

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 1 of 30

Pavo_muticus	-MEEARTRKLEAGRAKFAHFRERKAKGNVAQPQKKTPKRRKGSSVHTHDIPQEEHAVTAQG	59
Pavo_cristatus	-MEEARTRKLEAGRAKFAHFRERKAKGNVAQPQKKTPKRRKGSSVHTHDIPQEEHAVTAQG	59
Gallus_gallus	-MEEARMRKLEAGRAKFAHFRERKAKSNVTQSQKKTKRRKGSSVHTHDVPOEEHAAMGQG	59
Chelonia_mydas	MDAEERRRKLEAGRAKLAHFRQRKTGDNVTQSQKKAARKRGSSDHTQDIPKEECMIVAQD	60
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	
	1.....10.....20.....30.....40.....50.....60	

Pavo_muticus	CDVG---KGIESKAEDTNFLETATETEGSADLSIQDTVIDPAAEKVAVHSAAECSSELDD	115
Pavo_cristatus	CDVG---KGIESKAEDTNFLETATETEGSADLSIQDTVIDPAAEKVAVHSAAECSSELDD	115
Gallus_gallus	CDVG---KGIESKAEDTNFLETTTETEGSADLSIQDIVVNLAAEKVAVHSAAEYSSELDD	115
Chelonia_mydas	SDVLTELNISVESKTEET---ETRSESKADVLDLNPDLVDDHASEKDVLCPIKEYDQLDV	117
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	-----MSLECSSLNLSDYHGMSD	18
Rhinatrema_bivittatum	-----	
	.....70.....80.....90.....100.....110.....120	

Pavo_muticus	KMCQTRIAELEKRLLEKQQAIERLTVQMDLEQELSOHR--DSMQLQETTVOEQNEVIRK	173
Pavo_cristatus	KMCQTRIAELEKRLLEKQQAIERLTVQMDLEQELSOHR--DSMQLQETTVOEQNEVIRK	173
Gallus_gallus	KMRQTRIAELEKRLLEKQQAVGRLTVQMNLEQELSOHR--DSMQLQETTVOEQNEVIRK	173
Chelonia_mydas	QMCRNRIVELEKRLLDKQEAERLTAEVDDLLEQLAQHSGATHLQELTAQVQERNEIIAQ	177
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	VEEGDHMNHEVFDLYEEDGTEPENKSQLQKQVLOTANHCNDMTQLSCN--	67
Rhinatrema_bivittatum	-----	
	.....130.....140.....150.....160.....170.....180	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 2 of 30

Pavo_muticus	LTNCLQRRKDWDDLQEEALHVADQIHGLQLQLHGVNMLKNKSGKKEVLEAQQQMSLF	233
Pavo_cristatus	LTNCLQRRKDWDDLQEEALHVADQIHGLQLQLHGVNMLKNKSGKKEVLEAQQQMSLF	233
Gallus_gallus	LTSCLOQTRKDWDDLQEEASHVADQIHGLQLQLHEVNVMLKSKSGKKEVLEAQQQMSLF	233
Chelonia_mydas	LTSNLCQARQNRDDIQEEASLLADQIHGLQLQLHEN	213
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	---LQQLQGSQQLQDAEPLNQIHTMEGPLHDATDVLRN---	105
Rhinatrema_bivittatum	-----	
	.....190.....200.....210.....220.....230.....240	

Pavo_muticus	QNSLQEQNTLLEMLHQRADHLEVLQSSQKNTKDKEYLLALTEEGMKDTIQQLYESIGEK	293
Pavo_cristatus	QNSLQEQNTLLEMLHQRADHLEVLQSSQKNTKDKEYLLALTEEGMKDTIQQLYESIGEK	293
Gallus_gallus	QSSLQEQNARLEMLHQRADHLEVLQSSQKNTKDKEYLLALTEEGMKDTIQQLYESVGEK	293
Chelonia_mydas	-----TKDKESLLAQKEENLNNIMQMYNDIGEK	242
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	-----NTDLGLFDNRACDLEKELENFKKATKDK	133
Rhinatrema_bivittatum	-----	
	.....250.....260.....270.....280.....290.....300	

Pavo_muticus	EDCIKSLQDLLASERFNLSVLQRTLSLRDSEITELKNEITLTKMKEQQHIEELKVNHEKD	353
Pavo_cristatus	EDCIKSLQDLLASERFNLSVLQRTLSLRDSEITELKNEITLTKMKEQQHIEELKVNHEKD	353
Gallus_gallus	GDCIKSLQDLLASERFNLSILQRTLSLRDSEIKELKNEITLTKMKEQQHIEELKVNHEKD	353
Chelonia_mydas	EETIKGLQDIVKSERSNLSLLQHTLSLRDTEIMELKNEIASAKMKEQYIEELKANHKRD	302
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	ENQIAKLENQMKEKEKKLEILQEKLEISEKSVSVLEQELSENVEVVKLKHKLSGYMQPV	193
Rhinatrema_bivittatum	-----	
	.....310.....320.....330.....340.....350.....360	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 3 of 30

Pavo_muticus	VCRQLEHLKAELEKCHRKEIAEAKQVYEEEMILKYKSELEQLKKEHSALNSEEHIONLNR	413
Pavo_cristatus	VCRQLEHLKAELEKCHRKEIAEAKQIYEEEMILKYKSELEQLKKEHSALNSEEHIONLNR	413
Gallus_gallus	VCRQIEHLKVELEKCHRKETAEANQIYEEEMILKYKSEPGQLKKELTALNSEERIONLNR	413
Chelonia_mydas	ICROLQDLRTGLEESYRKEIVRVKEDCEEEMNKKYKNELEQIKRELSALNSDEDFONLNA	362
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	EESSTITTSNQETIAITGEDSIQSLSVIADLRQKLEHSERDLSSKKLQDQMVFEFEREKGCWE	253
Rhinatrema_bivittatum	-----	
	.....370.....380.....390.....400.....410.....420	

Pavo_muticus	IIINLNNLSLHESEISKENLRKELENQQENFOREKTEVEIQKVLINLKSQLSKAEEOVK	473
Pavo_cristatus	IIINLNNLSLHESEISKENLRKELENQQENFOREKTEVEIQKVLINDLSQLSKAEEOVK	473
Gallus_gallus	IIINLNNLSLHESEISKENLRKELVNQQENFOREKSEVEMQKVLINDLSQLSKAEEOVK	473
Chelonia_mydas	IIIDLNNKLHSEIHRNLCQKLNQMEDFORERSEIELRYKDLVEDLKLQLTNAEKOAK	422
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	HKHNDIVTINLTITLQHMEEQAREAAAQDKQEKERLNEELRLTKDKLRLEAEHNOVLKIQH	313
Rhinatrema_bivittatum	-----	
	.....430.....440.....450.....460.....470.....480	

Pavo_muticus	EAQQYEQEKQHLNNEEIQKLNIFYRELNKKRLFEEAKSKDAKQKHDEETVSN-----KNLR	528
Pavo_cristatus	EAQQYEQEKQHLNNEEIQKLNIFYRELNKKRLFEEAKSKDAKQKHDEETVSN-----KNLR	528
Gallus_gallus	EAQRYEQEKQCLNNEEIQKLHYFIRELNKKRLFEEAKSKDAKQKHDEETVSN-----KNLR	528
Chelonia_mydas	EAQESKQEKQKEYLNDEIQKLNSFIQELSEKLLLETKNNKDLKHKHDEETILYNLKLKKLEQ	482
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	DKDIQLYLTKLQNLEREQEEEMNEKLANASCVELEKESTDISDKYEVSKHALRHELEDLKK	373
Rhinatrema_bivittatum	-----	
	.....490.....500.....510.....520.....530.....540	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 4 of 30

Pavo_muticus	EQITLPDILELQAKLEEMLNERRFR--EELSDKVDFOCQPRMDSLKDESGEIVR---	583
Pavo_cristatus	EQITLPDILELQAKLEEMLNERRFR--EELSDKVDFOCQPRMDSLKDESGEIVR---	583
Gallus_gallus	EIRTLDPDILELQTMKLEKMLNEPHRFK--EELDPDKLDFQCQLRIDSVRDESEEIVC---	583
Chelonia_mydas	EEKLLQEVSSASQKAELEKMQNKLCOHEGEIQLVREELEFOHGLRVDSFKAELEDIKKNLK	542
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	NLN-----RVKARKEHENYETVLHNIEDHDRALSPISD	406
Rhinatrema_bivittatum	-----	
	.....550.....560.....570.....580.....590.....600	

Pavo_muticus	--SKIREHNESSGDHLSEELPELGFFASDEEILSKYLVFTGRPEESYVSGCSEGYTIEE	641
Pavo_cristatus	--SKIREHNESSGDHLSEELPELGFFASDEEILSKYLVFTGRPEESYVSGCSEGYTIEE	641
Gallus_gallus	--SKIREHNESSGDHLSEELPELGFFFTDEEILSKYLVFTGRPEESYVSGCSEGYTIEE	641
Chelonia_mydas	KVKAEDHKSYEADNRSEENTVELGSFIEDADILTKYLVSTEREQSYISDNSELIDTEE	602
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	TLDCMDKYLVPSTSIESDSQEHAFELDSDFVLEQSLSSSTTEVNVNLLSSPMAITNVLAG	466
Rhinatrema_bivittatum	-----	
	.....610.....620.....630.....640.....650.....660	

Pavo_muticus	DKRSRFGLDSSALSDFKPPQNFNFDLDEKPCGSLTKETFEETKVEAEAFISFLSDG	701
Pavo_cristatus	DKRSRFGLDSSALSDFKPPQNFNFDLDEKPCGSLTKETFEETKVEAEAFISFLSDG	701
Gallus_gallus	DKHSRSGLDSSNVFSDPSTDFKPPQNFNFDLDEKPCGSLTKETFEETKMEAEAFISFLSDG	701
Chelonia_mydas	D--RFVLDSNIILESNDSTADKLMFSPDEQKCVSSVLQGTSDTELEAEAFASFLSGD	659
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----MSTTAPCHERTRPGGICRRGLAFPA	25
Mus_musculus	-----	
Rattus_norvegicus	-----	
Canis_lupus_familiaris	-----	
Equus_caballus	-----	
Bos_taurus	-----	
Xenopus_tropicalis	GASLGTSLDPEYFAVYLSGNLRSAPYNEFSTMCDSESLQKCAVLVEQLNDREQQLQEC	526
Rhinatrema_bivittatum	-----	
	.....670.....680.....690.....700.....710.....720	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 5 of 30

Pavo_muticus	SPLQNKISDYGDVKDDERACVVERCVKLTEQLHKKESALKKSHQETQEAVEKWKKIIAEL	761
Pavo_cristatus	SPLQNKISDYGDVKDDERACVVERCVKLTEQLHKKESALKKSHQETQEAVEKWKKIIAEL	761
Gallus_gallus	SPLQNKISDYGDVKDDERACVLERCVKLTEQLHKKESALKKSHQETQEAVEKWKKVMAEL	761
Chelonia_mydas	SLLOSEVSDCKEVKDEERAGLMERCVKLFKELSEKESALNKSYQETQEALEKWEKATAEL	719
Homo_sapiens	-----MEVEQEORRRKVEAG-----	15
Pan_troglodytes	-----MEVEQEORRRKVEAG-----	15
Macaca_mulatta	-----MEVEQEORRRKVEAG-----	15
Callithrix_jacchus	GSAGSRLLAAILNPPLSARARPLRGHSQSAAGTRGASRAGRGAEPASATGRARSTPGG	85
Mus_musculus	-----MEDEQEORRRKVEAG-----	15
Rattus_norvegicus	-----MEDEQEORRRKVEAG-----	15
Canis_lupus_familiaris	-----MEDEQEORRRKVEAG-----	16
Equus_caballus	-----MEDEQEORRRKVEAG-----	16
Bos_taurus	-----MEDEQEORRRKVEAG-----	16
Xenopus_tropicalis	SALEEALVKWSEVTNELAAAKLELEIEKSKGGDLKKHELIVEELQSERDALRKKIVALET	586
Rhinatrema_bivittatum	-----	
	.....730.....740.....750.....760.....770.....780	

Pavo_muticus	CEINVELNKEREARLCCEEQLLOKTEREKELNINLLVKQODEDGSQPYCVVEPLAQAS	821
Pavo_cristatus	CEINVELNKEREARLCCEEQLLOKTEREKELNINLLVKQODEDGSQPYCVVEPLAQAS	821
Gallus_gallus	CEINVELNKEREARLCCEEQLLOKTEREKELNINLLVKQODEDGSQSSSVTEPIAQAS	821
Chelonia_mydas	SITHLELNKEREARVRCCEELDQEKKEKELENKINFLEKOGED--RDRIVCIHELGLGI	777
Homo_sapiens	-----	15
Pan_troglodytes	-----	15
Macaca_mulatta	-----	15
Callithrix_jacchus	AGVCGYQEEVVRVLGRRRLDPLVTPAP-----	111
Mus_musculus	-----	15
Rattus_norvegicus	-----	15
Canis_lupus_familiaris	-----	16
Equus_caballus	-----	16
Bos_taurus	-----	16
Xenopus_tropicalis	KSNVQDQNKCG-----	597
Rhinatrema_bivittatum	-----	
	.....790.....800.....810.....820.....830.....840	

Pavo_muticus	KSSTWQQMVKDLQEERQKSSAWQEMVKDLREEKEMLEQLRTQEQLVKEVQEQKVASDSV	881
Pavo_cristatus	KSSTWQQMVKDLQEERQKSSAWQEMVKDLREEKEMLEQLRTQEQLVKEVQEQKVASDSV	881
Gallus_gallus	KSSTWQQMVKDLQEERQKSSAWQEMVKELQEEKEMLEQLRTQEQLVKEVQEQKIASDSV	881
Chelonia_mydas	KAS-----KSHTWQEMIKHFKQERETLMMQLRAQEQLVKEVQEQKIASDSV	823
Homo_sapiens	-----RTKLAHFRQRKTKGDSS	32
Pan_troglodytes	-----RTKLAHFRQRKTKGDSS	32
Macaca_mulatta	-----RTKLAHFRQRKTKGDGS	32
Callithrix_jacchus	-----FGPGWLGLAHFRQRKTKGDGA	132
Mus_musculus	-----RAKLANFRQRKTKGDCP	32
Rattus_norvegicus	-----RAKLANFRQRKTKGDGP	32
Canis_lupus_familiaris	-----RAKLAHFRQRKTKGDCA	33
Equus_caballus	-----RAKLAHFRQRKTKGDCV	33
Bos_taurus	-----RAKLAHFRQRKTKGDCT	33
Xenopus_tropicalis	-----DKFCHSEILKNPLPSEDTLMQL	620
Rhinatrema_bivittatum	-----	
	.....850.....860.....870.....880.....890.....900	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 14:16:22 2022

Page 6 of 30

Pavo_muticus	TSEVQTLFGRQLAALQSQRDRMONQLDAQKAKNQRI	TELLGQKTILEETVLKEQELLKAE	941
Pavo_cristatus	TSEVQTLFGRQLAALQSQRDRMONQLDAQKAKNQRI	TELLGQKTILEETMLKEQELLKAE	941
Gallus_gallus	TSEVQTLFGRQLAALQSQRDRMONQLDAQKAKNQRI	TELLGQKTILEETMLKEQALLKAE	941
Chelonia_mydas	TSEVQSLFGRQLAALQSQRDOMQAQLDVQKAKNQTM	ELLGQKTILEETLLKEQEALKAE	883
Homo_sapiens	HSEKKTAKRKGS	SAVDASVQE-----ESPVTIKED--SALCGGGDICKSTSCDDTPDGAGG	84
Pan_troglodytes	HSEKKTAKRKGS	SAVNASVQE-----ESPVTIKED--SALCGGGDICKSTSCDDTPDGAGG	84
Macaca_mulatta	HSEKKTAKRKGS	SAVDAPVQE-----ESPIAKED--RALRGGGDICKSTSCDDTPDGAGG	84
Callithrix_jacchus	HSEKKTAKRKGS	SAVAAPVQE-----ESPVAKD--SEARGGGDIYKSPSCDHTPDGAGG	184
Mus_musculus	NSKKKTAKRKGS	SAVHASVQE-----EGSVATPN--SELPQGGAVFESPSCSNILEGTRG	84
Rattus_norvegicus	NSKKKTAKRKGS	SAVHASVQE-----EGSVAPPN--SELPQGAAVSERESCGNTILEGTGG	84
Canis_lupus_familiaris	YPKKKTAKRKGP	PAVDAPVQE-----ESPVATED--GGLLGRGGDVCRDTS	85
Equus_caballus	HSKKKTAKRKGS	SVDAPVQE-----ESPLVAK--GGLLG--GGDVCESTSCGDTPNGAG-	83
Bos_taurus	HSKKTPAKRKGT	TVNAPVTE-----ESPVAAPGNTGPLG--GLDIGKNPTCSDTPDGAE-	85
Xenopus_tropicalis	LEEKKSLQKRLS	SIEQELGKATL	680
Rhinatrema_bivittatum	-----	-----	

.....910.....920.....930.....940.....950.....960

Pavo_muticus	INNKEQDLALLVKEKTALGERLSVMEEDLVKA	EKALAANASIIADLEKNIHEVNTEVQNV	1001
Pavo_cristatus	INNKEQDLALLVKEKTALGERLSVMEEDLVKA	EKALAANASIIADLEKNIHEVNTEVQNV	1001
Gallus_gallus	INNKEQDLALLVKEKTALGERLSVMEEDLVKA	EKALAANASIIADLEKNIHEVNTEVQNV	1001
Chelonia_mydas	INNKEQSLTLTLKENITLQERLC	CAVEONLIKA	937
Homo_sapiens	AFAAQPEDCDGEKREDLEQLQKQ	---VNDHPPEQ	116
Pan_troglodytes	AFAAQPEDCDGEKREDLEQLQKQ	---VNDHPPEQ	116
Macaca_mulatta	AFAAQLED	RDGEKREDLEQLQKQ---VSDHPPEQ	141
Callithrix_jacchus	AFAAQLED	CDGEKREDLEQLHHHS	231
Mus_musculus	ASAAQEQ	-----	91
Rattus_norvegicus	AFAAQEQ	-----	91
Canis_lupus_familiaris	--AAQDR	-----	90
Equus_caballus	--AVQLED	PDGERTEDSELPQAL	105
Bos_taurus	--AAQLQ	-----	90
Xenopus_tropicalis	GVEQQLLCQAIKEKEAEFHERERSLQEEVSVLKQ	KAELN	721
Rhinatrema_bivittatum	-----	-----	

.....970.....980.....990.....1000.....1010.....1020

Pavo_muticus	KEAQECERLKYEDRLNFN	NMEINKLHAEIKAKSTEYSEKESQLTEEIAHLNKIRLELENY	1061
Pavo_cristatus	KEAQECERLKYEDRLNFN	NMEINKLHAEIKAKSTEYSEKESQLTEEIAHLNKVRLELENY	1061
Gallus_gallus	KEVQECERLSYEDRLN	LNNREINKLHAEIKAKSTEFGEKESQLIEEIAHLKKVHLELENY	1061
Chelonia_mydas	EKALECERVEFE	EKLKSSNLELQKLNIE	997
Homo_sapiens	-CGMFTVSDHPPEQ	HGMFTVGDHPPEQ	175
Pan_troglodytes	-CGMFTVSDHQPE	-----	128
Macaca_mulatta	QRMFTVSDHPPEQ	QRMFTVSDHPPEQ	201
Callithrix_jacchus	QCGTITISDHHPEQ	RGVITISDHHPEQ	291
Mus_musculus	-----	-----	91
Rattus_norvegicus	-----	-----	91
Canis_lupus_familiaris	-----	-----	90
Equus_caballus	-----	-----	105
Bos_taurus	-----	-----	90
Xenopus_tropicalis	-----	-----	721
Rhinatrema_bivittatum	-----	-----	

