKDMT-----	497	
Pavo_muticus	ETFCCHSYTQPTDELPGSHIDFAVNRKLAEILYKILETIMVQEMRRLHGKDMT-----	91	
Pavo_cristatus	ETFCCHSYTQPTDELPGSHIDFAVNRKLAEILYKILETIMVQEMRRLHGKDMT-----	91	
Gallus_gallus	ETFCRSYTQPTDELPGSHIDFAVNRKLAEILYKILETIMVQEMRRLHGKDMT-----	490	
Anas_platyrhynchos	ETFCRSYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGKDMT-----	487	
Chelonia_mydas	EAFCRSYTKSTDDQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGKDMT-----	486	
Homo_sapiens	ETFCQHYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	489	
Pan_troglodytes	ETFCQHYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	489	
Macaca_mulatta	ETFCQHYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	530	
Callithrix_jacchus	ETFCQHYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	488	
Bos_taurus	ETFCQHYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	489	
Equus_caballus	ETFCQHYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	489	
Pteropus_alecto	ETFCQHYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	490	
Heterocephalus_glaber	ETFCQRYTQSTDEQPGSHIDFAVNRKLAEILYKILETIMVQEAARRLHGMDMS-----	489	
Mus_musculus	ETFCQHYTQSTDKQPGSHIDFAVNRKLAEILYKILETIMVQETRRRLHGMDMS-----	489	
Rhinatrema_bivittatum	EIFCLNYTQSTDEQHGSHIDFAVNRKLAEILYKILDTIMVQETRRRLYGKDMTHLEPMV	493	
Ornithorhynchus_anatinus	-----VIIIIIIIIMMITESTVRQQRGTVP-----	381	
	.....490.....500.....510.....520.....530.....540		



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Xenopus_tropicalis	-----ALLEGDIFHQSLIACCLEIVL	511
Latimeria_chalumnae	-----ALLEGQEIFHCSLLACCLEIVL	518
Pavo_muticus	-----ALLEGQDVFHRSMLACCLEIVL	112
Pavo_cristatus	-----ALLEGQDVFHRSMLACCLEIVL	112
Gallus_gallus	-----ALLEGQDVFHRSMLACCLEIVL	511
Anas_platyrhynchos	-----ALLEGQDVFHRSMLACCLEIVL	508
Chelonia_mydas	-----ALLEGDIFHRSMLACCLEIVL	507
Homo_sapiens	-----VLLEGDIFHRSMLACCLEIVL	510
Pan_troglodytes	-----VLLEGDIFHRSMLACCLEIVL	510
Macaca_mulatta	-----VLLEGDIFHRSMLACCLEIVL	551
Callithrix_jacchus	-----VLLEGDIFHRSMLACCLEIVL	509
Bos_taurus	-----VLLEGDIFHRSMLACCLEIVL	510
Equus_caballus	-----VLLEGDIFHRSMLACCLEIVL	510
Pteropus_alecto	-----VLLEGDIFHRSMLACCLEIVL	511
Heterocephalus_glaber	-----VLLEGDIFHRSMLACCLEIVL	510
Mus_musculus	-----VLLEGDIFHRSMLACCLEIVL	510
Rhinatrema_bivittatum	TVPPPEEWGKGRYSINFGVSKKEDTLWPILDVKKISAAFAALLEGDIFHRSMLACCLEIVL	553
Ornithorhynchus_anatinus	-----	381
	.....550.....560.....570.....580.....590.....600	

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Xenopus_tropicalis	FAYSSPRITFPWTIEVLNLSAFYFYKVIEVFIRSEGLSRDMVKHLNLTIEEQILESRAWTS	571
Latimeria_chalumnae	FAYSSQRIFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	578
Pavo_muticus	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWTR	172
Pavo_cristatus	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWTR	172
Gallus_gallus	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWTR	571
Anas_platyrhynchos	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWTR	568
Chelonia_mydas	FAYSSLRTFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWTS	567
Homo_sapiens	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	570
Pan_troglodytes	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	570
Macaca_mulatta	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	611
Callithrix_jacchus	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	569
Bos_taurus	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	570
Equus_caballus	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	570
Pteropus_alecto	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	571
Heterocephalus_glaber	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWSH	570
Mus_musculus	FAYSSPRITFPWVIEVLNLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESRAWTN	570
Rhinatrema_bivittatum	FAYSSPRITFPWVIEFLSLRPFYFYKVIEVIRSEGLSRDMVKHLNLTIEEQILESWAWGH	613
Ornithorhynchus_anatinus	---SQRRAPGLVN---	391
	.....610.....620.....630.....640.....650.....660	

