

## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /home/ceglab2/Desktop/ajinkya/pavo/MSD/MSD\_Videos/MSD\_Videos\_Feb 16 12:47:08 2022

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Species	Sequence	Length
Pavo_muticus	MPGLESRRREFPAALSDPLPNLPLRERPRGCGGERRSPPAPLAECAEPRASGPRVHIMGD	60
Pavo_cristatus	MPGLESRRREFPAALSDPLPNLPLRERPRGCGGERRSPPAPLAECAEPRASGPRVHIMGD	60
Gallus_gallus	MPGLERRRREFPAALSDPLPNRPLRERPRGCDGERRSPPAPLPECAEPRASGPRVHIMGD	60
Anas_platyrhynchos	-----MGD	3
Chelonia_mydas	-----MGD	3
Rhinatrema_bivittatum	-----MGD	3
Homo_sapiens	-----MGD	3
Pan_troglodytes	-----MGD	3
Macaca_mulatta	-----MGD	3
Callithrix_jacchus	-----MGD	3
Equus_caballus	-----MGELPEEEATTMGD	14
Pteropus_alecto	-----MGD	3
Bos_taurus	-----MGD	3
Heterocephalus_glaber	-----MAEKTLLTMGD	10
Mus_musculus	-----MSGQLPGKTMGD	12
Ornithorhynchus_anatinus	-----MHGADSGPRPGLDSGPPEETGAQQSSPTVTIMAD	33
Xenopus_tropicalis	-----	

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Pavo_muticus	VKLVTSTRVSKTSLMLS-----	PSVPAEAPAF	TLPPRNIR	VQLGATAR	FE	GKVRGY	PEPQ			115
Pavo_cristatus	VKLVTSTRVSKTSLMLS-----	PSVPAEAPAF	TLPPRNIR	VQLGATAR	FE	GKVRGY	PEPQ			115
Gallus_gallus	VKLVTSTRVSKTSLMLS-----	PSVPAEAPAF	TLPPRNIR	VQLGATAR	FE	GKVRGY	PEPQ			115
Anas_platyrhynchos	VKLVTSTRVSKTSLMLS-----	PSVPAEAPAF	TLPPRNIR	VQLGATAR	FE	GKVRGY	PEPH			58
Chelonia_mydas	VKLVSSTRISKNSVTLEHSP	SPSVPT	EAPAF	TLPPRNIR	VLLGGTAR	FE	GKVRGY	PEPQ		63
Rhinatrema_bivittatum	VKLVAATRLSKTPLAPEHLARN	SPVPIEAP	SFTLPPRNIR	VPLGATAR	FDGKVRGH	PEPR				63
Homo_sapiens	VKLVASSHISKTSLSVDP	SRVDSMPLTEAPAF	ILPPRNLCI	KEGATAK	FE	GVRGY	PEPQ			63
Pan_troglodytes	VKLVASSHISKTSLSVDP	SRVDSMPLTEAPAF	ILPPRNLCI	KEGATAK	FE	GVRGY	PEPQ			63
Macaca_mulatta	VKLVASSHISKTSLSVAP	SRVGSMPLEAPAF	ILPPRNLCI	KEGATAK	FE	GVRGY	PEPQ			63
Callithrix_jacchus	VKLVASSHISKTSLSVDP	SRVGSMPLEAPAF	ILPPRNLCI	KEGATAK	FE	GVRGY	PEPQ			63
Equus_caballus	VKLAASAHGSKTSHSADHS	RVGSMPLKEAPAF	ILPPRNLCI	KEGDTAK	FE	GVRGY	PEPQ			74
Pteropus_alecto	VKLASSTHVSKTSTFSMD	PSRAGSMPLTEAPAF	ILPPRNLCI	KEGATAK	FE	GVRGY	PEPQ			63
Bos_taurus	VKLAQAQTHVSKTSLTVDS	HRVSSMPLTEAPAF	ILPPRNLCI	KEGATAK	FE	GVRGY	PEPQ			63
Heterocephalus_glaber	VKLIASSHVSKTSLSVDP	SSIGSLPLMEAPAF	ILPPRNLCI	KEGTTAK	FE	GVRGY	PEPQ			70
Mus_musculus	VKLFASSHMSKTSHSVDP	SKVSSMPLTEAPAF	ILPPRNLCV	KEGATAK	FE	GVRGY	PEPQ			72
Ornithorhynchus_anatinus	VRLVSATCVSKGPLTP	EPSS----APPGEAP	TFTLPPRNLCV	PEGSTAR	FE	GKVRGF	PEPN			89
Xenopus_tropicalis	-----MFLSKDKTS	AKPEPVLGVS	VLD	SKNKS	VP	PK---GPGDIIQ	KEPLGRTP	REPT		50
	.....70.....	80.....	90.....	100.....	110.....	120				

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	* . .	* : .	
Pavo_muticus	EGNSLKKYSL-----	PSAKTPGGRLGVPPVEHRPS	SIWGESPPKFATKPNRVVVREGQT 229
Pavo_cristatus	EGNSLKKYSL-----	PSAKTPGGRLGVPPVEHRPS	SIWGESPPKFATKPNRVVVREGQT 229
Gallus_gallus	EGNSLKKYSL-----	PSAKTPGGRLGVPPVEHRPS	SIWGESPPKFATKPNRVVVREGQT 229
Anas_platyrhynchos	EGNSLKKYSL-----	PSAKTPGGRLTVPPVEHRPS	SIWGESPPKFATKPNRVVVREGQT 172
Chelonia_mydas	EGNSLKKYSL-----	LSAKTLGGRFVAVPSVENRPS	SIWGESPPKFATKPNRVIVREGQT 177
Rhinatrema_bivittatum	EGNALKKFGL-----	PSHKSILGGRFP-PPVENRPS	SIWSESPPKFVTKPSRVTVKEGQT 176
Homo_sapiens	EGSFAKQLGQ-----	PVVSKTILGDRFSAPAVETRPS	SIWGECPPKFATKLGRVVVKEGQM 177
Pan_troglodytes	EGSFAKQLGQ-----	PVVSKTILGDRFSAPAVETRPS	SIWGECPPKFATKLGRVVVKEGQM 177
Macaca_mulatta	EGSFAKQLGQ-----	PVVSKTILGDRFSASAVETRPS	SIWGECPPKFATKLGRVVVKEGQM 177
Callithrix_jacchus	EGSFAKQLGQ-----	PVVSKTILGDRFSAPAVETRPS	SIWGECPPKFATKLGRVVVKEGQM 177
Equus_caballus	EGGFVKKHGG-----	PVVPKTLGDRFATPAVETRPS	SIWGECPPKFATKLGRAIVREGQM 188
Pteropus_allecto	EGGFVKKHGG-----	PVS-KTLGERFLSPAVETRPS	SIWGECPPKFATKLGRAVVKEGQM 176
Bos_taurus	EGSFVKKPGQ-----	PVVSALGDRFAPPAMETRPS	SIWGECPPKFATKLGRAVVKEGQM 177
Heterocephalus_glaber	EESFAKKRGH-----	PVASKSLGDRFSALGVETRPS	SIWGECPPKFATKLGRAVVKEGHM 184
Mus_musculus	EGNSMKKRDQ-----	PVLSKASG--FPG---ETRPS	SIWGECPPKFATKLGRAVVKEGQM 181
Ornithorhynchus_anatinus	ERNSMKSYGLSTDKSASLSAKTSGGRGPCALPGGS	-LWGESPPRFASKLSRVMVREGQT	208
Xenopus_tropicalis	ETSFLSARER-----	IMGPTIKSPYG-----	98
	.....190.....200.....210.....220.....230.....240		

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Pavo_muticus	GKFSCKITGRP	POV	TWSKGDVHL	QNERFNMFEKTGIHYLEIQNVQLADAGIYCTVNV	289	
Pavo_cristatus	GKFSCKITGRP	POV	TWSKGDVHL	QNERFNMFEKTGIHYLEIQNVQLADAGIYCTVNV	289	
Gallus_gallus	GRFSCKITGRP	POV	TWTKGDIHL	QNERFNMFEKTGIHYLEIQNVQLADAGIYCTVNV	289	
Anas_platyrhynchos	GKFSCKITGRP	POV	TWYKGDIL	QSERFNMFEKTGIFLEIQNARLADAGIYCTVNV	232	
Chelonia_mydas	GKFSCKITGRP	POI	TWFKGDIQL	QKDRFNMFEKAGIIFLEIQNVRLADAGTYTCTVMN	237	
Rhinatrema_bivittatum	GKLSCKVTGRPT	PII	WLKGEKQL	PSSEHLQMFELGLIHFLFIQDVRADAGTYTCLLLN	236	
Homo_sapiens	GRFSCKITGRP	POV	TWLKGNVPL	PSARVSVSEKNGMQVLEIHGVNQDDVGVTCLVNV	237	
Pan_troglodytes	GRFSCKITGRP	POV	TWLKGNVPL	PSARVSVSEKNGMQVLEIHGVNQDDVGMYTCLVNV	237	
Macaca_mulatta	GRFSCKITGRP	POV	TWLKGNVPL	PSARVSMSEKNGMQVLEIHGVNQDDMGVYTCLVNV	237	
Callithrix_jacchus	GRFSCKITGRP	POV	TWLKGNVPL	PSARVSMSEKNGMQVLEIHGVNQDDTGVTCLVNV	237	
Equus_caballus	GRFSCKITGRP	POV	TWLKGDVPL	PSARVSMSEKNGMQVLEIQEVNQDDVGVTCTMVNV	248	
Pteropus_alecto	GRFSCKITGRP	POV	TWLKGDVPL	PSARVSMSEKNGMQVLEIHEVQNQDDLGVYTCTMVNV	236	
Bos_taurus	GRFSCKITGRP	POV	TWLKGDVPL	PSARVSMSEKNGMQVLEIHDVTRDDVGVTCTMVNV	237	
Heterocephalus_glaber	GRFSCKVTGRP	POV	TWLKGNVAL	PSARVSMSEKNGMQVLEIRAVTQEDVGMYTCLVNV	244	
Mus_musculus	GRFSCKITGRPPP	QV	TWLKGNVPL	PSARVSMSEKNGMQILEIRGVTRDDLGVYTCTMVNV	241	
Ornithorhynchus_anatinus	GRFSCKITARP	PCV	TWTKGAVQL	PPDDHFAMFEKSGLWCLEIRAARMADAGVYTCTAVN	268	
Xenopus_tropicalis	---	SAKTLGNPASLY	EMSKETRSDVPS	SRQISN-----VILS	131	
	.....250.....	260.....	270.....	280.....290.....300		

