

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/COBOLD.fst Tue Feb 1 11:45:17 2022

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Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus          -----M
Chelonia_mydas         -----
Rattus_norvegicus      -----MGQAVTRRLRARARAAASAMDRSARDPVPRSAFRTPATQASGSAG----- 46
Mus_musculus           -----MDRSVDPDLPRSAFRTPAMQFAGSAG----- 26
Homo_sapiens           -----MDGRTIPRPOD----- 10
Pan_troglodytes        -----MPPSSWSPLMCGRAAEAAASRTTPGREMGQAVTRRLGAGARAAPRRAMDGRTIPRPOD 56
Macaca_mulatta         -----MPPSSSPLLRGSAAQAAASRTTPGREMGQAVTRRLGAGARAAPRRAMDGRTIPRPOD 56
Callithrix_jacchus     MDGRTIPHSQDAQAAPTPLAAPAGCIEIFHLLRKGEHQRAQAFVCCVFKKDRMKITSVGPFA 60
Canis_lupus_familiaris -----MERSAR-----SAQDAAAG----- 14
Equus_caballus         -----MQAEKGEILPKLQIWKVMEACGPTHIPLTAGLPLLLR----- 38
Bos_taurus             -----MTVPGPGRVRASDWGYVCACGQLPVPKSSAESDRRQGTFLCTLCLGEI----- 49
Rhinatrema_bivittatum -----MDEPGWASQAASLSIR----- 16
Xenopus_tropicalis     -----MDESGSWSETSNPEGLAPS----- 20
1.....10.....20.....30.....40.....50.....60

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Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus          AGRAPQATVPPLSGRKAKAPPPSETKTVIDCFDDTESATIIIMEQKENVIDKDIELSVV 61
Chelonia_mydas         -----MEQENITDKDIELSVV----- 17
Rattus_norvegicus      -----RKTAKAPLPPAEMKGMVSSAEDPVEIPVSTEQHDNMIDKDIELSVV 95
Mus_musculus           -----RKTGKAPLPPAETKGTVDVSSAEDPVESTAVVTEQDNMIDKDIELSVV 75
Homo_sapiens           -----APARRKPKAKAPLPPAETKYTDVSSAADSVESTAFIMEQKENMIDKDVELSVV 63
Pan_troglodytes        -----VPAGRKPKAKAPLPPAETKYTDVSSAADSVESTAFIMEQKENMIDKDVELSVV 109
Macaca_mulatta         -----APVGRKPKAKAPLPPAETKYADVSSAADSVESTAFIMEQKENMIDKDIELSVV 109
Callithrix_jacchus     KIKLSLYIKEQRKPKAKAPLPPAETKYVDVSSAADSVESTTFIMEQKENMIDKDIELSVV 120
Canis_lupus_familiaris -----RKPKAKAPPPPAETKHLDASS-DDTVESSACIMEQKENTIDKDIELLVV 62
Equus_caballus         -----KKTAKAPLPPAETKYLDASSVDDSIESSAFIMEQKENMVDKDVELSVV 87
Bos_taurus             GME---GAVTWRKPKAKAPLPPAETKCLDASSVDDSVESSAFIMDKENMIDKDIELLVV 106
Rhinatrema_bivittatum -----RKTGKAPLPPAEVKYVGDTFPSDGLSEINVTIMEQKENLINKEIELTVV 65
Xenopus_tropicalis     -----GRKAKGKAPLPPGEGKYSNSPSFDSSDHHFSMDQENIIDRDIDLTVV 70
.....70.....80.....90.....100.....110.....120

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Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus          LPGDVIKYSTTVNGRKPMDLLIFLCAQYHLNPSSYTIELISAENCQIKFKPNTPIGMLEV 121
Chelonia_mydas         LPGDVIKYSTTVNGSTPMDLLIFLCAQYHLNPSSYTIDLMSAEKRQIKFKPNTPIGMLEV 77
Rattus_norvegicus      LPGDVLKYSTTVHGSKPMDLLVFLCAQYHLNPSSHTINLLSAENLIKFKPNTPIGMLEV 155
Mus_musculus           LPGDILKYSTTVHGSKPMDLLVFLCAQYHLNPSSHTIDLLSAENLIKFKPNTPIGMLDV 135
Homo_sapiens           LPGDIIKYSTTVHGSKPMDLLIFLCAQYHLNPSSYTIDLLSAEQNHIFKPNTPIGMLEV 123
Pan_troglodytes        LPGDIIKYSTTVHGSKPMDLLIFLCAQYHLNPSSYTIDLLSAEQNHIFKPNTPIGMLEV 169
Macaca_mulatta         LPGDIIKYSTTVHGSKPMDLLIFLCAQYHLNPSSYTIDLLSAEQNHIFKPNTPIGMLEV 169
Callithrix_jacchus     LPGDIIKYSTTVHGSKPMDLLIFLCAQYHLNPSSYTIDLLSAEQNHIFKPNTPIGMLEV 180
Canis_lupus_familiaris LPGDIIKYSTTVHGSKPMDLLIFLCAQYHLNPSSYTIDLLQSAENNPICKPNTPIGMLEV 122
Equus_caballus         LPGDVIKYSTTVHGSKPMDLLIFLCAQYHLNPSSYTIDLLSAEKNPIKFKPNTPIGMLEV 147
Bos_taurus             LPGDIIKYSTTVNGSKPMDLLIFLCAQYHLNPSSHTIDLLSAEKNPIKFKPNTPIGMLEV 166
Rhinatrema_bivittatum LPGDVTTSTTVNGSKPMDLLVFLCGQYHLNPSTYTVDLISADKSQIKFKPNTPIGMLEV 125
Xenopus_tropicalis     LPGEKTAMATVHGSKPTDLLIFLCGQYRLNPSSHTIDLLISEGSQIKFKPNTPIGMLEV 130
.....130.....140.....150.....160.....170.....180

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Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus          EKVIVKPKQMDK--KKPVVPIPEQTVRVVINYKKTQKTIVRVSPYSPLOELIPIICSKE 179
Chelonia_mydas         DKVILKPKHMDK--KKPTPIIMPEQTVRVVINYKKTQKTIVRVSPHEPLHEFIPICSKCE 135
Rattus_norvegicus      EKVILKPKSLDK--KKPTPIIPEKTVRVVINFKKTQKTIVRVSPHSPLODLAPIICSKE 213
Mus_musculus           EKVILKPKSLDK--KKPTPIIPEKTVRVVINFKKTQKTIVRVSPHAPLODLAPIICSKE 193
Homo_sapiens           EKVILKPKMLDK--KKPTPIIPEKTVRVVINFKKTQKTIVRVSPHASLOELAPIICSKE 181
Pan_troglodytes        EKVILKPKMLDK--KKPTPIIPEKTVRVVINFKKTQKTIVRVSPHASLOELAPIICSKE 227
Macaca_mulatta         EKVILKPKMLDK--KKPTPIIPEKTVRVVINFKKTQKTIVRVSPHASLOELAPIICSKE 227
Callithrix_jacchus     EKVILKPKMLDK--RKPTPIIPEKTVRVVINFKKTQKTIVRVSPHASLOELAPIICSKE 238
Canis_lupus_familiaris EKVILKPKILDK--KKPTPIIPEKTVRVVINFKKTQKTIVRVSPHAPLOELAPIICSKE 180
Equus_caballus         EKVILKPKILDK--KKPTPIIPEKTVRVVINFKKTQKTIVRVSPHAPLOELAPIICSKE 205
Bos_taurus            EKVILKPKILDK--KKPTPLIPEKTVRVVINFKKTQKTIVRVSPHAPLOELAPIICSKE 224
Rhinatrema_bivittatum EKAILKPKNVDERNKKATPIIPEQTVRVVINYKKTQKTVMRVSPHVSLOELTPMICKSKE 185
Xenopus_tropicalis     EKVVLKSKVPDDKNKKPFPAPEQTVRVVINRYKKTQKTVMRVSPQVPLHEFFLSICNKCE 190
.....190.....200.....210.....220.....230.....240