Xenopus_tropicalis	DSVLWVHLDAVDN-VPTCEEVIIPSNFETGNEAG-VGHLPMMPASPIVHPRLKEVRTDLG	629
Latimeria_chalumnae	DSALWCALDAADNKVPTCEEVMFPNSNFTGSGAGGPAHLPMIPVSPIIHPRVKEMRTDLA	638
Pavo_muticus	DSALWTALQASENRVPTCEEVIFPNNFASNGGSGLGHPMPPIPIVHPRLKEVRTDLG	232
Pavo_cristatus	DSALWTALQASENRVPTCEEVIFPNNFASNGGSGLGHPMPPIPIVHPRLKEVRTDLG	232
Gallus_gallus	DSALWTALQASENRVPTCEEVIFPNNFASNGGSGLGHPMPPIPIVHPRVKEVRTDLG	631
Anas_platyrhynchos	DSALWSALQASENRVPTCEEVIFPNNFASNGGSGLGHPMPPIPIVHPRVKEVRTDLG	628
Chelonia_mydas	DSALWKALQASENKVPTCEEVIIPSNFASNGGSGLGHPMPVSPIIHPRVKEMRTDLG	627
Homo_sapiens	DSALWEALQVSANKVPTCEEVIFPNNFETGNGGNVQGHLPMPMSPLMHPRVKEVRTDSG	630
Pan_troglodytes	DSALWEALQVSANKVPTCEEVIFPNNFETGNGGNVQGHLPMPMSPLMHPRVKEVRTDSG	630
Macaca_mulatta	DSALWEALQVSANKVPTCEEVIFPNNFETGNGGNVQGHLPMPMSPLMHPRVKEVRTDSG	671
Callithrix_jacchus	NSALWEALQVSTNKVPTCEEVIFPNNFETGNGGNVQRHLPMPMSPLVHPRVKEVRTDSG	629
Bos_taurus	DSALWEALQASENRVPTCEEVIFPNNFETGSGGNVQGHLPMPMSPLMHPRVKEVRTDSG	630
Equus_caballus	NSALWEALQASANKVPTCEEVIFPNNFETGNGGSIQGHLPMPVSPIMHPRVKEVRTDSG	630
Pteropus_alecto	DSALWEALQTSANKVPTCEEVIFPNNFETGNGGNVQGHLPMPMSPLMHPRVKEVRTDSG	631
Heterocephalus_glaber	NSALWEALQASANKVPTCEEVIFPNNFETGNGGNVQGHLPMPMSPLMHPRVKEVRTDSG	630
Mus_musculus	NSALWEALHASANKVPTCEEVIFPNNFETGNGGNVQGHLPMPMSPLMHPRVKEVRTDSG	630
Rhinatrema_bivittatum	DSALWDVLQASENRVPSCEEVIFPNNFETGNGGNIQGHLPMPPIPIVHPRVKEVRTDLG	673
Ornithorhynchus_anatinus	-----	391
	.....670.....680.....690.....700.....710.....720	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /home/ceglab2/Desktop/ajinkya/pavo/MSD/ABITupFeb 15 15:29:32 2022