.....1030.....1040.....1050.....1060.....1070.....1080

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 7 of 30

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Pavo_muticus      LRESFQS-VQDAKEAQSSEMMNYYKEEIVKMETQHLAELTKLSLTHKKEIEELNAEIKDKV 1120
Pavo_cristatus    LRESFQS-VQDAKEAQSSEMMNYYKEEIVKMETQHLAELTKLSLTHKKEIEELNAEIKDKV 1120
Gallus_gallus     LRESFQS-VQDAKKAQCEMMNYYKEEIVKMESQHLAELTKLSLTHKKEIEELNAEIKDKV 1120
Chelonia_mydas    LQETVQKSAQAIQEVQSEMRRHYYEEIEISKMESRHLSSETTKMNLVHQEEIEELNAEIKDKV 1057
Homo_sapiens      DHQPEQR-----GMFTVSDHTPEQ 194
Pan_troglodytes   -----Q 129
Macaca_mulatta    DPHPEQR-----GIFTVSDPHPEQ 220
Callithrix_jacchus DHHPEQR-----GVITVSDHHPGQ 310
Mus_musculus      ----- 91
Rattus_norvegicus ----- 91
Canis_lupus_familiaris ----- 90
Equus_caballus    ----- 105
Bos_taurus        ----- 90
Xenopus_tropicalis -----RLQAEIHQ 729
Rhinatrema_bivittatum -----
.....1090.....1100.....1110.....1120.....1130.....1140

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Pavo_muticus      EKQKKLEEEERVEQLALVKKVHEREHDREISELITKHKEEMEELRAELNKEKLHLLDELOQ 1180
Pavo_cristatus    EKQKKLEEEERVEQLALVKKVHEREHDREISELITKHKEEMEELRAELNKEKLHLLDELOQ 1180
Gallus_gallus     EKQKKLEEEERVEQLALVKKVHEREHDREISELIAKHKEEMEELRAELHKEKLHLLDELOQ 1180
Chelonia_mydas    EKQQNLEAEERKEQIGLIKKVHEREHDREIAELIIKHEDEMKELRALIKKQQQLLDELOQ 1117
Homo_sapiens      RGIFTISDHPAEQRMFTKECEQECELAIITDLESGREDEAGLHQS----- 239
Pan_troglodytes   RGMFTISDHPGEQRMFTKECEQECELAIITDLESGREDEAGLQSS----- 174
Macaca_mulatta    RGIFTVSDPHPEQREVITKECKQEFELAIADLQSSREEEAGLQSS----- 265
Callithrix_jacchus CGTITISDHHPEQRTITKECEQECELAVADMESRCEDEAGPQSS----- 355
Mus_musculus      -----EDCELDVTDLGQQQ--TQPPPP----- 112
Rattus_norvegicus -----QDCELGVTDLGQQQPQPPPP----- 114
Canis_lupus_familiaris -----EQDCKLEIAQPMGRQEDQAGQQQVA----- 116
Equus_caballus    -----GGDSLEQPGVIIKECEQERDPAGAEILSRQEEAGRQRAV----- 146
Bos_taurus        -----EPSRERTPPKLDGHCAEQPGVMT----- 113
Xenopus_tropicalis QTFSLPVCVSHKDELPHVHSDMSTNPQLRNNPVEGTSTDLSTKQAS----- 776
Rhinatrema_bivittatum -----
.....1150.....1160.....1170.....1180.....1190.....1200

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Pavo_muticus      QMAATHKAEIERAQLQSOTLHSLLEAVRLSLNNLHTSLELTQSNLRKEKETALVELRE 1240
Pavo_cristatus    QMAATHKAEIERAQLQSOTLHSLLEAVRLSLNNLHTSLELTQSNLRKEKETALVELRE 1240
Gallus_gallus     QMAATHKAEIEYAQLQSOTLHSLLEALRLSLNNLHTSLELTQSNLRKEKETALVELRE 1240
Chelonia_mydas    QMEGTHKTEMQHAQLQSOTLHNLLEGLRLSLTNMHTSLELMQSNLRKEKETALVELRE 1177
Homo_sapiens      -----QAVHGLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRE 282
Pan_troglodytes   -----QAVHGLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRE 217
Macaca_mulatta    -----QAVHGLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRE 308
Callithrix_jacchus -----QAVHGLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRE 398
Mus_musculus      -----QTAHSLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRE 155
Rattus_norvegicus -----QTAHSLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRE 157
Canis_lupus_familiaris -VELRQPAGMQQVQLQTPVPSLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRA 175
Equus_caballus    -AELRQLTEMH-----QVPVPLELEALRLSLSNMHTAQLELTQANLQKEKETALTELRE 199
Bos_taurus        -----KELEVLRLSLSDMHAARLERTQAHLOREKEAALAEHLHA 153
Xenopus_tropicalis -----LQROSEHHMEMEALRLSLTNMHTAHLELCQANLOREKENALVOLRE 822
Rhinatrema_bivittatum -----
.....1210.....1220.....1230.....1240.....1250.....1260

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNDaps: Tue Feb 1 14:16:22 2022

Page 8 of 30

Pavo_muticus	MLNDKRAQEIAILQSRHOLEWEKIQERCLKEKEELTSKYQQELVDQRRKIELEMEEKH--	1298
Pavo_cristatus	MLNDKRAQEIAILQSRHOLEWEKIQERCLKEKEELTSKYQQELVDQRRKIELEMEEKH--	1298
Gallus_gallus	MLNDKRAQEIAILQSRHOLEWEKIKERCLKEKEDLTSKYQQELVDQRRKIELEMEEKH--	1298
Chelonia_mydas	MLNDKRAQEVAILQSRHOFLEHIKEQNLKEKEEIALKYQQELDE-RKKIELEMEKKH--	1234
Homo_sapiens	MLNSRRAQELALLQSRQQHELELLREQHAREKEEFVLRGQEAELKEKLQSEMEKN---	339
Pan_troglodytes	MLNSRRAQELALLQSRQQHELELLREQHAREKEEFVLRGQEAELKEKLQSEMEKN---	274
Macaca_mulatta	MLNSRRAQELALLQSRQQHELELLREQHAREKEEFVLRGQEAELKEKLQSEMEKN---	365
Callithrix_jacchus	MLNSRRAQELALLQSRQQHELDLLREQHAREKEEFVLRGQEAELKEKLQSEMEKN---	455
Mus_musculus	MLNGRRAQELALLQSRQQCELELLREQHAREKEEMALRSGQEAELKEKLRSSEMEKN---	212
Rattus_norvegicus	MLNGRRAQELALLQSRQQCELELMREQHAREKEEMALRNEQETAELKEKFRSEMEKT---	214
Canis_lupus_familiaris	MLNGRHAQELALLRSRQQCELELAREQHAREQEEMRLRCSQETAKLKEKLQSEMERN---	232
Equus_caballus	MLNGRHAQELALLQSRQLELELIREQHAREQEEMALRCAQETAELKEKLQIEMEKN---	256
Bos_taurus	ELTGRHAQERALLQSRARRELELVREEAA-----ELKEKLQSEIEKN---	195
Xenopus_tropicalis	HLNDKRSQEVAILQGRHOFVEVEKLKSQHLDAMENLVVQHSQKLEMLQKEIMQLKEAQSQE	882
Rhinatrema_bivittatum	-----	
	.....1270.....1280.....1290.....1300.....1310.....1320	

Pavo_muticus	----IQILETLKRDWELESEMMLKYTCCELS-KHQAETIAELQKTLEMELEKV-KAELGLL	1352
Pavo_cristatus	----IQILETLKRDWELESEMMLKYTCCELS-KHQAETIAELQKTLEMELEKV-KAELGLL	1352
Gallus_gallus	----IQILETLKRDWELESEMRLKYTCCELSKKHKAETIAELQKTLEMELEKV-KAELGLL	1353
Chelonia_mydas	----IQILETLKGDCAKLTETCLKNIREELSEKHOTEMGELQKTLKLELERV-KEELKSL	1289
Homo_sapiens	----AQIVKTLKEDWESEKDLCLNLRKELSAKHQSEMEDLQNOQFQKELAEQ-RAELEKI	394
Pan_troglodytes	----AQIVKTLKEDWESEKDLCLNLRKELSAKHQSEMEDLQNOQFQKELAEQ-RAELEKI	329
Macaca_mulatta	----AQIEKTLKEDWESEKDLCLNLRKELSAKHQSEMEDLQNOQFQKELAEQ-RAELEKI	420
Callithrix_jacchus	----AQIITETLKEDWESEKDLCLNLRKELSAKHQSEMDLQNOQFQKELAEQ-KVELEKI	510
Mus_musculus	----AQTIETLKQDWESERELCLNLRQELSLKHQSEMEGLQSQFQKELSEQ-KVELEKI	267
Rattus_norvegicus	----VQMMETLKQDWESERELCLNLRKELSAKHQSEMEGLQNOQFQKELSEQ-KAELEKI	269
Canis_lupus_familiaris	----ARAVESLKRQDWESERGLCLNLRRELAKHRSELENLQDQFKRELSEQ-KAELEKI	287
Equus_caballus	----VQMIETLKQDWESERDCLNLRQELSGKHQSELENLQNOQFKKEMAEQ-KAELEET	311
Bos_taurus	----AQMMETLKQDWESERDCLNLRQELLEKHRSLENLQNOQFKKELAEQ-KAEFEKV	250
Xenopus_tropicalis	IFHLQEQYEKKIDGLKEEYSQELVEQKKKLEEMHQDLADIKNTILNEMSLQHEEDMENL	942
Rhinatrema_bivittatum	-----	
	.....1330.....1340.....1350.....1360.....1370.....1380	

Pavo_muticus	SLEKEQSEMCKVDLEKQHOLAITMLTKQLOSEHNOLEDMMKIESQEKEQNLQKELEKLOI	1412
Pavo_cristatus	SLEKEQSEMCKVDLEKQHOLAITMLTKQLOSEHNOLEDMMKIESQEKEQNLQKELEKLOI	1412
Gallus_gallus	SLEKEQSEMCKVDLEKQQLAITTLTKQLOSEHNOLEDVKIESQEKEQNLQKELEKLOV	1413
Chelonia_mydas	SLKKEQAEKCKNLENEHQAIAIKRCEQLQTEHRCLENLKRKSKEREQEMRQEMEKLOA	1349
Homo_sapiens	FQDKNQAEARALRNLESHHQAIEKLREDLQSEHGRCLEDLEFKFKESEKEKOLELENLOA	454
Pan_troglodytes	FQDKNQAEARALRNLESHHQAIEKLREDLQSEHGRCLEDLEFKFKESEKEKOLELENLOA	389
Macaca_mulatta	FQDKNQAESALRNLESHHQAIEKLREDLQSEHRCLEDLEFKFKESEKEKOLELENLOA	480
Callithrix_jacchus	FQDKNQAEARALRNLESHHQAIEKLREDLQSEHCRYLEDLEFKFKENEKEKOLELENLOA	570
Mus_musculus	FQAKHAEVSLKNLEAQHQAIAIKKLQEDLQSEHCQYLDLEQKFREKEKAKELELETLOA	327
Rattus_norvegicus	FQAKHAEVSLKNLEAQHQAIAIKKLQEDLRSEHCQYLDLELRFREKEKAKELELETLOA	329
Canis_lupus_familiaris	FQAKNQAEALRTLEAQHEEALRLREDLQSERCQYVQDLELRRLDQVEKOLELESIRA	347
Equus_caballus	FQAKNQAEFSLKTLAQHEVALRKLHEDLQSEHCQYLEDLELKFKEKEKOLELETLOA	371
Bos_taurus	FQAKNQAECSLTQEAQHEASLSKLRLADLQLEHCQYLEELERKFRKKEKENOLELERIRA	310
Xenopus_tropicalis	KMQLHNERAQCEELTVQSONEVSILQSELOKLKEEMRKLLDRAVEKVEKSEPNLEKQSH	1002
Rhinatrema_bivittatum	-----	
	.....1390.....1400.....1410.....1420.....1430.....1440	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 9 of 30

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Pavo_muticus      MHEEFKTRSQEE-----VKELWSQLGSTRANROELS-- 1443
Pavo_cristatus    MHEEFKTRSQEE-----VKELWSQLGSTRANROELS-- 1443
Gallus_gallus     MHEEFKTRSQEE-----VKQLWSQLGSTRANROELS-- 1444
Chelonia_mydas    TYEELKTRSQEE-----IKQLWSQLDSTRASROELSEN 1382
Homo_sapiens      SYEDLKAQSQEE-----IRRLWSQLDSARTSROELSE- 486
Pan_troglodytes   SYEDLKAQSQEE-----IRRLWSQLDSARTSROELSE- 421
Macaca_mulatta    SYEDLKAQSQEE-----IRRLWSQLDSARTSROELSE- 512
Callithrix_jacchus SYEDLKVSQSQEE-----IRHLWSQLDSTRTSROELSE- 602
Mus_musculus      SYEDLKAQSQEE-----IRLLWSQLESMTKNREELNG- 359
Rattus_norvegicus SYEDLKAQSQEE-----IRHLWSQLESMTKNREEQNG- 361
Canis_lupus_familiaris SYAELKAQSQEE-----IRRLWSQLESPPRDRDAS- 378
Equus_caballus    LYEDLKAQSQEE-----IRSLWSQLESARTNROEPSE- 403
Bos_taurus        SYEELQAQSQREE-----IQCLGAQLESARSSROELSE- 342
Xenopus_tropicalis DQFLLEHPNRELGISTDNRNIIQFHKEGGYYDTRSSVEVQLLWSQLDGNRASROELIE- 1061
Rhinatrema_bivittatum -----
.....1450.....1460.....1470.....1480.....1490.....1500

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Pavo_muticus      GMLKITYVVFISIP-----ELKEQLMARASQVEEIEHLKQKFEEQHOOQT-- 1487
Pavo_cristatus    GMLKITYVVFISIP-----ELKEQLMARASQVEEIEHLKQKFEEQHOOQT-- 1487
Gallus_gallus     DGESVWLRLMEAHVP-----ELKEQLMARASQVEEIEHLKQKFEEQHOOQT-- 1488
Chelonia_mydas    GFCGEAKRCCTSAAPPQQRCLCSCSWGRELKEQLLARTSHVDEIERLKQDFEQROQR-- 1440
Homo_sapiens      -----LHEQLLARTSRVEDLEQLKQ-----RE-- 508
Pan_troglodytes   -----LHEQLLARASRVEDLEQLKQ-----RE-- 443
Macaca_mulatta    -----LHEQLLARASHVEDLEQLKQ-----RE-- 534
Callithrix_jacchus -----LHEQLLARASHVEDLEQLKQGFEEQQQQQEA-- 631
Mus_musculus      -----SWDPVLAQASHLEELHLRSGFAQQQQQOE-- 388
Rattus_norvegicus -----SWEPLLAQASHLEELQHLRSDFAQQQQQOE-- 390
Canis_lupus_familiaris -----ARTPHGEELEQREERCQVQQQRRGR 403
Equus_caballus    -----LREQLPLARGSHVEELEHLRRDFDQQRQRE-- 432
Bos_taurus        -----LREQLLARASHVEELEHLKRDLEQQQQQOE-- 371
Xenopus_tropicalis -----LKEQLLARSQVEEIEGRLLKQDFEQQRLLQI-- 1090
Rhinatrema_bivittatum -----
.....1510.....1520.....1530.....1540.....1550.....1560

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Pavo_muticus      KSEHEAELEQLRIYFERKLRVTEENYREELILLHQRLOELKEYSVSEDDVSHNQAGNISS 1547
Pavo_cristatus    KSEHEAELEQLRIYFERKLRVTEENYREELILLHQRLOELKEYSVSEDDVSHNQAGNISS 1547
Gallus_gallus     KSEHEAELEQLRIYFERKLRVTEENYREELILLHQRLOELKEYSVSGVDVSHNQAGNISS 1548
Chelonia_mydas    RSEHETELEQLRIYFEKKLRDAEKTYQEDLTLLQORLOGAREDALLDSVE-----VGL 561
Homo_sapiens      KTQHESELEQLRIYFEKKLRDAEKTYQEDLTLLQORLOGAREDALLDSVE-----VGL 496
Pan_troglodytes   KTQHESELEQLRIYFEKKLRDAEKTYQEDLTLLQORLOGAREDALLDSVE-----VGL 587
Macaca_mulatta    KIQHESELEHLRIYFEKKLRDAEKTYQEDLTLLQORLOGAREDALLDSVE-----VGS 684
Mus_musculus      RAQHESELEHLRVYFEKKLRDAEKTYQEDLTVFQORLOEAREDS-LESTE-----ISS 440
Rattus_norvegicus RAQHESELEHLRVYFEKKLRDAEKTYQEDLTVFQORLOEAREES-LESSE-----ISS 442
Canis_lupus_familiaris RAEQSEELGQS-----PEGAAERGREDPVLLQORLODATEEPSLESSE-----IGP 449
Equus_caballus    RTEHESELEQLRIYFEKKLRDAEKTYQEDLTLLQORLREVKEDSPVESVE-----ISS 485
Bos_taurus        RSRHESELEQLRLYFEKKLRDAEQSYQEDLTLLQORLOEGRDDSLLEAMG-----TSA 424
Xenopus_tropicalis KVEHEKEMDELRIYFEQSRMTESYREELEMLLQRLREIKDEDEELTQ-----QS 1142
Rhinatrema_bivittatum -----
.....1570.....1580.....1590.....1600.....1610.....1620

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 10 of 30

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Pavo_muticus          SVTVFGEAVEEKEKRDFFLDQLDQOLEQHKEEIIACLOGQLEEDHRH-LDSLKSSSLALQYKG 1606
Pavo_cristatus        SVTVFGEAVEEKEKRDFFLDQLDQOLEQHKEEIIACLOGQLEEDHRH-LDSLKSSSLALQYKG 1606
Gallus_gallus         SVIVFGEAVEEKEKRDFFLDQLNQOLEQHKEEIIACLOGQLEEDHRH-LDSLKSSSLALQYKG 1608
Chelonia_mydas        SVTLFEEASEEKERRD-TLDQLTQOLEQHKEEFTCLRLQLEEKHRHELGLSRSSSLALQYKE 1559
Homo_sapiens          SCVGLEEKPEKGRKD-HVDELEPE--RHKESLPRFQAELEESHRRHQLAELSPLCIOHEG 618
Pan_troglodytes       SCVGLEEKPEKGRKD-HVDELEPE--RHKESLPRFQAELEESHRRHQLAELSPLCIOHEG 553
Macaca_mulatta        SCVGLEEKPEKERKD-HVDELNPE--RHKESLPCFQAELEESHRRHLEAPESPLCIOREG 644
Callithrix_jacchus    SCMGFEETPEKERKD-HLDKLEAE--QHKEGLPCFQVQLGESHRHQLAELSPALCIOHEG 741
Mus_musculus          SCVLPEETSGREGKE-PPDPPLD----- 461
Rattus_norvegicus     SCMFPEETSGRERKE-PPDPPLD----- 463
Canis_lupus_familiaris SS-----MREGERRE-QRVGPSLOP-ELAEN-----HRCHLTAWTSSLEAQQA 491
Equus_caballus        SSALLEEASEKDGKD-QLDQLDLQL-EQPEESLCLHAVSEDDHRCQVAAVESSPDVQQA 543
Bos_taurus            CL---EETSEEERD-HLNGLSLQR-EQLEESLGLRTRLEENHQCQLAAGTSSQDAQQA 478
Xenopus_tropicalis    SSILALDVPTENEQSHLLQLTDELLQHKEELSYLKLOSDEKHKRDLENLHASLSLOYIS 1202
Rhinatrema_bivittatum -----
.....1630.....1640.....1650.....1660.....1670.....1680

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Pavo_muticus          DLLKMKMDLSDKYIAEIEEMKRKHCLLEQLRLARLSEEHKEITKLRLQCAQDAARQVEM 1666
Pavo_cristatus        DLLKMKMDLSDKYIAEIEEMKRKHCLLEQLRLARLSEEHKEITKLRLQCAQDAARQVEM 1666
Gallus_gallus         DLLKMKMELSDKYIAEIEEMKRKHCLLEQLRLARLSEEHKEITKLRLQSAQDAARQVEM 1668
Chelonia_mydas        DLMKMKMDLSDRYISEIEELKKKHCLDLEQLRAKLSEEHKEITKLRLQSAQDAARQVEA 1619
Homo_sapiens          HVSDRCCVETSALG-----HEWRLEPSEGHSQLPWWHLQGVQDGDLEADT 664
Pan_troglodytes       HVSDRCCVETSALG-----HEWRLEPSEGHSQLPWWHLQGVQDGDLEADT 599
Macaca_mulatta        HVSDRRCVETSALG-----CGWRLEPSEGRSQLPWWHLQGVQDRALEADT 690
Callithrix_jacchus    HVSDRLHVEAAALG-----CAWHQEPSEGHSQLPWWHLQ---DGAVEADT 784
Mus_musculus          ----- 461
Rattus_norvegicus     ----- 463
Canis_lupus_familiaris GLVETQSEGEQ-----REGLSEGPQELTQVPVPCAQGTALKVDT 532
Equus_caballus        DLAGTRALEREQ-----RVGFSEESGPGLARVCLQCAQDTALEVET 584
Bos_taurus            -----LEGEL-----PTGPSEEPQELAREPLLCAQSVALELET 512
Xenopus_tropicalis    EMQALQKKHSLELEH-----LKARLSEEHLEMKKLGACTLCNSHLVGT 1247
Rhinatrema_bivittatum -----
.....1690.....1700.....1710.....1720.....1730.....1740