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Pavo_muticus          -----ATSPVDLNLPSLKDYSYRVSEN 21
Pavo_cristatus        -----ATSPVDLNLPSLKDYSYRVSEN 21
Gallus_gallus          FDPSTVLLKKNYQSQEALDVTKSLNDLGLRELYAMDISRATSPVDLNLPSLKDSCRVSEN 239
Chelonia_mydas         FDPLHTVLLKKNYQCEPLDVTSLNDVGLRELYAMDVSKATPAADFNLSLRDSCQISON 195
Rattus_norvegicus      FDPLHTVLLKDYQAQEPDLDTKSLNDLGLRELYAMDISRAPSVTAFSKSSFQESCQISHN 273
Mus_musculus           FDPLHTVLLKDYQAQEPDLDTKSLNDLGLRELYAMDISR-----ESCQISHN 240
Homo_sapiens           FDPLHTLLLLKDYQSQEPLDLTKSLNDLGLRELYAMDVNR-----ESCQISON 228
Pan_troglodytes        FDPLHTLLLLKDYQTQEPDLDTKSLNDLGLRELYAMDVNRATSVTVFSKSSSQESCQISON 287
Macaca_mulatta         FDPLHTVLLKDYQSQEPLDLTKSLNDLGLRELYAMDVNRATSVTVFSKSSSQESCQISON 287
Callithrix_jacchus     FDPLHTLLLLKDYQSQEPLDMTKSLDDGLRELYAMDVNRATSVTVFSKSSSQESCQISON 298
Canis_lupus_familiaris FDPLHTLLLLKDYQSQEPLDLTKSLNDLGLRELYAMDVSRATSVTAFNKSSSQESCQISON 240
Equus_caballus         FDPLHTLLLLKDYQSQEPLDMTKSLNDLGLRELYAMDVNRATSVTAFSKSSSQESCQISON 265
Bos_taurus            FDPLHTQLLKDYQSQEPLDLTKSLNELGLRELYAIDVSKATSVTAFNKSSSQESCQISON 284
Rhinatrema_bivittatum FDPLHTVLLKDYQSQEPLDLTKSLNDLGLRELYAIDNSRGPLAADVHSSSLQDSYQISON 245
Xenopus_tropicalis     FDPVHTVLLKDHQSPRPLDLNLSLNDLGIRELCAVDRSKATSPSDLKPPPLQEAQN--- 247
.....250.....260.....270.....280.....290.....300

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Pavo_muticus          SDVLKEKEN-KGFFSFFQRSKKKKREQTASAPATPLMSKPRPTFTTRSSTVSKQYDSNTLP 80
Pavo_cristatus        SDVLKEKEN-KGFFSFFQRSKKKKREQTASAPATPLMSKPRPTFTTRSSTVSKQYDSNTLP 80
Gallus_gallus          SDVLKEKEN-KGFFSFFQRSKKKKREQTASAPATPLMSKPRPTFTTRSGTGSKQYDSNTLP 298
Chelonia_mydas         PDTLKEKEN-KGFFSFFQRSKKKKREQTASAPATPLMSKPRPTFINRSNTISKQYDSNTLP 254
Rattus_norvegicus      PDIVKEKEN-KGIFSFFQRSKKKKREQTASAPATPLVSKHRPSFT-RSNTISKPYISNTLP 331
Mus_musculus           PDIVKEKEN-KGIFSFFQRSKKKKREQTASAPATPLVSKHRPSFT-RSNTISKPYISNTLP 298
Homo_sapiens           LDIMKEKEN-KGFFSFFQRSKKKKRDQTASAPATPLVNKHRPTFT-RSNTISKPYISNTLP 286
Pan_troglodytes        LDIMKEKEN-KGFFSFFQRSKKKKRDQTASAPATPLVNKHRPTFT-RSNTISKPYISNTLP 345
Macaca_mulatta         LDIMKEKET-KGFFSFFQRSKKKKRDQTASAPATPLVNKHRPTFT-RSNTISKPYISNTLP 345
Callithrix_jacchus     LDIMKEKEN-KGFFSFFQRSKKKKRDQTASAPATPLVNKHRPTFT-RSNTISKPYISNTLP 356
Canis_lupus_familiaris LDFMKEKEN-KGFFSFFQRSKKKKREQTASAPATPLVSKHRPTFT-RSNTISKPYISNTLP 298
Equus_caballus         LDIMKEKEN-KGFFSFFQRSKKKKREQTASAPATPLVSKHRPTFM-RSNTISKTYVSNLTP 323
Bos_taurus            LDLMKDKES-KGFFSLFQRSKKKKREQTVSAPATPLVSKHRPTFT-KSNTISKQYISNTLP 342
Rhinatrema_bivittatum LDMLKQRENEKGFFSFFRRSKKKKREQTSSAPATPLLKQRPASVGRSNTLTRQVDLNTLP 305
Xenopus_tropicalis     --LEAKPHEDKGFFNFRRSKKKKRDQTSSAPTTPQLNKARFDAQINMVPKSYDSNTMP 305
.....310.....320.....330.....340.....350.....360

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*****      . * . :      :      *      : * : : . :      *
Pavo_muticus      ---SEMPKKRRAPLPPMPNSQSAPQELAEVR---TESDIVKSNLSLRNEQ---APSGLVRK      132
Pavo_cristatus    ---SEMPKKRRAPLPPMPNSQSAPQELAEVR---TESDIVKSNLSLRNEQ---APSGLVRK      132
Gallus_gallus     ---SEMPKKRRAPLPPMPNSQSAPQELAEVK---TESDIVKSNLSLRNEQ---APSGLVRK      350
Chelonia_mydas    ---SEMPKKRRAPLPPMPASQSVPODLAHAVRYTSSCVVKSSSVDENEQQLRLGIVRT      311
Rattus_norvegicus ---SDAPKKRRAPLPPMPTSQGAAQG---QER-RASCVERSTSVDDTDKSSSEGFVMRT      383
Mus_musculus      ---SDAPKKRRAPLPPMPTSQGAAQG---QER-RASCVERSTSVDDTDKSSSEAIMVRT      350
Homo_sapiens      ---SDAPKKRRAPLPPMPASQSVPODLAHIOER-PASCIVKSMVDETDKSPCEAGRVR      342
Pan_troglodytes   ---SDAPKKRRAPLPPMPASQSVPODLAHIOER-PASCIVKSMVDETDKSPCEAGRVR      401
Macaca_mulatta    ---SDAPKKRRAPLPPMPVQSVPQDLAHIOER-PASCIMKSMVDETDKSPCEAGRVR      401
Callithrix_jacchus ---SDAPKKRRAPLPPMPASQSVPODLAHIOER-PASCIVKSMVDETDKSPCEAGRVR      412
Canis_lupus_familiaris ---SDAPKKRRAPLPPMPGQSSTPQDLAHIOER-PASCIVKSLVDETEKNPCGAGIVRT      354
Equus_caballus    ---SDAPKKRRAPLPPMPGQSVPQDLAHIOER-PASCIVKSMVDESHKGPCCAGIVRT      379
Bos_taurus        ---SDAPKKRRAPLPPMPGQSVPQDLAHIOER-PASCIVKSLVDETEESYGEGRVRT      398
Rhinatrema_bivittatum ---FAMPKKRRAPLPPMNASQGVKPEVASSQVR-SGSLVLKSVSVDEADKGISEIGIVRT      361
Xenopus_tropicalis ---SMPSELPPKKRRAPLPPMPHPPQSAQNSISRGOVR-TSSCIVKS-TLHETEKAVPGIDRSRT      363
.....370.....380.....390.....400.....410.....420