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Species	Sequence	Position
Pavo_muticus	STELMVETKDKVSAKKETFYTS-REAKDGGKQGQN-----	382
Pavo_cristatus	STELMVETKDKVSAKKETFYTS-REAKDGGKQGQN-----	382
Gallus_gallus	STELMVETKDRLSAKKETFYTS-REAKDGGKQGQN-----	382
Anas_platyrhynchos	STELMIETKDRVSAKKEAFYIS-REAKESKQVQN-----	325
Chelonia_mydas	STDLTIVETKERTAVKKEASSISSEAKADNRQRQL-----	331
Rhinatrema_bivittatum	GAASTVETKERPRVKKETPIPSKEATRISSTETSCTSSSKVTPHLTSKMTIYTTTPKKNAT	350
Homo_sapiens	SLEAAAKSKNCSSPQRGGSPWAANSQPQPPRES-----	320
Pan_troglodytes	SLEAAAESKNCSSPQRGGSPWAANSQPQPPRES-----	320
Macaca_mulatta	SLEAAAESKNCSSPQRGGSPWAANSQPQPPRES-----	320
Callithrix_jacchus	SLEAAAESKNCSSPQRGGSPAWARNHQPOPPRES-----	320
Equus_caballus	SLDTAAQRKNCSSSTQRG-SPAWATSSQPQPLRES-----	330
Pteropus_allecto	SLETTIAESKNCSSSTQRGGSPTWATSTQPQPLRES-----	319
Bos_taurus	GLDAAAESKNRPSTQRGGSPTWATGSPQPPRES-----	320
Heterocephalus_glaber	SLETMAGSKNSSSLOKGGSLAWVTNSPSHSLWET-----	327
Mus_musculus	--ETVAESKNCPSPPQRSGSARATNSHLKSPQEP-----	319
Ornithorhynchus_anatinus	ASPGVREDLNGCSEKNSGAPSRPCPEPSQALPAP-----	349
Xenopus_tropicalis	-TQSFPKSRESQSR LHGTSTSTLLGSGSTQHPDT-----	177

Species	Sequence	Position
Pavo_muticus	----QEANAVPLQESRG-TKGPQVLQKTSSTITLQAVKVQPEPKAEPQTTFIRQAEDRKR	437
Pavo_cristatus	----QEANAVPLQESRG-TKGPQVLQKTSSTITLQAVKVQPEPKAEPQTTFIRQAEDRKR	437
Gallus_gallus	----QEANAVPLQESRG-TKGPQVLQKTSSTITLQAVKAQPEPKAEPQTTFIRQAEDRKR	437
Anas_platyrhynchos	----QEVNAVSLQEPKGGTKGSQVLQKTSSTITLQPVKVQPEPKTEPQTTFIRQGEDRKR	381
Chelonia_mydas	----REINTEPAQEPKGEARGSRGLQKTSSTITLQAIKVQPEPKTESTATSTGQDEDRKG	387
Rhinatrema_bivittatum	GWHRQESRSSESTESKREAVQSQAQKSSSTITLQACKVQPKPTAEIGPPVAQN--ERGQ	408
Homo_sapiens	-----KLESCKDSPTAPQTPVLQKTSSTITLQAARVQPEPRAPGLGLVLSPSGEERKR	373
Pan_troglodytes	-----KLESCKDSPTAPQTPVLQKTSSTITLQAARVQPEPRAPGLGLVLSPSGEERKR	373
Macaca_mulatta	-----KLESCKDSPTAPQTPVLQKTSSTITLQAARVQLEPRAPGLGALSPSGEERKR	373
Callithrix_jacchus	-----KMEPCRDSPTAPQTPVLQKTSSTITLQAASVQPEPIAPVLGTLSPSGEERKR	373
Equus_caballus	-----NLEQG-DSRKALRTPIQ--TSSTITLQAAKVQPEPRAPVSSALSPSREERES	380
Pteropus_allecto	-----KLDLFEDSRKALRTPVLQKTSSTITLQATKVQPEPRAPVSGFSPG-EKREK	371
Bos_taurus	-----ELEPLGNSPRKGQRAVPVLQKTSSTITLQAAKVQLEPRAPVPGTTPCSREEMEG	373
Heterocephalus_glaber	-----EPEPCRDSPRK-----VQKTSSTITLQATKVQPEPRAPTLGALSPSGEEQKR	374
Mus_musculus	-----KPKLCEDAPRKVPQSSILQKSTSTITLQALKVQPEARVPAIGSFSPG-EDRKS	371
Ornithorhynchus_anatinus	-----SLQTTSSGTLKAAHP--QHPLHQLEEWRRPTKTPPPLGPRPPALTPRPEWRR	400
Xenopus_tropicalis	-----PQRTAETSPDGGEVKRQKTASSTITLKSVKIETQPKSE-----	215

Pavo_muticus	TVQSLMTTTTQENPSLTGQVSPRSREAENRAGARKSVKEEKREPLGI PPQFESRPQSLEA	497
Pavo_cristatus	TVQSLMTTTTQENPSLTGQVSPRSREAENRAGARKSVKEEKREPLGI PPQFESRPQSLEA	497
Gallus_gallus	TVQPLMTTTTQENPSLTGQVSPRSRETENRAGVRKSVKEEKREPLGI PPQFESRPQSLEA	497
Anas_platyrhynchos	TVQP--VTITQQNP SLTGQVGPR SREAENRAGARKAVTEEKRDP LGI PPQFESC PESLEA	439
Chelonia_mydas	TTQP--LMTTRQTASLIROAGPRS REAENRAGTRKSTTEEKREPQGVP PPFESRPQS QEV	445
Rhinatrema_bivittatum	VERREL PVQIRKTASLS---QPRANETK-----KLITEQKREAPGT PPAFEIRPQS QE A	459
Homo_sapiens	-----PAPP RPATFP TRPGLGSQD VVSKAANRRIPME GORD--SAFPKFESKP QS QEV	425
Pan_troglodytes	-----PAPP RPATFP TRPGLGSQD VVSKAATRIPME GORD--SAFPKFESKP QS QEV	425
Macaca_mulatta	-----PAAP RPATFP TRPGLGSQD VVSKAATRIIPME GOKD--SALPKFESKP QS QEV	425
Callithrix_jacchus	-----PAAP HPATFSTRP GLGSQD-VSK VATRRIPLE GORD--AAFPKFESKP QS QEV	424
Equus_caballus	-----PAV PPPATLP TRSGLGSQE VVSKVATRKVPMD SWRD--STFPKFESKP QS QEV	432
Pteropus_alecto	-----PAAP PPATLP TRSG LRSQE VVSKVATRKVIPMES ORD--STFPKFESKP QS QEV	423
Bos_taurus	-----PAAS PDILSTRSGLGSQDTMGKVATRKVPMS ORD--TMFPKFENKP QS QEV	425
Heterocephalus_glaber	-----PAAS QPATHPTSWSGLESPEVVSTVATRKTPMES ORE--STLPKFENKP QS LEV	426
Mus_musculus	-----LAAP QQATLP TRSSLG-GSVG NKFVTIGNIPRES ORE--STFP RFESQP QS QEV	422
Ornithorhynchus_anatinus	-----PTQT PHRMVTF-----ATTGPLRGSLQDRGEDL--GSPSRFDTHP QAPGV	444
Xenopus_tropicalis	-----ISHGG TIRNQSL PLRGEGSHSH PGLSDTKETLRSRLGTAPGF DLS PSS QEV	267
	.....490.....500.....510.....520.....530.....540	



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Pavo_muticus	SEGQ	EIKFKSKVS	GKPKPDV	KWFK	EGAPIKT	GEG-VQI	YEEDGTHCLWLKKA	CLGDSGSY	556
Pavo_cristatus	SEGQ	EIKFKSKVS	GKPKPDV	KWFK	EGAPIKT	GEG-VQI	YEEDGTHCLWLKKA	CLGDSGSY	556
Gallus_gallus	SEGQ	EIKFKSKVS	GKPKPDV	EWFK	EGVPIKT	GEG-VQI	YEEDGTHCLWLKKA	CLGDSGSY	556
Anas_platyrhynchos	SEGQ	EIKFKSKVS	GKPKPNV	EWFK	EGAPIKT	GEN-IQI	YEEDGVHCLRLKKA	CLGDSGSY	498
Chelonia_mydas	LEGQ	EVKFKSKVS	GKPKPDV	EWFK	EGAPV	KGRDG-IQI	YEEDGIHCLRLMK	THLGD	504
Rhinatrema_bivittatum	LEGQ	EVIFTC	CKVSGKPI	PEV	WFKDGS	PLK	GREG-MQINERN	GFHSLRLMTA	518
Homo_sapiens	KENQ	TVKFRCEVS	GIPKPE	VAWF	LEGT	TPVRRQEGS	IEVYEDAGSHYL	CLLKARTRD	485
Pan_troglodytes	RENQ	TVKFRCEVS	GIPKPE	VAWF	LEGT	TPVRRQEGS	IEVYEDAGSHYL	CLLKARTRD	485
Macaca_mulatta	RENQ	TVKFRCEVS	GIPKPE	VAWF	LEGT	TPVRRQEGS	IEVYEDAGSHYL	CLLRARTRD	485
Callithrix_jacchus	RENQ	TVKFRCEVS	GIPKPE	VAWF	LEGAP	VRRQGGTIEVYEDAGSHYL	CLLRARTRD	484	
Equus_caballus	SEDQ	TVKFRCEVS	GIPKPE	VTWF	LEGAP	VRRQEDTIEVYEDGRSHYL	CLLRAQVKD	492	
Pteropus_allecto	REDQ	TVKFRCEVS	GIPKPV	TWF	LEGAP	VRRREGTIEIYEDGGSHYL	CLLRARARD	483	
Bos_taurus	SEDE	PVEFRCEVS	GIPKPE	VTWF	LDGVP	VRSGEISIEVYEAGGTHYL	CLLWRARARD	485	
Heterocephalus_glaber	SEHET	TVKFRCEVS	GIPKPE	VAWF	LEGIPVQ	TREGTTEVYEHGGSHYL	CLLRARARD	486	
Mus_musculus	TEGQ	TVKFICEVS	GIPKPDV	GW	LEGIP	VRRREGITEVYEDGVSHH	CLLRARTRD	482	
Ornithorhynchus_anatinus	LEGQ	LAES	RVKAE-----	PGE	QQ-----			463	
Xenopus_tropicalis	PEGSE	VIFRCKVSGD	PRPRVE	WF	FRNSALGERDG	VRIREGARIHSLHLL	KAQTGDS	326	
	.....550.....	560.....	570.....	580.....	590.....	600			