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Pavo_muticus          EVAERVSVLEEEHKVKLSLLHSEEQH----- 1692
Pavo_cristatus        EVAERVSVLEEEHKVKLSLLHSEEQH----- 1692
Gallus_gallus         EVAKRVSVLEEEHKVKLSLLHSEEQH----- 1694
Chelonia_mydas        EVVERACVLENEHKAKLSLLQSEKQY----- 1645
Homo_sapiens          ERAARVLGLETEHKVQLSLLQTE----- 687
Pan_troglodytes       EGAARVLGLETEHKVQLSLLQTE----- 622
Macaca_mulatta        EVAARVLGLETEHKVQLSLLQTE----- 713
Callithrix_jacchus    EVAARVLGLETEHKVQLSLLHTE----- 807
Mus_musculus          ----- 461
Rattus_norvegicus     ----- 463
Canis_lupus_familiaris EVVARGLGLEAEHRLKLLLLQTE----- 555
Equus_caballus        EVAARVLGLETEHKVQLSLLQTE----- 607
Bos_taurus            EVQAGDMGLETAHRAQLVLLPVE----- 535
Xenopus_tropicalis    KEADNMQCFEDDYQAWLCLLPQNHCA TKLENLMEQSDGGQQFVLEQEDKLCVLMKNDQ 1307
Rhinatrema_bivittatum -----
.....1750.....1760.....1770.....1780.....1790.....1800

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNDaps: Tue Feb 1 14:16:22 2022

Page 11 of 30

Pavo_muticus	-----	1692
Pavo_cristatus	-----	1692
Gallus_gallus	-----	1694
Chelonia_mydas	-----	1645
Homo_sapiens	-----	687
Pan_troglodytes	-----	622
Macaca_mulatta	-----	713
Callithrix_jacchus	-----	807
Mus_musculus	-----	461
Rattus_norvegicus	-----	463
Canis_lupus_familiaris	-----	555
Equus_caballus	-----	607
Bos_taurus	-----	535
Xenopus_tropicalis	ICQTEPHLESEDMSDSTPNTCSNENDTSLQNGNACPFHETLYSKELLLLKGOHDKLESL	1367
Rhinatrema_bivittatum	-----	
	.....1810.....1820.....1830.....1840.....1850.....1860	

Pavo_muticus	-----	1692
Pavo_cristatus	-----	1692
Gallus_gallus	-----	1694
Chelonia_mydas	-----	1645
Homo_sapiens	-----	687
Pan_troglodytes	-----	622
Macaca_mulatta	-----	713
Callithrix_jacchus	-----	807
Mus_musculus	-----	461
Rattus_norvegicus	-----	463
Canis_lupus_familiaris	-----	555
Equus_caballus	-----	607
Bos_taurus	-----	535
Xenopus_tropicalis	REQMSIDVAKIKKNIQADYDCALKEAQRNFKQDLWENPDELQNLWRDFOEKLQCGSGDHI	1427
Rhinatrema_bivittatum	-----	
	.....1870.....1880.....1890.....1900.....1910.....1920	

Pavo_muticus	-----IAELSEEIKCLKEEITKQKDFVONEKHLKE	1723
Pavo_cristatus	-----IAELSEEIKCLKEEITKQKDFVONEKHLKE	1723
Gallus_gallus	-----IAELSEEIKCLKEEMTKQKDFVONEKHLKE	1725
Chelonia_mydas	-----IAELQGEIQHLERESAKLKDIGVQHEIHLKE	1676
Homo_sapiens	-----LKEEIELLKIE-NRNLVYKLOHETRLKD	714
Pan_troglodytes	-----LKEEIELLKIE-NRNLVYKLOHETHLKD	649
Macaca_mulatta	-----LKEEIELLKIE-NRNLVYKLOHETRLKE	740
Callithrix_jacchus	-----LKEEIELLKIG-NRNLSEKLOHEIRLKE	834
Mus_musculus	-----LQL	464
Rattus_norvegicus	-----LQL	466
Canis_lupus_familiaris	-----LKEEMDVLLKE-NRNLHEKLOHEVCLKE	582
Equus_caballus	-----LKEEIDLLKIE-NRNLQEKLOYEVHLKE	634
Bos_taurus	-----LKEEIDLLKVE-NRNLQEKLOREICLKE	562
Xenopus_tropicalis	SISTIGSWGQHKELLGNGMSDMOOHENKLIVDVSDQKYNFKLEFSADLLHNEPKKELICL	1487
Rhinatrema_bivittatum	-----	
	.....1930.....1940.....1950.....1960.....1970.....1980	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCN Daps: Tue Feb 1 14:16:22 2022

Page 12 of 30

Pavo_muticus	QMEQVVKFKIAEDHENELKEAREEVQKIETVYKEKEKKWKRESEDRIOAEKKLLLLLHTEL	1783
Pavo_cristatus	QMEQVVKFKIAEDHENELKEAREEVQKIETVYKEKEKKWKRESEDRIOAEKKLLLLLHTEL	1783
Gallus_gallus	QMEQVVKFKIAEDHENELKEAREEVVKIETLYKEKEKKWKCESEDRVQAEKKSLLLHTEL	1785
Chelonia_mydas	EMEKIKCRLVDDHKNELKRTREEVQMEQVHKEKEEEWKCEALRIKVEEKLRLRTEL	1736
Homo_sapiens	DLEKVKHNLIEDHQKELNNAKQKTELMKQEFQKQETDVKVMKEELQREAEKKLTMLLEL	774
Pan_troglodytes	DLEKVKHNLIEDHQKELNNAKQKTELMKQEFQKQETDVKVLKEELQREAEKKLTSMLEL	709
Macaca_mulatta	NLEKVKHNLVEDHQEELNNAKQKTELMKQEFQKQEMDVKVMKEELQREAEKKLTMLLEL	800
Callithrix_jacchus	DLEKVKHSLVEDHQEELNNAKQKTELMKQEFQKQEVVDVKVAREELQREAEKKLTMLLEL	894
Mus_musculus	GQPKVQESLVEDCQVKLSKAEKIQMKEEFQKQEAWEELSREELKREAEERLASMFLEL	524
Rattus_norvegicus	EQPKAQGSLIEDYQEKLSNAEEKIELMKQEFQKQEAWEELSREDLKRDAEEKLASMFLEL	526
Canis_lupus_familiaris	DLERVKHS�VEDHREELKKANERLQLVKQELKDKEAEWKVASEDLKRKAEEELTLMHDL	642
Equus_caballus	DLEKVKHNLVEAHQEEELKKAKEEIQMKEEFKERAWEKVTSEDLKRKAEEELTLMHDL	694
Bos_taurus	DLEKVKQNLVEAHQEEELKSAEERIEQIKQELREREAEWKVTSEDLRRGAEEELTKMLLDL	622
Xenopus_tropicalis	LSELQKQYVELSAHVAELQLQHEEKLNTDVSDEHQQEFSKHLSEVKQKHEVELSNVSKL	1547
Rhinatrema_bivittatum	-----	
	.....1990.....2000.....2010.....2020.....2030.....2040	

Pavo_muticus	QNKLEHEKQSLQKEFELRETQMNQLODHQAAKIVELEKLVKEQQNNLOQLEDSLAVAQAT	1843
Pavo_cristatus	QNKLEHEKQSLQKEFELRETQMNQLODHQAAKIVELEKLVKEQQNNLOQLEDSLAVAQAT	1843
Gallus_gallus	QNRLEYEKQNLQKEFEVREAQMNQLODHQAAKIVELEKLVKEQQNNLOQLEDSLAVAQAT	1845
Chelonia_mydas	EDKAEYEKQTLQKEFELREAEMNQLODQAAQILDLERSLITEQQGRLOQLEQDLTSDDAL	1796
Homo_sapiens	REKAESEKQTIINKFELREAEMROLDQAAQILDLERSLITEQQGRLOQLEQDLTSDDAL	834
Pan_troglodytes	REKAESEKQTIINKFELREAEMROLDQAAQILDLERSLITEQQGRLOQLEQDLTSDDAL	769
Macaca_mulatta	REKAESEKQTIINKFELREAEMROLDQAAQILDLERSLITEQQGRLOQLEQDLTSDDAL	860
Callithrix_jacchus	RQKADSEKQSIIVNKFELREAEMROLDQAAQILDLERSLITEQQGRLOQLEQDLTSDDAL	954
Mus_musculus	REKAESEKLSIISRFHRESSMRHLODQAAQILDLERSLITEQQGRLOQLEQDLTSDDAL	584
Rattus_norvegicus	REKAESEKLSIISRFHRESSMRHLODQAAQILDLERSLITEQQGRLOQLEQDLTSDDAL	586
Canis_lupus_familiaris	KEQAEAEKQSVINKFELREIKMROLDQAAQILDLEGSILVEQQGRLOQLEHGLEAECP	702
Equus_caballus	RGQAESEKQSIINKFELREIEMROLDQAAQILDLEGSILVEQQGRLOQLEHGLEAECP	754
Bos_taurus	REQVESEKRSMMNRFELRESEMRLOLDQAAQILDLEGSILVEQQGRLOQLEHGLEAECP	682
Xenopus_tropicalis	QQLPKEESLMSELMQNELELHROVFELQLENKELFPFVSELQQHEEVIKNSVSELQQ	1607
Rhinatrema_bivittatum	-----	
	.....2050.....2060.....2070.....2080.....2090.....2100	

Pavo_muticus	Q-----KSEQYDSLDQAAKVLMAEEMEKAKLCLOEECALKLM	1881
Pavo_cristatus	Q-----KSEQYDSLDQAAKVLMAEEMEKAKLCLOEECALKLM	1881
Gallus_gallus	R-----KSEQYDSLDQAAKELMAKEMEKAKLCLOEECALKLM	1883
Chelonia_mydas	Q-----KAC--YDSELQAAKALMEKKLEKATFGLQEECAAKLM	1832
Homo_sapiens	H-----CSQCGREP-----PTAQDGE--LAALHVKEDCALQLM	865
Pan_troglodytes	H-----CSQCGREP-----PTAQDGE--LAALHVKEDCALQLM	800
Macaca_mulatta	R-----CSQCGREP-----PTAQDGE--LAALHVKEDCALQLI	891
Callithrix_jacchus	R-----CSHCGREP-----PTAQDGE--LAALRVKEDCALQLM	985
Mus_musculus	P-----CSQCGQEP-----AMAEQEK--GALLREKEDCALQLL	616
Rattus_norvegicus	L-----CSQCGKEP-----SVAQDEKS--AILLREKEDCALQLL	618
Canis_lupus_familiaris	R-----CGHCGQEPAGRVAPADQDWE--LATRRLREDCALQLM	738
Equus_caballus	Q-----CGQCDQEPGGGLAPTDKWE--LAMLRLKEDCALQLT	790
Bos_taurus	R-----CSHCGRELGCSPAPGAQDQF--LAILHLKEDCALQLK	718
Xenopus_tropicalis	QHEIELNNRVSELQOQHKTELNNCMSELOQEHEEVIKNNRVSELQOHEMELNNRASEMQQ	1667
Rhinatrema_bivittatum	-----	
	.....2110.....2120.....2130.....2140.....2150.....2160	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 13 of 30

Pavo_muticus	EAQNRFMEEHKALTQKFTAEQEILLOELKKKHVDELELSQQLQEKHKQKIFSLTTEFOR	1941
Pavo_cristatus	EAQNRFMEEHKALTQKFTAEQEILLOELKKKHVDELELSQQLQEKHKQKILSLTTEFOR	1941
Gallus_gallus	KAQNKFMEEHKALTQKFTAEQEILLOELKKRHVDELELSQQLQEKHKQKILSLTAEFOR	1943
Chelonia_mydas	EAQNKFMEEHKIMTQKFTTEQELLLOELKGKHADELELSQQLQEKHKQHILSLTAELOT	1892
Homo_sapiens	LARSRFLEERKEITEKFSAEQDAFLQEAQEQHARELQL----LQERHQQLLSVTAELEA	921
Pan_troglodytes	LARSRFLEERKEITEKFSAEQDAFLQEAQEQHARELRL----LQERHQQLLSVTAELEA	856
Macaca_mulatta	LARSRFLEERKEITEKFSAEQDAFLREAQEQHTRELOL----LQERHQQLLSVTAELEA	947
Callithrix_jacchus	LARSRFLEERKEITEKFNAEQDAFLREAQEQHAQELQL----LQEKHQQLLSVTAELEA	1041
Mus_musculus	MAQNRFLEERKEIMEKFAKEQDAFLRDAQEKHNHELOL----LQOGHQQLLALRMELET	672
Rattus_norvegicus	TAQNRFLEERKEIMEKFAKEQDAFLLDTOEKHSHELOL----LQOGHQQLLALRMELET	674
Canis_lupus_familiaris	QAQSRFLKERKELTEKFTAEQDALLQEAQEKHACDMRL----LQERHQQHVLSLTAQLEA	794
Equus_caballus	LAQNRFLEERKEIIEKLAAEQDASLRETOEKHTRELOL----LQERHQQHVLSLTAELEA	846
Bos_taurus	VAQSRFLEERRAITEKLAAEQDAFLREAQEQHAHELRL----LQEGHQRHILSLTAELET	774
Xenopus_tropicalis	QHKTELNRMSLELQEEHEKVIKNCVSELQQLHEMELNNRVSELOQLHEEVLKNRVSELQQL	1727
Rhinatrema_bivittatum	-----	
	.....2170.....2180.....2190.....2200.....2210.....2220	

Pavo_muticus	KHQAIEIKTLKSTLESKQIQLEAFVAELOTKHQAQMD-----	1978
Pavo_cristatus	KHQAIEIKTLKSTLESKQIQLEAFVAELOTKHQAQMD-----	1978
Gallus_gallus	KHQAIEIKTLKSTLESKQIQLEAFVAELOTKHQAQVD-----	1980
Chelonia_mydas	KHQAIEIETLTSTLSKQQAHLAEHIAELRAKHQTQID-----	1929
Homo_sapiens	RHQAALGELTASLESKQGALLAARVAELOTKHAADLG-----	958
Pan_troglodytes	RHQAALGELTASLESKQGALLAARVAEMQTKHAADLS-----	893
Macaca_mulatta	RHQAALRELTALESKQGALLAARVAELOTEHAADLS-----	984
Callithrix_jacchus	RHQAAMGELTASLENRQGALLAARVAELOTKHAADLS-----	1078
Mus_musculus	KHRSELTEQLASSESRQALLETHTVAELOVKHNAEIS-----	709
Rattus_norvegicus	KHSELTEQLASLESKQALLETHTVAKMOVKHDAEIS-----	711
Canis_lupus_familiaris	RRRAEVEELKASVESERWALAEARVAELOTEHAAAIS-----	831
Equus_caballus	QHQAEMDQLRAAFESQWALSEARVAELOTKHAAEIS-----	883
Bos_taurus	RHQAEDVALRSSLERERLALAEAREAELOVKHAADIN-----	811
Xenopus_tropicalis	QHHEMELNNRVSGLOQLHEEVLKNRVSELQQLHEIELNNHVSQLOREHKEELKNLQROHEE	1787
Rhinatrema_bivittatum	-----	
	.....2230.....2240.....2250.....2260.....2270.....2280	

Pavo_muticus	-----	1978
Pavo_cristatus	-----	1978
Gallus_gallus	-----	1980
Chelonia_mydas	-----	1929
Homo_sapiens	-----	958
Pan_troglodytes	-----	893
Macaca_mulatta	-----	984
Callithrix_jacchus	-----	1078
Mus_musculus	-----	709
Rattus_norvegicus	-----	711
Canis_lupus_familiaris	-----	831
Equus_caballus	-----	883
Bos_taurus	-----	811
Xenopus_tropicalis	ELDHRVSELQIHKELSNRVSELQGYKEELSKNVSDLOREHKEELKNKORQYVEELDH	1847
Rhinatrema_bivittatum	-----	
	.....2290.....2300.....2310.....2320.....2330.....2340	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 14 of 30

Pavo_muticus	-----ELEAKHLSN	1987
Pavo_cristatus	-----ELEAKHLSN	1987
Gallus_gallus	-----ALEAKHLSN	1989
Chelonia_mydas	-----ELEAKHLSN	1938
Homo_sapiens	-----ALETRHLS	967
Pan_troglodytes	-----ALETRHLS	902
Macaca_mulatta	-----ALETRHLS	993
Callithrix_jacchus	-----ALETRHLS	1087
Mus_musculus	-----ALEKRHLSN	718
Rattus_norvegicus	-----ALEKRHLSN	720
Canis_lupus_familiaris	-----ALEARHSAL	840
Equus_caballus	-----VLETRHLSN	892
Bos_taurus	-----VLEARHASH	820
Xenopus_tropicalis	RVFELQQQHEEELDHRVSELOQEDKINSMSDLRKHEEELKALASEHKTQIEQLETTHTMTN	1907
Rhinatrema_bivittatum	-----	

.....2350.....2360.....2370.....2380.....2390.....2400

Pavo_muticus	LDSLESSYLSEIQNIRDEHROVLEKLOLHHTEQLEKDKMNEACLAQETIEILKLKHAEEL	2047
Pavo_cristatus	LDSLESSYLSEIQNIRDEHROVLEKLOLHHTEQLEKDKMNEACLAQETIEILKLKHAEEL	2047
Gallus_gallus	LDSLESSYLSEIQNIRGEHRLVLEKLOLHHTEQLEKDKMNEACLAQETIEILKLKHSEEL	2049
Chelonia_mydas	LDSLESSYLSEIQIIRDEHKOAVEDLOMHFIAQLHEKDKANQAILTOEMERLKLKHSEEL	1998
Homo_sapiens	LDSLESCYLSSEFQITIREEHRALELLRADFEEQLWKKDSLHQTILTQLEKLRKHKEGEL	1027
Pan_troglodytes	LDSLESCYLSSEFQITIREEHRALELLRADFEEQLKKDSLHQTILTQLEKLRKHKEGEL	962
Macaca_mulatta	LDSLESCYLSSEIQITIREEHRRRALELLRADFEEQLRKQDSLHQTILTQLEKLRKHKEGEL	1053
Callithrix_jacchus	LDSLESCYLAIEQITIREEHRRRALELLRADFEEQLRKQDSLHQTILTQLEKLRKHKEGEL	1147
Mus_musculus	LDELESCYVADVQITIRDEHQAQALELLRAELEEQLEKESCHREMLTQELNLRKHAEEL	778
Rattus_norvegicus	LDELESCYVADIQITIRDEHKKALELLRAELEEQLEKESCHREMLTQLEKLRKHAEEL	780
Canis_lupus_familiaris	LGSLESRLHSEVQAMREEHRALEQLRVDLEKQLEKEASHPTPLTQALEKHPPLSHGOEL	900
Equus_caballus	LDSLESCYLSSEIQAIRDEHRRRALELLRVDLEGOLEKKNESHOMILTQELGKLKLKHDKEL	952
Bos_taurus	LDALRLQYLSSELQAVQGRHRALELLRLDLEERLQKEDMAHHAVLTQVLELLELRCAEEP	880
Xenopus_tropicalis	MDTLESSYLAIEIHKIREEHSQALSDEMCLADRLQEKEREMLEKLANAEMHWRDQHQEL	1967
Rhinatrema_bivittatum	-----	