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      *      . * . .      . .      . . . . . * *      .
Xenopus_tropicalis  GSFRRDCOPLSPISVHRYSSPAAGSAKRRLFGDDCPREQTVDK-----ITTPD 678
Latimeria_chalumnae VAYR-HVPPTSPLSVHRYSSPAAGSAKRRLFGDDSPTEENPLKKNLGGTVGLKIVSTSN 697
Pavo_muticus        GSLRRDTQPLSPISVHERYSSPTAGSAKRRLFGDDSPKEMQMEKI-LTEGTKLTIAPASS 291
Pavo_cristatus      GSLRRDTQPLSPISVHERYSSPTAGSAKRRLFGDDSPKEMQMEKI-LTEGTKLTIAPASS 291
Gallus_gallus       GSLRRDTQPLSPISVHERYSSPTAGSAKRRLFGDDGPKEMQMEKI-LTEGTKLTIAPASS 690
Anas_platyrhynchos GTLRRDLQPLSPISVHERYSSPTAGSAKRRLFGDDSPKEMQMEKI-LTEGTKLTIAPASS 687
Chelonia_mydas      GSLRRDMOPLSPISVHERYSSPTAGSAKRRLFGDDSPKDMQVEKV-LSEGTKLKIAPASS 686
Homo_sapiens        -SLRRDMOPLSPISVHERYSSPTAGSAKRRLFGEDPPKEMLMDKI-ITEGTKLKIAPSSS 688
Pan_troglodytes     -SLRRDMOPLSPISVHERYSSPTAGSAKRRLFGEDPPKEMLMDKI-ITEGTKLKIAPSSS 688
Macaca_mulatta      -SLRRDMOPLSPISVHERYSSPTAGSAKRRLFGEDPPKEMLMGKI-ITEGTKLKIAPSSS 729
Callithrix_jacchus  -SLRRDMOPLSPISVHERYSSPTAGSAKRRLFGEDPPKEMLMDKI-ITEGTKLKIAPSSS 687
Bos_taurus          -SLRKDMOPLSPISVHERYSSPTAGSAKRRLFGEDPPKEILMDRI-ITEGTKLKIAPSSS 688
Equus_caballus      -NLRRDIQPLSPISVHERYSSPTAGSAKRRLFGEDPPKEMFIDRV-ITEGTKLKIAPSSS 688
Pteropus_alecto     -NLRRDMOPLSPISVHERYSSPTAGSAKRRLFGEDPPKEMLMDKI-ITEGTKLKIAPSSS 689
Heterocephalus_glaber -GLRRDIQPLSPISVHERYSSPTAGSAKRRLFGEDPPKEMLMDKI-ITEGTKLKIAPSSS 687
Mus_musculus        -SLRODMOPLSPISVHERYSSPAAGSAKRRLFGDDPPKDTLMDKI-MAEGTKLKIAPS-S 687
Rhinatrema_bivittatum GSCROEFQPLSPISVHERYNSPTAGSAKRRLFRDDSQKEFHVEKINTTEMTKLKISPTTN 733
Ornithorhynchus_anatinus ---RTSSQAVSAPSPPTLLSGGGGDPGTRRRAGSRARVR----- 427
      .....730.....740.....750.....760.....770.....780