Pavo_muticus	S C A A F N P R G Q T S T S W L L T V K R S K V E E V A P C F S S V L K G C T V S E G Q D F V L Q C V G G V P V P E I	616
Pavo_cristatus	S C A A F N P R G Q T S T S W L L T V K R S K V E E V A P C F S S V L K G C T V S E G Q D F V L Q C V G G V P V P E I	616
Gallus_gallus	S C A A F N P R G Q T S T S W L L T V K R P K V E E V A P C F S S V L K G C T V S E G Q D F V L Q C V G G V P V P E I	616
Anas_platyrhynchos	S C A A F N P K G Q T S T S W L L T V K R P K V E E V A P C F S S V L K G C T V S E G Q D F V L Q C V G G I P V P Q I	558
Chelonia_mydas	S C T A F N A R G R T S S S W V L S V E R S K V E E M A P R F S S V L K G C T V S E G Q D F V L Q C S V E G T P V P Q I	564
Rhinatrema_bivittatum	T C R I S N N R G R A S S T W I L N V E R P K V E E V S P H F S S L L K G C I I S E G Q D F V L R C S V E G E P V P K I	578
Homo_sapiens	S C T A S N A Q G Q L S C S W T L Q V E R L A V M E V A P S F S S V L K D C A V I E G Q D F V L Q C S V R G T P V P R I	545
Pan_troglodytes	S C T A S N A Q G Q V S C S W T L Q V E R L A V M E V A P S F S S V L K D C T V I E G Q D F V L Q C S V R G T P V P R I	545
Macaca_mulatta	S C T A S N A R G Q V S C S W T L Q V E R L A V M E V A P S F S S V L K D C T V I E G Q D F V L Q C S V R G T P V P Q I	545
Callithrix_jacchus	S C T A S N A R G Q V S C S W T L Q V E R L A L M E V A P S F S S V L K D C T V T E G Q D F V L Q C S V R G T P G P R I	544
Equus_caballus	S C T A S N V R G Q V S C G W T I L L V K -----	512
Pteropus_alecto	S C I A S N V R G Q V S C D W T I L L V K R L A R M E V A P S F S S V L K D C S V I E G Q D F V L Q C S V L G T P A P Q I	543
Bos_taurus	S C T A T N V R G Q S C R W T I L L V K K P A V M E V A P S F S S A L K D C T V V E G Q D F V L R C S V Q G T P L P R I	545
Heterocephalus_glaber	S C T A S N S Q G Q V S C T W T I L L V E K P V E M E V V P S F S S V L K D C T V I E G Q D F V L Q C S V Q G T P V P Q I	546
Mus_musculus	S C T A S N S L G Q V S C S W S L L V D R P N L A Q T A P S F S S V L K D S V V I E G Q D F V L R C S V Q G T P A P R V	542
Ornithorhynchus_anatinus	-----A P S F S N P L T G C V V S E G Q D F T L Q C S V R G R P D P L I	496
Xenopus_tropicalis	S C E V S N A R G R V S H S W T L S V T R R K M E A V P R F V R K L R G C S I I E G E D F V L E C S I E G Q P A P E I	386
	.....610.....620.....630.....640.....650.....660	

		*:.	
Pavo_muticus	TWLLNEQPIQYAHSTFEAGVAKLTVDALPEDDGIYTCLAENSTGRASC	SAQVTVKEKKS	676
Pavo_cristatus	TWLLNEQPIQYAHSTFEAGVAKLTVDALPEDDGIYTCLAENSTGRASC	SAQVTVKEKKS	676
Gallus_gallus	TWLLNEQPIQYAHSTFEAGVAKLTVDALPEDDGIYTCLAENNAGRASC	SAQVTVKEKKS	676
Anas_platyrhynchos	TWLLNEQPIQYAHSTFEDGVAKLTVDALPEDDGIYTCLAENNTGRASC	SAQVTVKEKKS	618
Chelonia_mydas	TWLLNDEPIQYAHSIFEDGVAKLTVDALPEDDGVIYTCLAENSTGRASC	SAQVTVKEKKS	624
Rhinatrema_bivittatum	TWLLNDQPIQYAHATFEGGVAELTIQDALPEDDGVIYTCMAENSSGKVLCS	SATVTVQEKKS	638
Homo_sapiens	TWLLNGQPIQYARSTCEAGVAELHIQDALPEDHGTIYTCLAENALGOVSC	SAWVTVHEKKS	605
Pan_troglodytes	TWLLNGQPIQYARSTCEAGVAELHIQDALPEDHGTYTCLAENALGOVSC	SAWVTVHEKKS	605
Macaca_mulatta	TWLLNGQPIQYAHSTCEAGVAELHIQDALPEDHGTYTCLAENALGOVSC	SARVTVHEKKS	605
Callithrix_jacchus	TWLLNGQPIQYARSTCEAGVAELHIQDALPEDHGTYTCLAENALGOVSC	SARVTIHEKKS	604
Equus_caballus	-----	-----KKKS	516
Pteropus_allecto	TWLLNEQPIQYAHSTCAAGMAELHIQDALPEDDGIYTCLAENTLGOVSC	SARVTVHEKKS	603
Bos_taurus	TWLLNGQPIQYAHSTCEAGVAELHIQDTLPEDDGTYTCLAENTVGQVSC	SARVTVQEKKS	605
Heterocephalus_glaber	IWLLNGQPIQYAHSTCQAGVAELRIQDTLPEDDGVIYTCLAENALGOVSC	SARVTVHEKKS	606
Mus_musculus	TWLLNGQPIQFAHSICEAGVAELHIQDALPEDRGTYTCLAENAMGOVSC	SATVTVQEKKG	602
Ornithorhynchus_anatinus	SWLLNGRPIRYAHSVLAAGLAELRVQDALPEDDGRTYTCVAENCVGKVSC	SATVTVREKRS	556
Xenopus_tropicalis	SWLLNDQPIQYAHSAIEDGVARLRVQDALPEDEGVIYTCLAQRGGKVSC	CATVTVTEKKA	446
	.....670.....680.....690.....700.....710.....720		

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /home/ceglab2/Desktop/ajinkya/pavo/MSDAAVYWKpFeb 16 12:47:08 2022

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      *.  * * : *:* .***** * *:::.. * .:: *:*: * **
Pavo_muticus      S-KKAESAQAVKLNKTFAPIFLKGGLDLDKVMDSQVIMTVEVSANPCPEIIWLHNGKEIQ 735
Pavo_cristatus    S-KKAESAQAVKLNKTFAPIFLKGGLDLDKVMDSQVIMTVEVSANPCPEIIWLHNGKEIQ 735
Gallus_gallus     S-KKAECTQAAKLNKTFAPIFLKGGLDLDKVMDSQVIMTVEVSANPCPEIIWLHNGKEIQ 735
Anas_platyrhynchos S-KKAESAQAVKLNKTFAPIFLKGGLDLDKVMDSQVIMTVEVSANPPPEIIWLHNGKEIQ 677
Chelonia_mydas    S-KKVESTHSVQTNKTFAPVFLKGGLDLDKVMDSQVIMTVEVSANPPPEIIWLHNGKEIQ 683
Rhinatrema_bivittatum A-KKAECAKPVQPSKTFPPVFRKGLDLDKVMDSQVIMTVEISANPPPEITWLHNGKEIQ 697
Homo_sapiens      S-RKSEYLLPVAPSKPTAPIFLQGLSDLKVMDSQVIMTVQVSGNPPPEVIWLHNGNEIQ 664
Pan_troglodytes   S-RKSEYLLPVAPSKPTAPIFLQGLSDLKVMDSQVIMTVQVSGNPPPEVIWLHNGNEIQ 664
Macaca_mulatta    S-GKSEYLLPVAPSKPTAPIFLQGLSDLKVMDSQVIMTVQVSGNPPPEVIWLHNGNEIQ 664
Callithrix_jacchus S-GKSEYLLPVAPSKPTAPIFLQGLSDLKVMDSQVIMTVQVSGNPPAEVIWLHNGNEIQ 663
Equus_caballus    D-RKSEYLLPMAPGKSTAPRFLQGLSDLKVMDSQVIMTVQVSGNPPPEVIWLHNGNEIQ 575
Pteropus_alecto   D-GKSEYFLPTAPGKPVAPLFLQGLSDLKVMDSQVIMTVQVSGNPPPEVIWLHNGTEIQ 662
Bos_taurus        E-EKSEYLLPAAPNKPVAPLFLQGLSDLQVMDGSQVIMTVQVSGNPPPEVIWLHNGTEIQ 664
Heterocephalus_glaber D-RKS-VLLPLAPTKTTEPIFLQGLSDLKVMDSQVIMTVQVSGNPPPEVIWLHNGNEIQ 664
Mus_musculus      E-GEREHLRSLPARSKPIAPIFLQGLSDLKVMDSQVIMTVQVSGNPPPEVIWLHNGNEIQ 661
Ornithorhynchus_anatinus S-RGRDQAPVPTLALKASAPVFLKGLADLEVMDSQVIMAVEIAAHPPPKVVWLHDGVEIR 616
Xenopus_tropicalis A----HEPGGDREPKSSPPIFLKRLDLDQVMDGSQVIMTMSVELSGTPPAEILWFHNGKEIQ 502
.....730.....740.....750.....760.....770.....780