.....2410.....2420.....2430.....2440.....2450.....2460

Pavo_muticus	QLAQNNLKIELATVHMEKLIKIMAVEADEAHKDDLKAALQNRSLLEEEKRLALDILREEV	2107
Pavo_cristatus	QLAQNNLKIELATVHMEKLIKIMAVEADEAHKDDLKAALQNRSLLEEEKRLALDILREEV	2107
Gallus_gallus	QLAQNNLKIELATVHMEKLIKIMAVEADEAHKDDLKAALQNRSLLEEEKRLALDMLREEV	2109
Chelonia_mydas	QLSQDNLKIELATIHIIEKLIKAMAAELEEAHKEDLNTTLQNRCLLEENHKALDVLREEV	2058
Homo_sapiens	QSVRDHLRTEVS-----	1039
Pan_troglodytes	QSVRDHLRTKVS-----	974
Macaca_mulatta	QSVRDGLQTAAS-----	1065
Callithrix_jacchus	QSVRDGLRAKTS-----	1159
Mus_musculus	QSVRDSLREMS-----	790
Rattus_norvegicus	QSVRNSLRVKMS-----	792
Canis_lupus_familiaris	PPVEGGLRTQTSSGQLEGVKAPVPEVQGAQQEGAPVP-----	938
Equus_caballus	QSAKDSLRIETSAKCVGNLKAPAP-ELQGAHQQSAPVP-----	989
Bos_taurus	QPAEDSLRGDGSVEPQEGVRAVRL-----SMAH-----	908
Xenopus_tropicalis	HLLRELLGKELAAVHMDKFOAMSRELEAAHLEEMNEKLDHQRHVLEQEKIHAFDALQEL	2027
Rhinatrema_bivittatum	-----	

.....2470.....2480.....2490.....2500.....2510.....2520

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 15 of 30

Pavo_muticus	VHMEEKHRKALQELQDLLEAEIKKHKEEYSRDLEKELEKLKAQHEHEQEMYASASASEVE	2167
Pavo_cristatus	VHMEEKHRKALQELQDLLEAEIKKHKEEYSRDLEKELEKLKAQHEHEQEMYASASASEVE	2167
Gallus_gallus	VHMEEKHRKALQELQDLLEAEIKKHKEEYSRELEKELEKLKAQHKHEQEMYASASASEIE	2169
Chelonia_mydas	LQMEHHKKALNELQDLHVAEVQKQKEEYSWLOQEELEKLKAQHEHEEEMYASASASEVE	2118
Homo_sapiens	-----TELA	1043
Pan_troglodytes	-----TELA	978
Macaca_mulatta	-----TELA	1069
Callithrix_jacchus	-----PELA	1163
Mus_musculus	-----AQHI	794
Rattus_norvegicus	-----AQHT	796
Canis_lupus_familiaris	-----AEVE	942
Equus_caballus	-----AEAE	993
Bos_taurus	-----KEPE	912
Xenopus_tropicalis	QKIEQQHQIALQELREFHDAEVKKRSLEETG-----KLQLEIRKLKEEIQKLEILTTEL	2081
Rhinatrema_bivittatum	-----	
	.....2530.....2540.....2550.....2560.....2570.....2580	

Pavo_muticus	TVRTALLSQFEAVKMKQQLQFQDEIELLKQSEVLLQQIAQLKDEFEAETALIHDOEQ	2227
Pavo_cristatus	TVRTALLSQFEAVKMKQQLQFQDEIELLKQSEVLLQQIAQLKDEFEAETALIHDOEQ	2227
Gallus_gallus	TVRTALLSQFEAVKMKQQLQFQEEIELLKQSEVLLQQIAQLKDEFEAETALIHDOEQ	2229
Chelonia_mydas	TVRTALLAQFEEAKLKQQLQFQDEIELLKQSEVLLQQITQLKEEFNAERKTAWHSKEQ	2178
Homo_sapiens	G---TVAHELGQV-----HQQ-----EFGSEKKTALHEKEE	1071
Pan_troglodytes	G---TVAHELGQV-----HQQ-----EFGSEKKTALHEKEE	1006
Macaca_mulatta	G---TVAHELQGA-----HQQ-----EFGSEKKAALHEKEK	1097
Callithrix_jacchus	R---TVAHQLOEA-----HQQ-----EFGSEKKATLPEKEE	1191
Mus_musculus	ENGKGPAADLQGA-----HQQ-DPAMALHNEGHLLEDGDA	829
Rattus_norvegicus	ESGKGPAADLQGA-----HQQKAPAMALHNEGHLLEDGDA	832
Canis_lupus_familiaris	AQRPALLAELRQETGKQQLHCQEEPEVLECPSEPFLEQQILQPKGEFESEKKVALHEK-E	1001
Equus_caballus	AQGSALPAELEEE--KQQQFCSQSEELQTCQSEALLEQKIAQLKGEFECEKKAVLHEKEE	1051
Bos_taurus	AQCSAPQAGQEEE-----LELLERKPEASLEQQVALLQGEFGSERKAALHGKEE	961
Xenopus_tropicalis	TSERQALSALQKAEQQLQIQEEIELLKQSEMLLEQQITQLKEEFEVERQVALEKKEE	2141
Rhinatrema_bivittatum	-----	
	.....2590.....2600.....2610.....2620.....2630.....2640	

Pavo_muticus	VLIQEREKAQAACQKE-E-----ALSAQLQEKAAARIIOLEKRVESLNCE	2270
Pavo_cristatus	VLIQEREKAQAACQKE-E-----ALSAQLQEKAAARIIOLEKRVESLNCE	2270
Gallus_gallus	VLIQESEKAQAACQKEKE-----TLSAQLQEKAAARIIOLEKRVESLNCE	2273
Chelonia_mydas	VLIQETEKQAARYQKERE-----ELSVQIQEKTNIIOLEKKVESLNHE	2222
Homo_sapiens	TLRLQSAQAQPPFHQEEKE-----SLSLQLQKKNHQQVQLKDQVLSLSHE	1115
Pan_troglodytes	TLQLQSAQAQPPFHQEEKE-----SLSLQLQKKNHQQVQLKDQVLSLSHE	1050
Macaca_mulatta	TLWLQSAQAQPPFHQEEKE-----SLSLQLQKKNHQQVQLKDQVLSLSHE	1141
Callithrix_jacchus	TRGLQSAQAQPPFHQEEKE-----SLSLQLQKKNHQQVQLKDQVVSLSHE	1235
Mus_musculus	VLRSVDAEGLLHQAGPQELGDAHTVEMQKSCAELAKPQELQASQDQVAQVRDKVFLNRE	889
Rattus_norvegicus	ALGGADTEDLQHHAEPREREGPHTVEMQTSQTELAKPQELQASQDQGAQVRDQVFLLSRE	892
Canis_lupus_familiaris	IHGLECAQAQSLYQKEKE-----SLFLQLQEKNNQILQLKEQILSLSHE	1045
Equus_caballus	LHRHEREQAQSFYRKEKE-----SLSLQLQEKNNQILQLKDQIVTSLSHE	1095
Bos_taurus	IHKLDHEKAHSLYEKEKE-----SLSLQLQEKNNQILQLKDQILSLNRE	1005
Xenopus_tropicalis	QVTKEVEKMSAHQMEMD-----HMTDKLQEKSKLVSQLEKILSLTKK	2185
Rhinatrema_bivittatum	-----	
	.....2650.....2660.....2670.....2680.....2690.....2700	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 16 of 30

Pavo_muticus	IQETNCELETTLIERRDRENOEGGNLVAMLRSDIEQSKDERKKMODSYQCLLKWLMLVKA	2330
Pavo_cristatus	IQETNCELETTLIERRDRENOEGGNLVAMLRSDIEQSKDERKKMODSYQCLLKWLMLVKA	2330
Gallus_gallus	IQETNCELETTLIERRDRENOEGGNLVAMLRSDIEQSKDERKKMODSYQCVLKWLVELVKA	2333
Chelonia_mydas	LEETSSSELETLLORRDRENOEGEYLVAMLRSDIELSQNERKKLOESYQCVLKLFVEMVKA	2282
Homo_sapiens	IEECRSELEVLQORRERENREGANLLSMLKADVNLHSHSERGALQDALRRLLGLFGETLRA	1175
Pan_troglodytes	IQECRSELEVLQORRERENREGANLLSMLKADVDLHSHSERGALQDALRRLLGLFGETLRA	1110
Macaca_mulatta	IEECRSELEALQORRERENREGANLLSMLKADVDLHSHSERGALQDLRRLLGLFGETLRA	1201
Callithrix_jacchus	IEECRAELEALQORRERENQEAANLLSMLKADADLSQSKRGALQDALRRLLGLFGETLRA	1295
Mus_musculus	LEECRAELEQLQORRERENQEGTTLICMLRADLELAQEGKALRDALRRLLDLFGDTLKA	949
Rattus_norvegicus	LEECRGELEQLQORRERENQEGATTLICMLRADVDLAQSEGKALRDALRRLLDLFGDTLKA	952
Canis_lupus_familiaris	VEERRRDLEQLQORRERENQEGTNLISMLKSDADLSDRERRALRDALRRLLSLFGEMLVK	1105
Equus_caballus	IEORRSDELEKLQORRERENQEGANLLSMLKADVDLHSHSERIALRDALRRLLGLFGETLKA	1155
Bos_taurus	VEERHSELEKLQORRERENQEGTALIAMLKSDVDLHSGERRALQDLRRLLGLFGETLQ	1065
Xenopus_tropicalis	MEKSHSQLEELVQORRERENQEGDNLVAMLRQADVSTAQQEKAKLOESCOQLLKLFSDVLKS	2245
Rhinatrema_bivittatum	-----	
	.....2710.....2720.....2730.....2740.....2750.....2760	

Pavo_muticus	TIAVEDLICSKIGLCCLDNMSASADSMESHSTIMEEVGFAQYFKAKEKSHLEKVDELLEDTL	2390
Pavo_cristatus	TIAVEDLICSKIGLCCLDNMSASADSMESHSTIMEEVGFAQYFKAKEKSHLEKVDELLEDTL	2390
Gallus_gallus	TIAVEDLICSKIGLCCLDNMSASADSMESHSTIVEEIGFAQYFKAKEKSHLEKVDELLEDTL	2393
Chelonia_mydas	TISTEDLICKKVGCLDDSLASGDSRESRMMEEVGFIQHFKAKEKRDLEKSD--LDLTL	2340
Homo_sapiens	AVTLRSRIGERVGLCLDDAGAG-----LALSTAPALEETWS--DVALPE-----LDRTL	1222
Pan_troglodytes	AVTLRSRIGERVGLCLDDAGAG-----LAPSAAPALEETWS--DVALPE-----LDRTL	1157
Macaca_mulatta	AITLRSRIGERVGLCLDDAGAG-----LALSAAPAEETWS--DVALPE-----LDRTL	1248
Callithrix_jacchus	AITLRSRIGERVGLCLDDAGTG-----LALSAAPALEETWS--DVALPE-----LDRTV	1342
Mus_musculus	AVTLKSRISERAGLLLDHEDAADT---SDARLAAAALGDMWS--DEGLLE-----IDRTL	999
Rattus_norvegicus	AVTLKSRISERAGLLLDHEDAADT---SGAQLAAAALGEMWP--DEGLLD-----IDRTL	1002
Canis_lupus_familiaris	AIALKSRISERVGLCLEDEDPPGAWPSGQALSAAPVLEETWPGSEAALLE-----LDRSL	1160
Equus_caballus	AVALKSRIGERVGLCLEQSPDLAQPGAQVPSAAPALDETWPGPDAAALPE-----LDGTF	1210
Bos_taurus	AIALKSRIGERVGLCLEDRSPPTTQPGGQSPPTDPAALDDMWAGLDVASLE-----PDGTV	1120
Xenopus_tropicalis	TLSTEDLICKKIGLCCLDSSLPHQENVDRSQWGTFSLLKCGELLERNEKNRVSPDCETMT	2305
Rhinatrema_bivittatum	-----	
	.....2770.....2780.....2790.....2800.....2810.....2820	

Pavo_muticus	TEHSQSPVTEEQYELSQHIFYESAFAKPEMAYENEEMILKICHLRLTAVERLLELVTEST	2450
Pavo_cristatus	TEHSQSPVTEEQYELSQHIFYESAFAKPEMAYENEEMILKICHLRLTAVERLLELVTEST	2450
Gallus_gallus	TEHSQSPVTEEQYELSQYLYESVFAKPEMAYENEEMILKICRRLTAVERLLELVTEST	2453
Chelonia_mydas	TEHNQVSAVTDEGSSELSQHLCEVFAFSPDLALENEEMILKICRRLTAVERLLELVTEST	2400
Homo_sapiens	SECAEMSSVA----EISSHMRESFLMSPESVRECEQPIRRVFQSLSLAVDGLMEMALDSS	1278
Pan_troglodytes	SECAEMSSVA----EISSHMRESFLMSPESVRECEQPIRRVFQSLSLAVDGLMEMALDSS	1213
Macaca_mulatta	SECAEMSSVA----EISSHMRESFLMSPESVRECEQPIRRVFQSLSLAVDGLMEMALDSS	1304
Callithrix_jacchus	SECAEMSSVA----EISSHMRESFLMSPESVRECEQPIRRVFQSLNLAVDGLMEMALDSS	1398
Mus_musculus	PEGAETSSVC----EISSHVCSFFISPENTLDCEQPIRRVFQSLSTAVEGLLEMALDSS	1055
Rattus_norvegicus	PEGAETSSVC----EISSHVCSFFMSPENTQCEQPIRRVFQSLSTAVEGLLEMALDSS	1058
Canis_lupus_familiaris	PECVEMPSEA----EISSHICESFFMSPESSELEYEQPIRRVFQSLGLAVEGLLEMALDSS	1216
Equus_caballus	PECAEMSSVA----EISSHVCSFFMSPESSTLECEQPVRRVYQSLGLAVDGLLEMALDSS	1266
Bos_taurus	AECAETSSVA----EISSHVCSFFLSPERTLDCEQPVRRVFQSLGLAVDGLLEMLVDSA	1176
Xenopus_tropicalis	EQSLMSSDEGY---EVSEYLCDSMLGSLVGLNEEEKILLMSQRLRTAVEQLLEMVAGST	2362
Rhinatrema_bivittatum	-----	
	.....2830.....2840.....2850.....2860.....2870.....2880	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 17 of 30

Pavo_muticus	KQLEKTHEIHAQFEEFFTRRNQETAQVVSQHQLMDCLTEESEAKNQLALELHKAEGIIE	2510
Pavo_cristatus	KQLEKTHEIHAQFEEFFTRRNQETAQVVSQHQLMDCLTEESEAKNQLALELHKAEGIIE	2510
Gallus_gallus	KQLEKTHEIHAQFEEFFTRRNQETAQVVCQHRELMECLTEESEAKNQLALELHKAEGIIE	2513
Chelonia_mydas	KQLEKTHEIHAHFEEFFSRRNQETAQVVSQHDLMECLNEESEAKNQLALELHKAEGIIE	2460
Homo_sapiens	RQLEEARQIHSRFEKEFSFKNEETAQVVRKHQELLECLKEESAAKAELALELHKTQGTLE	1338
Pan_troglodytes	RQLEEARQIHSRFEKEFSFKNEETAQVVRKHQELLECLKEESAATAELALELHKTQGTLE	1273
Macaca_mulatta	RQLEEARQIHSRFEKEFSFKNEETAQVVRKHQELLECLKEESAATAELALELHKTQGTLE	1364
Callithrix_jacchus	RQLEEARQIHSRFEKEFSFKNEETAQVVRKHQELLECLKEESAATAELALQLHKTRGTLE	1458
Mus_musculus	KQLEEARQLHRCVEREFRHRNEEMAQAMQKQQLERLREESAARDRLALELHTAKGLLE	1115
Rattus_norvegicus	KQLEEARQLHRCVEKEFRHRDEEMAQAVQKQQLERLREESAARDRLALELHTAEGLE	1118
Canis_lupus_familiaris	RQLEEARQIHSRFEKEFSCKNEETAQVVRKHQQLLERLEENAAARTRLMLELHQAQGIIE	1276
Equus_caballus	RQLEEARQMHSLEKEFSCKNEETAQVVRKHQQLLERLEENAAARARLVLELHKAEGILE	1326
Bos_taurus	RQLEEARQIHSRFEKEFSCKNEETAQVVRKHQELLEQLAESEAKAQLALELHKAEGIIE	1236
Xenopus_tropicalis	TQLELAHEMQQKIQEEFRSSNLEMAQIVISQEMKKQLALETEAKNQLQVELHKAQGLIE	2422
Rhinatrema_bivittatum	-----	
	.....2890.....2900.....2910.....2920.....2930.....2940	

Pavo_muticus	GYVAEKAALAEALNLKEESERRLVVELENMRERFOELTQEQAILG-----	2555
Pavo_cristatus	GYVAEKAALAEALNLKEESERRLVVELENMRERFOELTQEQAILG-----	2555
Gallus_gallus	GYVAEKAALAEALNLKEESERRLVVELENMRERFOELTQEQAILG-----	2558
Chelonia_mydas	GYVVEKAALAEAMSLKEESERRLVLELESLOEQFOKLTQEQAILCEERDMLISQKALAA	2520
Homo_sapiens	GFKVETADLKEVLGKEDSEHRLVLELESRLRQLQAAEQEALREECTRLWSRGEATAT	1398
Pan_troglodytes	GFKVETADLKEVLGKEDSEHRLVLELESRLRQLQAAEQEALREECTRLWSRGEATAT	1333
Macaca_mulatta	GFKVETADLKEVLGKEDSEHRLVLELESRLRQLQAAEQEALREECTRLWSRGEATAT	1424
Callithrix_jacchus	GFKVETADLQKALGKEDSEHRLVLELESRLRQLQAAEQEALREECTRLWSRGEATAT	1518
Mus_musculus	GFKVEKVDLQEALGKKEESEQLLILELEDLRKQLQAAARELLTLKEEKSVLWNQKETLTN	1175
Rattus_norvegicus	GFKVEKADLQEALGKKEESEQLLIVELEDLRKQLQAAARELLTLKEEKSVLWNQKETLTN	1178
Canis_lupus_familiaris	GFKEEKASLQEALCRQETAHGLAELEGLRQLQAAQQAELKEENSALWSQKEASAA	1336
Equus_caballus	GFKVEKASLQEALGRKEASEQLVLELESRLRQLQAAQQAELKEENATLWSQKEALAT	1386
Bos_taurus	GFKEEKASLQEALGQKEASERGLVGELEGLRQLQAAARRQAELREENAALCSQTEALAA	1296
Xenopus_tropicalis	GYAAEKETLEKTLGKENAERLLVVELEKSREQLKVLQEPSSLGEEKEVLLKLQEVLSG	2482
Rhinatrema_bivittatum	-----	
	.....2950.....2960.....2970.....2980.....2990.....3000	

Pavo_muticus	-----LLKEVELLAKEKLELECQAEKDHSNLSQMKVLEMELEE	2594
Pavo_cristatus	-----LLKEVELLAKEKLELECQAEKDHSNLSQMKVLEMELEE	2594
Gallus_gallus	-----LLKEVELLAKEKLELECQAEKDHSNLSQMKVLEMELEE	2597
Chelonia_mydas	NVGEIEVGVPPVANVAQKEDSGLLKEVEFLAKEKLELCQAEKDHSNLSQMKILEVELEE	2580
Homo_sapiens	DAEAREAE-----ALRKEVEDLTKEQSETRKQAEKDRSALLSQMKILESELEE	1445
Pan_troglodytes	DAEAREAGTAVT--AAHKDSALRKEVEDLTKEQSETRKQAEKDRSALLSQMKILESELEE	1391
Macaca_mulatta	DAEAREAGTAVT--AAHKDSALRKEVEDLTKEQSETRKQAEKDRSALLSQMKILESELEE	1482
Callithrix_jacchus	DAEAREAE-----ALRKEVEDLVTERSETKKQAEKDRSALLSQMKILEMELEE	1565
Mus_musculus	EAKER-----EAALQEEVESLRTVOWESRKQSEKDRATLLSQMRVLESELED	1222
Rattus_norvegicus	EAKEREAGTPVS--AGREDAALQKEVESLRTDQWESRKQSEKDRATLLSQMRVLESELED	1236
Canis_lupus_familiaris	EAEAREAGTPAP--IAHEDSALRREVECLTQEQSEARKQSEKDRAALLSQMKVFEAELEE	1394
Equus_caballus	GAEREADVPVT--LAHKDSALQKEVEYLTKQSETRROFEKDRSALLSQMKVLEAELEE	1444
Bos_taurus	DAREREAGIPVS--VAHEDSALRREVESLTQEQSEARRQADKDRASLLSQMRFLEAELEE	1354
Xenopus_tropicalis	SVKNVEA-----ELLKETERLAQEKLELHCQAKKDRSNLLSQMKVLEMELEE	2529
Rhinatrema_bivittatum	-----	
	.....3010.....3020.....3030.....3040.....3050.....3060	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 14:16:22 2022