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** * . : . * : * * * * *
Pavo_muticus      GSLPLS-DTASVN-SLRRMKRKAPSPPS---RTPEDHSES---SNETVTESTESILTGT---      182
Pavo_cristatus    GSLPLS-DTASVN-SLRRMKRKAPSPPS---RTPEDHSES---SNETVTESTESILTGT---      182
Gallus_gallus     GSLPLS-DTASVN-SLRRMKRKAPSPPS---RTPEDHSES---SNETVTESTESILTGT---      400
Chelonia_mydas    GSLQLS-GTSSVNSSLRRTKRKAPSPPS---RIPQDQSDS---SKRTASEFAESNPVENTI      364
Rattus_norvegicus GSLQLSGSTSVGTSSLKRTKRKAPSPPS---KPSLTETDEGSSAAAHGLPLEDGIVPDSI      440
Mus_musculus      GSLQLS-STSIGTSSLKRTKRKAPSPPS---KTPLAQTDERNSAMAHGLPLEDGIAPDSM      406
Homo_sapiens      GSLQLS-SMSAGNSSLRRTKRKAPSPPS---KIPPHQSDS---NSRVLTALQPVDPVPPDSA      396
Pan_troglodytes   GSLQLS-STSAGNSSLRRTKRKAPSPPS---KIPPHQSDS---NSRVLTALQPVDPVPPDSA      455
Macaca_mulatta    DSLQLS-STSAGNSSLRRTKRKAPSPPS---KIPPHQSDS---NSRVLTALQPVDPVPPDSA      455
Callithrix_jacchus GSLQLS-STSAGNSSLRRTKRKAPSPPS---KISLHQSDS---NSHVLTALQPEGGVPSDSV      466
Canis_lupus_familiaris GSLQLS-STAVSSSSLKRTKRKAPSPPS---KIPPHQSAE---HSRVLTALQGTHTVPTDGV      408
Equus_caballus    GSLQLS-STSVGNSSLKRTKRKAPSPPS---KMSLHQSDS---NSPVTALQSVHAVPTDSV      433
Bos_taurus        GSLQLS-STSAGNSSLRRTKRKAPSPPS---KTVLLQSDS---NSHVLTALQSVHAVPTDSG      452
Rhinatrema_bivittatum RSLQLG-APTTSSSSLRRTKRKAPLPPSPPTSKIQQQONDE---NSNEIVFESTEAHVYQKPG      418
Xenopus_tropicalis GSLQLS-GSSSFNSPLRRTKRKAPLPPSP--PPNSSQDGNYENGTEKAQVSEVVIYEKRV      420
.....430.....440.....450.....460.....470.....480

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*
Pavo_muticus      VEGR-----AAEMQSET-----      194
Pavo_cristatus    VEGR-----AAEMQSET-----      194
Gallus_gallus     VEGR-----AAQMSETGLKDTLQLVKQ---      423
Chelonia_mydas    VEERDAEVLFPAGDKVDV-----TRATVPS-CASHCLDAANHEQNTVQQLTDESNLSGNT      418
Rattus_norvegicus SEVSSPEGMSSPEG-----PGFLSQEECSVPKPMDE---ISEGP      476
Mus_musculus      LELSSPEGMSTPEGS-----LGPGLSQEQCAVPKPPDE---ISEGP      445
Homo_sapiens      SEANSPEELSSP-----FHPGHSSQEQCTAPKLMEETSIVFECP      408
Pan_troglodytes   SEANSPEELSSPET-----FGPGLSSQEQCTAPKLMEETSIVFECP      495
Macaca_mulatta    SEANSPEELSSPETS-----LAETSFGPGLSSQEQCTASNLMEETSIVFECP      496
Callithrix_jacchus SEANSPEELSSPDSTS-----LAEASLGPGLPSHEQCTVPKLLDEAPLSEGP      513
Canis_lupus_familiaris LEANSPEELASPDFTS-----LAEASLGPGLPSHEQCSVPTLTETSLSECP      455
Equus_caballus    SEADSPEGLSSPDFAS-----LAEASLGPGLPSHEQCSVPTLTETSLSECP      480
Bos_taurus        VEVSSSEGLSSP-----EASLG-PGNEQCAVSQLPAEAPVSGCP      490
Rhinatrema_bivittatum SEGAY-----AIEPSP-----      429
Xenopus_tropicalis SEEERQDTTAPAADISEPPLDIKEKEETTFSEIESEGDKTEDVSVSSVSTDAMGDVAE      480
.....490.....500.....510.....520.....530.....540

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                                : .: *.:*..
Pavo_muticus      -----GARTSEYSLLEEIDKEEEMSVQEGEESGSTDIFLRTGEVTAAFSSTEVPL 243
Pavo_cristatus    -----GARTSEYSLLEEIDKEEEMSVQEGEESGSTDIFLRTGEVTAAFSSTEVPL 243
Gallus_gallus      -----SPGARASEYSLLEEIDKEEEMSVQEGEESGSTGTSRLRTGEATAAFSCMEVPL 474
Chelonia_mydas     GCPDASEMPKSGICSEYSLLEEINEKEQKNVQHKEESESADTSLMTQEVSAFISTDVPL 478
Rattus_norvegicus  GTPEAAVASMTSGVSSDYSLEEIDKEELMEASKDQAG--SVKSPT----IASASTDM-I 529
Mus_musculus       GTPEAAVASLTSGVSSDYSLEEIDKEELSEASKDPAGSISVKSPD----IASASTDM-R 500
Homo_sapiens       -----AGISSDYSLEEIDKEELSEVPKVEAENISPKSQD----IPFVSTDI-I 452
Pan_troglodytes    GTPEAAITSLTSGISSDYSLEEIDKEELSEVPKVEAENISPKSQD----IPFVSTDI-I 550
Macaca_mulatta     GTPEAAITSLTSGISSDYSLEEIDKEELSEVPKVEAENISPKSQD----IPFVSTDI-I 551
Callithrix_jacchus GTPEAAITSLTSGISSDYSLEEIDKEELSEVPKVEAENISPKSQD----IPFVSTDI-I 568
Canis_lupus_familiaris GTPEAAVASLTGIISSDHSLEEIDKEELSEVPKDEAENTALKSQD----VPFGSTDI-I 510
Equus_caballus     GTPEAAVASLTSGISSDYSLEEIDKEELREVPKDEAENISLKSQD----IPCGSTDR-T 535
Bos_taurus         GTPEAAATSLPSGISSDYSLEEIDKEELSEMPKDEAENTSLKSQD----IPTVSTDI-I 545
Rhinatrema_bivittatum -----TALVGYEYSLLEEIDKEETSAAHNEESAGTTLETQEVSS--TSAISTDVPL 477
Xenopus_tropicalis ESFHSGSDMANGSKTSEEEIMITISDKSSPVKVDIAAGSATLEYDHKS-HINGTSTQMT 539
                   .....550.....560.....570.....580.....590.....600