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      *:::.. * .:: *:*: * **
Pavo_muticus      ETEDFHFHEKKGNEYSLYIQEVFPEDTGKYTCEAWNELGETQTQATLTVQEPDGIQPWFI 795
Pavo_cristatus    ETEDFHFHEKKGNEYSLYIQEVFPEDTGKYTCEAWNELGETQTQATLTVQEPDGIQPWFI 795
Gallus_gallus     ETEDFHFHEKKGNEYSLYIQEVFPEDTGKYTCEAWNELGETQTQATLTVQEPDGIQPWFI 795
Anas_platyrhynchos ETEDFHFHEKKGNEYSLYIQEVFPEDTGKYTCEAWNELGETQTQATLTVQEPDGIQPWFI 737
Chelonia_mydas    ETEDFHFHEKKGNEYSLYIQEVFPEDTGKYTCEAWNDLGETQTQATLTVQEPDGIQPWFI 743
Rhinatrema_bivittatum ETEDFHFLEQKGEYSLYIQEVFPEDTGKYTCEAWNKLGAARTQASLTVQEPDGIQPWFI 757
Homo_sapiens      ESEDHFHFQRGTOHSLCIQEVFPEDTGTYTCEAWNSAGEVRTQAVLTVQEPHDGTQPWFI 724
Pan_troglodytes   ESEDHFHFQRGTOHSLCIQEVFPEDTGTYTCEAWNSAGEVRTQAVLTVQEPHDGTQPWFI 724
Macaca_mulatta    ESEDHFHFQRGTOHSLCIQEVFPEDTGTYTCEAWNSAGEVRTQAVLTVQEPHDGTQPWFI 724
Callithrix_jacchus ESEDHFHFQRGTOHSLCIQEVFPEDTGTYTCEAWNSAGEVRTQAVLTVQEPHDGTQPWFI 723
Equus_caballus    ESEDHFHFQRGTOHSLCIQEVFPEDTGTYTCEAWNSAGGVRTQAVLTVQEPDGTQPWFI 635
Pteropus_alecto   ESEDHFHFQRGTRHSLCIQEVFPEDTGTYTCEAWNSAGAVRTQAVLTVQEPDGTQPWFI 722
Bos_taurus        ESEDHFHFQRGTOHSLCIQEVFPEDTGTYTCEAWNSAGEVRTQAVLTVQEPDGTQPWFI 724
Heterocephalus_glaber ESEDHFHFERRGTOHSLCIQEVFPEDTGTYTCEAWNSAGAVRTQAMLMVQEPDGTQPWFI 724
Mus_musculus      ESEDHFHFQKGGWHSLSIQEVFPEDTGTYTCEAWNSAGEVRTQAVLTVQEPHDGTQPWFI 721
Ornithorhynchus_anatinus ETEDFHFLEELDGAFLSYIQEVFPEDTGTYTCAANSQGRAHSQATLTVRVPDGVQPWFI 676
Xenopus_tropicalis ETEDFHFHEQSGNEHRLCIQEVFPEDTGTYMCKAWNSLGQTATEATLTVQEPQEGIQPWFI 562
.....790.....800.....810.....820.....830.....840

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      *:::.. * .:: *:*: * **
Pavo_muticus      SKPRSVTAAGQNVLSICAIAGDPFPTVHWFKDGQEITPGA-GCEILQNEIDFTLILRNV 854
Pavo_cristatus    SKPRSVTAAGQNVLSICAIAGDPFPTVHWFKDGQEITPGA-GCEILQNEIDFTLILRNV 854
Gallus_gallus     SKPRSVTAAGQNVLSICAIAGDPFPTVHWFKDGQEITPGT-GCEILQNEIDFTLILRNV 854
Anas_platyrhynchos SKPRSVTAAPGQNVLSICAIAGDPFPTVHWFKDGQEILPGK-GCEILQNEIDFTLILRNV 796
Chelonia_mydas    SKPRSVTAAPGQNVLSICAIAGDPFPTVHWFKDGQEIMSGA-ECEILQNEIDFTLIMRNV 802
Rhinatrema_bivittatum SRPKSVTSAVGQNVLMSCAIAGDPFPAVQWLKDGQELAEKE-GCEILQSDDVFTLILRNV 816
Homo_sapiens      SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALCKDTGHFEVLQNEIDVFTLVLKKV 784
Pan_troglodytes   SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALCKDTGHFEVLQNEIDVFTLVLKKV 784
Macaca_mulatta    SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALSKDTGHFEVLQNEIDVFTLVLKKV 784
Callithrix_jacchus SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALSKDTGHFEVLQNEIDVFTLVLKNV 783
Equus_caballus    SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALSKDAGHFEVLQNEIDVFTLVLKNV 695
Pteropus_alecto   SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALSKDTGHFEVLQNEIDVFTLVLKNV 782
Bos_taurus        SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALSKDTGHFEVLQNEIDVFTLVLKNV 784
Heterocephalus_glaber SKPRSVTASLGQSVLISCAIAGDPFPTVHWLRDGGKALSKDTGHFEVLQNEIDVFTLVLKNV 784
Mus_musculus      SKPRSVTATLGQSVLISCAIAGDPFPTVHWLRDGRALSKDSGHFELLQNEIDVFTLVLKNV 781
Ornithorhynchus_anatinus SKPRSVTAAPGQDALISCAVAGDPFPTVRWARDGRPIRPGP-DRRFLHHRDVFTLLLRDV 735
Xenopus_tropicalis SKPKCTSASVGQNVLSICAIAGDPFPRVQWLKDGRELPPER----ILQSDDVFTLILRNV 618
.....850.....860.....870.....880.....890.....900

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /home/ceglab2/Desktop/ajinkya/pavo/MSD/MSD\_Videos/MSD\_Videos/Feb 16 12:47:08 2022

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	* . * : * * *	** :	** :	*	:	.	.	:	
Pavo_muticus	QSRHAGQYEIQLRNQVGECSQVSLMLRESSASRAEMLRDGRESASSG--ERRDG-----907								
Pavo_cristatus	QSRHAGQYEIQLRNQVGECSQVSLMLRESSASRAEMLRDGRESASSG--ERRDG-----907								
Gallus_gallus	QSRHAGQYEIQLRNQVGECSQVSLMLRESSASRAEMLRDGRESASSG--ERRDG-----907								
Anas_platyrhynchos	QSRHAGQYEIQLRNQVGECSQVSLMLRESSASRAEMLRDGRESASSG--ERRDG-----849								
Chelonia_mydas	ORRQAGQYEIQLRNQVGECSQVSLMLRESSSVGGEMHRDGREPASSG--ERRDG-----855								
Rhinatrema_bivittatum	QAHSAGQYIEIKLNPFVGECSCQVSILTLKSGSACREGTGKVRRREEASSKGKEERDS----871								
Homo_sapiens	QPWHAGQEYILLKNRVGECSQVSLMLQNSS-ARALPR--GREPASCED-LCGGG-VGAD839								
Pan_troglodytes	QPWHAGQEYILLKNRVGECSQVSLMLQNSS-ARALPR--GREPASCEC-LCGGG-VGAD839								
Macaca_mulatta	QPWHAGR YEILLKNRVGECSQVSLMLQNSP-AGALPR--GREPASCEG-LCGGG-VGAD839								
Callithrix_jacchus	QPWHAGR YEILLKNRVGECSQVSLMLQNSP-AKALPR--GREPASCEG-LCGGG-VGAD838								
Equus caballus	QPWHAGQEYILLNRNQGVECSQVSLMLQSSP-SRAPTR--GREPASCEG-LCGRG-AGAD750								
Pteropus_alecto	QPWHAGQEYILLKNRVGECSQVSLMLQSSP-ARTVLW--GREPASCEG-LCGRG-VVAD837								
Bos taurus	QPWHAGQEYILLKNRVGEGSQVSLMLQSSP-ARAVALR--GREPASCEG-LCGRG-AGAD839								
Heterocephalus_glaber	QPWHAGQEYILLNRNQVGECSQVSLMLQNSP-ASSLTR--GREATSREG-LCGGG-VGAD839								
Mus musculus	QPWHAGQEYILLKNRVGECSQVSLMLHNPS-SRAPPR--GREPASCEG-LCGGGGVGAH837								
Ornithorhynchus_anatinus	QPSDAGLYEIIRLNRNVGESQVSLMLREGLDPDRPLP--GGRPAGRP-QAAAG-----787								
Xenopus_tropicalis	QQSDGGGYOITLINAVGECSR VSLMVEGSSGGPSHTHOTLSLVSFCLFPNRTLRL-----673								
	. . . . .910 . . . . .920 . . . . .930 . . . . .940 . . . . .950 . . . . .960								

Pavo_muticus	GNHGALTFGRTSGFVK-SSSETRAAEEEEQEDVRGVLKRRVETREHTEESLRQEEAEQLDF	966
Pavo_cristatus	GNYHGALTFGRISVFVK-SSSETRAAEEEEQEDVRGVLKRRVETREHTEESLRQEEAEQLDF	966
Gallus_gallus	GNHGALTFGRTSGFVK-SSSETRAAEEEEQEDVRGVLKRRVETREHTEESLRQEEAEQLDF	966
Anas_platyrhynchos	GDHGLTLTFGRTSGFRK-SSSETRAAEEEEQEDVRGVLKRRVETREHTEESLRQEEAEQLDF	908
Chelonia_mydas	GDHGVLTFTGRISGFRK-SGGDTRPAEEEEQEDVRGVLKRRVETREHTEERLRQEEAEQLDF	914
Rhinatrema_bivittatum	SDHGVVTFDRITGGVR-SPGETTEAQEEDNVRGLLKRRTEIREHTEDKHRQEEAEQLDF	930
Homo_sapiens	GGGS--DRYGSRLRPGWP-ARGQGWLPEEDGEDVRGVLKRRVETRQHTEEAIRQQEVEQLDF	897
Pan_troglodytes	GGGS--DHYGSLRPGWP-ARGQGWPQEEDGEDVRGVLKRRVETRQHTEEAIRQQEVEQLDF	897
Macaca_mulatta	GGGS--DRYGTLRPGWP-ARGQGWPEEEDGEDVRGVLKRRVETRQHTEEAIRQQEVEQLDF	897
Callithrix_jacchus	SGGG--DHYGTLRPGWP-ARGQGWPEEEDGEDVRGVLKRRVETRQHTEEAIRQQEVEQLDF	896
Equus_caballus	GGGG--DCYGTLPSPWP-ARGQGWPEEEDSEDVRGVLKRRVETRQHTEEAIRQQEVEQLDF	808
Pteropus_alecto	GGGG--DCYGTLPSPWP-ARGQGWPEEEEGEGVRGVLKRRVETRQHTEEAIRQQEVEQLDF	895
Bos_taurus	GGGGGDGYGSLRPGWPVARQGAPAEDDGEDVRGVLKRRVETRQHTEEAIVRQQEVEQLDF	899
Heterocephalus_glaber	GGGD--CDGTLRPGWL-ARGQGWL EEESGEDVRGLLKRRVETRLHTEEAIRQQEVEQLDF	896
Mus_musculus	GDGD--RHGTLRPCWP-ARGQGWPEEEDGEDVRGLLKRRVETRLHTEEAIRQQEVGQLDF	894
Ornithorhynchus_anatinus	GGGG--PSGDLHGALS---DHREARADCAEGGRGPLRRRVPEERPEERSEGRPEERPRR	842
Xenopus_tropicalis	QREQLRSCERLGDWEEDALSIGRTIEEQENIRGVLKRRVEVKESSEKLRRQEEAEQVDF	733
	.....970.....980.....990.....1000.....1010.....1020	

