

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/TM148B.fasta Tue Feb 1 14:46:48 2022

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Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus      -----
Taeniopygia_guttata -----
Anas_platyrhynchos -----
Chelonia_mydas     -----
Latimeria_chalumnae -----
Rhinatrema_bivittatum -----
Xenopus_tropicalis -----
Pan_troglodytes    MAQPLSRPLVLSQSPPWPPAPPSPRFPHRPQPLPGSP-----SRTPFQSLP--LAWP 50
Macaca_mulatta     MAQPLSRPLVLSRSPPWPPVPPSPRFPNRPQPLPGSP-----SRTPFQSLP--LAWP 50
Callithrix_jacchus MAQPLSRPLVLSRSPPWPPAPPSPRFPHRPQPLPGSP-----SRTPFQSLP--LAWP 50
Canis_lupus_familiaris MAQPLSRPLVLSSSSPWTPAPPSPRFPNRPQPGPGSQRMPSRSQPRPPLLSQSPCLPWP 60
Bos_taurus         MAQPLSRPLVLSRSQPPWPTTPSPRFPNRFQFPFGSQRMPSRSFQLRRPLQSLT----WA 56
Homo_sapiens       MAQPLSRPLVLSQSPPWPPAPPSPRFPHRPQPLPGSP-----SRTPFQSLP--LAWP 50
Mus_musculus       MAQPLSRPLILSQFQPPWPPATPSRFPNLSRPRPVSQRMSP-----SRSPQPRSLPAPWP 56
Rattus_norvegicus  MAQPLSRPLILSQSQPPWPPATPSRFPNLSRPRPVSQRMSP-----SSPFQPRSLPAPWP 56
1.....10.....20.....30.....40.....50.....60

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Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus      -----
Taeniopygia_guttata -----
Anas_platyrhynchos -----
Chelonia_mydas     -----
Latimeria_chalumnae -----
Rhinatrema_bivittatum -----
Xenopus_tropicalis -----
Pan_troglodytes    PSRPRPSFHPLSQIPQAALSQPHSQCLLKALAQPRPLLOSQSPQPLLPSSHSLPLFKPQCPA 110
Macaca_mulatta     PSRPRPSFHPLSQISAQGLSQPHSQCLLKALAQPRPLLOSQSPQPLLPSSHSLPLFKPQCPA 110
Callithrix_jacchus PSRPRPLFHPLSQIPVRALSHPHSQCLLKALAPGSLLOSQSPQPLLPSSHSLPLFKPQCPA 110
Canis_lupus_familiaris RTTPLPLFHLLSQIPVQPLSOPHAQYLLKPGACTLPLPQSPLOPLLPSSHSLPLFKPRCP- 119
Bos_taurus         PSQSLALLHLFFHIPARPLCQPHSQNLLKPGSQRLPLFEPPSQPLLPSSHPLPLHKSILCPA 116
Homo_sapiens       PSRPRPSFHPLSQIPQAALSQPHSQCLLKALAQPRPLLOSQSPQPLLPSSHSLPLFKPQCPA 110
Mus_musculus       LSPPRPLFHPLSQFPAQHLTLSSHPRLLKPLAQPPLOQSPSHPLLPSHLLPLFEPRCSV 116
Rattus_norvegicus  LSPPRPLFHPLSQFPAQHLPLSHSQRLKPLAQPPLOQSPSHPLLPSHLLPLFEPRCSV 116
.....70.....80.....90.....100.....110.....120

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Pavo_muticus      -----GRPLPPPPLR---LPLLLVPLLLLLLLPPPPA 30
Pavo_cristatus    -----GRPLPPPPLR---LPLLLVPLLLLLLLPPPPA 30
Gallus_gallus      -----MGRRGGGRGRPLPPPPLR---LPLLLVPL----LLLLLLPPPPA 37
Taeniopygia_guttata -----
Anas_platyrhynchos SFSRARVGLRRRRRGGMGRGGAGRRDPLVRPPLRPPPLLLLLLLFLLLLLLLLPPPPA 73
Chelonia_mydas     -----MARLLLLLLLGAAGPLA 16
Latimeria_chalumnae -----
Rhinatrema_bivittatum -----MNTPKLLMSQRT 12
Xenopus_tropicalis -----MRAERRGGGGAGYLGQLLVLLAAGLA 26
Pan_troglodytes    QPKP-LSQPLPSSSLCLPKSLPLVPPISHTLPLSQPRLKSGFQLPPALLLLLLLFSVLGPGA 169
Macaca_mulatta     QPNP-LSQPLPSSSLCLPKSLPLVPPISHTLPLSQPRLKSGFQLPPALLLLLLLFSVLGPGA 169
Callithrix_jacchus QPNP-LSQPLPSSSLCLPKSLPLVPPISHTLPLSQPRLKSGFQLPPALLLLLLLFSVLGPGA 169
Canis_lupus_familiaris ----LSHPLPSSSLCLPKSLPLPTPLSHTLPLSQPRLRSGQLPPALLLLLLLFSVLGPGA 174
Bos_taurus         QPNS-LSQPLPSSSLCLPKSLPLVPPISHTLPLSQPRLRSGQLPPALLLLLLLFSVLGPGA 175
Homo_sapiens       QPNP-LSQPLPSSSLCLPKSLPLVPPISHTLPLSQPRLKSGFQLPPALLLLLLLFSVLGPGA 169
Mus_musculus       QRHPKKAQSLPSSSLCLPKSLPLGPRLSHTLPLSQPRLRSGQLPPALLLLLLLFSVLGPGA 176
Rattus_norvegicus  QRHP-IAQSLPSSSLCLPKSLPLGPRLSHTLPLSQPRLRSGQLPPALLLLLLLFSVLGPGA 175
.....130.....140.....150.....160.....170.....180