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* . :
Pavo_muticus      ETERNDHASSVPVPGTVSVDNSQSFKEEKQENMSTDGKEL----QTQISSDQAAFEEDRK 299
Pavo_cristatus    ETERNDHASSVPVPGTVSVDNSQSFKEEKQENMSTDGKEL----QTQISSDQAAFEEDRK 299
Gallus_gallus      ETERNDHASSVPVPGTVSVDNSQSFKEEKQENMSTDGKEL----QTQISSDQAAFEEDRK 530
Chelonia_mydas     DTEKNDASASSSSIPGSGVDNFSQSFKEEKQENMSTDGKGP----HSKIDSAQITFENDKK 534
Rattus_norvegicus  ITAENDPDASA---LSISDGETSPGSKGNTPEGRNPEGQPHHPVECLIGNENNVSISIKD 586
Mus_musculus       ITVEKDPDSA---LGISDGETSPSSKGKTQEGRSTEGQGPYHPVGHIGNEDRVSDSIKD 557
Homo_sapiens       NTLKNPDPSA---LGNGSGEFSQNSMEEKQETKSTDGQEP-HSVVYDTSNGKKVVDISIRN 508
Pan_troglodytes    NTLKNPDPSA---LGNGSGEFSQNSMEEKQETKSTDGQEP-HSVVYDTSNGKKVVDISIRN 606
Macaca_mulatta     NTLKNPDPSA---LGNDSGEFSQNSMEEKQETRSTDGQEP-HSAVYDTSNEKKVVDISIRN 607
Callithrix_jacchus NTLKNPDPSA---LGNDSGEFSQNSMEEKQESRSTNGQEP-HSVVYDTSNEKKVVDISIRN 624
Canis_lupus_familiaris NTLKNPDPSA---LGNVTGESQNSKEEKQEARNTDGGQGP-HMMVYDAGNGERVIDHVVD 566
Equus_caballus     NTLKNADAAA---LGNGTGGSPNSAEEKQEAGNADGGQGP-HVMVYNASNEKKVVDISVRN 591
Bos_taurus         NTLKNPDPSA---PGSATGESQNSKEEKQGTRNTDEQRL-HIMVCNSSDKETVVDISVRN 601
Rhinatrema_bivittatum DTGKNDETSSVS---ANATVNSKSSSEEEKQDSMNSENKVM-HSEADRKDGENTLEDEIE 533
Xenopus_tropicalis KTEDDTTRATKIKILHIITELQTLPCVHSEHMITDIQDNATVSVSETEGTLDHSSPTKAK 599
                   .....610.....620.....630.....640.....650.....660

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: . :
Pavo_muticus      LRILEQ-NKNYDHSRDTLLPTN-EEGREEQ--TAKTKAVD---FRENKLEVDRLSNCO 351
Pavo_cristatus    LRILEQ-NKNYDHSRDTLLPTN-EEGREEQ--TAKTKAVD---FRENKLEVDRLSNCO 351
Gallus_gallus      LRILEE-NKNYDHSRDTLLPTN-EEGREEQ--TAKTKAVD---FRENKLEVDRLSNCO 582
Chelonia_mydas     LGILDP-NKNYDHNGTRFLPAT-TGEKENQRKMGEINTAD---VREKNKLEVERLSNCO 588
Rattus_norvegicus  LKTLSPNQESVQNEVVVCATS-TDYVKNRPREMEATIEG--EAQKKVGDVEAERLSGSP 643
Mus_musculus       MKTLGPNQES-VQNEIMVCATS-TDYVKNRPGKMETTIEGEGEALKKASDMETDRLSGSP 615
Homo_sapiens       LKSLGPNQENVVQNEIIVYPENTEDNMKNGVKKTEINVGG--VAKNNNIDMEVERPSNSE 566
Pan_troglodytes    LKSLGPNQENVVQNEIIVYPENTEDNMKNGVKKTEINVGG--VAKNNNIDMEVERPSNSE 664
Macaca_mulatta     LKSLGPNQEN-AQNEIIVFPKNTEDNMKNGVKKTEIDVGG--VAKNNIDMEVERPSNSQ 664
Callithrix_jacchus LKSLGPNQENVVQNEIIVFPKNTEDNMKNGVKKTEINVGG--VAKNNIDMEVERPSNSQ 682
Canis_lupus_familiaris LKSLGPNQENVVQNEIIVIPPNTDTHMKNGVRRTEIDVGG--VAENNNVDMEVDRLSNHQ 623
Equus_caballus     LKSLGPNQENVVQNEIIVIPPNTEDNMKNGVRRTEINAGG--VAKNNNVDMEVDRLSNYQ 649
Bos_taurus         LKSLDPNQERADQHEIIVPTNTENNMGVRRTEINVAG--VAKNNNVDIEVDRLSNYQ 659
Rhinatrema_bivittatum LKVQGTNEDDAHSDIIVASG---GKEENLNTTEVIKAD---AAENVKLQDDRLSDYQ 586
Xenopus_tropicalis MODSAVQTVSFDSGVEMNGIKESSQTVPEPSLEHLTVSHKDVETNGQSPVPPQVTHQHVEV 659
                   .....670.....680.....690.....700.....710.....720

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      .      .      :      :      .      :      :
Pavo_muticus      ASKNDIAISYSNYTQLIPGKQDQKTSQTSLDTVKTHDVAIQTGPLVSNLGRTAQKEMIVP      411
Pavo_cristatus    ASKNDIAISHSNYTQLIPGKQDQKTSQTSLDTVKTHDVAIQTGPLVSNLGRTAQKEMIVP      411
Gallus_gallus     ASKNDIAISHKNYSQLIPGKQDEKTSQTSLDTVKTHDVAIQTGPLVSNLGRTAQKEMIVP      642
Chelonia_mydas    ENKNDISTNQNDNPQVNLGIQDQKLIQTNMEIVKTDVAIQTTPSDNSFGRTILSEMIVL      648
Rattus_norvegicus AGRMDDVQSSRENHLTASPGPDQKSNQPRVEKTKMODAAIQATPACSTFDGNH-----      696
Mus_musculus      ACRMDNVKSSRENHLTASPGPDQKLNQPGVEKTKMODAAIQATPARGTFDGNH-----      668
Homo_sapiens      AHETDTAISYKENHLAASSVPDQKLNQPSAEKTKMODAAIQTTTPSCNSFDGKH-----      617
Pan_troglodytes   AHETDIAISYKENHLAASSVPDQKLNQPSAEKTKMODAAIQTTTPSCNSFDGKH-----      717
Macaca_mulatta    AHETDTAISYKENHLAASSVPDQKLNQPSAEKTKMODAAIQTTTPSCNSFDGKH-----      717
Callithrix_jacchus AHETDTSISYKENHLAASLVPDQKLNQPSAEKTKMODVAIQTTTPSCNSFDWKH-----      735
Canis_lupus_familiaris AHKTDTAESYKENHLAASLGQDQKLNQLSEKTKTDAAIQTVPSVDSFDGNH-----      676
Equus_caballus    AHKTDGARSYKENHFAASLVPDQKLNQPSAEKTKMODAAIQTTTPSCTSFDFGNH-----      702
Bos_taurus        AYKTDTAGRYKENHLAVSSAPDPNLIQPSAEKTKMODAAIQTTIPSCGSDFDGQ-----      712
Rhinatrema_bivittatum EPEKVISLFPNETPRIILEREQKVNENAKMVKTDAAIQTAFSYNGIDRMS-----      640
Xenopus_tropicalis SKKELQAPEVEKTSMEIPSAKETMHTQTDIEMKMOVESPLKSPSKSHQLYIQDSEPKPKP      719
      .....730.....740.....750.....760.....770.....780