Page 18 of 30

Pavo_muticus	QLQSNQDLTKQLMEAAELKQOIEVLEKQLKNQRFMDEQAIEREHERDDFQOEIKRLEEQ	2654
Pavo_cristatus	QLQSNQDLTKQLMEAAELKQOIEVLEKQLKNQRFMDEQAIEREHERDDFQOEIKRLEEQ	2654
Gallus_gallus	QLHSNQDLTKQLMETAEKQOIEVLEKQLKNQRFMDEQAIEREHERDDFQOEIKKLEEQ	2657
Chelonia_mydas	QMDONQKLAKKSLEVTDLRQOIQVLEKQLRSRQFMDEQAIEREHERDEFQOEIKLEDDQ	2640
Homo_sapiens	QLSQHRGCAKQAEAVTALEQQVASLDKHLRNQRFMDEQAAEREHEREEFQOEIORLEEQ	1505
Pan_troglodytes	QLSQHRGCAKQAEAVTALEQQVASLDKHLRNQRFMDEQAAEREHEREEFQOEIORLEEQ	1451
Macaca_mulatta	QLSQHRGCAKQAEAVTALEQQVASLDKHLRNQRFMDEQAAEREHEREEFQOEIORLEEQ	1542
Callithrix_jacchus	QLSQHLGCAKQAEAVTTLEQQVASLDKHLRSRQFMDEQAAEREHEREEFQOEIORLEEQ	1625
Mus_musculus	QLVQHRGCAQLAAEVATLKQQLAALDKHLRSRQFMDDQAAEREHEREEFQOEIORLEEQ	1282
Rattus_norvegicus	QLVQHRGCAQLAAEVTTTLKQQLATLDKHLRSRQFMDEQAAEREHEREEFQOEIKWLEEQ	1296
Canis_lupus_familiaris	QLSRHEACAKQAEELSALRQQAALDKHLRSRQFMDEQAVEREHEREEFQOEIORLEEQ	1454
Equus_caballus	QLSRHRVCAQQAELSALRQMGSLDKHLRSRQFMDEQAVEREQEREDFQOEIORLEEQ	1504
Bos_taurus	QLSHQACARQAEELAALRQIDSLDQHLRRRQRFMDEQAVEREHEREDFQOEIORLEEQ	1414
Xenopus_tropicalis	QMSRNQELLRKTNDMSDLQQQIQSLEKQLKNQRFMDEQAVEREHERDEFQOEIKLEEQ	2589
Rhinatrema_bivittatum	-----	
	.....3070.....3080.....3090.....3100.....3110.....3120	

Pavo_muticus	LKLSAKGQTSGEPREYG--NYDLILOVESLQAEVKEKVDDYNKLLLEKEQKHQEITARDK	2712
Pavo_cristatus	LKLSAKGQTSGEPREYG--NYDLILOVESLQAEVKEKVDDYNKLLLEKEQKHQEITARDK	2712
Gallus_gallus	LKLSAKLQTSGEPREYG--NYDLILOVESLQAEVEEKVDDYNKLLLEKEQKHQEIAARDK	2715
Chelonia_mydas	LKLSGKSGTCEGPREYQ--IFELTLQIESLQAEIKDKTDDFNKLLLEKEQKYQEVTVRDK	2698
Homo_sapiens	LRQAAPQPPWGPGRDSQQ---APLDGEVELLQOKLREKLDEFNELAIQKESADROVLMQEE	1562
Pan_troglodytes	LRQAAPQPPWGPGRDSQQ---APLDGEVELLQOKLREKSDGFNELAIQKESADROVLMQEE	1508
Macaca_mulatta	LRQVAKPQPPWGPGRDSQQ---TPLDGEVELLQOKLREKLDEFNELALQKESADROVLMQEE	1599
Callithrix_jacchus	LRQATKPPWGPGRDSQQ---QAPLDGEVELLQOKLREKSDGFNELALQKESADROVSMQED	1683
Mus_musculus	LRQAARPPPPGPRDSQC---VQLDEEVELLQOKLREKLDGFNELVIKKDFADQQLLIQEE	1339
Rattus_norvegicus	LRQATRP RP PP GPRDSQC---AKLDEEVELLQOKLREKLDGFNELVIKKDLADQQLLIQEE	1353
Canis_lupus_familiaris	LRQAARPPPHGPRVSD--E-EQLDEEVELLQOKLREKSDGFNELVIKKELADROVMIQEE	1511
Equus_caballus	LRQVARPPRGPHDSH--R-AQLDEEVELLQOKLREKSDGLNELVIKKELADROVLIQEE	1561
Bos_taurus	LRQAARPRSPGLRDSHRQR-AQLDKEVELLEEKLREKSDGLNELILKKELVDROVLIQEE	1473
Xenopus_tropicalis	LKLSLKNLGDSTRAYGLL---DWRIQIENLEAQVKEKSDDCNLLQGRDHLEQOITERNE	2645
Rhinatrema_bivittatum	-----	
	.....3130.....3140.....3150.....3160.....3170.....3180	

Pavo_muticus	EIVKLVA---QVQELEHSSTEVSKTVNYLQQQLQKMKKVETELKQDKEALQQQQYNNLIQ	2769
Pavo_cristatus	EIVKLVA---QVQELEHSSTEVSKTVNYLQQQLQKMKKVETELKQDKEALQQQQYNNLIQ	2769
Gallus_gallus	EIEKLVA---QVQELEHSSTEVSKTVNYLQQQLQKMKKVETELKQDKEALQQQQYNNLIQ	2772
Chelonia_mydas	EIEEQTA---QIRELEHTNTEASKTVSRLEQELQKMKKRETELTDKEALQQQQYNNLIQ	2755
Homo_sapiens	-----EIKRLEEMNINIRKKVAQLQEEVEKQKNIVKGLEQDKEVLKKQOMSSLLL	1612
Pan_troglodytes	-----EIKRLEEMNINIRKKVAQLQEEVEKQKNIVKGLEQDKEVLKKQOMSSLLL	1558
Macaca_mulatta	-----EIKRLEETNINIRKKMAELQEEVEKQKNIVKELADKELLKKQOMSSLLL	1649
Callithrix_jacchus	-----EIKRLEEMNVNMRKTVAQLQEELENQKNIVKLEQDKEALKEQOMSSLLL	1733
Mus_musculus	-----EIKRLEETNASIQRMVQLQEELEKQKKSMEELK-EKEILKQENMGDLLL	1388
Rattus_norvegicus	-----EIKHLEETNENIQRMQALQEELEKQRRSTEEL-----	1386
Canis_lupus_familiaris	-----EIRRLEETNASCRREAQLREELERQDAMKALQDKEALQEKQMSNLLL	1561
Equus_caballus	-----EIKRLEETNANTRQVIOLEEELEKQKKTVKELQDKEALQEQQMSNLLL	1611
Bos_taurus	-----EIRRLEETNASITRKLQLQEELETORRAVRALQDKEALQEQQMSNLLQ	1523
Xenopus_tropicalis	EIDKMLIRIQELEQAALINADAACKCTOLEEELQKLHKAQKEILQDKDALQKQYNNALQ	2705
Rhinatrema_bivittatum	-----	
	.....3190.....3200.....3210.....3220.....3230.....3240	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 19 of 30

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Pavo_muticus      ISALQSKLDEVHRHGVPEGSDQGLK-EQLQAEQESLERKEGEIASLLYHLEEHKDKLTS 2828
Pavo_cristatus    ISALQSKLDEVHRHGVPEGSDQGLK-EQLQAEQESLERKEGEIASLLYHLEEHKDKLTS 2828
Gallus_gallus     ISALQSKLDEVHRHGVPEGSDQGLK-EQLQAEQESLERKEGEIASLLDHLHQHKDILTS 2831
Chelonia_mydas    ISALQSKLDEARHRVPTEGSSDHGLK-EQLQAEQEALLMKEREILSLLEQLQFKENLIN 2814
Homo_sapiens      ASTLQSTLDAGRCPEPPSGSPPEGPE-IQLEVTQALLRHESEVLDLKEQLEKMKGDLES 1671
Pan_troglodytes   ASTLQSTLDAGRCPEPPSGSPPEGPE-VOLEVTQALLRHESEVLDLKEQLEKMKGDLES 1617
Macaca_mulatta    ASTLQSTLDAGSCPEPPPGSPPEGPE-VOLEVTQALLQRESEVLDLKEQLEKMKGVLES 1708
Callithrix_jacchus ASTLQSTLDAGRCPEPPSGSPPEGPE-APLEVTQALLQRESEVLDLKEQLEKIKGDLVS 1792
Mus_musculus      TTVSRSGLDGAGCPMLPQGSSSRGPE-AQPDVTERALLQHENEVVR----- 1434
Rattus_norvegicus -----EVVNS----- 1391
Canis_lupus_familiaris VSTLQSKLDEGRCPVPPADSCPEGPE-VOLEAVQALQORESEVLDLKEQLEKMKDDILVS 1620
Equus_caballus     VSTLQSKLDEGKCPPLPSAGSCPEGPE-VOSEAVQVLLQRETEILDLEQLEKVKDDILVS 1670
Bos_taurus        VSALQSRLEDEGKCPVPPPEGGRPDRAE-AQLEAMQALQREAEVSDIKEQLENLKDDLNVN 1582
Xenopus_tropicalis ISALQSKLDEARHKVPLAGESENLLKQEQEAEREALLIKEKEAESLAEQLEQFREDLMN 2765
Rhinatrema_bivittatum -----
.....3250.....3260.....3270.....3280.....3290.....3300

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Pavo_muticus      KNEEILQLKLQLEVKNLSTFTINQLQIENEQLKD-LTKLHVKNQDLDVSDSSSLSFPO 2887
Pavo_cristatus    KNEEILQLKLQLEVKNLSTFTINQLQIENEQLKD-LTKLHVKNQDLDVSDSSSLSFPO 2887
Gallus_gallus     KNEEILQLKLQLEVKNLSTFTINQLQIENAQLKD-LAKLHVKNQRSDVDGSSALSFPPO 2890
Chelonia_mydas    KNEEILRLNLQLEMOKNLTTG-IGLOIENAHKLEDIAKLHMMQSONVGNSESQAVLQFPO 2873
Homo_sapiens      KNEEILHLNLKLDMONSQTAVSLRELEENSTLK----- 1705
Pan_troglodytes   KNEEILHLNLKLDMONSQTAVSLRELEENSTLK----- 1651
Macaca_mulatta    KNEEILHLNLKLDKNSQTAVRLGELQEESSVSSK----- 1742
Callithrix_jacchus KNEEILHLNLKLDRONNQTVISLRELQEEENASLKE----- 1827
Mus_musculus      ----- 1434
Rattus_norvegicus ----- 1391
Canis_lupus_familiaris KSDEVLHLNLELDAQSSRAAVSVRELOEENASLKA----- 1655
Equus_caballus     KNEEVLHLTLKLDMONNHSAASVRELOEENANLKA----- 1705
Bos_taurus        KNEEILHLNLKLDGQNSTAASIKELQEEENAHKLT----- 1617
Xenopus_tropicalis KTEEVQLQNMQLQEVQRKQNTLVACDYQEEVLQKK-----DISSLKVQRDQERANSI 2818
Rhinatrema_bivittatum -----
.....3310.....3320.....3330.....3340.....3350.....3360

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Pavo_muticus      ALLKEKNQEIIDLNEQLRRLKYELVNTLENKVVEDQKSEIEELRSLEHLRGDQERLCKD 2947
Pavo_cristatus    ALLKEKNQEIIDLNEQLRRLKYELVNTLENKVVEDQKSEIEELRSLEHLRGDQERLCKD 2947
Gallus_gallus     ALLEEKNQEIIDLNEQLRRLKYDQVNTLENKVVEDQKSEIEELRSVIEYLRGDQERLCKD 2950
Chelonia_mydas    ALLEEKNQEIIDLNEQLRRLQRELNDATDTKVMENGKSEIDELRLVVEHLRGDQERLHRD 2933
Homo_sapiens      -----VIYTRSSEIEELKATIENTLQENQKRLOKE 1734
Pan_troglodytes   -----VIYTRSSEIEELKATIENTLQENQKRLOKE 1680
Macaca_mulatta    -----VVYTRSSEIEELKATIENTLRENQKRLOKE 1771
Callithrix_jacchus -FLHNKEEEILRVSQQLQACQGGMASHVLGEVITYTRSSEIEELKATIENTLHENQKRLOKE 1886
Mus_musculus      -----RNSEIDELKSLIENTLQENQROLOKD 1459
Rattus_norvegicus -----RNSEIEELKATIEHLQENQEQLOKA 1416
Canis_lupus_familiaris -FLONKEKEIMCVSEQLAQLAGMGSGALREVTYDRSSEIEELRSIIENTLRENQORLOKE 1714
Equus_caballus     -FLONKEREIKCVSEQLAQLAGMGSGALREVTYDRSSEIEELRSIIENTLRENQORLOKD 1764
Bos_taurus        -LLONKESEMHHVRESAEALARTGSGALSEVVCNRSSEIEELKSIIETLRENQARLOKD 1676
Xenopus_tropicalis ELQALLQEKQEIIDLNEQILQLQEQELEKFAHSQSSEVDELRSIVVEHLRSDLERLRKD 2878
Rhinatrema_bivittatum -----MIAMLQEEELAQLG-----SVCHEAHDCHNHLG----- 27
.....3370.....3380.....3390.....3400.....3410.....3420

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File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 14:16:22 2022
Page 20 of 30

	* *	
Pavo_muticus	KDEEVEQLHGVIKELQKELAQFGPVCHEVSDSQGDIFQFGLKSVENLQKELRKGLIDCH	3007
Pavo_cristatus	KDEEVEQLHGVIKELQKELAQFGPVCHEVSDSQGDIFQFGLKSVENLQKELRKGLIDCH	3007
Gallus_gallus	KDEEVEQLHEVIEKLQKELAQIGPVCHEVSDNQGDIFQFGLKSVENLQKELKKGLIDCQ	3010
Chelonia_mydas	KAEEVEQLHGVIEKLQKELLQLGPVCHEVSDSQDNLNLLRLLEEQVENLQKELKKGSLDFQ	2993
Homo_sapiens	KAEEIEQLHEVIEKLQHLSLMGPVVHEVSDSQ-----AGSLQSELLCSQ---	1779
Pan_troglodytes	KAEEIEQLHEVIEKLQHLSLMGPVVHEVSDSQ-----AGSLQSELLCSQ---	1725
Macaca_mulatta	KAEEIEQLHEVIEKLQHLSLMGPVVHEVSDSQ-----AGSLQSELLCSQ---	1816
Callithrix_jacchus	KAEEIEQLHEVIEKLQQLSLMGPVLHEVSHSQ-----AGSLQSELLCSQ---	1931
Mus_musculus	KAEEIEQLHEVIEKLQSELMLMGPKVHEVSDPQ-----AGSLHSELACLR---	1504
Rattus_norvegicus	KAEEIEQLHEVIEKLQSELMLMGPTVHEMSDLP-----PGSLHTIELSCLQ----	1461
Canis_lupus_familiaris	KAEMEQLHEVIERLQEELS LGAPAVPAAVDCHE-----LPAPVPAPAVG-----	1757
Equus caballus	KAEEIEQLHEVIEKLQRELSLGGLAVHEVSDCR-----AEDLQSELERGLICLO	1813
Bos_taurus	NAEEIEQLHEVIEKLQRELPLGGPEAPKAGEGG-----AMSLQSELLG-----IP	1721
Xenopus_tropicalis	KEEEVEQLHEVIEKLQQLAQLGPNRHEVSDSQESLDOLGLGEVENLKSELRKKGARKLHN	2938
Rhinatrema_bivittatum	-----QSGLVQIESQLKELSRGP-----EGSLAEVKNLQKELKTGS---Q	64
	.....3430.....3440.....3450.....3460.....3470.....3480	

		:	:	:	.	:	*::	:	:		
Pavo_muticus	GDTDLDGKNALLLSKVRELEEEELFASADRKDLQQQLEEKESSQFKMEVEVLEKKCONSOE	3067									
Pavo_cristatus	GDTDLDGKNALLLSKVRELEEEELFASADRKDLQQQLEEKESSQFKMEVEVLEKKCONSOE	3067									
Gallus_gallus	GDTDLDGRNALLLCVKRELEDLEFASAARKDLQQQLEEKESSQFKMEVEILEKKCONLOE	3070									
Chelonia_mydas	EHSDKNKKTIVLLHSNLKEQEELLELVSTAREALQQQLEEKESSQFKMEVEIILONLNVQE	3053									
Homo_sapiens	-AGGPRGC-----ALOGELEAAALEAKEALSRLADDERRHSOALEALOORLOGAE	1829									
Pan_troglodytes	-AGGPRGC-----ALOGELEAAALEAKEALSRLADDERRHSOALEALOORLOGAE	1775									
Macaca_mulatta	-AGGPRGC-----ALOGELEAAALEAKEALSRLADDERGHSALEALOORLOGAE	1866									
Callithrix_jacchus	-AGGPSGC-----ALQGKLEAAALEAKETVSRLLADEEHGHSOALQALQORLODAEE	1981									
Mus_musculus	-GEGLGGO-----ALRSNELQAQAQKEVFGLLADAHGHSOALEALOORLODAEE	1554									
Rattus_norvegicus	-AEGMGGC-----ALHNELQAQAQKAFAFGOLLAD--HGHSOALEALOORLODAEA	1509									
Canis_lupus_familiaris	-----PEALAAAAGAASRLFAGEHRHGALEALOORLOQAAEE	1794									
Equus caballus	AEGAIAHA-----ALEGELQAALAAKEALSOLLAEDERRHGALEALOORLRGAOE	1864									
Bos_taurus	AEGAIAAPA-----VLAGEIHAAALEAKEALSORLAEDERQHSALEALOORLOQAAEE	1772									
Xenopus_tropicalis	ESLTELDHLSTIGREDVNLEEFELIMYKGVESLQSLEESSAQHLAEIEVLNDNLHNLQ	2998									
Rhinatrema_bivittatum	DELDSGEGAVTAETHVKKLWEKLELVCTSRRELQLLFEEKSESKFKLEKKILDLSLOTVOE	124									
3490.....3500.....3510.....3520.....3530.....3540										

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 21 of 30

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      :      ::      :      :      :      :      :
Pavo_muticus      KDKQGRTMADQREAEESLQYLMKQASELE---TELKKRD---ASQAQDVYSHELEVSR 3180
Pavo_cristatus    KDKQGRTMADQREAEESLQYLMKQASELE---TELKKRD---ASQAQDVYSHELEVSR 3180
Gallus_gallus     KDSQIQAMAHQREADEGELRYLLEQASDLE---TELKKRD---ASQAQDVHSPLEEVSR 3183
Chelonia_mydas    SDLQIKTVAEQRVVEAAELOHLAEKIVRL---GELLQKDLHQKTEAEVQTLQSEVSR 3169
Homo_sapiens      RNLEIDALNQRKAAHSAELEAVLLALARIR---RALEQQPLAAGAAPPPELQWLRAQCAR 1928
Pan_troglodytes   RNLEIDTLNQRKAAHSAELEAVLLALARIR---RALEQQPLAAGVEPPELQWLRAQCAR 1874
Macaca_mulatta    RNLEIDALNQRKVAHSAELEAVLLALAHIR---CVLEQQPLAAGAEPPELQRLRAQCAR 1965
Callithrix_jacchus RDLEIHALNQRKAAHSAELEAVLSALGRLR---RALEQQPLTALAEPPELQHLRAQCAR 2080
Mus_musculus      RDLEIDAVNKWKVSHSLELEAILLALAHFR---HALEQQTCATPDEPPELQRLRVOCAR 1653
Rattus_norvegicus RDLEIDAVNKWKVSHSVELEAILLALAHFQ---HAVEQQTSATPDEPPKQLQLLVOCAR 1608
Canis_lupus_familiaris RDLEIDAMKRQKLAHSAELETTILAAFSRFR---RTLQQLPLAAEDEPPELQRLRVOCVR 1893
Equus_caballus     RDLEIEAMNKQKSAYSTELONILSALTFR---RALEQQPLAAADEPPELQRLRVOCAR 1963
Bos_taurus        RDLEIQALRRREKSTHSAELEAILAARFR---HALEQQLLAASGEPPPELQRLREOCVC 1862
Xenopus_tropicalis KDLIIQTLQEQRAADVAALAEQLAQKCVSHLAVSELQELHTNSEALKEQEEKHKEEIDH 3118
Rhinatrema_bivittatum KELHLKTLKEQRVVYLELMTKFN-----AELAKRDACHQPEAEERQAHRSSEAK 233
      .....3610.....3620.....3630.....3640.....3650.....3660