	*		*:***:~::~*	
Pavo_muticus	RDILGKKVSTKSFSEE	-----	DLKEIPAEQMDFRANL	998
Pavo_cristatus	RDILGKKVSTKSFSEE	-----	DLKEIPAEQMDFRANL	998
Gallus_gallus	RDILGKKVSTKSFSEE	-----	DLKEIPAEQMDFRANL	998
Anas_platyrhynchos	RDILGKKVSTKSFSEE	-----	ELKEIPAEQMDFRANL	940
Chelonia_mydas	RDILGKKVNTKSFSEE	-----	ELKEIPAEQMDFRANL	946
Rhinatrema_bivittatum	RNVLGKKVSTRSFSEE	-----	ELKEIPAEQMDFRGNL	962
Homo_sapiens	RDLLGKKVSTKTLSED	-----	DLKEIPAEQMDFRANL	929
Pan_troglodytes	RDLLGKKVSTKTLSED	-----	DLKEIPAEQMDFRANL	929
Macaca_mulatta	RDLLGKKVSTKTLSED	-----	DLKEIPAEQMDFRANL	929
Callithrix_jacchus	RDLLGKKVSTKTLSED	-----	DLKEIPAEQMDFRANL	928
Equus_caballus	RDLLGKKVSTKTLSEE	-----	DLKELPAEQMDFRANL	840
Pteropus_alecto	RDLLGKKVSTKTVSEE	-----	DLKEIPAEQMDFRANL	927
Bos_taurus	RDLLGKKVSTKTLSEEDLKEIPAEQLDFRDLLGKKVSTKTLSEEDLKEIPAEQMDFRANL			959
Heterocephalus_glaber	RDLLGKKVNTKTVSEE	-----	DLKEIPAEQMDFRANL	928
Mus_musculus	RDLLGKKVSTKTVSED	-----	DLKDIPAEQMDFRANL	926
Ornithorhynchus_anatinus	RE-----		AEHMDYRAQL	854
Xenopus_tropicalis	RRVLGKKVSTRSVSEE	-----	DLKDIPPEQMDFRANL	765
	.....1030.....1040.....1050.....1060.....1070.....1080			



## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	** **** *:*** :..*****:***.*** ..* . . . . *:***.***	
Pavo_muticus	QRQVKPKTILSEERKVHAPQQVDFRSVLAKK-GTPKKTPLPEKVPPPAPVTDFRSVLGAK	1057
Pavo_cristatus	QRQVKPKTILSEERKVHAPQQVDFRSVLAKK-GTPKKTPLPEKVPPPAPVTDFRSVLGAK	1057
Gallus_gallus	QRQVKPKTILSEERKVHAPQQVDFRSVLAKK-GTPKKTPLPEKVPPPAPVTDFRSVLGAK	1057
Anas_platyrhynchos	QRQVKPKTILSEERKVHAPQQVDFRSVLAKK-GTPKKTPLPEKVPPAPVTDFRSVLGAK	999
Chelonia_mydas	QRQVKPKTILSEERKVHSPQQVDFRAVLAKK-GTPKVSLEKVPPPAPATPDRSVLGSK	1005
Rhinatrema_bivittatum	QRQVKPKALSEERKVHGAQQVDFRAVLAKK-GTPKPSAPEKAP--KPSNPDFKSVLGSK	1019
Homo_sapiens	QRQVKPKTVSEERKVHSPQQVDFRSVLAKK-GTSKTPVPEKVPPPAPATPDRSVLGSK	988
Pan_troglodytes	QRQVKPKTVSEERKVHSPQQVDFRSVLAKK-GTSKTPVPEKVPPPAPATPDRSVLGSK	988
Macaca_mulatta	QRQVKPKTVSEERKVHSPQQVDFRSVLAKK-GTPKTPVPEKVPPPAPATPDRSVLGSK	988
Callithrix_jacchus	QRQVKPKTVSEERKVHSPQQVDFRSVLAKK-GTPKAPVPEKVPPPAPATPDRSVLGSK	987
Equus_caballus	QRQVKPKTVSEERKVHSPQQVDFRSVLAKK-GTPKTPVPEKVPPPAPATPDRSVLGSK	899
Pteropus_alecto	QRQVKPKTVSEERKVHSPQQVDFRSVLAKK-GTPKTPVPEKVPPPAPATPDRSVLGSK	986
Bos_taurus	QRQVKPKTILSEERKVHGPQQVDFRSVLAKK-GTPKTPVPEKVPPPAPATPDRSVLGSK	1018
Heterocephalus_glaber	QRQVKPKTVSEERKVHSPQQVDFRSVLAKK-GTPKTPGPEKAPPPAPATPDRSVLGSK	987
Mus_musculus	QRQVKPKTILSEERKVHSPQQVDFRSVLAKK-GTPKTPVPEKAPP-KAATPDRSVLGSK	984
Ornithorhynchus_anatinus	QRPVKPKALSEERKVGHPQQVDFRAVLAKK-GPPKTAATP-APPKAGPPDFRAVLGAK	912
Xenopus_tropicalis	QRQVKPK--AEDERKVNSPQQVDFRSVLGKKPSTPKTLPEKVA-KAATPDRSVLGSK	822
	.....1090.....1100.....1110.....1120.....1130.....1140	

	** *::*	.	
Pavo_muticus	KKPPAEN	G	1065
Pavo_cristatus	KKPPAEN	G	1065
Gallus_gallus	KKPPAEN	G	1065
Anas_platyrhynchos	KKPPAEN	G	1007
Chelonia_mydas	KKPPAEN	G	1013
Rhinatrema_bivittatum	KKPPAEN	G	1027
Homo_sapiens	KKLPAEN	G	996
Pan_troglodytes	KKLPAEN	G	996
Macaca_mulatta	KKLPAEN	G	996
Callithrix_jacchus	KKLPAEN	G	995
Equus_caballus	KKLPAEN	S	907
Pteropus_alecto	KKLPTEN	G	994
Bos_taurus	KKLPTEN	G	1026
Heterocephalus_glaber	KKTPAEN	G	995
Mus_musculus	KKSPSEN	G	992
Ornithorhynchus_anatinus	KKPPAQN	G	920
Xenopus_tropicalis	KKLPTENGSPNDVPHEQGKSKVNCCTVVDGGVAKNSVTNNSVPNAAKISVLSVDKANVPG	G	882
	.....1150.....1160.....1170.....1180.....1190.....1200		

Pavo_muticus	SASTPAPNARAGSEAQKAQNA-----	1086
Pavo_cristatus	SASTPAPNARAGSEAQKAQNA-----	1086
Gallus_gallus	SASTPAPNARAGSEAQNAT-----	1084
Anas_platyrhynchos	NAGTPAPNARTINSEAQNAT-----	1026
Chelonia_mydas	STNAQARNTSINSVAQNAR-----	1032
Rhinatrema_bivittatum	NS---IPNAOD-----	1035
Homo_sapiens	SSSAETLNKAVESKPLSNAQPSGPLKPVG-----	1027
Pan_troglodytes	SSSAETLNKAVESKPLSNAQPSGPLKPVG-----	1027
Macaca_mulatta	SSSAETLNKAVESKPLSNAQPSGPLKPMG-----	1027
Callithrix_jacchus	GNSAETLNKAVVESKPLSNAQPSGPLKPMG-----	1026
Equus_caballus	SNDAAELNAKAAESPKPVGNQAQPSGSLKPVGNTKLAAETLKPVGNTKPVETLKSVGNAKPA	967
Pteropus_allecto	SNNAEALNAKAAESLKAVGNTQPSGSLKPVGNAKPAETPKPVGNTKPAETLKPVGNAKPA	1054
Bos_taurus	SNNTEALNAKAAEGLKPVGNQAQPSGFLKPVGNAKLADTPKPLSSTKPAETPKPLGNVKPA	1086
Heterocephalus_glaber	SSSAEAPDTPKPPQSPMSVGNSEVAGSLKPMG-----	1026
Mus_musculus	GNSAEVLNVKAGESPTPAGDAQAIGALKPVGN-----	1024
Ornithorhynchus_anatinus	SANAEAEVVKPEAKPEAKPEAKPVA-----	945
Xenopus_tropicalis	TAKNSVPVSDKTSAPGTAKNSVPVSDKTSAPSTAKNSVSSGSKASFGLGADKAGVPSVAKT	942
	.....1210.....1220.....1230.....1240.....1250.....1260	

## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	-----	1086
Pavo_cristatus	-----	1086
Gallus_gallus	-----	1084
Anas_platyrhynchos	-----	1026
Chelonia_mydas	-----	1032
Rhinatrema_bivittatum	-----	1035
Homo_sapiens	-----NAKPAETLKPMGNAKPAET-----	1046
Pan_troglodytes	-----NAKPAETLKPMGNAKPAET-----	1046
Macaca_mulatta	-----NAKPAETLKPMGNAKPAET-----	1046
Callithrix_jacchus	-----SAKPAETSKPTGNAKPAETPKSTGNAMPAETPKSLGNAMPA-----	1067
Equus_caballus	ETLKPVGNAKPAETLKPVGNAPAEITLKPVGNAPAEITLKPVGNATKPSSETILKPVGIAPKA	1027
Pteropus_alecto	EISKLVGNAPAESVQKPVGNAPAESQKPVGNTPKPAEILKPVGNAPKPSSETPKPVGNAPKA	1114
Bos_taurus	ETPKPLGSTKPAETPKPLGSTKPAETPKPLGNVKPAETPKPLGNIKPTETPKPLGSTKPA	1146
Heterocephalus_glaber	-----NAKPAEIMKPVGNTOHAEILKPVSNAAQPSGSLKPMGNAPKA-----	1067
Mus_musculus	-----AKPAETPKPIGNAKPTETLKPVGNTPKPAETLKPIANAQPSGSLKPVTNAQPA-----	1076
Ornithorhynchus_anatinus	-----DSRDQIAKPEGTQASGVVDGP-----QTA-----	969
Xenopus_tropicalis	SVPTATKTINVPSVDKTNVPAATKTNVPSLAKTSLPATKTNVPSVDKASVPSVDKSSVPA	1002
	.....1270.....1280.....1290.....1300.....1310.....1320	