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Pavo_muticus      GGLFVTDYFTRTPRKLSPPFRSFASIELFHFHIPEDTVIAVWNLIIFKEQGGTFGDQCPDR    90
Pavo_cristatus    GGLFVTDYFTRTPRKLSPPFRSFASIELFHFHIPEDTVIAVWNLIIFKEQGGTFGDQCPDR    90
Gallus_gallus     DGLFVTDYFTRTPRKLSPPFRSFASIELFHFHIPEDTVIAVWNLIIFKEQGGTFGDQCPDR    97
Taeniopygia_guttata -----
Anas_platyrhynchos DGLFVTDYFTRTPRKLSPPFRSFASIELFHFHIPEDTVIAVWNLIIFKEQGGTFGDHCPDR    133
Chelonia_mydas    DGLFVTDYFTRTPRKLSPPFRSFASIELFHFRIPEDTLVAVWNLIIFKEQGGTFGDRCPDR    76
Latimeria_chalumnae -GLFVTDYFTRTPRKLNPFRRSFASVELFHFHNPEDTLIAVWNLIIFKEQGGTFGDHCPDR    59
Rhinatrema_bivittatum DGLFVTDYFTRTPRKLSPPFRSFGSVELFHFHFSVPEDTIIAVWNLIIFKEQGGTFGDRCPDR    72
Xenopus_tropicalis DGLFVTDYFTRTPRKLNPFRRSVGSVELFHFHNPEDTVIAVWNLIIFKEQGGTFGDNCPCR    86
Pan_troglodytes   GGLFLTLDYSTCSPRKLSPPFRSFASIELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    229
Macaca_mulatta    GGLFLTLDYSTCSPRKLSPPFRSFASIELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    229
Callithrix_jacchus GGLFLTLDYSTCSPRKLNPFRRSFASIELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    229
Canis_lupus_familiaris GGLFLTLDYSTCSPRKLSPPFRSFASIELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    234
Bos_taurus        GGLFLTLDYSTCSPRKLSPPFRSFASIELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    235
Homo_sapiens      GGLFLTLDYSTCSPRKLSPPFRSFASIELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    229
Mus_musculus      GGLFLTLDYSTCSPRKLSPPFRSFASIELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    236
Rattus_norvegicus GGLFLTLDYSTCSPRKLSPPFRSFASIELFHFRVPEDTFLAVWNLIIFKEQGGTFGDHCPDQ    235
.....190.....200.....210.....220.....230.....240

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Pavo_muticus      SITVYFRSGAPSVINPLHTHFPSTAVPGSFALTTLTWLTPNRTTGVENITSPLPGDWFLA    150
Pavo_cristatus    SITVYFRSGAPSVINPLHTHFPSTAVPGSFALTTLTWLTPNRTTGVENITSPLPGDWFLA    150
Gallus_gallus     SITVYFRSGAPSVINPLHTHFPSTAVPGSFALTTLTWLTPNRTTGVENITSPLPGDWFLA    157
Taeniopygia_guttata -----
Anas_platyrhynchos SITVYFRSGAPSVINPLRTHFPRTAVPGSFALTTLTWLTPNRTTGVENITSPLPGDWFLA    193
Chelonia_mydas    SVTVYFRSGAPPPIIAPLHTHFPRTAVPSSFTLTLTWLTPNRTTGVENITSPLPGDWFLA    136
Latimeria_chalumnae SVTVYFRSGAPPVINPLQTHFPKDTVVPGSFAVTLTWLTPNRTTGVENITSPLPGDWFLA    119
Rhinatrema_bivittatum SVTVYFRSGAPPVINPLRNHFPRTSIPGAFALTTLTWLTPNRTTGVENITSPLPGDWFLA    132
Xenopus_tropicalis TITVYFRAGAPPVINPLGAHFPRTAVPGFTLTLTWLTPNRTTGVENITSPLPGDWFLA    146
Pan_troglodytes   SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    289
Macaca_mulatta    SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    289
Callithrix_jacchus SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    289
Canis_lupus_familiaris SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    294
Bos_taurus        SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    295
Homo_sapiens      SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    289
Mus_musculus      SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    296
Rattus_norvegicus SVTVYFRSGAPPVINPLHTHFPDGTAVPGVFSLTLSWTLNRTSGIFNVSSPLPGDWFLA    295
.....250.....260.....270.....280.....290.....300