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      .      .      :      :      :
Pavo_muticus      QDSESSTFKGMVRQHNTDTNSPGLRVMQGVHKGEEISTERNLQR-QEVSYEKPIPVKDEI      470
Pavo_cristatus    QDSESSTFKGMVCQHNTDTNSPGLRVMQGVHKGEEISTERNLQR-QEVSYEKPIPVKDEI      470
Gallus_gallus     QEYESSTFKGMVHQHSTDTNPNGLRVMQGVHKGDEEISTERNLQR-QEVSYEKTIITMKDEI      701
Chelonia_mydas    QDCESSTFKGVAHMNQNDLMDSPSLQLMNKVQESVEVATEFNHOR-QDAADDKAIPIONQN      707
Rattus_norvegicus EAHNSPDLRVDETAQTLGSSSTQHSASAFQDSVNASREVRSQG-TSTYVQDRLPVKEAA      755
Mus_musculus      EVSNSDDPRADETVQTSQGSISAQHSSASLQDSVNASREFRSQG-TSTYVQDRLPKEEPA      727
Homo_sapiens      QDHNLSDSKVEECVQTSNNNIQTHSCLSSQDSVNTSREFRSQGTLLIHSDELPLTVKDPI      677
Pan_troglodytes   QDHNLSDSKVEECVQTSNNNIQTHSCLSSQDSVNTSREFRSQGTLLIHSDELPLTVKDPI      777
Macaca_mulatta    QDHNLSDSKVEESVQTSNNNIQTHSSLSSQDSVDTSTREFRSQGTLLIHSDELPLTKDPI      777
Callithrix_jacchus QDHNLSDFKVEESVQTSNN-VSTQHSFLSSQDSVDHSKEFRSQGTLLIHSDELFTTKDPI      794
Canis_lupus_familiaris QDHDLSNFKVNESVQTSNNKPTQHSLSLSPQDSVDASRNLRGPGLLTVQSDNQLTIEDPI      736
Equus_caballus    QDHNLSDFKVDSESVQTSNNKSTQHSPLSPQDSIDLSREFRSQGPLTLHSEDQLTIKDPI      762
Bos_taurus        QDHNLSDVKVDESVQTSNNKSTQHLSSLSPQDSIDISGKFRSGPLVVYTEEQLALKDPT      772
Rhinatrema_bivittatum NVISSPRDWNLPALQDNSTQYPIITLNSLQSTMEKSVQVCHSPNQETVHDAALPIKDST      700
Xenopus_tropicalis SNEITRDYLPKIGMTTYKIVPQKSFDAETENGNYDSSAQHDKWLQSPGTGNVSPIQAAR      779
      .....790.....800.....810.....820.....830.....840

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      .      .      :      .      :      ** :*      :      :      .
Pavo_muticus      HICTNGSNVTSPETIAKTPDGSPIRGYPLYRD---TKPKPKP-----ANEITRDYIP      520
Pavo_cristatus    HICTNGSNVTSPETIAKTPDGSPIRGYPLYRD---TKPKPKP-----ANEITRDYIP      520
Gallus_gallus     HICTNSSNVTSPETIAKTPDGSPIRSYPYLYRD---MKPKPKP-----ANEITRDYIP      751
Chelonia_mydas    NIYENDSSFTPSERAPKSAINSPIKGYPLYRD---FKPKPKP-----SNEITRDYIP      757
Rattus_norvegicus CTYGNNDALSPIDGSGKNPAASSLKNFPLYRD---NHPKPKP-----SNEITREYIP      805
Mus_musculus      CTYGNNVPLSPVDGSNKNPAASYLKNFPLYRD---SNPKPKP-----SNEITREYIP      777
Homo_sapiens      CAHGNDLLPPVDRIDKNSTASYLKNYPLYRD---YNPKPKP-----SNEITREYIP      727
Pan_troglodytes   CAHGNDLLPPIDRIDKNSTASYLKNYPLYRD---YNPKPKP-----SNEITREYIP      827
Macaca_mulatta    CAHGNDLLPPIDRIDKNSTASYLKNYPLYRD---YNPKPKP-----SNEITREYIP      827
Callithrix_jacchus CAHSNDLLPSIDRIDKNSTASYLKNYPLYRD---YNPKPKP-----SNEITREYIP      844
Canis_lupus_familiaris YTHGDDLLPSLDGIDKNSTVSHIKNYPLYRD---YDPKPKP-----SNEITREYIP      786
Equus_caballus    CAQSNDDLLSPVDGIDKNSTASYIKNYPHYRD---YNPKPKP-----SNEITREYIP      812
Bos_taurus        CAHGNDNLLPTVDGTDKNPTASYVKNYPFYRD---YNPKPKP-----SNEITREYIP      822
Rhinatrema_bivittatum NMHIIATDFTSKVIPTQSPLHSPSKSYPVYKQ---SEPKPKP-----SNEITREYIP      750
Xenopus_tropicalis EAFFSELSSAVKNGSHSPQLKAKVNPMLTYVNNTVISPKHEPGLTRSLSSAPVLKSEKS      839
      .....850.....860.....870.....880.....890.....900

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/COBOLD.fasta Date: Tue Feb 1 11:45:17 2022

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:: * . * * .
Pavo_muticus      KIGMTTYKIVPPPKSLETMKSWES-EVSDCKDQEV----SASKNSLKYEDPKKEFIMQTEI 575
Pavo_cristatus    KIGMTTYKIVPPPKSLETMKSWES-EVSDCKDQEV----SASKNSLKYEDPKKEFIMQTEI 575
Gallus_gallus     KIGMTTYKIVPPPKSLETMKSWES-EVSDCKDQEV----SASKNSLKYEDPKKEFIMQTEI 806
Chelonia_mydas    KIGMTTYKIVPP-KSSEILKGGESDAMSDIKDQIG----VTLEMSPOSENSKEFGVQTEI 812
Rattus_norvegicus KIGMTTYKIVPP-KSLEVVKDWDSEAAAGKKDNQKT----LAVAQKHAIETMTETAVQAEE 860
Mus_musculus      KIGMTTYKIVPP-KSLEMAKDWESEAMGRKDDQKM----LPVGQRHTIENMTETSMQTEV 832
Homo_sapiens      KIGMTTYKIVPP-KSLEISKDWQSETIEYKDDQDM----HALGKKHTHENVKETAIQTED 782
Pan_troglodytes   KIGMTTYKIVPP-KSLEISKDWQSETIEYKDDQDM----HALGKKHTHENVKETAIQTED 882
Macaca_mulatta    KIGMTTYKIVPP-KSLEILKDWQSETTGKDDQDI----HALGKKHTHENVKETAIQTED 882
Callithrix_jacchus KIGMTTYKIVPP-KSLEILKDWQSETIGYKDDQDI----HTLGKKHTHENVKETAIQTED 899
Canis_lupus_familiaris KIGMTTYKIVPP-KSLEILKNWESETPGNKDDQEI----HTLGKKHTHENVKETAIAQTE 840
Equus_caballus    KIGMTTYKIVPP-KSLEILKDWSEETIGYKDDQDR----HTLGKKHTHENVKETAIAQTE 866
Bos_taurus        KIGMTTYKIVPP-RSLEISKDWSEETIGYKDDQEI----HTLGKKDITYENVKETTIAED 877
Rhinatrema_bivittatum KIGMTTYKIVPP-QSLEALKFFSNDPIMNKNVLEPQSHNLENYLYKYNAKESGYQTGN 809
Xenopus_tropicalis NVPETKPVSVKAPSSFYLMQRRASSLYVTSAAAKVVKPSSPTNNTFTNLGKDTLPTTI 899
.....910.....920.....930.....940.....950.....960