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Pavo_muticus      LDLHVQAVNQEEVSNQREIDELQGNITTKLDQIKIV----- 3216
Pavo_cristatus    LDLHVQAVNQEEVSNQREIDELQGNITTKLDQIKIV----- 3216
Gallus_gallus     LDLHVQAMNQKEVSKQREIDELQGSTTKLDQIKIV----- 3219
Chelonia_mydas    LDFKVQTLNQKEVVQREIDELQANATKLKDQIQEL----- 3205
Homo_sapiens      LSRQLQVLHQRFRLRCQVELDRRQARRATAHTRVPG-----AHPOPR 1969
Pan_troglodytes   LSRQLQVLHQRFRLRCQVELDRRQARRATAHTRVPG-----AHPOLR 1915
Macaca_mulatta    LSRQLHVLHQRFRLRCQVELDRRQACRTTAHTRVPG-----AHPOPR 2006
Callithrix_jacchus LGRQLQVLHQRFRLRCRVELDKRQACGAAAHTRVPG-----VHPOPC 2121
Mus_musculus      LSHQLQVLYRPFLLKCRMOLDQHOPHVASIGCANP----- 1687
Rattus_norvegicus LSHQLHVLVYRRFLRCQVELGQHOPRVASVGCADPP-----AEAQ-- 1647
Canis_lupus_familiaris LSRQLQVLNQRFLRCQKEADKQARGARLRPRGARGLGPGPRAEEASRDEASQDQVDSR 1953
Equus_caballus     LSRQLQTLNQRFLRCQEALDKPOEHGARLYPR----- 1995
Bos_taurus        LSRQLQALNQRFLRCQKELDERQACGEGGSQG-----WVPRGKETSCSEELQDQVDGR 1915
Xenopus_tropicalis LNQLLKTWEGKAKALTEEIQTMKLQETEKNLISRC----- 3155
Rhinatrema_bivittatum LELELQATP-----DCQLETDTVTHNSTIKREV----- 260
      .....3670.....3680.....3690.....3700.....3710.....3720

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Pavo_muticus      -----TKELEALRL-----ERDELISQLELYKAK 3240
Pavo_cristatus    -----TKELEALRL-----ERDELISQLELYKAK 3240
Gallus_gallus     -----TKELEALHL-----ERDELISQLELYKPK 3243
Chelonia_mydas    -----LKELEALCS-----ERDDLISQLESYKEK 3229
Homo_sapiens      MDGGAKAQVTGDVEASHDAALEPVPDPQGDLPVLVTLKDAPLCKQEGVMSVLTVCQRO 2029
Pan_troglodytes   MDGGAKTQVTGDVEASHDAALEPVPDPQGDLPVLVTLKDAPLCKQEGVMSVLTVCQRO 1975
Macaca_mulatta    VDGGAKAQVPGDMEASHDGALEPVPDPQGDLPVLMTELEAPLCKQEGVMSVLTVCQRO 2066
Callithrix_jacchus ADS-----DEEAHDAALEPAVNPWGDLPVLVMMKDAPLCKQEGVMSVLSICQRO 2173
Mus_musculus      -----CADDELE-----QEGVSNRLALAPHS 1708
Rattus_norvegicus -----GKRDGELE-----QDGVSSGLALAPHS 1669
Canis_lupus_familiaris QVASATQGQVRDPQNAVNDLQ-----AELPVTSGPPGLLKQDSVMSVLAVCQRO 2004
Equus_caballus     -----VESPVKGLQ-----AKALVTSDHAGLQKRDSVMSVLTVCQRO 2034
Bos_taurus        QLAQALDSRGSQPSLVKDDLP-----AKALPTLTCAEPSQDSVISVLTVCQRO 1966
Xenopus_tropicalis -----SDQVLVSLKEQLST----- 3169
Rhinatrema_bivittatum -----SDELHVSLAN----- 270
      .....3730.....3740.....3750.....3760.....3770.....3780

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 22 of 30

Pavo_muticus	EQCD-----KEDANFLFCWGERQGEVLKKGMEEL-EALETH	3277
Pavo_cristatus	EQCD-----KEDANFLFCWGERQGEVLKKGMEEL-EALETH	3277
Gallus_gallus	EQCD-----KENANCLFCWQQRQGEVLKEGMEEL-ESLETH	3280
Chelonia_mydas	EQSN-----DQEAKLHLVLKQEGEVQVHTNGMEKLKGERGAN	3267
Homo_sapiens	LQSELLLVKNEMRLSLEDGG-----KGKEKVLQEDCQLPKVDLIAQVKQLQEKLNRLLYS	2083
Pan_troglodytes	LQSELLLVKNEMRLSLEDGG-----KGKEKVLQEDCQLPKVDLIAQVKQLQEKLNRLLYS	2029
Macaca_mulatta	LQSELLLVKNEMRLSLEDVG-----KGKEKVLQEDCQLPKVDLIAQVKQLQEKLNRLLYS	2120
Callithrix_jacchus	LQSELLLVKNEMRLSLEDGGKVGWQGESREKAPEDCQLPKVDLIAQVKQLQEKLSCLIDS	2233
Mus_musculus	LAAQ-----AKEEL-EDCPLGKANLMAQVROLQEELDHRVHS	1744
Rattus_norvegicus	LVAQ-----AKEEQPEDCHLGNTSLRAQLRQLEEKLDPPQHS	1706
Canis_lupus_familiaris	LESELLLLKNEMHLRTEDRGKAPARMKNKENLLEDRLQKVGLISQVKELQEKLNHLVRS	2064
Equus_caballus	LESELLLVKNELRLSVEDHGKVSRAKADREQLLESCQLQKIDLIQVKQLQEKLNCLVRS	2094
Bos_taurus	LESELLLVKKEMRLHAEDGGRASGAVKDKGKLLLEDCLQKVDLIAQVKQLQEKLNHLVCS	2026
Xenopus_tropicalis	AKEMLI-----GKETELHNTDHLSSMKSELEELRTECELRETK	3208
Rhinatrema_bivittatum	-----	270
	.....3790.....3800.....3810.....3820.....3830.....3840	

Pavo_muticus	ADQSFASPADNLEEVALFDFTAHDTDK-----	3304
Pavo_cristatus	ADQSFASPADNLEEVALFDFTAHDTDK-----	3304
Gallus_gallus	VDQSFASPADNLEKVALFDFTAHDISK-----	3307
Chelonia_mydas	ADQSFASVSQSDKLILVQLEATDTSENHKDLIAKMTLHQEELKSELAQVKKELELSFEEQ	3327
Homo_sapiens	MTFQNVDAADTKSLWPMSAHLLESSWSDSCDGEEPDISPHTDTCANTATGGVTD---	2140
Pan_troglodytes	MTFQNVDAADTKSPWPMSAHLLESSWSDSCDGEEPDISPHTDTCANTAMGGVTD---	2086
Macaca_mulatta	MTLQNVDAADAKSPWPLASAHLLLESSWSDGSCDGEEPDTSAPTDACDASAATG-----	2173
Callithrix_jacchus	MTFQDVDAADKSPRPVALAHLLESRWSDGSRDGEEPDTSAPVDVCDANRARE-----	2286
Mus_musculus	VASRDTNSETCK----LQQPNLSENGPRNHCCNGEESKPSPPDDVLNIAKTTW-----	1793
Rattus_norvegicus	VAFRDTSMETCK----LQQPNPLENGSSNHCHNGEESRPSPPNDVP--AKTTW-----	1753
Canis_lupus_familiaris	VNFQNIETEDFKSQQPVACSRALENSLSSSSNGEETDRSSLVDAFHIDKTTCDLN----	2120
Equus_caballus	LSVPDIEAEDSESQQPLAFPRALSSSSSDSKNSEQTDRSPPIDAFNIDKTTCDLI----	2150
Bos_taurus	MSFQNIEMEDFKYQQALASPCALEDGLSDGSDNSEETDKSPPIDTFNI---IWDLA----	2079
Xenopus_tropicalis	AQQAIQQFKRRDACVAELQSHSQNLGA-----	3235
Rhinatrema_bivittatum	----FEQF-----HSQ-----	277
	.....3850.....3860.....3870.....3880.....3890.....3900	

Pavo_muticus	-----QSQVKQSEENISIQNWDMINSSEEQTFKKHRHQ	3339
Pavo_cristatus	-----QSQVKQSEENISIQNWDMINSSEEQTFKKHRHQ	3339
Gallus_gallus	-----QSQVKQSEENISIQKLDMINSSEEQTLKKHHHQ	3342
Chelonia_mydas	TGKILEDIKEKDAADLKLTHSRNLKTQIKQLQETLLTQEAEMTDKARELDLKKHCQOI	3387
Homo_sapiens	-----VIKNQAIDACDANTTTGGVTDVIKNWDSLIPDEMPDSPIQEKSECODMSLSSP	2193
Pan_troglodytes	-----VIKNQAIDACDANTTTGGVTDVIKNWDSLIPDEMPDSPIQEKSECODRSLSSP	2139
Macaca_mulatta	-----GVTDVIKNRDSLIPDEMPDSPIQEKSECODRSLSSP	2209
Callithrix_jacchus	-----ELTDVIKDQDSLIPDEVPDSPNQEKSECODGPHSSP	2322
Mus_musculus	-----DVIDIKNQDLLVQVEMPDFPTQEKLTSGGGPFSSQ	1829
Rattus_norvegicus	-----DVIGVIKNQDLLAQIEMPDSPPTPEKLASGGGAFSSQ	1789
Canis_lupus_familiaris	-----DLSGNQDPLMRNEMLDVPVEDKVELQEGPRCLQ	2153
Equus_caballus	-----DIIGNQDSSLRNELPKVPVEDKIDLDGSLCLQ	2183
Bos_taurus	-----EVTGNSDSLIRNE-PDAPTGEQVTLQDRSLCLQ	2111
Xenopus_tropicalis	-----QVQKLOKLTLESQEVTIASMSSELOKONVEGRYN	3268
Rhinatrema_bivittatum	-----QKSQGGTETGDALEPRNLQEQIAEKKSK	305
	.....3910.....3920.....3930.....3940.....3950.....3960	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 23 of 30

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Pavo_muticus      PGCPKTVGSAGCPEG-----TLKNFQDFIVDVTSWDSPEIMRKQDISVELQPV 3388
Pavo_cristatus   PGCPKTVGSAGCPEG-----TLKNFQDFIVDVTSWDSPEIMRKQDISVELQPV 3388
Gallus_gallus     LDSPKIIIVNAGCTEG-----TLKNFQDFIVDVTSWDSPEIMRKQDISMELPPAL 3391
Chelonia_mydas    MEFHQNPDSVKCKLNNLSRNTTEHAKETPKDFKCLVMDETSWDSPEIVRKQETSIELQPSL 3447
Homo_sapiens      TSVLGGSRRHQSHATAEA-----GPRKSPVGMIDLSSWSSPEVLRK-DWTLEPWPSSL 2242
Pan_troglodytes   TSVLGGSRRHQSHATAEA-----GPRKSPVGMIDLSSWSSPEVLRK-DWTLEPWPSSL 2188
Macaca_mulatta    TSMLGGSCHQSHATAEA-----GPRKSPVGMIDLSSWSSPEVLRK-DWSLEPRPSSL 2258
Callithrix_jacchus TSLLGVPVPHRSHAMEA-----RPRKGSVRMLDLSSWSSPEVLRK-DWTLEPQPSL 2371
Mus_musculus      ASGHSGSLLPEEAAE-----PQODPVRALDLSSWSSPEVVRK-DPSLEPQHSL 1876
Rattus_norvegicus ASVHGASLLPEEAAE-----PQKDPVRLDLSSWSSPEVLRK-EPSLEPQHSL 1835
Canis_lupus_familiaris ANFHGGSDDLTPTEGP-----GPLKNALRAMDLSSWSSPEVVRK-DLTLEPVPSSL 2202
Equus_caballus     ASLHSSSRDLTHTEGA-----EPLKNVLRAMELSSWSSPEVIRK-DSTLEPPSSL 2232
Bos_taurus        SHLHGCSQDLTHSQGS-----KPLKNVLRIMGLSPWSSPEVVRK-DSTLEPLENL 2160
Xenopus_tropicalis IASDLRAYTK-----PRSFTESTLDLSDWDSPEVVRK-QEEHMHSMR 3309
Rhinatrema_bivittatum IP-----TPTEDLQSLQ-----GQKNVHGSGW 326
.....3970.....3980.....3990.....4000.....4010.....4020

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Pavo_muticus      NLTPFSEAESTG---LEMVHSRS--SLOGDNSVLLGFSYLYENGSEEAADRADVKSFPVSS 3443
Pavo_cristatus    NLTPFSEAESTG---LEMVHSRS--SLOGDNSVLLGFSYLYENGSEEAADRADVKSFPVSS 3443
Gallus_gallus     NLTPFSEAESTG---LEMAHSRS--SLOGDNSVLLGFSYLYENGSEEAAGRADVKSFPVSS 3446
Chelonia_mydas    HLTPEFSEVDSVHSTDFEMKHNKSS-VVQGDTPGLLGYQSLYANTNEEAVARLDLKSAPFS 3506
Homo_sapiens      PVTPHSGALSLCSADTSLGDRADTSLPQTQGPGLLCSP-----GVSAALALQWAESE 2295
Pan_troglodytes   PVTPHSGALSLCSADTSLGDRADTSLPQTQGPGLLCSP-----GVSTAALALQWAESE 2241
Macaca_mulatta    PVTPHSGALSLCSADTSLRDRADTSLPQTQGPGLLCSP-----GVSAALALQWAESE 2311
Callithrix_jacchus LLTPHSGALSLCSADTSPRDRADSLQAQGLGLLCYP-----SVSVAALAPKWPGSP 2424
Mus_musculus      PLTPGVGTVSLHSVDIS-PDWTDP-LLQADVSGLLCYP-----GKSASGQAPLWAVAP 1927
Rattus_norvegicus PLTPGVGTVSLHSVDIS-PDWTDP-LLQADVSGLLCYP-----GKSATGQAPLWVAVAP 1887
Canis_lupus_familiaris PLTPCSDALS---LDASLQDRTSAS-LLQADQLELLWYL-----GQSPAEEKASRSAESPL 2252
Equus_caballus     PLTPCSDALSQRSPDASLRDRISTSLQADQSGLLCYP-----VRSAAQTAPRWAESE 2286
Bos_taurus        PLTPCSDALSLSLSDTSLWDGTSTHVLQADQSGRLCYP-----GESAAGTAPKWVGSPL 2214
Xenopus_tropicalis VFTPFSELSIAYSTDRDPIPSKSSSEYQKQTIQYDLLGS----- 3347
Rhinatrema_bivittatum PYEQSSDLMEGNIEDFSLSQSAFQEYCASLLES----- 359
.....4030.....4040.....4050.....4060.....4070.....4080

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Pavo_muticus      ESVYSAAADDQDMEK-ILOMRETDNLTPSDLODDVRSASATDVMSSG----- 3490
Pavo_cristatus    ESVYSAAADDQDMEK-ILOMRETDNLTPSDLODDVRSASATDVMSSG----- 3490
Gallus_gallus     ESIYSAGARDQDLKTTTLQMSGTDNLTPSDLODDVRSASATDVMSSG----- 3494
Chelonia_mydas    ESTYSIAEYQNMKEKRLVRDVFITLTPSDSQDDLRTSMGLEGASDG----- 3554
Homo_sapiens      -----PADDHHVQRTAVEKDVEDFITTSFDSQETLSPPPGLEGKADR----- 2338
Pan_troglodytes   -----PADDHHVQRTAVEKDVEDFITTSFDSQETLSPPPGLEGKADR----- 2284
Macaca_mulatta    -----PADDHRVQRTAVEKDVEDFITTSFDSQETLSPPPGLEGKIDG----- 2354
Callithrix_jacchus -----PADLH-VERMAVEKDVEDFITTS-FDSQETLSPPPGLEGKTS----- 2465
Mus_musculus      -----SAGKHHHAERTATEKDVEDFIVTSFDSQELLTSPSHELARRSDG----- 1970
Rattus_norvegicus -----SAEKHHVERTATEKDVEDFIVTSFDSQESLTSPSHELARRSDG----- 1930
Canis_lupus_familiaris AADRVPSADHHVLQMAVEKDVEDFIVTSLDAQEKPRSSPLGFEGKSN----- 2300
Equus_caballus     AIDRAPSADHHVQRTAVEKDVEDFIITSLDSQEKSGSPPLGLEGRSDG----- 2334
Bos_taurus        AADGVPSANHHAAQRPVEKDVEDFIITSLDSQEKSRSPPLGLEKSGDKSQQLRSCGRTAR 2274
Xenopus_tropicalis ---RTPSLSGSNFSAQRTSPVGDTEHTMVESETEDQVYNEGYETSLKP----- 3392
Rhinatrema_bivittatum -----ARDEYGSNAISNLGDRLSWELEESKHLDVQFLAYLQHTG----- 398
.....4090.....4100.....4110.....4120.....4130.....4140

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 14:16:22 2022

Page 24 of 30

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Pavo_muticus      -----CDSSTRSNLAAKLKEQLQTSDFSD-----ANFMAYLRYCGMFPDIMESVREK 3537
Pavo_cristatus    -----CDSSTRSNLAAKLKEQLQTSDFSD-----ANFMAYLRYCGMFPDIMESVREK 3537
Gallus_gallus     -----CDSSTRSNLEAKLKEQLQTSDFSD-----ANFMAYLQYCGMFPDIMESVREK 3541
Chelonia_mydas    -----YVSNTSSDLAAKLNQELFTEHLD-----ASF MAYLYQYCGIFQDAMDVVEK 3601
Homo_sapiens      -----SEKSDGSGFGARLSPGSGGPEAQT-----AGPVT PASISGRFQPLPEAMKEK 2385
Pan_troglodytes   -----SEKSDGSGFGARLSPGSGGPEART-----AGPVT PAPISGRFQPLPEAMKEK 2331
Macaca_mulatta    -----SEKSDGSGFGARLSLGS GGPEAPT-----AGPVT PAAIPGRFQPLPAAMKEK 2401
Callithrix_jacchus -----SEKSDGSGFGARLRPGSGGLEAHT-----AGPVT PAPISGRFQPLPEAMKEK 2512
Mus_musculus      -----SRKSDGPDIAMLTLGSEGSETPTTDLVAAAAA VPFRRFVQSPGAMKEK 2021
Rattus_norvegicus -----SGKSDGPDIAMLTLGSEGSETPTTDLVAATIG--PFSRRFVQSPGAMREK 1979
Canis_lupus_familiaris -----SENSDGSACGEILNDLGR LGAPA-----ARPPGPPAASGRFRFRPLEAMKEK 2347
Equus_caballus    -----SENSDGS GFGEILNGSERLKTPT-----AGPPVPPPASRRFRFRPLEAMREK 2381
Bos_taurus        LHPVPSEQPSVLGGGVFEAEPLSGSGRLGAPT-----ASPAAPPVTPRDCRRPLDTMKEK 2330
Xenopus_tropicalis -----EMRQGS LAGLKM DYLT K 3409
Rhinatrema_bivittatum -----MAEDGVESGKEMEVTGL 415
.....4150.....4160.....4170.....4180.....4190.....4200