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: :*: *****
Pavo_muticus      AHLPKDEGKISVKGLYECCQYLFQPOLIVQRLVNIAVLPGYITEQSMAPHNRSCLYKVF    210
Pavo_cristatus    AHLPKDEGKISVKGLYECCQYLFQPOLIVQRLVNIAVLPGYITEQSMAPHNRSCLYKVF    210
Gallus_gallus     AHLPKDEGKISVKGLYECCQYLFQPOLIVQRLVNIAVLPGYVITEQSMAPHNRSCLYKVF    217
Taeniopygia_guttata -----MAPHNRSCLYKVF    13
Anas_platyrhynchos AHLPKDEGKISVKGLYECCQYLFQPOLIVQRLVNIAVLPGYASEQSMGPHNRSCLYKVF    253
Chelonia_mydas    AHLPKDEGKISVKGLYECCQYLFQPOLIAQRLVGIAVLPGYVSAQSIAPHNRSCLYKVF    196
Latimeria_chalumnae AHLPKDGGKISVKGLYDECQYLFQPOLIVQRLIGIPVLYPGYIIDQAILARNRSALYKVF    179
Rhinatrema_bivittatum AHLPKDDGKISVKGLYDECQYLFQPOLIVQRLIGIPVLYPDYITEQMIPAHNHSVLYKVF    192
Xenopus_tropicalis AHLPKDDGKITIKGLHDECQYLFQPOLIVQRAVGVPVLYPGYVTEQMLPVHNRSALYKVF    206
Pan_troglodytes   AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSPHNRSALYKVF    349
Macaca_mulatta    AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSPHNRSALYKVF    349
Callithrix_jacchus AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSPHNRSALYKVF    349
Canis_lupus_familiaris AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSAHNRSALYKVF    354
Bos_taurus        AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSAHNRSALYKVF    355
Homo_sapiens      AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSPHNRSALYKVF    349
Mus_musculus      AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSSHNRSAALYKVF    356
Rattus_norvegicus AHLPOAHGHISVKGLQDECQYLLQPOLIVRRLLDVAVLVPGRPSEQTLSSHNRSAALYKVF    355
.....310.....320.....330.....340.....350.....360

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      :*...* : : ** : * :*.*****:**: * .*:** **
Pavo_muticus      VPSYTSRVLVLEVLRCRG---AEGCPLWLRMRAPPLHNSTALDCREHAPCOLALDLPF 266
Pavo_cristatus    VPSYTSRVLVLEVLRCRG---AEGCPLWLRMRAPPLHNSTALDCREHAPCOLALDLPF 266
Gallus_gallus     VPSYTSRVLVLEVLRCRG---AEGCPLWLRMRAPPLHNSTALDCREHAPCOLALDLPF 273
Taeniopygia_guttata VPSYTSQVLVEVLRCRG---AEGCPLWLRVRAPPLHNSTLDCQEHPTCOLAQDLPF 69
Anas_platyrhynchos VPSYTSRVQVEVLRCRG---AEGCPLWLWVRAPPLHNSTALDCREHAPCOLALDLPF 309
Chelonia_mydas    VPSHTSRVLVQVLGCRAGNRSATSCPLWLKVRAPPLHNSTALDCRERAPCOLALELPL 256
Latimeria_chalumnae IPSYTSVQVQLDCGTSNRSTEGCPVFLKIRAKAPPLHNSSYMDCRDRPVCKLGVELPF 239
Rhinatrema_bivittatum VPSYTSEVHVLLLDRCVGNKTGEGCPVYLKMRAPPLHNSTLQDCREFAVCRLCVQLPS 252
Xenopus_tropicalis VPQFTSGLRIHLLGCRTGTHLGETCPLLLRLRAKAPPLHNSSSQDCPLPSGCQLLMPLPL 266
Pan_troglodytes   VPSFTYRVSAQLVCVGG--RGVSACPLSLRLRPKAPPLHNSSSVACGGASGCQLELALPP 407
Macaca_mulatta    VPSFTYRVSAQLACVGG--RGVSACPLSLRLRPKAPPLHNSSSVSCGGASGCQLELALPP 407
Callithrix_jacchus VPSFTYRVSAQLACVGG--RGVSACPLSLRLRPKAPPLYNSSSVACGGASGCQLELALPP 407
Canis_lupus_familiaris VPSFTYRVSAQLVCVGG--RGVLACPLTLRLRPKAPPLHNSSSVSCGGASVCQLELALPP 412
Bos_taurus        VPSFTYRVSAQLVCVGG--RGASACPLTLRLRPKAPPLHNSSSVACGGASVCQLELALPP 413
Homo_sapiens       VPSFTYRVSAQLVCVGG--RGVSACPLSLRLRPKAPPLHNSSSVACGGASGCQLELALPP 407
Mus_musculus       VPSFTYRVSAQLVCVGG--RGASVCPLTLRLRPKAPPLHNSSSVACGGASVCQLELALPP 414
Rattus_norvegicus  VPSFTYRVSAQLVCVGG--RGASVCPLTLRLRPKAPPLHNSSSVTCGGASVCQLELALPP 413
.....370.....380.....390.....400.....410.....420