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Pavo_muticus      PHLPKSPGHLQTLGQNIIPA-AKNDLLHRVNSISECGVPSGARVITEVSQIETVSSKQ--- 631
Pavo_cristatus    PHLPKSPGHLQTLGQNIIPA-AKNDLLHRVNSISECGVPSGARVITEVSQIETVSSKQ--- 631
Gallus_gallus     PHLPKSTGHLQTLGQNIIPA-AKNDLLHRVNSISEHGVPSGARVITEVKQIETVSSKQ--- 862
Chelonia_mydas    LRVSKNTSQSESGLYEPALAVNDOLHKTNRITDSVSTSELGVITESKHIKTEASKPNLG 872
Rattus_norvegicus LVTSKNSQQPQDRTPKPSGGTEHPLHRT--VSS--PVGTEMNPPKP-PRMTTDTG--- 911
Mus_musculus      PATSKSSQQPQDLKPKPSSGTERHLHRT--LSS--PTGTEINPPKA-PRVTTDTG--- 883
Homo_sapiens      SAISESPPEEPLPNLKPKPNLRTEHQVPSS--VSS--PDDAMVSPLKPAPKMTRTDTG--- 834
Pan_troglodytes   SAISESPPEEPLPNLKPKPNLRTEHQVPSS--VSS--PDGAMVSPLKPAPKMTRTDTG--- 934
Macaca_mulatta    SAISESPKGPLPDLKPKPNLRTEHQVHSS--VSP--PDGATVSPLKPAPKMTRTDTG--- 934
Callithrix_jacchus SAISEGPKGPLPDLKPKPNLRTEHQVHGS--VSS--PVSAMVSPLKPSPKMTRTDTG--- 951
Canis_lupus_familiaris LVISESPKEPQADLKLKPTAGTEHQVPSV--ESSPHVPHVAVGKPMKPTPRMTKDTG--- 895
Equus_caballus    DLISESSKEPQAALRQKPAPRTEHQVHSM--ESS--PHSTANPLKLTTPRMTRTDTG--- 918
Bos_taurus        LVISESPKESQADLKSPTLRTEHQMQSD--ERF--TRSRMVNPLKP-PRMTSDTG--- 928
Rhinatrema_bivittatum LYASERLSQSGKQYESAAG----DWLNGTSFSHSHLPTSSFKCATAASPTESKNNFR-- 863
Xenopus_tropicalis KTLPPSLEAAQVTTKQEENISDGSMLCAENKSLQRLNLEPVAVSQITSKTSPREDIYLP 959
.....970.....980.....990.....1000.....1010.....1020

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Pavo_muticus      --HVPLMLSLSNSNAASETOEKSNALESPTTK-----PSSFYLMQRRVSGHYVSSAI 681
Pavo_cristatus    --HVPLMLSLSNSNAASETOEKSNALESPTTK-----PSSFYLMQRRVSGHYVSSAI 681
Gallus_gallus     --HVPLMLSLSDSNAASETREKSNLTSPPTK-----PSSFYLMQRRVSGHYVSSAI 912
Chelonia_mydas    NGITPLMLNSGNTNSSPETOEKSSVFSPTTK-----PSSFYLMQRRASGHYVTSAA 924
Rattus_norvegicus --TIPFAPNLEDINNILESKFRSRASNPQAK-----PSSFFLQMQKRASGHYVTSAA 961
Mus_musculus      --TIPFAPNLEDINNILESKFRSRASNPQAK-----PSSFFLQMQKRASGHYVTSAA 933
Homo_sapiens      --TAPFAPNLEEINNILESKFKSRASNAQAK-----PSSFFLQMQKRVS GHYVTSAA 884
Pan_troglodytes   --TAPFAPNLEEINNILESKFKSRASNAQAK-----PSSFFLQMQKRVS GHYVTSAA 984
Macaca_mulatta    --TVPFAPNLEDINNILESKFKSRASNPQAK-----PSSFFLQMQKRVS GHYVTSAA 984
Callithrix_jacchus --TAPFAPNLEDINNILESKFKSRASNPQAK-----PSSFFLQMQKRVLGHYVTSAA 1001
Canis_lupus_familiaris --TAPFVFNLEDINNILESKLKS RVSNPQTK-----PSSFFLQMQKRVS GHYVTSAA 945
Equus_caballus    --TAPFAPNLEDINNILESKLKS RVSNPQTK-----PSSFFLQMQKRVS GHYVTSAA 968
Bos_taurus        --TAPFAPKLEDINNILESKFKSRVSNPHSK-----PSAFFLQMQKRVS DHYVSSAA 978
Rhinatrema_bivittatum KELAGLLQKSNNINGSGETKEKQYVAYPKMK-----QNSFYLMQKRVS GLYVESAV 915
Xenopus_tropicalis SGHNDLHRDKPTLEEMESEVQSLRECSQLTQKPRLDVRLPSISEDEQAKGLTEERMVETV 1019
.....1030.....1040.....1050.....1060.....1070.....1080

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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: : * .. . * :.. .
Pavo_muticus      ARSTICAPNSIQNEVKNTETEEKK-ISSPDETL--LHTTGS SPPVDEKDD-----DG 731
Pavo_cristatus    ARSTICAPNSIQNEVKNTETEEKK-ISSPDETL--LHTTGS SPPVDEKDD-----DG 731
Gallus_gallus     ARSTICAPNSIQNEVKNTETEEKK-ISSPDETS--LHATNSFSPPVDEKDD-----DG 962
Chelonia_mydas    ARSVSAATSPTQREAMNTEREKN-LSSDRSFFP-LHKAYNFP AELDEEKVD-----NE 975
Rattus_norvegicus AKSVHTAPGPTPKEPTIKEVQRDPQLPPEQCLSPLSERTHSAPLPNISKAD----DNRIQ 1017
Mus_musculus      AKSVHTAPGPAPKEPTIKEVQRDPQLSPEQHPSSLERTHSAPLPNISKAD----DDIIQ 989
Homo_sapiens      AKSVHAAPNPAPKELTNKEAERDMLPSPEQTLSPLSKMPHSVPQPLVEKTD---DDVIGQ 941
Pan_troglodytes   AKSVHAAPNPAPKELTNKEAERDMLPSPEQTLSPLSKMPHSVPQPLVEKTD---DDVIGQ 1041
Macaca_mulatta    AKSVHAAPNPAPKELTNKEAERDMLPSPEQTLSPLNKMPHSVPQPLVEKTD---DDVIGQ 1041
Callithrix_jacchus AKSVHAAPNPAPRELTNKEAEKNTLPSPEQTVSPLSKTAHSVPQPLVEKTD---DDVIGQ 1058
Canis_lupus_familiaris AKSVQVAPNPAPKELVKKEEERDAIPPPEQTLSPLSQATPSLPQPPVKDFAGDLGDL SNE 1005
Equus_caballus    AKSIHAAPNPPTPKEQIKKEVERDMIPPPEQTLSPLSKTAHS-POPHTKNTD---DDILSK 1024
Bos_taurus        AKSVQAASNPPTPKE-LKKEVERDTIPPEPALSPLSKTIQSLPQPHVQNTD---DDSNQ 1033
Rhinatrema_bivittatum ARSANTAISPTQNDPAFKEIEKNVLS SDKTIQFANDLVPSPTESIEKNSDSVHGEEKKSE 975
Xenopus_tropicalis SGTFSVATNSVYTSLNITEMDNKFTHANRESFIVNAGEEHLSPSFSAKIESENSLSAGV 1079
.....1090.....1100.....1110.....1120.....1130.....1140