Species	Sequence	Length
Pavo_muticus	-----	1086
Pavo_cristatus	-----	1086
Gallus_gallus	-----	1084
Anas_platyrhynchos	-----	1026
Chelonia_mydas	-----	1032
Rhinatrema_bivittatum	-----	1035
Homo_sapiens	--LKPMPG-----	1051
Pan_troglodytes	--LKPMPG-----	1051
Macaca_mulatta	--LKPMPG-----	1051
Callithrix_jacchus	ETAKPTG-----	1074
Equus_caballus	ETPKPLGNLKPATLKPISNAKPAETTKPMGFAKLAETPKPLGNVKPAEPLKPVGNTKPA	1087
Pteropus_alecto	ETPKPVG-----	1121
Bos_taurus	ETPKPLG-----	1153
Heterocephalus_glaber	ETPKPLS-----	1074
Mus_musculus	EPQKPVG-----	1083
Ornithorhynchus_anatinus	GGHKDVD-----	976
Xenopus_tropicalis	AVKTNDK-----	1009

Species	Sequence	Position
Pavo_muticus	-----	1086
Pavo_cristatus	-----	1086
Gallus_gallus	-----	1084
Anas_platyrhynchos	-----	1026
Chelonia_mydas	-----	1032
Rhinatrema_bivittatum	-----	1035
Homo_sapiens	-----	1051
Pan_troglodytes	-----	1051
Macaca_mulatta	-----	1051
Callithrix_jacchus	-----	1074
Equus_caballus	EILKPMGIAKPAETPKPLGNVKPAEPLKPVGNAKPAESLKPVGSVKPAETLKPVGNAKPD	1147
Pteropus_allecto	-----	1121
Bos_taurus	-----STKPAETPKPLGNVKPAETPKPLGNVKPAETPKPLGNVKPAETPKPVSNAKPA	1206
Heterocephalus_glaber	-----	1074
Mus_musculus	-----	1083
Ornithorhynchus_anatinus	-----	976
Xenopus_tropicalis	-----DVAPSADKOLTPNVDKDIAPSSSEKDVAPSVDKDVA	1044



## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /home/ceglab2/Desktop/ajinkya/pavo/MSD/MSD\_Videos/MSD\_Videos\_Feb 16 12:47:08 2022

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Species	Sequence	Accession
Pavo_muticus	-----IPNSEA	1092
Pavo_cristatus	-----IPNSEA	1092
Gallus_gallus	-----PNSEA	1089
Anas_platyrhynchos	-----PNSEA	1031
Chelonia_mydas	-----TNSET	1037
Rhinatrema_bivittatum	-----	1035
Homo_sapiens	-----NAKPD	1056
Pan_troglodytes	-----NAKPD	1056
Macaca_mulatta	-----NTKPA	1056
Callithrix_jacchus	-----NAKPA	1079
Equus_caballus	EPLKPVGNAKPAESLKPVGNVKPAETILKPVGNAKPDEPLKPVGNAKPDEPLKPVGNAKPA	1207
Pteropus_allecto	-----NAKPE	1126
Bos_taurus	ETILKPVGNAKPAETPKPLSNVKPAETPKLVGNAKPAETSKPLDNAKPAEAPKPLGNAKPA	1266
Heterocephalus_glaber	-----NAKPA	1079
Mus_musculus	-----NAKSA	1088
Ornithorhynchus_anatinus	-----SLQPA	981
Xenopus_tropicalis	PSSEKDVAPSVDKDIAPSVDKDIAPSSDKDVAPSSDKDVAPSSDKDVAPSSDKDVAPSSD .....1450.....1460.....1470.....1480.....1490.....1500	1104

	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520	2530	2540	2550	2560	2570	2580	2590	2600	2610	2620	2630	2640	2650	2660	2670	2680	2690	2700	2710	2720	2730	2740	2750	2760	2770	2780	2790	2800	2810	2820	2830	2840	2850	2860	2870	2880	2890	2900	2910	2920	2930	2940	2950	2960	2970	2980	2990	3000	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230	3240	3250	3260	3270	3280	3290	3300	3310	3320	3330	3340	3350	3360	3370	3380	3390	3400	3410	3420	3430	3440	3450	3460	3470	3480	3490	3500	3510	3520	3530	3540	3550	3560	3570	3580	3590	3600	3610	3620	3630	3640	3650	3660	3670	3680	3690	3700	3710	3720	3730	3740	3750	3760	3770	3780	3790	3800	3810	3820	3830	3840	3850	3860	3870	3880	3890	3900	3910	3920	3930	3940	3950	3960	3970	3980	3990	4000	4010	4020	4030	4040	4050	4060	4070	4080	4090	4100	4110	4120	4130	4140	4150	4160	4170	4180	4190	4200	4210	4220	4230	4240	4250	4260
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<i>Pavo_muticus</i>	SKPAPP	-----	1144
<i>Pavo_cristatus</i>	SKPAPP	-----	1144
<i>Gallus_gallus</i>	SKGTAPS	FTTEKLQDAKVDGKLVLCRISSDPPASVSWTLDSKAIKSSKSIVISQEGTL	1195
<i>Anas_platyrhynchos</i>	SKGTAPS	FTTEKLQDAKVVDGKLVLCRISSDPPAAVTWTLDGKAIKSSKSIVISQEGTL	1140
<i>Chelonia_mydas</i>	HVVDGE	-----KLVLCRISSDPPAAVTWTLDGKAIKSSKSIVISQEGSL	1131
<i>Rhinatrema_bivittatum</i>	CVVDGE	-----KLVLCRVSSDPPAAVTWTLDGKAIKSSKSIVISQEGPL	1128
<i>Homo_sapiens</i>	HVAEGK	-----KLLVLCQVSSDPPATITWTNLGKTLKTTKFIIISQEGSL	1152
<i>Pan_troglodytes</i>	HVAEGK	-----KLLVLCQVSSDPPATITWTNLGKTLKTTKFIIISQEGSL	1152
<i>Macaca_mulatta</i>	RVAEGE	-----KLLVLCQVSSDPPATVWTNLGKTLKTTKFIVLSQEGSL	1152
<i>Callithrix_jacchus</i>	RVAEGE	-----KLLVLCQVSSDPPATITWTNLGKTLKTTKFIIISQEGSL	1174
<i>Equus_caballus</i>	HVAEGE	-----RLLLVCQVSSDPLATITWMLNGKTLKTTKFIIISQEGPL	1302
<i>Pteropus_alecto</i>	HVAEGE	-----KLLVLCQVSSDPPATITWTNLGKTLKTTKFIIISQEGSL	1221
<i>Bos_taurus</i>	HVAEGE	-----KLLVLCRVSSDPPATITWTNLGKTLKTTKFIVLSQEGSL	1362
<i>Heterocephalus_glaber</i>	HVAEGE	-----KLLVLCQVSSDPPATITWTNLGKTLKTTKFIIISQEDSV	1175
<i>Mus_musculus</i>	HVAEGE	-----KLLVLCQVSSDPPATVWTSNLGKTLKTTKFIVLAEQESR	1183
<i>Ornithorhynchus_anatinus</i>	HVAEGE	-----RLLELCRVSSADPPATVWTSNLGKTLKTTKFIVLATDGPL	1071
<i>Xenopus_tropicalis</i>	RVTIDGE	-----KLVLCQVTAEPPTVVWTLGKVIKSSKIVLSQEGSV	1209
	.....1570.....1580.....1590.....1600.....1610.....1620		

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	CSLTIEKVMPE <del>D</del> GGEYK <del>C</del> IAEN <del>A</del> AGKAECACKVLVED--TSS <del>T</del> KA <del>A</del> KPAEKKTKKPKTTL	1253
Anas_platyrhynchos	CSLTIEKVMPE <del>D</del> GGEYK <del>C</del> IAEN <del>A</del> AGKAECACKVLVED--SSA <del>T</del> KT <del>P</del> KPT <del>E</del> KKTKKPKTTL	1198
Chelonia_mydas	CSLTIDKALPE <del>D</del> EGGY <del>K</del> CIAEN <del>A</del> AGRAECACKVLVDD--PSP <del>K</del> KT <del>P</del> KS <del>A</del> EKKTKKSKSSL	1189
Rhinatrema_bivittatum	CSLTIDKALPE <del>D</del> EGGY <del>K</del> CIAEN <del>A</del> AGKAECACNVFVDD--APT <del>T</del> NA <del>A</del> KS <del>A</del> EKKIKKPKPTI	1186
Homo_sapiens	CSVSIEKALPEDRGLYKCVAKNDAGQAECSCQVTVDD--APASE <del>N</del> TKAPE <del>M</del> KSR <del>R</del> PKSSL	1210
Pan_troglodytes	CSVSIEKALPEDRGLYKCVAKNDAGQAECSCQVTVDD--APASE <del>N</del> TKAPE <del>M</del> KSR <del>R</del> PKSSL	1210
Macaca_mulatta	CSVSIEKALPEDRGLYKCVAKNDAGQAECSCQVTVDD--APASE <del>N</del> TKAPE <del>M</del> KSR <del>R</del> PKSSL	1210
Callithrix_jacchus	CSVSIEKALPEDRGLYKCVAKNDAGQAECSCQVTVDD--APASE <del>N</del> TKAPE <del>M</del> KSR <del>R</del> PKSSL	1232
Equus_caballus	CSLSIEKALPEDRGLYKCVAKNGAGQAECSCQVTVDG--APT <del>S</del> ENAKAGELKARRPKSSL	1360
Pteropus_alecto	CSVSIEKALPEDRGLYKCLAKNGAGQAECSCQVTVDA--APASE <del>N</del> AKAPE <del>M</del> KSR <del>R</del> PKSSL	1279
Bos_taurus	CSVSIEKALPEDRGLYKCVAKNSAGQAESSCQVTVDVDPAPT <del>S</del> ENAKAPE <del>M</del> KARRPKSSL	1422
Heterocephalus_glaber	CSVSIEKALPEDRGVYKCVAKNGAGQAACSCQVTVDD--AQAGE <del>N</del> TKAPE <del>L</del> KSR <del>R</del> SKSSL	1233
Mus_musculus	FSVSIEKALPEDRGLYKCVAKNSAGQAECSCQVTVDD--AQ <del>T</del> SEN <del>T</del> KAPE <del>M</del> KSR <del>R</del> PKSSL	1241
Ornithorhynchus_anatinus	CSVTIEKALPEDQGQYTCVAKNAAGQAECSCQVTVKG--APASA <del>Q</del> PKVP <del>E</del> MKARKARSSL	1129
Xenopus_tropicalis	CSLSIEKTFPEDEGQYLCAVENAAGRAECACNVTVED-----TSG <del>N</del> KGIK <del>S</del> KKPR <del>S</del> NA	1263
.....1630.....1640.....1650.....1660.....1670.....1680		