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Xenopus_tropicalis  ITRIRIALSP-----SPDKTAQSIGQTIAPVQGLANESVKSLFLPMKTSPPQS---- 727
Latimeria_chalumnae EATIESVSVTPGQTVVMTATATVITASTGQKVSIPVQGVANENGGITFIPINMSIAHOPKA- 756
Pavo_muticus        IAAENVSISPGQTVLTVTTATVAGKAGQKVTIPLHGITNELGGITLIPISMNLGOAPK-- 349
Pavo_cristatus      IAAENVSISPGQTVLTVTTATVAGKAGQKVTIPLHGITNELGGITLIPISMNLGOAPK-- 349
Gallus_gallus       IAAENVSISPGQTVLTVTTATVAGKPGQKVTIPLHGIAGELGGITLIPIAMNLGOAPK-- 748
Anas_platyrhynchos IATENISVSPGQTVLTMTTATVPGKAGQKVTIPLHGIAGELGGITLIPISMNLGOAPK-- 745
Chelonia_mydas      VAAENVSLSTGQTIILTMATATVTGTMGQKVTIPLHGIANDTGGITLIPISVNLSQOSK-- 744
Homo_sapiens        ITAENVSILPGQTLTMTAPVTGTTGHKVTIPLHGVANDAGEITLIPISMNTNQESK-- 746
Pan_troglodytes     ITAENVSILPGQTLTMTAPVTGTTGHKVTIPLHGVANDAGEITLIPISMNTNQESK-- 746
Macaca_mulatta      ITAENVSILPGQTLTMTAPLTGTTGHKVTIPLSHGVANDAAEIT-LPISMNTNQESK-- 786
Callithrix_jacchus  IAAENISILPGQTLTMTAPGPVTGTAGHKVTIPLHGVANDAGEIMLIPISMNTNQDSK-- 745
Bos_taurus          ITAENISISPGHSLTMTAIVAGTTGHKVTIPLHGIANDAGEITLIPISMNTTQESK-- 746
Equus_caballus      ITAENLSISPGQSLTMTSTAIVTGTGTTGHKVTIPLHGIANDAGEITLIPISMNTTQESK-- 746
Pteropus_alecto     ITAENLSISPGQRLTMTTAIVTETGTTGHKVTIPLHGIPNDAGEITLIPISMNTNQDSK-- 747
Heterocephalus_glaber IIVENISVSPGQ-ILTMSTATVAGTTGHKVTIPLHGVANDSGEITLIPISMNTSDEPK-- 744
Mus_musculus        VTAESLSISPGQALLTMATTTVTGTTGRKVTIPLHGIANDAGEITLIPISMNTPTQEST-- 745
Rhinatrema_bivittatum VANENASMSPPQOMILTAAATTVTGTTGHRVAIPMTSIANDTTTRITFIPISMNFSHSLK-- 791
Ornithorhynchus_anatinus -----FFAGITAAAGGITLIPISGNPRPKAGGP 455
      .....790.....800.....810.....820.....830.....840

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Xenopus_tropicalis  -ENYVVPVPLTAQALISPLTKRQLG-RMPESCPTSAARKPKKTGSLALFFRKVYHLASVRLR 785
Latimeria_chalumnae VECGVQVPLTAQALASTSPKRHH--INPGTQESAGSKPKKTGSLALFLRKVYHLASVRLR 814
Pavo_muticus        IEAQ-----DPCHPQVNQDQEVHLSGNGPKPKKTGSLALFYRKVYHLASVRLR 396
Pavo_cristatus      IEAQ-----DPCHPQVNQDQEVHLSGNGPKPKKTGSLALFYRKVYHLASVRLR 396
Gallus_gallus       IEAQ-----DPCHPQVNQDQEVHLSGNGPKPKKTGSLALFYRKVYHLASVRLR 795
Anas_platyrhynchos IEAQ-----APYHPQVSAQEGHLSGSKPKPKKTGSLALFYRKVYHLASVRLR 792
Chelonia_mydas      VESHGQVPLTAQALTGASPNHSMNQAQEAHQSSAGSKPKKTGSMALFYRKVYHLASVRLR 804
Homo_sapiens        VKSP--VSLTAHSLIGASPKQTNLTAKAEVHSTGINRPKRTGSLALFYRKVYHLASVRLR 804
Pan_troglodytes     VKSP--VSLTAHSLIGASPKQTNLTAKAEVHSTGINRPKRTGSLALFYRKVYHLASVRLR 804
Macaca_mulatta      VKSP--VSLTAHSLIGASPKQTSLTAKAEVHSTGISRPKRTGSLALFYRKVYHMASVRLR 844
Callithrix_jacchus  VKSP--VSLTAHSLIGASPKQTNLTAKAEVHPTGISPKPKRTGSLALFYRKVYHLASVRLR 803
Bos_taurus          VESP--VSLTAQSLIGASPKQTHLTAKAEVHPIGISPKPKRTGSLALFYRKVYHLASVRLR 804
Equus_caballus      VESS--VSLTAQSLIGTSPKQTHPSKAQEVHPTGVNPKPKRTGSLALFYRKVYHLASVRLR 804
Pteropus_alecto     VKSP--ISLTAQSLIGSSPKQTYLAKAEVHPTGISRPKRTGSLALFYRKVYHLASVRLR 805
Heterocephalus_glaber IESP--VSLTAQSLTSASPKQTYLIKQEIHLTGINKPKRTGSLALFYRKVYHLASVRLR 802
Mus_musculus        AESP--VSLTAQSLIGTSPKQTHLTAKADAHLTGVSKPKRTGSLALFYRKVYHLASVRLR 803
Rhinatrema_bivittatum SETGIQIPLTAQALIS-SPKQYHVNKALIEPYPALGSKPKKTGSLALFFRKVYHLASVRLR 850
Ornithorhynchus_anatinus -----APLTAQALAGASPKRARATEPPEAGGGGGGRPRRTGSLALFFRKVYRPAVRLR 509
      .....850.....860.....870.....880.....890.....900