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..
Pavo_muticus      KKIESSTSP----- 740
Pavo_cristatus    KKIESSTSP----- 740
Gallus_gallus     KKIESSTSP----- 971
Chelonia_mydas    KKIDTSTS----- 983
Rattus_norvegicus KPAETSPPPVAPKPMALPAETSPPPAVAPKPMAPFAETSLPPVSPKPMALPTEASSSPISP 1077
Mus_musculus      KPAETSPPPVAPKPMTLRAETSPPPVFPKPMTLPAETSPPPVFPKPMTL----- 1039
Homo_sapiens      APAEASPP----- 949
Pan_troglodytes   APAEASPP----- 1049
Macaca_mulatta    KPAEASPP----- 1049
Callithrix_jacchus KPDEASPP----- 1066
Canis_lupus_familiaris KPMEASPP----- 1013
Equus_caballus    KPPETSPP----- 1032
Bos_taurus        KPTETSPP----- 1041
Rhinatrema_bivittatum EVLITSPIN----- 984
Xenopus_tropicalis KNFEVKTEPLN----- 1090
.....1150.....1160.....1170.....1180.....1190.....1200

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Pavo_muticus      ----- 740
Pavo_cristatus    ----- 740
Gallus_gallus     ----- 971
Chelonia_mydas    ----- 983
Rattus_norvegicus KPMAPPAEASIPPVVPKPMAPPAEASPLPVAPKPMAPFAETSLPPVAPKPMALPTEASPP 1137
Mus_musculus      -----AETSLPLVFPKPMTLRAETSPP 1061
Homo_sapiens      ----- 949
Pan_troglodytes   ----- 1049
Macaca_mulatta    ----- 1049
Callithrix_jacchus ----- 1066
Canis_lupus_familiaris ----- 1013
Equus_caballus    ----- 1032
Bos_taurus        ----- 1041
Rhinatrema_bivittatum ----- 984
Xenopus_tropicalis -----VSPEVTKHFDVEDKTRHYEDSLTSS 1115
.....1210.....1220.....1230.....1240.....1250.....1260

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/COEData **Date: Tue Feb 1 11:45:17 2022**

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| | | |
|------------------------|---|------|
| | * * : : * : : * : . * . * : : : * : : * : : * : * | |
| Pavo_muticus | VKNNKSPSFPSCOPAPLNLRLTLRTFAVPKPYSSSRPSPFALAVSSAVKRQSQSFNKTRTIS | 800 |
| Pavo_cristatus | VKNNKSPSFPSCOPAPLNLRLTLRTFAVPKPYSSSRPSPFALAVSSAVKRQSQSFNKTRTIS | 800 |
| Gallus_gallus | VKNNKPSPSFPSCOPAPLNLRLTLRTFAVPKPYSSSRPSPFALAVSSAVKRQSQSFNKTRTIS | 1031 |
| Chelonia_mydas | VKTAKPLSPSFPSCOPATLNLRLTLRTFAVPKPYSSSRPSPFALAVSSAIKRQSQFSFKPHITIS | 1043 |
| Rattus_norvegicus | PVAPKPLALPGSQGASLNLTLLKTLFTGAPRPYNSSAPSPFALAV---VKRSQSFSKASPES | 1194 |
| Mus_musculus | PVAAPKVALPGSQGTSLNLTLLKTLFTGAPRPYSSSGPSPFALAV---VKRSQSFSKACPES | 1118 |
| Homo_sapiens | PIAPKPVITIPASQVSTQNLTLLKTLFTGAPRPYSSSGGPSPFALAV---VKRSQSFSKERTES | 1006 |
| Pan_troglodytes | PIAPKPVITIPASQVSTQNLTLLKTLFTGAPRPYSSSGGPSPFALAV---VKRSQSFSKERTES | 1106 |
| Macaca_mulatta | PIAPKPAAITPAROVSTQNLTLLKTLFTGAPRPYSSSGGPSPFALAV---VKRSQSFSKERTKS | 1106 |
| Callithrix_jacchus | PIAPKPVITIPASQVSAQNLTLLKTLFTGAPRPYSSSGGPSPFALAV---VKRSQSFSKERTES | 1123 |
| Canis_lupus_familiaris | PSS--PAPLPASQSAALNLTLLKTLFTGAPRPYASSAPSPFALAV---VKRSQSLSKVRRGA | 1068 |
| Equus_caballus | PVAPKPTPLPTSQLAALNLTLLKTLFTGAPRPYSSSGAPSPFALAV---VKRSQSFSKSRTES | 1089 |
| Bos_taurus | PVASKPVLPKSQLATLNLKTLKTLFTGAPRPYSSSGAPSPFALAV---VKRSQSFSKSPTES | 1098 |
| Rhinatrema_bivittatum | --MDKHSHFFPASQSVPLNFEKLKAFATPRPFSTRTPSPFAVAVSSAIRRQSQSFSTTSITA | 1042 |
| Xenopus_tropicalis | SQTVRSPSSPTGPAVTMSLQKLRTFAIPRFSSCNSSSFAPTSSLAIRRSQSFTSSSAPV | 1175 |
| | 1270 1280 1290 1300 1310 1320 | |

| | | | | |
|------------------------|-----------------------------------|--------------------------|------------------|------|
| Pavo_muticus | SLAPREEFPVEHSSASNAAEFSSPTSMPOVKNP | SLHSITG---- | GPONSLMDKKSSNV | 855 |
| Pavo_cristatus | SLAPREEFPVEHSSASNAAEFSSPTSMPOVKNP | SLHSITG---- | GPONSLMDKKSSNV | 855 |
| Gallus_gallus | SLAPREEFPVELSSVSAAEFSSATSMPQVKNL | SLHGITG---- | GPONSLMDKKSSNV | 1086 |
| Chelonia_mydas | SQPSKEESSVELSSAP----- | STGDVKNQFLQTLTG | GSQHSMDKKKS-NCT | 1088 |
| Rattus_norvegicus | PSE---DSSAQCP----- | PAATQDGKIQTVNQPTV | GSQHDGVDKQNKPVQ | 1235 |
| Mus_musculus | ASE---GSSALP----- | PAATQDEKTHTVNKPTV | GSQHDGDGDKQNNPVQ | 1159 |
| Homo_sapiens | PSA---SALVQP----- | PANTEEGKTHSVNKFVD | IPQLGVSDKENNSAH | 1047 |
| Pan_troglodytes | PSA---SALVQP----- | PANTEEGKTHSVNKFVD | IPQLGVSDKENNSAH | 1147 |
| Macaca_mulatta | SSA---GASVQP----- | PANTEEGKTHSVNTFVD | IPQLGVSDKDNNNSAH | 1147 |
| Callithrix_jacchus | SSA---GASVQP----- | PANTEEGKTHPVNKFVD | IPQLGVMDKENNSAH | 1164 |
| Canis_lupus_familiaris | GGD---GAATPP----- | PADT-EGQAPSVNQLAG | IPQLCLSDKGNNNSAH | 1108 |
| Equus_caballus | CSE---GALDQP----- | PADTEEGKTPSVDKFVD | IPQLGVSDKENNSAH | 1130 |
| Bos_taurus | CSEEVKGASART----- | PTDADKGKIPSVSTFGN | MPQLGVSDKENNSAH | 1142 |
| Rhinatrema_bivittatum | IQPSEQELCNAFSP----- | MTSSSTAINKHSSSKLFGNSRDS | TPQLQELLSMTQGOAK | 1093 |
| Xenopus_tropicalis | KQP----- | LKSTGWTSVVSPTEAEFRN----- | DSSSFSENSQEQSE | 1211 |
| |1330.....1340..... | 1350.....1360..... | 1370.....1380 | |