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. . : : : : * . : . * * * * * :
Pavo_muticus      EILSPQLKTVLKLVEEESHKILALSEHSFGFRELKNVHRSRAMMEGWOKDGLALLNAIQS 3597
Pavo_cristatus    EILSPQLKTVLKLVEEESHKILALSEHSFGFRELKNVHRSRAMMEGWOKDGLALLNAIQS 3597
Gallus_gallus     EILSPQLKTVLKLVEEESHKILALSEHSFGFRELKNVHRTKALMEGWOKDGLALLNAIQS 3601
Chelonia_mydas    ETISPQLKSVLKMVYDESHRILALSEHPFPLSDQKSIQSS-AAAEGWOKDGLTLLDAIQS 3660
Homo_sapiens      EVRPKHVKALLQMVREDSHQILALSEGLAPP-----SGEPHPPRKEDEIQDISLHGGKT- 2439
Pan_troglodytes   EVHPKHVKALLQMVREDSHQILALSEGLAPP-----SGEPHPPRKEDEIQDSSLHGGKT- 2385
Macaca_mulatta    EVHPKHVKALLQMVCDESHQILALSEGLAPL-----TGEPHPPRKG D----- 2443
Callithrix_jacchus EVHPKHMKALLQMMRDESHQILALSEGLMPPSAL--GTGEPHPAWKGN----- 2558
Mus_musculus      EIHAKQMKALLQMVFDESHQILALSESQDPSSAL--NKGEPRDPLDGFPRDSQALSEVITD 2080
Rattus_norvegicus EVHAKQMKALLQMVFDESHQILALSESQDSSSAL--SKGEPRDPLDGVPRDRQALSEGTS D 2038
Canis_lupus_familiaris EVHPKQVKALLQMVCDESHQILALSECRGLPSAL--SRGEPRAPLEHFPGEGLLEAVPA 2406
Equus_caballus    EVHPKQVKALLQMVCDESHQILALSEYR-----GPHCAPLECFPREGQGLLEAVPA 2432
Bos_taurus        EVHPKQVKALLQMVCDESHQILALSEYREPPHIL--SRSEPSARLECLPLGGQGLLEAVPA 2389
Xenopus_tropicalis RGTSKNLQSMQMIHEESCKILALS QRP-----VDQIPSDPTVADTWLQDKQTLQDAMEK 3464
Rhinatrema_bivittatum EQLSPQLQALLDKVHKESCSILACSEYFPIYEVVPGMSRSTGLSEWQERLSLCGIIES 475
.....4210.....4220.....4230.....4240.....4250.....4260

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:
Pavo_muticus      LKDHL SKVADRGDK E----- 3612
Pavo_cristatus    LKDHL SKVADRGDK E----- 3612
Gallus_gallus     LKDYL SKVADRGDK E----- 3616
Chelonia_mydas    LKDYL SKVEDRGDK ESSDTCLDWRGELLQAVQGVLEKERNTFQIDLQSHLCNPGSGDEGS 3720
Homo_sapiens      -----QEVPTACPDWRGDLLOVVQEA FEKEQEMQGVLOPRLSGSDLGGHSS 2486
Pan_troglodytes   -----QEVPTACPDWRGDLLOVVQEA FEKEQEMQGVLOPRLSGSDLGGHSS 2432
Macaca_mulatta    -----KDVPTVC PDWRGELLQVVQEA FEKEPEIQGVLOPRLSGSDLGGHSF 2490
Callithrix_jacchus -----EDLPSTCPDWSGEFLQVVQEA FEKEQEMQGVLOPQLGGSDPGCRSS 2605
Mus_musculus      K-----GEKESLETHLTWSEELLRAIQEVFAREQ--EKAELQPRPYGSNLGDYNS 2128
Rattus_norvegicus R-----GEKEALGTHLTWSEELLQAIQEVFAREQ--ENAELOPRPYSSDLGDYNS 2086
Canis_lupus_familiaris PRRHPLAPQKGEQEPDPGLDWRGEFLQAVQEA FGKEREMLRaelQPRPCGSAPGEHSS 2466
Equus_caballus    LRGHPTPAPQKGEKPADVCLDWRGEFLRVIOEA FEKEREMLKVELQPRVGDSDPRDCSC 2492
Bos_taurus        PREHPTPGSQKGEKASSNVGLDWKGFLOTVQEA FEKEWEMLRVELWPQLCGLGPGGCGS 2449
Xenopus_tropicalis LSKALTEAALKQEKDSSDVALDWRKELLQNVQSLLESEREYLRLELQSLGNHGSMDAGS 3524
Rhinatrema_bivittatum LKELLINAIIDKGGKDAEDAPCDWRKEMFHKMOGLFEKERISLCNELYSHLYDHSSGDQRF 535
.....4270.....4280.....4290.....4300.....4310.....4320

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 14:16:22 2022

Page 25 of 30

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                                :      :*.***:*** **.**:*****:*      ::
Pavo_muticus      -----EQRQMVVEHLFSSERNSSLSEIQELRAQLRMTHLQNOEKLQQLQETL 3659
Pavo_cristatus    -----EQRQMVVEHLFSSERNSSLSEIQELRAQLRMTHLQNOEKLQQLQETL 3659
Gallus_gallus     -----EQRQMVVEHLFSSDRNSSLLSEIQELRAQLRMTHLQNOEKLQQLQETL 3663
Chelonia_mydas    LVEKLEHIVKROEEQORIVLEHLLSSDRNSSLLSEIQDLRAQLRMTHLQNOEKLQQLQETL 3780
Homo_sapiens      LLERLEKIIIREQGDLQEKSLLEHLRLPDRSSLLSEIQALRAQLRMTHLQNOEKLQHLRTAL 2546
Pan_troglodytes   LLERLEKIIIREQGDLQEKSLLEHLRLPDRSSLLSEIQALRAQLRMTHLQNOEKLQHLRTAL 2492
Macaca_mulatta    PLERLEKVISEQGDLEKSLLEQLCLPDRSSLLSEIQALRAQLRMVHLQNOEKLQHLRTAL 2550
Callithrix_jacchus LLERLEKVICEQGDLEKSLLEHLRLPDRSSLLSEIQALRAQLRMTHLQNOEKLQHLRMAL 2665
Mus_musculus      LVQRLEKVIQEQGDLPQ-KVQDHLCLSDRSSLLAEIQALRAQLRMTHLQNOEKLQQLCAAL 2187
Rattus_norvegicus LVKKLEKVIQEQGDLPQ-KVREHACLSDRSSLLAEIQALRAQLRMTHLQNOEKLQQLCAAL 2145
Canis_lupus_familiaris LLERLEKVVVEQ----EKSLEHLRASDRSSLLSEIQALRAQLRMTHLQNOEKLQQLCAAL 2522
Equus_caballus    LLERLEKVVVEQGDLEKSLLEHLRLSDRSSLLSEIQALRAQLRLTHLQNOEKLQQLCTAL 2552
Bos_taurus        LLERLEKVVVEQGDQERSLEHLCLSDRSSLLSEIQALRAQLRMTHLQNOEKLQQLCTAL 2509
Xenopus_tropicalis MSERLEHLLKEQEEQKHLVMAHLLASDRSSLLSEIQDLRSQRLMAHLQNOEKLQQLQEQAL 3584
Rhinatrema_bivittatum LVEKLEHIVNEKEEQQLVLEHLLSLDRSSLLAEIQDLRAQLRMTHLQNOEKLQQLQESV 595
.....4330.....4340.....4350.....4360.....4370.....4380

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*...* ** :*:***:***** *: .** :. :*: * :*: : * * : .
Pavo_muticus      TSVEDHGSKEQHQLRRKVELLEYKLOQEKCIIVSDLHSTLSEEQKRASETCELLNQEKAVV 3719
Pavo_cristatus    TSVEDHGSKEQHQLRRKVELLEYKLOQEKCIIVSDLHSTLSEEQKRASETCELLNQEKAVV 3719
Gallus_gallus     TSVEDHGSKEQHQLRRKVELLEYKLOQEKCIIVSDLHSTLSEEQKRASETRELLSQEKAAV 3723
Chelonia_mydas    TNAEDHGSKEQHQLRRKVELLEYNLQEKTIASDLQNSLSEEQERASEMLELLQKERSAV 3840
Homo_sapiens      TSAEARGSQKEQHQLRRQVELLAYKVEQEKCIAGDLQKTLSEEQEKANSVQKLLAAEQTVV 2606
Pan_troglodytes   TSAEARGSQKEQHQLRRQVELLAYKVEQEKCIAGDLQKTLSEEQEKASGVQKLLAAEQTVV 2552
Macaca_mulatta    TSAEARGSQKEQHQLRKQVELLYKVEQEKCIAGDLQKTLSEEQEKANGVQKLLAAEQSVV 2610
Callithrix_jacchus TSAEACGSQKEQHQLRRQVELLYKVEQEKSIAGDLQKTLREEEEEKASGLQKLLAAEQNAV 2725
Mus_musculus      TSTEARGSQREHQLRRQVELLAYKVEQEKCIANELQKTLSEEQETASDVRKRLVVEQNAV 2247
Rattus_norvegicus TSTEARGSQREHQLRRQVELLAYKVEQEKCIANDLQKTLSEEQEASDVRKRLMVEQNAV 2205
Canis_lupus_familiaris TSAEARGSRQEHQLRRQVELLAYKVEQEKRIASDVQKTLTEEQEKASSVRKLLVVEQTVV 2582
Equus_caballus    TSVEARGSQKEQHQLRRQVELLAYKVEQEKCIASDLQKTLNEEQEKANDVRKLLVVEQNAV 2612
Bos_taurus        TSAEARGSRQEHQLRRQVELLAYKVEQEKCIASDLQKTLNEEQEKANNVRKLLVVEQNAV 2569
Xenopus_tropicalis TNTEEKGSIRDHQLRRQVELLEYKLOQEASIVADLNASLSREKERASEQHKLLLVVEQGSV 3644
Rhinatrema_bivittatum TSAEEHGSKREHQLRKQVELLEYKRLHQMISMVNDLQCSLSRQEQELAEKCOHLKEQNT 655
.....4390.....4400.....4410.....4420.....4430.....4440

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*::: . . * : * : *      *...* . *
Pavo_muticus      STLKSDLYERKQENERLQKSLEEHQREINKLR-----FELESKEKDL 3761
Pavo_cristatus    STLKSDLYERKQENERLQKSLEEHQREINKLR-----FELESKEKDL 3761
Gallus_gallus     STLKSDLYERKQENERLQKSLEEHQREINKLC-----FELESKEKDL 3765
Chelonia_mydas    SDLKSELYESKEENESLQKSLQKLOREMNLRL-----SELESKEKDL 3882
Homo_sapiens      RDLKSDLCESRQKSEQLSRSLCEVQEQEVLQLR-----SMLSSKENEL 2648
Pan_troglodytes   RDLKSDLCESRQKNEQLSRSLCEVQEQEALQLR-----SMLSGKENEL 2594
Macaca_mulatta    RDLKSELCESRQESERLSRSLCEVQEQEVLQLR-----SMLSSKENEL 2652
Callithrix_jacchus WDLKSQLCESRQESERLSALHEVQEQEVLQLR-----SVLSSKENEL 2767
Mus_musculus      QDLKSELHACKQENTSLLESQDKVQEQEVLRLR-----AVLDGKEKEL 2289
Rattus_norvegicus QDLKSELHACKQENTNLLESQDKVQEQEVLRLRYGHVTWSYSGTSSASAGRAVLGKENEL 2265
Canis_lupus_familiaris RDLRSELRECKQDNERLLASLGEAQKEVLQLR-----SVLDSKESNL 2624
Equus_caballus    RDLKSELSECKQDNERLLASLNDVQKEVLQLR-----SVLDSKENDL 2654
Bos_taurus        RDLKSELCECRQDNERLLKSLNDVQKEVLQLR-----SMLDSKESDL 2611
Xenopus_tropicalis NQLRTOQEEWQLEQEKLVKTQKELOMDISTLR-----EQLESKAQAL 3686
Rhinatrema_bivittatum SILRKELCDCNQKLERLLSHQALQEQEISRLS-----YALESKEQDL 697
.....4450.....4460.....4470.....4480.....4490.....4500

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNDaps: Tue Feb 1 14:16:22 2022

Page 26 of 30

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      .  :  :  .      *  :      :  .  .  :  :  *  :  *  :  .  .  :  *
Pavo_muticus      TATLQELQTELLTETELRVLLLEEQLOHKKAEDKKKALEDLQAALDLQMVONSKLSVSL 3821
Pavo_cristatus    TATLQELQTELLTETELRVLLLEEQLOHKKAEDKKKALEDLQAALDLQMVONSKLSVSL 3821
Gallus_gallus     TATLQELEAERLTETELRVLLLEEQLOHKKAEDKKKALEDLQAALDLQTAQNRKLSVSL 3825
Chelonia_mydas    TVALODIONEHSKEKELRNMFEEOHLOHKLREDEKTKALEELOAALELOCTIONNOMSVAL 3942
Homo_sapiens      KAALQELESEQKGKRALQSLEEEQLRHLORESQSAKALEELRASLETORAQSSRLCVAL 2708
Pan_troglodytes   KAALQELESEQKGKRALQSLEEEQLRHLOREGQSAKALEELRASLETORAQSSRLCVAL 2654
Macaca_mulatta    KAALQELESEQKGKRALQSLEEEQLRHLOREGQSAKALEELRASLETORAQSSRLCVAL 2712
Callithrix_jacchus KAMRQELESEQKGKRALQSLEEEQLRHLOREGQNAKALEELRASLETORAQSSRLCVAL 2827
Mus_musculus      KVVLEEELESERGGKQALQAQEEQOLRYLQREGQSSRALEELKLSLEKOLAQNQLCVAL 2349
Rattus_norvegicus KVVLEEELECERGKGQVLAQEEQOLRHLOREGQSSRALEELKLSLEKOLAQNQLCVAL 2325
Canis_lupus_familiaris RAALQELSERGKERALQSRLEEAQLHLOREGQSSKTLEELRASLEKQFAQSSQLCVAL 2684
Equus_caballus    KAVLQELSERMKERALQSLEEEQLHLOREGQSSKTLEELRISLEKQYQAQSNRLCVAL 2714
Bos_taurus        QAALQHLLEGERMKEQALQSLEEEQLHMQREGQSAKTLEELRASLEQQAQSNQLCVVL 2671
Xenopus_tropicalis SVYIEKLHTHQELSES---KRLEEEKILQQQSQEHYEKTLQELSKSLEELQVONNLSAAL 3743
Rhinatrema_bivittatum LAATQSLQGEREKGK---ALTEQEQHONHPEDQKTNTVKDLKITLEAQNQLSTIAL 754
      .....4510.....4520.....4530.....4540.....4550.....4560

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      :  :  :  .  :  :  :  :  :  *  :  :  :  *  :  :  *  :  :  :  :  :  :
Pavo_muticus      EHEQIINDNLRKELRIEYSRCEALLSQEHDKVLELQKNLDAERNRSLELLNSLNHERVLT 3881
Pavo_cristatus    EHEQIINDNLRKELRIEYSRCEALLSQEHDKVLELQKNLDAERNRSLELLNSLNHERVLT 3881
Gallus_gallus     EHEQIINDNLRKELRIEYSRCEALLSQEHDKVLELQKNLDAERNRSLELLNSLNHERILT 3885
Chelonia_mydas    EHEKSANNNLRKELQIEHSRCEALLSQERNKLTLORNLEVEKNHSLLELLNALNHERVLT 4002
Homo_sapiens      KHEQTAKDNLQKELRIEHSRCEALLAQERSQSELOKDIAAEKSRTLELSEALRHERLLT 2768
Pan_troglodytes   KHEQTAKDNLQKELRIEHSRCEALLAQERSQSELOKDIAAEKSRTLELSEALRHERLLT 2714
Macaca_mulatta    KHEQTAKDNLQKELRIEHSRCEALLAQERSQSELOKDIAAEKSRTLELSEALRHERLLT 2772
Callithrix_jacchus KHEQVAKDNLQKELRIEHSRCEALLAQEQTQSELOKDIAAEKSRTLELSEALRHERLLT 2887
Mus_musculus      KHERAAKDNLQKELQIEASRCEALLAQEKQSELOKSLEAERSRSLELSEALQHERLLT 2409
Rattus_norvegicus KHERAAKDNLQKELQIEASRCEALLAQEKQSELOKSLEAERSRSLELSEALQHERLLT 2385
Canis_lupus_familiaris KHEQTAKDNLQKELQIEASRCEALLAQERGQSELOKSLEAEGRSLELAAALRHERLLT 2744
Equus_caballus    KHEQTAKDNLQKELQIEYSRCEALLAQERSQSELOKSLEVEKGRSLELSEALQHERLLT 2774
Bos_taurus        KHEQTAKDNLQKELQIEASRCEALLAQERGHMSELOKSLEAERDRARELSEALQHERILT 2731
Xenopus_tropicalis QHEQTCCSNIKKDLQIEQSRFEALLALEQNKLSQELAKERQSQKLSSTLTILERNML 3803
Rhinatrema_bivittatum EHEQASNSNLRKELQIEYSRCGALLSQEKSLSLSEFOHILTLEQCCEDLAATVNYEQAVL 814
      .....4570.....4580.....4590.....4600.....4610.....4620

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      :  :  :  :  :  :  :  :  :  *  :  :  :  :  :  :  :  :  :  :  :  :
Pavo_muticus      EQLSMQAKEDASCQRRELLLEQAFIRELOSQLEEEERSKAELAAIIEKTHQKGIKSKROL 3941
Pavo_cristatus    EQLSMQAKEDASCQRRELLLEQAFIRELOSQLEEEERSKAELAAIIEKTHQKGIKSKROL 3941
Gallus_gallus     EQLSVQAKEDASCQRRELLLEQAFIRELOAQLEEEERSQKTELAVITEKTHORAIRSKROL 3945
Chelonia_mydas    EQLSMRVNEDSSCKHKESLLEQTFVQELQALDEERSRAMELAAIIEKTHQAIQSKROL 4062
Homo_sapiens      EQLSQRTQE--ACVHODTQAHHALLQKLR----EEKSRVVDLQAMLEKVQQQALHSQQQL 2822
Pan_troglodytes   EQLSQRTQE--ACMHODTQAHHALLRKLK----EEKSRVVDLQAMLEKVQQQALHSQQQL 2768
Macaca_mulatta    EQLSQRTQE--ACVHODTQAHHALLRKLK----DEKSRVVDLQAMLEKVQQQALRSQQQL 2826
Callithrix_jacchus EQLSQRTQE--ACVHODTQAHHTLLRKLK----EEKSRVVDLQAMLEKVQQQAVRSQQQL 2941
Mus_musculus      EQLSRNSQE--ACARQETQVQHALLRKLK----AEKTRALELEAMLEKVQKQAAHTQQQL 2463
Rattus_norvegicus EQLSRNAQE--ACARQDTQAQHALLRKLK----AEKARALELEAMLEKVQKQAAHTQQQL 2439
Canis_lupus_familiaris EQLSR-----GPRESPAHHALLRKLK----EEKSRAAELOARLEQVQ-----RQQ 2785
Equus_caballus    EQLSRRTQE--ACAHQETQVHHALLRKLK----DEKARVVELQAMLEKVQQQAMRSORQL 2828
Bos_taurus        ERLSR-----RPQERPAHQALLQKLR----AQEEHVRELEVALEAAQR-----RAL 2773
Xenopus_tropicalis DQLRQQHSMELSRKDQEKLQEHNTVLTLSQLEEEERSRAKDLAAMMEKTOQQQAIHAKROL 3863
Rhinatrema_bivittatum EQLAKKHQGPSPNKKQETLTGQSFVQELQALKEEKKRTVELADKMEKTOQHAVLVKROA 874
      .....4630.....4640.....4650.....4660.....4670.....4680

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 27 of 30

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*.: :
Pavo_muticus      EADVQMCCEETQME-EISNKLRTVLESLSQKQEQN----- 3976
Pavo_cristatus    EADVQMCCEETQME-EISNKLRTVLESLSQKQEQN----- 3976
Gallus_gallus     EAEVQMCCEETQKEKEITNKLRLVLDLSQKQEQN----- 3981
Chelonia_mydas    EAEVQMCCEETQKEREVSTKLRTVLESLSQKQEQVIRSLEREREKGLKVDWEQLQTLF 4122
Homo_sapiens      EAEAKHCEALRREKEVSATLKSTVEALHTQKRELRCSLEREREKPAWLQAELEQS--- 2878
Pan_troglodytes   EAEAKHCEALRREKEVSATLKSTVEALHTQKRELRCSLEREREKPAWLQAELEQS--- 2824
Macaca_mulatta    EAEAEHCEALRREKEVSATLKSTVEALHTQKRELRCSLEREREKPAWLQAELEQS--- 2882
Callithrix_jacchus EAEAKHCEELRREKE----- 2957
Mus_musculus      EAQAQERCVELRREKE----- 2479
Rattus_norvegicus EAQAQERCLELRREKEVSGNLRSAVDALQTHKQELGCCLEREREKAAWLQAELEQL--- 2495
Canis_lupus_familiaris EADVQKRAELEREKEVRAAQAR-----EPGRCLRREG-HASQQQAGLEPI--- 2830
Equus_caballus     EAEVHKRCQELQKEKEVSLSLSTVEALQTPKSQRLCYLEREGEKPAPWLQTELEQL--- 2884
Bos_taurus        EAEAHVHREEVEREQEVSAAPKT-----PPEILPGTRERPAR----- 2810
Xenopus_tropicalis EAEVQASREETQNVRETSIKLRAMLDSLSQKQQLDNLEHLRIRESNLQKERDQYQAQ- 3922
Rhinatrema_bivittatum EVELQISCDKTQKEKEFSKKLQALKCLO----- 903
.....4690.....4700.....4710.....4720.....4730.....4740