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

**File:** /home/ceglab2/Desktop/ajinkya/pavo/MSD/Rabbit/HupFeb 15 15:29:32 2022

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	*** * *** : * ***** * : *::**.*::*****.*:::*** *::*	
Xenopus_tropicalis	DLCLKLDVSNDLRRKIWTLEFVYSLVHCTDLMKDRHLDQLLLCAVYIMAKISKEERLFHDI	845
Latimeria_chalumnae	DLCLKLDVSVELRRKIWTCFEYSLVHCTDLMKDRHLDQLLLCAFYIMSKVTKERTFQDI	874
Pavo_muticus	DLCLKLDVSNDLRRKIWTCFEFTLVHCADLMKDRHLDQLLLCAFYIMAKVTKEERTFQDI	456
Pavo_cristatus	DLCLKLDVSNDLRRKIWTCFEFTLVHCADLMKDRHLDQLLLCAFYIMAKVTKEERTFQDI	456
Gallus_gallus	DLCLKLDVSNDLRRKIWTCFEFTLVHCADLMKDRHLDQLLLCAFYIMAKVTKEERTFQDI	855
Anas_platyrhynchos	DLCLKLDVSNDLRRKIWTCFEFTLVHCADLMKDRHLDQLLLCAFYIMAKVTKEERTFQDI	852
Chelonia_mydas	DLCLKLDVSIELRRKIWTCFEFTLVHCTDLMKDRHLDQLLLCAFYIMAKVTREERTFQDI	864
Homo_sapiens	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	864
Pan_troglodytes	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	864
Macaca_mulatta	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	904
Callithrix_jacchus	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	863
Bos_taurus	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	864
Equus_caballus	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	864
Pteropus_alecto	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	865
Heterocephalus_glaber	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	862
Mus_musculus	DLCLKLDVSNELRRKIWTCFEFTLVHCPDLMKDRHLDQLLLCAFYIMAKVTKEERTFOEI	863
Rhinatrema_bivittatum	DLCLKLDVSNELRRKIWTCFEFTLIHCTDLMKDRHLDQLLLCAFYIMAKVTKEERTFQDI	910
Ornithorhynchus_anatinus	DLCPKPDVSGDLRRKIWTRFEFTLVHCTDLLRDRHLDQLLLCAFYIVGKVTREERTFQDI	569
	.....910.....920.....930.....940.....950.....960	