| | . | : | | ::: | : | .* | : | .* | .* | .* | .* | .* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|----|---|-----|---|----|---|----|----|----|----|----|---|---|---|---|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|------|------|------|
| Pavo_muticus | N | S | E | E | K | I | A | Q | S | G | A | S | A | D | H | P | R | -- | P | V | I | M | R | Q | T | S | T | P | V | Q | C | S | D | P | E | Q | I | H | S | L | L | A | A | I | R | S | G | E | A | A | A | R | L | K | R | -- | 911 | |
| Pavo_cristatus | N | S | E | E | K | I | A | Q | S | G | A | S | A | D | H | P | R | -- | P | V | I | M | R | Q | T | S | T | P | V | Q | C | S | D | P | E | Q | I | H | S | L | L | A | A | I | R | S | G | E | A | A | A | R | L | K | R | -- | 911 | |
| Gallus_gallus | N | S | E | Q | K | I | E | A | Q | S | G | A | S | A | D | H | P | R | -- | P | V | I | M | R | Q | T | S | T | P | V | Q | R | S | D | P | E | Q | I | H | S | L | L | A | A | I | R | S | G | E | A | A | A | R | L | K | R | -- | 1142 |
| Chelonia_mydas | N | E | O | N | S | O | V | Q | S | -- | S | A | D | H | P | T | -- | S | V | F | E | R | E | T | A | L | T | F | O | S | S | D | P | E | Q | I | H | S | L | L | A | A | I | R | S | G | E | G | A | A | L | K | R | K | R | K | -- | 1144 |
| Rattus_norvegicus | N | -- | E | H | S | S | Q | R | L | T | -- | P | A | D | G | P | S | -- | F | T | L | Q | R | O | S | S | L | N | F | O | S | S | D | P | E | H | I | R | O | S | L | L | T | A | I | R | S | G | E | A | A | A | L | K | R | -- | 1289 | |
| Mus_musculus | N | -- | E | H | S | S | Q | V | L | T | -- | P | A | D | G | P | S | -- | F | T | L | K | R | O | S | S | L | T | F | O | S | S | D | P | E | H | V | R | O | S | L | L | T | A | I | R | S | G | E | A | A | A | L | K | R | -- | 1212 | |
| Homo_sapiens | N | -- | E | Q | N | S | Q | I | P | T | -- | P | T | D | G | P | S | -- | F | T | V | M | R | Q | S | S | L | T | F | O | S | S | D | P | E | Q | M | R | Q | S | L | L | T | A | I | R | S | G | E | A | A | A | L | K | R | -- | 1100 | |
| Pan_troglodytes | N | -- | E | Q | N | S | Q | I | P | T | -- | P | T | D | C | P | S | -- | F | T | V | M | R | Q | S | S | L | T | F | O | S | S | D | P | E | Q | M | R | Q | S | L | L | T | A | I | R | S | G | E | A | A | A | L | K | R | -- | 1200 | |
| Macaca_mulatta | N | -- | E | Q | N | S | Q | I | P | T | -- | P | T | D | C | P | S | -- | F | T | L | M | R | Q | S | S | L | T | F | O | S | S | D | P | E | Q | M | R | Q | S | L | L | T | A | I | R | S | G | E | A | A | A | L | K | R | -- | 1200 | |
| Callithrix_jacchus | N | -- | E | Q | N | S | Q | I | T | T | -- | P | T | D | R | S | -- | F | T | L | M | R | Q | S | S | L | P | L | O | S | S | D | P | E | Q | M | R | Q | S | L | L | T | A | I | C | S | G | E | A | A | A | L | K | R | -- | 1217 | | |
| Canis_lupus_familiaris | N | -- | E | Q | N | S | Q | T | P | S | -- | P | T | G | C | P | S | -- | F | I | V | R | R | Q | S | S | L | T | L | Q | G | P | D | P | E | Q | A | R | R | S | L | L | T | A | I | R | S | G | E | A | A | A | R | L | K | R | -- | 1161 |
| Equus_caballus | N | -- | E | Q | N | S | Q | I | P | S | -- | L | T | D | C | P | S | -- | F | T | L | K | R | O | S | S | L | P | F | O | S | S | D | P | E | Q | V | R | O | S | L | L | T | A | I | R | S | G | E | A | A | A | L | K | R | -- | 1183 | |
| Bos_taurus | N | -- | E | Q | N | P | Q | I | P | S | -- | P | T | D | C | P | S | -- | F | T | L | K | R | O | S | S | L | T | F | O | S | S | D | P | E | Q | I | R | O | S | L | L | T | A | I | R | S | G | E | A | A | A | L | K | R | | | |

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/COB1141.fst Tue Feb 1 11:45:17 2022

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Pavo_muticus      -----VGPPSNTVSVNGRAR-----LNHLYSTEAKANE-----939
Pavo_cristatus    -----VGPPSNTVSVNGRAR-----LNHLYSTEAKANE-----939
Gallus_gallus      -----VGPPSNTVSVNGRAR-----LNHLYSTEAKANE-----1170
Chelonia_mydas     GNGIASLSFPGPPPSHRLNSPASS-----EWSQVESQHDSVSPVCCQSGAQLVTV1196
Rattus_norvegicus -----VTVPSNRISVNGKSG-----LSQPMSTDAQDSC-----1317
Mus_musculus       -----VTVPSNTISVNGKSG-----LSQPMSTDAQDSR-----1240
Homo_sapiens       -----VTIPSNITISVNGRSR-----LSHSMSPDAQDGH-----1128
Pan_troglodytes    -----VTIPSNITISVNGRSR-----LSHSMSPDAQDGR-----1228
Macaca_mulatta     -----VTIPSNITISVNGRSR-----LSHSMSPDAQDDR-----1228
Callithrix_jacchus -----CRLQTGIRGAFGKPDVTVARVHIGQVIMSICTKLONKEHVMEALSRAKFKE1268
Canis_lupus_familiaris -----VTVPSNTISVNGRSR-----LSHSMSSDAQDGH-----1189
Equus_caballus      -----VTVPSNTISVNGRSG-----LSRSMSSDAQDAH-----1211
Bos_taurus         -----VTVQSNITIVNGKSR-----LSRSMSLDAPGNH-----1223
Rhinatrema_bivittatum -----VYVPSNTLSINGRSK-----LSHQASSEVQYEH-----1179
Xenopus_tropicalis -----VPVQSNITISINGRSR-----LSHPVFSETQEEEL-----1293
.....1450.....1460.....1470.....1480.....1490.....1500

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Pavo_muticus      -----939
Pavo_cristatus    -----939
Gallus_gallus      -----1170
Chelonia_mydas     LQ-----1198
Rattus_norvegicus -----1317
Mus_musculus       -----1240
Homo_sapiens       -----1128
Pan_troglodytes    -----1228
Macaca_mulatta     -----1228
Callithrix_jacchus PGSQKIHISKKRGFTKFNADKFEDMVAEKRLIPNGCGVKYIPNCGPLHKWWTLS1323
Canis_lupus_familiaris -----1189
Equus_caballus      -----1211
Bos_taurus         -----1223
Rhinatrema_bivittatum -----1179
Xenopus_tropicalis -----1293
.....1510.....1520.....1530.....1540.....1550.....

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