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	PPVLSTESSEATVKKKPPAKTPPKAATPPQITQFPEDRKVRAGESVELFAKVVGTA <del>P</del> ITC	1313
Anas_platyrhynchos	PPVLSTESSEATVKKKPPAKTPPKAATPPQITQFPEDRKVRAGESVELFAKVVGTA <del>P</del> ITC	1258
Chelonia_mydas	PPVLATES--EATVKKKPPAKTPPKAVLPPQIIQFPEDRKVRAGESVELFGKVGT <del>P</del> PLITC	1248
Rhinatrema_bivittatum	P-SLPTNENEATVKKKPPAKTPPKAAAPPQIILQFPEDRKVQAGESVELFCKVAGTQ <del>P</del> PLITC	1245
Homo_sapiens	PPVLGTES--DATVKKKPPAKTPPKAAMPQIIQFPEDQKVRAGESVELFGKVGTG <del>T</del> Q <del>P</del> ITC	1269
Pan_troglodytes	PPVLGTES--DATVKKKPPAKTPPKAAMPQIIQFPEDQKVRAGESVELFGKVGTG <del>T</del> Q <del>P</del> ITC	1269
Macaca_mulatta	PPVLGTES--DATVKKKPPAKTPPKAAMPQIIQFPEDQKVRAGESVELFGKVGTG <del>T</del> Q <del>P</del> ITC	1269
Callithrix_jacchus	PPVLGTES--DATVKKKPPAKTPPKAAMPQIIQFPEDQKVRAGESVELFGKVAGTQ <del>P</del> ITC	1291
Equus_caballus	PPVLGTES--DATVKKKPPAKTPPKAAMPQIIQFPEDQKVRAGESVELVGKVAGTQ <del>P</del> ITC	1419
Pteropus_alecto	PPVLGTES--DATVKKKPPAKTPPKAAMPQIIQFPEDQKVRAGESVELF <del>S</del> KVAGTQ <del>P</del> ITC	1338
Bos_taurus	PPVLGTES--DATVKKKPPAKTPPKAAMPQIIQFPEDQKVRAGESVELFGKVAGTQ <del>P</del> ITC	1481
Heterocephalus_glaber	PPVLGTES--DATVKKKPTPKTSPKAAMPQIIQFPEDQKVRAGEPV <del>E</del> LFGKVAGSQ <del>P</del> ITC	1292
Mus_musculus	PPVLGTES--DATVKKKPPAKTPTKAAMPQIIQFPEDQKVRAGEPV <del>E</del> LFGKVAGTQ <del>P</del> ITC	1300
Ornithorhynchus_anatinus	PTVLGNDG--DATVKKKPPAKTPPRAAMPSSITQFPEDQKVRAGEPV <del>K</del> LLCKVAGD <del>P</del> PLITC	1188
Xenopus_tropicalis	PLSNATEN--EATIKKKPPAKTPPKAASAPQIILQFPEDRKVKAGESVELLCKVGGTQ <del>P</del> ITC	1322
.....1690.....1700.....1710.....1720.....1730.....1740		

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	TWMKFRKQIQENEYIKIENAE <del>N</del> SSKLTISSTKQEHCGCYTLVVENKLGSRQAQVNLTVVD	1373
Anas_platyrhynchos	TWMKFRKQIQENEYIKIENAE <del>N</del> SSKLTISSTKQEHCGCYTLVVENKLGSRQAQVNLTVVD	1318
Chelonia_mydas	TWMKFRKQIQENEHIK <del>I</del> ENAE <del>N</del> SSKLTISSTKQEHCGCYTLVVENKLGSRQAQVNLTVVD	1308
Rhinatrema_bivittatum	KWMKFRKQIKENDYIKIENTENSSKLTITSARQEHCGCYTFVVENKLGNRQAQVNLTVFD	1305
Homo_sapiens	TWMKFRKQIQESEHMKVENSENGSKLTILAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1329
Pan_troglodytes	TWMKFRKQIQESEHMKVENSENGSKLTILAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1329
Macaca_mulatta	TWMKFRKQIQESEHMKVENSENGSKLTILAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1329
Callithrix_jacchus	TWMKFRKQIQESEHMKVENSENGSKLTILAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1351
Equus_caballus	TWMKFRKQIQESEHIKVENSENGSKLTILAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1479
Pteropus_alecto	TWMKFRKQIQESEHIKVENSESGSKLTILAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1398
Bos_taurus	TWMKFRKQIQDSEHIKVENSEQGSKLTIRAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1541
Heterocephalus_glaber	TWMKFRKQIQNSEHIKVENSEGGSKLTILAARQEHCGCYTLLVENKLGSRQAQVNLTVVD	1352
Mus_musculus	KWMKFRKQIQESEHIKVENGESGSKLTILAARQEHCGCYTLVVENKLGSRQAQVNLTVVD	1360
Ornithorhynchus_anatinus	TWMKFRKQIQESELMEIENTADSSKLTITAARQEHCGCYTLVVNNKLGSKQAQVNLTVVD	1248
Xenopus_tropicalis	MWMKFRKEIKESEFIK <del>I</del> ESTETS <del>K</del> LTISSARQEHCGCYTLVAENKQGSQAQVNLTVFD	1382
.....1750.....1760.....1770.....1780.....1790.....1800		

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Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYTVEIWNVSVDNKWTDLTTCRSTSF	1433
Anas_platyrhynchos	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYTVEIWNVSVDNKWTDLTTCRSTSF	1378
Chelonia_mydas	KPDPPAGKPCASDIQSSSLTLSWYGSSYDGGSAVQSYTVETWNSVDNKWTDLTTCRSTSY	1368
Rhinatrema_bivittatum	KPDPPAGQPCASDVKSSTLTLSWYGPTYDGGSVVQSYTLESWDTVDKKWADLTACRSTSY	1365
Homo_sapiens	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYSIEIWDSTNKTWKELATCRSTSF	1389
Pan_troglodytes	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYSIEIWDSTNKTWKELATCRSTSF	1389
Macaca_mulatta	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYSIEIWDSTNKTWKELATCRSTSF	1389
Callithrix_jacchus	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYSIEIWDSTNKTWKELATCRSTSF	1411
Equus_caballus	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYSVEIWDSTNKTWKELATCRSTSF	1539
Pteropus_alecto	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYSVEIWDSTNKTWKELATCRSTSF	1458
Bos_taurus	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYSVEIWDSTNKTWKELATCRSTSF	1601
Heterocephalus_glaber	KPDPPAGTIPCASDIRSASLILSWYGSSYDGGSAVQSYSVEIWNVSVDKMWKELATCRSTSF	1412
Mus_musculus	KPDPPAGTIPCASDIRSSSLTLSWYGSSYDGGSAVQSYNVEIWDSTEDKVKWELATCRSTSF	1420
Ornithorhynchus_anatinus	KPDPPAGTIPCVDVRSSTLTLSWYGSSYDGGSAVQSYTVEAWDSVERAWTPVVTCCSTAH	1308
Xenopus_tropicalis	KPDPPAGVPCASCMKGSVLTLWYGPYDGGSVVESYSVEIWDSTNKTWKELATCRSTSF	1442
	.....1810.....1820.....1830.....1840.....1850.....1860	

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	NVQDLQADREYKFRVRAANVYGISEPSQSESEVVKVGEKQEEELKEEEAELSDDEGKETEV	1493
Anas_platyrhynchos	NVQDLQADREYKFRVRAANVYGISEPSQSESELVKVGEKQEEELKEEEAELSDDEGKETEV	1438
Chelonia_mydas	NVKSLLADKEYKFRVRAANVYGISEPSQSESELVKVGEKQEEP--KDEAELSDDEGKETEV	1426
Rhinatrema_bivittatum	HIKNLLPDREYKFRVRRAINVHGTSEPSQSESELVKVGENKAEP--KDEVDVSDDE--ESEF	1421
Homo_sapiens	NVQDLLPDHEYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1447
Pan_troglodytes	NVQDLLPDHEYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1447
Macaca_mulatta	NVQDLLPDHEYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1447
Callithrix_jacchus	NVQDLLPDHEYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1469
Equus_caballus	NVQDLLPDREYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEI	1597
Pteropus_alecto	NVQDLLPDREYKFRVCAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1516
Bos_taurus	NVQDLLPDREYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1660
Heterocephalus_glaber	NIQDLLPDREYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1470
Mus_musculus	NVQDLLPDREYKFRVRRAINVYGTSEPSQSESELTVGEKPEE--PKDEVEVSDDEKEPEV	1478
Ornithorhynchus_anatinus	SVQDLLPGRQYRFRVRATNVYGTSEPSQSESDPTAVGEKPP--PKDDVELSDDEKEPEV	1366
Xenopus_tropicalis	NVENLLQDREYKFRVRATNIHGTSEPSQSESEFVPTYKEKEEE--HKEEEAEVSDDEKESEF	1501
	.....1870.....1880.....1890.....1900.....1910.....1920	

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	NYRTVTINTEQKVSVDVYNIEERLGS GKFGQVFRIVEKKTGKVWAGKFFKAYS AKEKENIR	1553
Anas_platyrhynchos	EYRTVTINTEQKVSVDVYNIEERLGS GKFGQVFRIVEKKTGKVWAGKFFKAYS AKEKENIR	1498
Chelonia_mydas	DYRTVTINTEQKVAEFYNIEERLGS GKFGQVFKLVEKKTGKVWAGKFFKAYS AKDKENIR	1486
Rhinatrema_bivittatum	DYRTVNINTTQKVTFDYDIEERLGTGKFGQVFRIVEKKTGKIWAGKFFKAYS AKDKESIR	1481
Homo_sapiens	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKVWAGKFFKAYS AKEKENIR	1507
Pan_troglodytes	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKVWAGKFFKAYS AKEKENIR	1507
Macaca_mulatta	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKIWAGKFFKAYS AKEKENIR	1507
Callithrix_jacchus	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKVWAGKFFKAYS AKEKENIR	1529
Equus_caballus	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKIWAGKFFKAYS AKEKETIR	1657
Pteropus_alecto	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKIWAGKFFKAYS AKEKENIR	1576
Bos_taurus	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKIWAGKFFKAYS AKEKENIR	1720
Heterocephalus_glaber	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKIWAGKFFKAYS AKEKENIR	1530
Mus_musculus	DYRTVTINTEQKVSDFYDIEERLGS GKFGQVFRIVEKKTGKIWAGKFFKAYS AKEKDNIR	1538
Ornithorhynchus_anatinus	DYRTVTINTEQKVADFYDIEERLGS GKFGQVFRIVEKKTGKVWAGKFLKAYS AKDKEDIR	1426
Xenopus_tropicalis	EYRDVTILNSSEKVTDDYDVEERLGTGKFGQVFRIVEKKSRIYAGKFFKAYS AKDKEGIR	1561
	.....1930.....1940.....1950.....1960.....1970.....1980	

## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	DEISIMNCLHHPKLVQCVDAFEKANIVMVLEMVSGGELFERIIDEDFELTERECIKYMR	1613
Anas_platyrhynchos	DEISIMNCLHHPKLVQCVDAFEKANIVMVLEMVSGGELFERIIDEDFELTERECIKYMR	1558
Chelonia_mydas	QEIGIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMR	1546
Rhinatrema_bivittatum	QEISIMNCLHHPKLVQCVDAFEKCDIVMVLELVSGGELFERIIDEDFELSEREVIKYM	1541
Homo_sapiens	QEISIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMR	1567
Pan_troglodytes	QEISIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMR	1567
Macaca_mulatta	QEISIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMR	1567
Callithrix_jacchus	QEISIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMR	1589
Equus_caballus	QEIGIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIQYMR	1717
Pteropus_alecto	QEISIMNCLHHPKLVQCVDAFEDKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMK	1636
Bos_taurus	QEISIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMK	1780
Heterocephalus_glaber	EEISIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIQYMR	1590
Mus_musculus	QEISIMNCLHHPKLVQCVDAFEKANIVMVLEIVSGGELFERIIDEDFELTERECIKYMR	1598
Ornithorhynchus_anatinus	REIGIMNCLHHPKLVQCVDAFEDKANIVMVLEIVSGGELFERIIDEDFELTERECIQYMK	1486
Xenopus_tropicalis	QEIAIMNCLHHPKLVQCVDAFESKADVMVLELVSGGELFERIIDEDFELSEREVIKYM	1621
	.....1990.....2000.....2010.....2020.....2030.....2040	

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTSIKLIDFGLARRLESAGSLKVLFGTPEF	1673
Anas_platyrhynchos	QISEGVQYIHKQ GIVHLDLKPENIMCVNKTGTSIKLIDFGLARRLESAGSLKVLFGTPEF	1618
Chelonia_mydas	QISEGVQYIHKQ GIVHLDLKPENIMCVNKTGARIKLIDFGLARRLESTGSLKVLFGTPEF	1606
Rhinatrema_bivittatum	QISEGV EFIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENTPNLKVLFGTPEF	1601
Homo_sapiens	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1627
Pan_troglodytes	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1627
Macaca_mulatta	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1627
Callithrix_jacchus	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1649
Equus_caballus	QISEGVQYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARKLENAGSLKVLFGTPEF	1777
Pteropus_alecto	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1696
Bos_taurus	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1840
Heterocephalus_glaber	QISEGVAYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1650
Mus_musculus	QISEGV EYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1658
Ornithorhynchus_anatinus	QISEGVQYIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLENAGSLKVLFGTPEF	1546
Xenopus_tropicalis	QICEGV EFIHKQ GIVHLDLKPENIMCVNKTGTRIKLIDFGLARRLESCPNLKVLFGTPEF	1681
	.....2050.....2060.....2070.....2080.....2090.....2100	

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	VAPEVINYEPIGYETDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1733
Anas_platyrhynchos	VAPEVINYEPIGYETDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1678
Chelonia_mydas	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1666
Rhinatrema_bivittatum	VAPEVINYEPISYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1661
Homo_sapiens	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1687
Pan_troglodytes	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1687
Macaca_mulatta	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1687
Callithrix_jacchus	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1709
Equus_caballus	VAPEVINYEPISYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1837
Pteropus_alecto	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1756
Bos_taurus	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1900
Heterocephalus_glaber	VAPEVINYEPISYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1710
Mus_musculus	VAPEVINYEPIGYATDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1718
Ornithorhynchus_anatinus	VAPEVINYEPIGYPTDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1606
Xenopus_tropicalis	VAPEVINYEPIGYSTDMSIGVICIYLVSGLSPFMGDNDNETLANVTSATWDFDDEAFDE	1741
	.....2110.....2120.....2130.....2140.....2150.....2160	



# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	ISDDAKDFISNLLKKDKMSRLNCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1793
Anas_platyrhynchos	ISDDAKDFISNLLKKDKMSRLNCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1738
Chelonia_mydas	ISGDAKDFISNLLKKDKMSRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1726
Rhinatrema_bivittatum	ISEDAKNFISLLKKDKMKNRLNCPQCLQHSWLQODTKTMEVKTLSKDRIKKYMARRKWQK	1721
Homo_sapiens	ISDDAKDFISNLLKKDKMKNRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1747
Pan_troglodytes	ISDDAKDFISNLLKKDKMKNRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1747
Macaca_mulatta	ISDDAKDFISNLLKKDKMKNRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1747
Callithrix_jacchus	ISDDAKDFISNLLKKDKMKNRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1769
Equus_caballus	ISDDAKDFISNLLKKDKMKNRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1897
Pteropus_alecto	ISDDAKDFISNLLKKDKMKNRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1816
Bos_taurus	ISDDAKDFISNLLKKDKMKNRLNCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1960
Heterocephalus_glaber	ISEDAKDFISNLLKKDKMKNRLNCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1770
Mus_musculus	ISDDAKDFISNLLKKDKMKNRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1778
Ornithorhynchus_anatinus	ISDDAKDFISNLLKKDKMSRLDCTQCLQHPWLQKDTKNMEAKKLSKDRMKKYMARRKWQK	1666
Xenopus_tropicalis	ISEEAKNLISLLKKDKMKNRLNCTQCLQHSWLQODTATMEAKKLSKDRMKKYMARRKWQK	1801
.....2170.....2180.....2190.....2200.....2210.....2220		

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	TGHAVRAIGRLSSMAMISGMSGRKASGSSTSPINAD---KVENEDAFLEEVAAEEKPHV	1849
Anas_platyrhynchos	TGHAVRAIGRLSSMAMISGMSGRKASGSSTSPINAD---KLENEDAFLEEVAAEEKPHV	1794
Chelonia_mydas	TGHAVRAIGRLSSMAMISGLSGRKASTSPTSPINKDKVDLDDDAARAFLEAAEEKPHV	1786
Rhinatrema_bivittatum	TGHAVRAIGRLSSMAMISGLSGRKSSASSTSPINSEKSETEEDVAHVFLVEVDEERNV	1781
Homo_sapiens	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	1807
Pan_troglodytes	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	1807
Macaca_mulatta	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	1807
Callithrix_jacchus	TGNAVRAIGRLSSMAMISGLSGRKASTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	1829
Equus_caballus	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	1957
Pteropus_alecto	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	1876
Bos_taurus	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	2020
Heterocephalus_glaber	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHI	1830
Mus_musculus	TGNAVRAIGRLSSMAMISGLSGRKSSSTGSPTSPINAEKLESEEDVSAFLEAVAAEEKPHV	1838
Ornithorhynchus_anatinus	TGNAVRAIGRLSSMAMISGLSGRKSSSGSPTSPINADKLETDDASQVFLEAVAAEEKPHV	1726
Xenopus_tropicalis	TGHAVRAIGRLSSMAMISGLSARKSSGSAPSSPLSAELEANEEDN-QAFLESVTEEKPPA	1860
.....2230.....2240.....2250.....2260.....2270.....2280		

Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	KPYFTKTILDMEVVEGSAARFDCKIEGYDPPEVMWYKDDQPVKESRHFQIDYDEEGNCSL	1909
Anas_platyrhynchos	KPYFTKTILDMEVVEGSAARFDCKIEGYDPPEVMWYKDDQPVKESRHFQIDYDEEGNCSL	1854
Chelonia_mydas	KPYFTKTILDIEVVEGSAARFDCKIEGYDPPEVIWYKDDQSIKESRHFQIDYDEEGNCSL	1846
Rhinatrema_bivittatum	KPYFTKTILLNLEVVEGSAARFDCKIEGYDPPEVIWYKDDQPIKESRHFQIDYDEEGNCAL	1841
Homo_sapiens	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	1867
Pan_troglodytes	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	1867
Macaca_mulatta	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	1867
Callithrix_jacchus	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	1889
Equus_caballus	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	2017
Pteropus_alecto	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	1936
Bos_taurus	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	2080
Heterocephalus_glaber	KPYFSKTILDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	1890
Mus_musculus	KPYFSKTIRDLEVVEGSAARFDCKIEGYDPPEVWVFKDDQSIRESRHFQIDYDEEGNCSL	1898
Ornithorhynchus_anatinus	KPYFSKTILDIEVVEGSAARFDCKIEGHPDPEVWVFKDEHSIKESRHFQIDYDEEGNCSL	1786
Xenopus_tropicalis	KPYFTKTILDIEVVEGSAARFDCKIEGHPDPEVIWYKDDQPIKESRHFQIDYDEEGNCSL	1920
.....2290.....2300.....2310.....2320.....2330.....2340		

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus	-----	1144
Pavo_cristatus	-----	1144
Gallus_gallus	TISEVCGDDDAKYTCKAVNSLGEATCTAELLVETMGKEGEGE-----GEGEEDEEEEEE	1963
Anas_platyrhynchos	TISEVCGDDDAKYTCKAVNSLGEATCTAELLVETMGKEGEGE-----GEEDEEEEEEE--	1906
Chelonia_mydas	TISEVCGDDDAKYTCKAVNSLGEATCTAELLVETMGKEEEEE-----EEEE-----	1892
Rhinatrema_bivittatum	TISEVCGDDDAKYTCKAVNSLGDATCTAELIVEVMGKSDEEE-----EEEEEEEEEE--	1893
Homo_sapiens	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEE-----	1914
Pan_troglodytes	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEE-----	1914
Macaca_mulatta	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEE-----	1914
Callithrix_jacchus	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEE-----	1936
Equus_caballus	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEEEEEEEE--	2069
Pteropus_alecto	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEEEEEE--	1985
Bos_taurus	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEEEEEE--	2129
Heterocephalus_glaber	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGE-----GEEEE-----	1936
Mus_musculus	IISDVCGDDDAKYTCKAVNSLGEATCTAELIVETME-EGEGEGEG--GEEEEEEEE--	1950
Ornithorhynchus_anatinus	TIADVSGDDDAKYTCKAVNCAGEATCAELIVETMASEGGGGGAGAGGDDDDQEEEEEE--	1844
Xenopus_tropicalis	TISEVCGDDDAKYTCKAANS LGDTTCTAELIVEVMAEEEEEE-----EEEEEE-----	1969
	.....2350.....2360.....2370.....2380.....2390.....2400	