	: * ** . **** . *: ***** :	
Xenopus_tropicalis	MKCYRNQPOANSHVYRSVLLKRI PQASGDETSTS--QDVEMTARNSSDSH-----	893
Latimeria_chalumnae	MKCYRSQPOAHSHVYRSVLLKKPRRETIVANSSTDPEGDVEMKDLDKDGN-----	924
Pavo_muticus	MKSYRNQPOANSHVYRSVLLRNTSANVLLD-RNA-NQAVQMTD-DSSVKTGNL-----	507
Pavo_cristatus	MKSYRNQPOANSHVYRSVLLRNTSANVLLD-RNA-NQAVQMTD-DSSVKTGNSS-----	507
Gallus_gallus	MKSYRNQPOANSHVYRSVLLRNTSANVLLD-RNA-NQDVQMTD-DSSVKTGNL-----	906
Anas_platyrhynchos	MKSYRNQPOANSHVYRSVLLRNTSDDVLLD-KNK-NQDVEMTE-DSSVKTGSSS-----	903
Chelonia_mydas	MKSYRNQPOANSNVYRSVLLKNSPKEVTISENTNS-NQDVEMTGGDS PGKVCLSF-----	917
Homo_sapiens	MKSYRNQPOANSHVYRSVLLKSIPEVVAYNKNI-NDDFEMIDCDLEDAT-----	913
Pan_troglodytes	MKSYRNQPOANSHVYRSVLLKSIPEVVAYNKNI-NDDFEMIDCDLEDAT-----	913
Macaca_mulatta	MKSYRNQPOANSHVYRSVLLKSIKRICAYNKNI-NXDFEMIDCDLEDAT-----	953
Callithrix_jacchus	MKSYRNQPOANSHVYRSVLLKSIPEVVAYNKNI-NDDFEMIDCDLEDAA-----	912
Bos_taurus	MKSYRNQPOANSHVYRSVLLKSIPEVVAYSKNL-NGDFEMTDCDLEDAT-----	913
Equus_caballus	IKSYRNQPOANSHVYRSVLLKSIPEVVAYNKNV-NGDFEMRDCDLEDAT-----	913
Pteropus_alecto	MKSYRNQPOANSHVYRSVLLR---KEIVAYSKKI-NGDFEMTDSGLEEAI-----	911
Heterocephalus_glaber	MKSYRNQPOANSHVYRSVLLKSIPEIVTYNNDI-SDDFEMTDGDSLEEAT-----	911
Mus_musculus	MKSYRNQPOANSHVYRSVLLKSIPIGGVVVYN---GDCEMTDGDIEDAT-----	908
Rhinatrema_bivittatum	MKCYRSQPOANSHVYRSVLLKTVAEAVITNDANI-NLNVEMEDSASDSNTCCSS-----	963
Ornithorhynchus_anatinus	VKNYRSQPADSHVYRSVLLTAGPGGAPGDGSA-GQDVEMADCGNDRNNAVRALATV-----	628
	.....970.....980.....990.....1000.....1010.....1020	

Species	Sequence	Position
Xenopus_tropicalis	-----PTPSG-----	898
Latimeria_chalumnae	-----QQPSRQPE-----	932
Pavo_muticus	-----GRSAPES-----	514
Pavo_cristatus	-----GRSAPES-----	514
Gallus_gallus	-----GRSAAEN-----	913
Anas_platyrhynchos	-----GRSAAEK-----	910
Chelonia_mydas	-----VRSTPEN-----	924
Homo_sapiens	-----KTPDC-----	918
Pan_troglodytes	-----KTPDC-----	918
Macaca_mulatta	-----KTPDC-----	958
Callithrix_jacchus	-----KTPDC-----	917
Bos_taurus	-----KTPDC-----	918
Equus_caballus	-----KTPDC-----	918
Pteropus_alecto	-----KTPDC-----	916
Heterocephalus_glaber	-----KTTDC-----	916
Mus_musculus	-----KTPNC-----	913
Rhinatrema_bivittatum	-----QRMPPE-----	970
Ornithorhynchus_anatinus	PSAGVDAGKPGRTIPSPVSSGESPGPGVGRTVRSFDCVRGALAVCRAVTEARAPRADGWRH .....1030.....1040.....1050.....1060.....1070.....1080	688



# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Xenopus_tropicalis      -----FTGSPCGNAERGDLITFYNN      918
Latimeria_chalumnae    -----YSSEAEEDRGDLITFYNT      952
Pavo_muticus            -----STELGTEERGDLIKFYNA      532
Pavo_cristatus          -----STELGTEERGDLIKFYNA      532
Gallus_gallus           -----STELGTEERGDLIKFYNA      931
Anas_platyrhynchos     -----SSESGTEERGDLTIFYNA      928
Chelonia_mydas          -----SSESGKEERGDLIKFYNA      942
Homo_sapiens            -----SSGPVKEERGDLIKFYNT      936
Pan_troglodytes         -----SSGPVKEERGDLIKFYNT      936
Macaca_mulatta          -----SSGPVKEERGDLIKFYNT      976
Callithrix_jacchus      -----SNGSVKEERGDLIKFYNT      935
Bos_taurus              -----SSGPVKEERGDLIKFYNT      936
Equus_caballus          -----SIGPVKEERADLIKFYNT      936
Pteropus_alecto         -----SSGPVREERGDLIKFYNT      934
Heterocephalus_glaber   -----SSGPVKEERGDLIKFYNT      934
Mus_musculus            -----SSEPVEERGDLIKFYNT      931
Rhinatrema_bivittatum   -----SSEQRKEERGDLTIFYNA      988
Ornithorhynchus_anatinus RNPGGDARAPASGLAKAAEFPPAGTEAPGPPAPGGAPASPARPEKEERGDITIFYNA 748
                        .....1090.....1100.....1110.....1120.....1130.....1140

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Xenopus_tropicalis      VYVERVRSFALKFAST-QDHLMDAPPLSPFPSTIKQQ----AISPRRVSQQHSIYVSPHKN      973
Latimeria_chalumnae    VYVMRVKSLALKYAVTSLEHGFEAPPLSPFPNMKPH----PVSPRRISQRHSVYVSPHKN      1008
Pavo_muticus            VYVGRVKSFALKYDITNQDHVMEAPPLSPFPSTIKQQ----PVSPRRISQQHSVYVSPHKN      588
Pavo_cristatus          VYVGRVKSFALKYDITNQDHVMEAPPLSPFPSTIKQQ----PVSPRRISQQHSVYVSPHKN      588
Gallus_gallus           VYVGRVKSFALKYDITNQDHVMEAPPLSPFPSTIKQQ----PVSPRRISQQHSVYVSPHKN      987
Anas_platyrhynchos     VYVGRVQS FALKYDITNQDHVMEAPPLSPFPSTIKQQ----PVSPRRISQQHSVYVSPHKN      984
Chelonia_mydas          VYVGRVKSFALKYDITNQDHVMEAPPLSPFPSTIKQQ----PVSPRRISQQHSVYVSPHKN      998
Homo_sapiens            IYVGRVKSFALKYDLANQDHMDAPPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      992
Pan_troglodytes         IYVGRVKSFALKYDLNQDHMDAPPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      992
Macaca_mulatta          IYVGRVKSFALKYDLNQDHVMDAPPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      1032
Callithrix_jacchus      IYVGRVKSFALKYDLNQDHVMDVPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      991
Bos_taurus              IYVGRVKSFALKYDLNQDHVMEAPPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      992
Equus_caballus          IYVGRVKSFALKYDLNQDHVMEAPPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      992
Pteropus_alecto         VYVGRVKSFALKYDLNQDHVMEAPPLSPFPSTIKQQ----PGSPRRISQQHSVYVSPHKN      990
Heterocephalus_glaber   IYVGRVKSFALKYDLNQDHVMDAPPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      990
Mus_musculus            VYVGRVKSFALKYDLNQDHMDAPPLSPFPSTIKQQ----PGSPRRISQQHSIYISPHKN      987
Rhinatrema_bivittatum   IYVAKMKFFALKYSFSTQDHVMEALPLSPFPSTIKQQ----PVSPRRVSQQHSIYISPHKN      1044
Ornithorhynchus_anatinus VFVGRVKSFALKYGSQRDPSAEAPSPSPFPSTARRRRAPRRASPRRVVSQRHPVYVSPHKN      808
                        .....1150.....1160.....1170.....1180.....1190.....1200