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*: *::: * : * :
Pavo_muticus      -----LELQHORDEQRIKEMOEIL 3995
Pavo_cristatus    -----LELQHORDEQRIKEMOEIL 3995
Gallus_gallus     -----LELQHORDEQRIKEMOEIV 4000
Chelonia_mydas    RSMKEQEKSKKEEREKERROFEKEFEKRWKDRERLHELELQHORDEHRIKELQOTL 4182
Homo_sapiens      HPRLKEQEGRKAARRSAEARQSPAAAEQWRKWORDKEKLRELELQORDLHKIKLOQTV 2938
Pan_troglodytes   HPRLKEQEGRKAARRSVEARQSPAAAEQWRKWORDKEKLRELELQORDLHKIKLOQTV 2884
Macaca_mulatta    HPRLKEQEGRKASRRSTEAGQSPAAAEWRKWORDKEKLRELELQORDLHKIKLOQTV 2942
Callithrix_jacchus -----RELELQORDLHKIKLOQMV 2978
Mus_musculus      -----RELEIQRORDEHKIEQLRLV 2500
Rattus_norvegicus SARVKQQEARQDEKRM--DRRSREDLDKRWQRVKEKLRELELQORDEHKIEQLRLV 2553
Canis_lupus_familiaris QAGLAAQEGRKDARR-ADVGPGRADAEMRPTG--AKEKLRELELQORDEHKIEQLRLV 2887
Equus_caballus     HAGVADQEGRKATRRRAETROSQADAKEWEQRORDKERLRELELQORDGHKITLOQTV 2944
Bos_taurus        GRGRVEQDACEVDTGAELRPSRADTQPSRWWORDKETLRELELQORDEHKIEQLRLV 2870
Xenopus_tropicalis IFIYQEEERCWMKQKEKDRKSEEQTEAKRALEEREKRILSLQOQHERDOHRIQELQHML 3982
Rhinatrema_bivittatum ----REKEARLMRERERGGKDDQQTMDQGDWERDEAMLOLELQHQKDHQIKELQRL 959
.....4750.....4760.....4770.....4780.....4790.....4800

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*
Pavo_muticus      AILEETERSPPSPSSQRLGCTSDK-DONAKEPMTKETGKFNLOOQ-KQOLEKIROQLLF 4053
Pavo_cristatus    AILEETERSPPSPSSQRLGCTSDK-DONAKEPMTKETGKFNLOOQ-KQOLEKIROQLLF 4053
Gallus_gallus     AILGETERSPPSPSSQRLGCTSDK-DONAKEPMTIETGKFNLOOQKQOLEKIROQLLF 4059
Chelonia_mydas    AELEEQERNLASHKSQQLSSCPKNDYNANLSLATETALHLQOQ--QLEKIROQLLF 4239
Homo_sapiens      RDLESKDEVPGSRLHLG-----SARRAAGSDADHLWEQQR---ELEAMRORLLS 2984
Pan_troglodytes   RDLESKDEVPGSRLHLG-----SARRAAGSDADHLWEQQR---ELEAMRORLLS 2930
Macaca_mulatta    RDLESKDEVPGSRLHLG-----SARRAAGLDADHLWEQQR---ELEAMRORLLC 2988
Callithrix_jacchus RDLESKDEAPGGRLHPD-----SAHGAAASDVHLWEQOQ---ELEAMRORLLC 3024
Mus_musculus      RELRWKEEVSGGNGPCR-----GSPGRGSLERDQFQEQOQ---ELEKIROQLLC 2546
Rattus_norvegicus RELRWKEEAPGGNGPCR-----GSPCLGSLERDQFQEQOQ---ELEKIROQLLC 2599
Canis_lupus_familiaris QALEAKEEAAQR-----PEAERLQEERL---GLERVROQLLC 2921
Equus_caballus     RELEAKEAAHLC-----PESQRLREOQ---DLEKIROQLLC 2978
Bos_taurus        QELQARVALPN-----TEPEHLREOQR---GLEKVVROQLLC 2903
Xenopus_tropicalis AELEEQERAIASRKLOFQ-----KESFSPAKIFSISTVYSKGLEKVVROQLFQ 4030
Rhinatrema_bivittatum IELAKHKQEQEDAYSSMK-----SNANDHELCSPSIGTINLOKLEKAKQLLF 1007
.....4810.....4820.....4830.....4840.....4850.....4860

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNDaps: Tue Feb 14:16:22 2022

Page 28 of 30

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      . : . : . : : * : : * * : : *
Pavo_muticus      VAAHLIELMCKTVDKTVSDWYVSNDEAVASLLQTLKELKSDLLSPP----- 4099
Pavo_cristatus    VAAHLIELMCKTVDKTVSDWYVSNDEAVASLLQTLKELKSDLLSPP----- 4099
Gallus_gallus     VAAHLIELMCKTVDKTVNDWYVSNDEAVASLLQTLKELKSDLLSPP----- 4104
Chelonia_mydas    AAVHLLNEFIYKTVDKTVNDWSASNDEAIASLLHTLKEELKSELSTSNPLK--PLOGSVSL 4297
Homo_sapiens      AARLLTSFTISQAVDRITVNDWTSSNEKAVMSLLHTLEELKSDLSRPTSSQKKMAAELOFOF 3044
Pan_troglodytes   AARLLTSFTISQAVDRITVNDWTSSNEKAVMSLLHTLEELKSDLSRPTSSQKKMAAELOFOF 2990
Macaca_mulatta    AAGLLTSFASQAMDRITVNDWTSSNEKAVVSLHTLEELKSDLSRPTSSQKKMAAELOFOF 3048
Callithrix_jacchus AAGLLTSFASQAMGRTINDWTSSNQKAGASLLHTLEELKSELSTSSQKKVAAELOLOF 3084
Mus_musculus      AAGLLTSFTINHTVDRTIKDWTSSNEKAVSSLMRTLEELKSELSTSMPTSFQKKMTAELOVOL 2606
Rattus_norvegicus AAGFLTSTFTINHTVDRTIKDWTSSNEKAVSSLMRTLEELKSELSTSMPTSFQKKMAAELOVOL 2659
Canis_lupus_familiaris AAGLLTSFISRTVDRTISDWTSSNEKAVTSLHTLEELKSELSTPSSQKKMTAELOVOL 2981
Equus_caballus    AAGLLTTFINQTVDRITISNWTSSNEKAVTSLHTLEELKSELSTSMSSSQKKMTAELOVOL 3038
Bos_taurus        AAGLLTSFINQTVDRITISDWTSSNEKAVASLLHTLEELKSELSTSSQKKMTAELOVOL 2963
Xenopus_tropicalis MVLQVKQWVNKNNERKLSHP--DDEAVISMLNTLSELKTELK--RGCGKP-LGQVSHSL 4085
Rhinatrema_bivittatum TAIHLKKFMHNVDRSTALS--DGASMASLLHTLGELKSELKNLSSTARK-PSHDPAIL 1064
.....4870.....4880.....4890.....4900.....4910.....4920

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Pavo_muticus      -----ASQIRSTDDANPVQE 4114
Pavo_cristatus    -----ASQIRSTDDANPVQE 4114
Gallus_gallus     -----ASQIRSTDDSNPVQE 4119
Chelonia_mydas    VDILLKENGELAKSVTTLTTEEKLELRAAICOLEKNLQOQHHRGIGNRQIHSTDDAHSVQG 4357
Homo_sapiens      VDVLLKDNVSLTKALSTVTQEKLELSRAVSKLEKL-----LKHHLQKGCSPSR 3092
Pan_troglodytes   VDILLKDNVSLTKALSTVTQEKLELSRAVSKLEKM-----LKHHLQKGRSPSR 3038
Macaca_mulatta    VDVLLKDNVSLTKALSTVTREKLELSRAVSKLEKM-----LKHHLQKGCSPSR 3096
Callithrix_jacchus VDVLLKDNVSLTKALSTVTREKLELSRAVAKLEKM-----MKHHLQKGCSTPSR 3132
Mus_musculus      MNELLSNDALTKAVGMATREKAELCRTVSRLEKT-----LKHHTQKGCVLNR 2654
Rattus_norvegicus MNELLSNDALTKAVGMATREKAELCKTVSRLEKT-----LKHHTQKGCILNR 2707
Canis_lupus_familiaris VDVLLKDNDSLTKALRTVTQEKALCRAVSQLEKS-----LKHHLVLRGVCSEK 3029
Equus_caballus    VEVLLKDNDSLTKALGAATQEKALCRAVSHLEKT-----LKHHLKGCALRK 3086
Bos_taurus        VDVLLKDNESLSRALSTVTREKAELCKALSRLEKRAH-----RVPTLQEGCARKR 3013
Xenopus_tropicalis MDVLQSENEELTKSVTALTKDKMELKSQLAQLKRLQOPS--EKQVRSISASESVLE 4139
Rhinatrema_bivittatum TDVLLLENKELTKSVTSLTEEKLEKLK----- 1090
.....4930.....4940.....4950.....4960.....4970.....4980

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      : : : : : * : : * * : : *
Pavo_muticus      LERAAWQQERSILONALKQAESELAkataETENKPTVEAFNPKLQRLYRKYLAESFRKA 4174
Pavo_cristatus    LERAAWQQERSILONALKQAESELAkataETENKPTVEAFNPKLQRLYRKYLAESFRKA 4174
Gallus_gallus     LERAAWQQERNILONALKQAESKLAKATAETENKPAMEAFNPKLQRLYRKYLAESFRKA 4179
Chelonia_mydas    SERASWOREKTILONALKQAESELAkatVEIENKPIETSNPKLQRLYRKYLAESFRKA 4417
Homo_sapiens      SERSAWKPDETAPOSSSLRRPDGRLPPAAASEEAH----TSNVKMEKLYLHYLAESFRKA 3148
Pan_troglodytes   SERSAWKPDETAPOSSSLRRPDGRLPPAAASEEAH----TSNVKMEKLYLHYLAESFRKA 3094
Macaca_mulatta    SERAAWKPDETAPOSSSLRRPDGRLPPAAASEEAH----PSNVKMEKLYLHYLAESFRKA 3152
Callithrix_jacchus PDRSAWKPDETVPESSLRCPDGRPLPAASREAN----TSNVKTEKLYLHYLAESFRKA 3188
Mus_musculus      QSKSSLKQDGTDLQSSSLRHSDEPEWHSQTTSQDITN----TCNIKMEKLYLHYLAESFRKA 2710
Rattus_norvegicus QSKTPLKQDGMQLQSSSLPHSDPEWHPQTITGDTN----TCNIKMEKLYLHYLAESFRKA 2763
Canis_lupus_familiaris PDRCAGKQDGTALPSSARQPDGRLPPAAAREAN----TCGVQMEKLYLHYLAESFRKA 3085
Equus_caballus    SDRSAWKQDRTVLQSSSPROPDGLPTPAASDEAK----VCNIKMEKLYLHYLAESFRKA 3142
Bos_taurus        SDRSAWKQDKMVSPGSARHPDPAL-----DAG-----ACSAKMEKLYLHYLAESFRKA 3062
Xenopus_tropicalis AERAAWHRERRHLQIALKEAESELAkMTLENHVPD--VPI SKMORLHRKYLAESFRKA 4197
Rhinatrema_bivittatum -----REKEYLENNLQHYLCKG--AAGEQVKRLYMKYLAERFRKA 1129
.....4990.....5000.....5010.....5020.....5030.....5040

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCNaps: Tue Feb 1 14:16:22 2022

Page 29 of 30

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*:*****:*:**** *:***:***:~::~** : : . ::~** ***::~*
LVYQKYYLLLLGGFODCEQATLSLIARMGIYVSPADLQLSASLSRPFTKFRCAVRAVIA
LVYQKYYLLLLGGFODCEQATLSLIARMGIYVSPADLQLSASLSRPFTKFRCAVRAVIA
LVYQKYYLLLLGGFODCEQATLSLIARMGIYVSPADLQLSASLSRPFTKFRCAVRAVIA
LVYQKYYLLLLGGFODCEQATLSLIARMGVYVSPADLQVSESRSPFTKFRSAVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАERKITS---RPFTRFRTAVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАERKITS---RPFTRFRTAVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАERKITS---RPFTRFRTAVRVVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАERKITS---RPFTKFRТАVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАDKKITS---RPFTKFRТАVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАDKKVТАS---RPFTRFRTAVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАDKKTTTS---RPFTRFRTAVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАDKKVТTS---RPFTKFRТАVRVIA
LIYQKYYLLLLIGGFODSEQETLSMIAHLGVFPСКАDKKAAGP---RPLTRFRTAVRVIA
LVYQKYYLLLLGGFOACEKATLSLIARMGVYVSPSDLQIPITQKPAFTKFRSAVRVIA
LVYQKYYLLMLLGGFOCEQATLSLIARMGIYVSHRDLQVSLHSHAFSKFRSAVRAIIA
.....5050.....5060.....5070.....5080.....5090.....5100

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:  **  ***: ** : : .      *      .      :  *
VSRLKFLVRKWNRLNRRNAQGETISQITGNNT-ASGARTDTLTKQQLPAVHVS SPPTTRDT 4293
VSRLKFLVRKWNRLNRRNAQGETISQITGNNT-ASGARTDTLTKQQLPAVHVS SPPTTRDT 4293
VSRLKFLVKKWKKLNKRKAQAETVSQNTGSNT-ASGARTETLTKQQLTAVHVS SPPTWDT 4298
VSRLKFLVKKWKKLNKRKAQGENISHSIGHNP-VSGARTEVLRLQQCFPSVNVNS SPPTRDI 4536
ILRLRFLVKKWQEVDRKGALAAQG-KAPRP-----GPRAR--RPQ-SPPTRES SPPTRDV 3255
ILRLRFLVKKWQEVDRKGALAAQG-KAPRT-----GPRAR--RPQ-SPPTRES SPPTRDV 3201
VLRLRFLVKKWQEVDRKGALAAQG-KVPRP-----GPRVR--RPQ-SPPTRES SPPTRDV 3259
ILRLRFLVKKWQEVDRKGALAAQG-RAPRP-----GPRAR--RPQ-SPARTRES SPPTRDV 3296
VLRLRFLVKKWQEVDRKGALVHP-KSTRH-----GHRTS--QRQSPSGPRASLPTRDT 2819
VLRLRFLVKKWQEVDRKGALIHHSRSTRH-----GHRTS--QRQNSPSGTRASLPTRDV 2873
ILRLRFLVKKWQEVDRRGAATHG-RAPRP-----GLPAP--RQ-PPPAASR-SPPTTRDT 3193
IFRLRFLVKKWQEVDRKGALVRG-RAPRPVIL-GEGLGP--QQQSPPETs-ESPTRDV 3255
VLRLRFLVKKWQQVDGRGALAPG-QALRP-----GEGLVP--RRQSPPVITRES SPPTRDV 3173
ISRLKFLVRKWHKINKKAGVEDPVVQIPAAFKGGLPLTRTDILHQONIGQVLLNSPPTKDV 4317
ISRLGFLVKKWKKMNRNRDQIEGHTQNIVHRPVLGTPTTLGHQQQSSIIILNSPQAQDT 1249
.....5110.....5120.....5130.....5140.....5150.....5160

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GLCHRTSSARSVSCSSKSSHRSHS-----	4317
GLCHRTSSARSVSCSSKSSHRSHS-----	4317
GLCHRTSSARSVSCSSKSSHRSHS-----	4322
G5CHRTSSARFVSHSPKSSYWLHN-----	4560
PSGHTRDPARGRRLLLLAAASPHSGG-----	3279
PSGHTRDPARGRRLLLLAAASPHSGG-----	3225
PSGHTRDPARGHGLAAAAASPHTGG-----	3283
PLGHARDPARGHGRAAAASPHSGE-----	3320
SSGPTKASRHSPPRSAAAGSPGKE-----	2842
SSGTKDSRHSPKCSAT-SLGKG-----	2895
SCSRSGDRAPKASPGRRHRGNHASVYSGAGTREAVGAVSFPPRSPRICNKAHLSLCLRGV	3253
SSSHTRDPVPKASPRRRER-----	3274
SSSQARDVPKASPRRREK-----	3192
PLSSLRPSPISTSVQSPKTTTHWIH-----	4341
ASCHR---VCSATLVSSATAKSSQ-----	1269

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/PCN Daps: Tue Feb 1 14:16:22 2022

Page 30 of 30

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                                     .
                                     ***.*.:***: **: *****
Pavo_muticus      -----RLPPSTS---ERSPVPTQDPERSLTEYIHRLEIIQORLGGMQP 4357
Pavo_cristatus    -----RLPPSTS---ERSPVPTQDPERSLTEYIHRLEIIQORLGGMQP 4357
Gallus_gallus     -----RLPPSTS---EKSPVPTQDPERSLTEYIHRLEIIQORLGGMQP 4362
Chelonia_mydas    -----RLHPSTS---SASEKSLVSTQDPERSLTEYIHRLEVIQORLGGAQT 4603
Homo_sapiens      -----RATPSPNRSLERSLTASQDPEHSLTEYIHHLEVIQORLGGVLP 3322
Pan_troglodytes   -----RATPSPNRSLERSLTASQDPEHSLTEYIHHLEVIQORLGGVLP 3268
Macaca_mulatta    -----RATPSPNRSLERSLTASQDPEHSLTEYIHHLEVIQORLGGALP 3326
Callithrix_jacchus -----RATPSPNRSLERSLTASQDPEHSLTEYIHHLEVIQORLGGAI 3363
Mus_musculus      -----RSTSTPSSRLERSLTASQDPEHSLTEYIHHLEMIQORLGGLP 2885
Rattus_norvegicus -----RSTSTSSRLERSLTASQDPEHSLTEYIHHLEMIQORLAGLP 2938
Canis_lupus_familiaris GTCVWNPPCQRVPLSAPASTPSPDSRSQSPAASQDPERSLTEYIHHLEVIQORLGGAAA 3313
Equus_caballus    -----SNPSPNSRSERSLTASEDPEHSLTEYIHHLEMIQORLAGVQP 3316
Bos_taurus        -----SSPPSNPRSERSLTASQDPEHSLTEYIHHLEMIQORLGGVLP 3234
Xenopus_tropicalis -----NRISHSPALTPEQPQNTSHDPERISSEYIRHLELVQORLGGQLQN 4385
Rhinatrema_bivittatum -----NSVSLESSLASTQ-----DPEKSLTEYIQHLEVIQORLGGLO 1307
.....5230.....5240.....5250.....5260.....5270.....5280

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                                     .
Pavo_muticus      AAVADSFPMFWLLIPTISGLLPKTTHGSLQSSISRQEMFISSYQHFP 4404
Pavo_cristatus    AAVADSFPMFWLLIPTISGLLPKTTHGSLQSSISRQEMFISSYQHFP 4404
Gallus_gallus     DAVADSFPMFWLLIPTVSCLLPKTTGSLQSSVPRQEMFISSYQHLP 4409
Chelonia_mydas    G-----NTPGPPHQRNK----- 4616
Homo_sapiens      DST-----SKKSCHPMIKO----- 3336
Pan_troglodytes   DST-----SKKSCHQMIKO----- 3282
Macaca_mulatta    DSP-----SKKSCHQKIKO----- 3340
Callithrix_jacchus EARGMAWA-----LLCTCRDTSPQMP----- 3384
Mus_musculus      DST-----QKSCHQKIKO----- 2898
Rattus_norvegicus DAP-----QKACPQKIKO----- 2951
Canis_lupus_familiaris DSG-----SKKSCCQRMKQ----- 3327
Equus_caballus    DST-----SKKSCRQKIKO----- 3330
Bos_taurus        DST-----SKKSCCQKMKQ----- 3248
Xenopus_tropicalis GTSP-----ELSRNKYVRK----- 4399
Rhinatrema_bivittatum IDAKKG-----CQTSRNMCMWRLEED----- 1327
.....5290.....5300.....5310.....5320.....

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