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Xenopus_tropicalis      GSGLTPTHTALLYKFNGSPSKSLQDINSMLKQ-EQSRK-----RI      1012
Latimeria_chalumnae    GSGLTPTRSAMLYKFNGSPSKSLRDINSMIKQGERMSRK-----RA      1048
Pavo_muticus            GACLTPTRTALLYKFNGSPSKSLKDINNMIKQGEHRSKK-----RA      628
Pavo_cristatus          GACLTPTRTALLYKFNGSPSKSLKDINNMIKQGEHRSKK-----RA      628
Gallus_gallus           GACLTPTRTALLYKFNGSPSKSLKDINNMIKQGEHRSKK-----RA      1027
Anas_platyrhynchos     GACLTPTRTALLYKFNGSPSKSLKDINNMIKQGEHRSKK-----RA      1024
Chelonia_mydas          GACLTPTRTALLYKFNGSPSKSLKDINNMIKQGEHRSKK-----RA      1038
Homo_sapiens            GSGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RV      1032
Pan_troglodytes         GSGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RV      1032
Macaca_mulatta          GSGLTPTRSTALLYKFNGSPSKSLKEINNMIROGEORTKK-----RV      1072
Callithrix_jacchus      GSGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RA      1031
Bos_taurus              GSGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RA      1032
Equus_caballus          GPGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RA      1032
Pteropus_alecto         GSGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RA      1030
Heterocephalus_glaber   GSGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RA      1030
Mus_musculus            GAGLTPTRSALLYKFNGSPSKSLKDINNMIROGEORTKK-----RV      1027
Rhinatrema_bivittatum   GSGLTPTRTALLYKFNGSPSKSLKDINNMIKQGDORSKK-----RA      1084
Ornithorhynchus_anatinus GACLTPTGTALTQFHGSPSEVGTPTPGGAGRGRSRGSSGGGDPSPPPAGSVPRPLCDLGS      868
                        .....1210.....1220.....1230.....1240.....1250.....1260

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Xenopus_tropicalis	IAIDSDT---	DSPAKRLCQ	ENDDALLKRLQ	DVVSERANH 1048
Latimeria_chalumnae	FTIDSDS---	ESPAKRRCQ	DNVALLKRLQ	DVVSERANH 1084
Pavo_muticus	ITIDSDT---	EPPMKRLCQ	ENDDVLLKRLQ	DVVSERANH 664
Pavo_cristatus	ITIDSDT---	EPPMKRLCQ	ENDDVLLKRLQ	DVVSERANH 664
Gallus_gallus	ITIDSDT---	ESPMKRLCQ	ENDDVLLKRLQ	DVVSERANH 1063
Anas_platyrhynchos	ITIDSDT---	ESPTKRLCQ	ENDDVLLKRLQ	DVVSERANH 1060
Chelonia_mydas	ITIDSDS---	ESPAKRLCQ	ENDDVLLKRLQ	DVVSERANH 1074
Homo_sapiens	IAIDSDA---	ESPAKRVCQ	ENDDVLLKRLQ	DVVSERANH 1068
Pan_troglodytes	IAIDSDA---	ESPAKRVCQ	ENDDVLLKRLQ	DVVSERANH 1068
Macaca_mulatta	IAIDSDA---	ESPAKRVCQ	ENDDVLLKRLQ	DVVSERANH 1108
Callithrix_jacchus	IAIDSDA---	ESPAKRACQ	ENDDVLLKRLQ	NVVSERASH 1067
Bos_taurus	ITIDGDA---	ESPAKRLCQ	ENDDVLLKRLQ	DVVSERANH 1068
Equus_caballus	IAIDGIV---	ESPAKRLCQ	ENDDVLLKRLQ	DVVSERANH 1068
Pteropus_alecto	IAIDGDT---	ESPAKRLCQ	ENDDILLKRLQ	DVVSERANH 1066
Heterocephalus_glaber	IAISGDA---	ESPAKRLCQ	ENDDVLLKRLQ	DVVSERANH 1066
Mus_musculus	IAISGDA---	DSPAKRLCQ	ENDDVLLKRLQ	DVVSERANH 1063
Rhinatrema_bivittatum	LTIDSDS---	ESPEKRLCQ	EKDDVLLKRLQ	DVVSERANH 1120
Ornithorhynchus_anatinus	VTAGGAGGGRS	PAERRCREN	DAVLLRRLRDAVGGRADR	907
	.....1270.....	1280.....	1290.....	.....