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      * : * * : * : : * : : : * : * : : .....*****:
Pavo_muticus      WQHWYYVLVERHP-GAPGTVSFQITVQLTDCSRPSLARPPFLPSSASMNMPHSFGSAGGM 325
Pavo_cristatus    WQHWYYVLVERHP-GAPGTVSFQITVQLTDCSRPSLARPPFLPSSASMNMPHSFGSAGGM 325
Gallus_gallus     WQHWYYVLVERHP-GAPGTVSFQITVLLTDCSRPSLARPPFLPSSASMNMPHSFGSAGGM 332
Taeniopygia_guttata WQHWYYVLVEKHP-GVPGTVSFQVTVQLTDCSRPSLARPPFLPSSASMNMPHSFGSAGGL 128
Anas_platyrhynchos WQHWYYVLVERHP-GVPGTVSFQVIVQLTDCSRPSLSRPPFLPSSASMNMPHSFGSAGGL 368
Chelonia_mydas    WQHWYYVLLEKAL-GVPGPIHFQITVQLTDCSRPGLSRAPVMLPAAAMNPQSFAGLVSL 315
Latimeria_chalumnae WQWYYIILEKYT-GNIN-IYFRIGVQIKDCSKPGLARSLSVPPSAALNMPQSFSGTGGF 297
Rhinatrema_bivittatum WQHWYVLVEKHS-SIASPVYFRVTVQFKDCSRPDHVKSULLSPSALNMPQSFSGSAGSG 311
Xenopus_tropicalis WQHWYYILVERTG-VPGTAIYFQLTAHLHDCSRPGLTR--IAGPSSTLNMPQSFGTAGGL 323
Pan_troglodytes   WGHWVYVRVETSSRGPGRITIRFQLCVRLQECQPQGLLR--ALVPGAAMNPQSLGNQ--- 462
Macaca_mulatta    WGHWVYVRVETSSRGPGRITIRFQLCVRLQECQPQGLLR--ALVPGAAMNPQSLGNQ--- 462
Callithrix_jacchus WGHWVYVRVETSSRGSGRITIRFQLCVRLQECQPQGLLR--SLVPGAAMNPQSLGNQ--- 462
Canis_lupus_familiaris WGHWVYVRVEIPSRGPGRITIRFQLCVRLQECQPQSLSR--VLVPGAAMNPQSLGNQ--- 467
Bos_taurus        WGHWVYVRVETPSRGPGRITIRFQLCVWLQECQPQSLSR--AVVPGAAMNPQSLGNQ--- 468
Homo_sapiens       WGHWVYVRVETSSRGPGRITIRFQLCVRLQECQPQGLLR--ALVPGAAMNPQSLGNQ--- 462
Mus_musculus       WGHWVYVRVETPSRGPGRITISFQLCVRLQECQPQSLSR--ALVPGAAMNPQSLGTQ--- 469
Rattus_norvegicus  WGHWVYVRVETPSRGPGRITVRFQLCVRLQECQPQSLSR--ALVPGAAMNPQSLGTQ--- 468
.....430.....440.....450.....460.....470.....480

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      *
Pavo_muticus      VLG-DSPPPTSPNSTKRPL-----PISSTMPATERCWPPIRPTLRNELDTFSVH 372
Pavo_cristatus    VLG-DSPPPTSPNSTKRPL-----PISSTMPATERCWPPIRPTLRNELDTFSVH 372
Gallus_gallus     VLG-DSPPPTSPNSTKRPL-----PISSTMPATERCWPPIRPTLRNELDTFSVH 379
Taeniopygia_guttata ALG-DSPPPTSPNDIKHPV-----PIPVTLHTGEQCWPVRPTLRNELDTFSVH 175
Anas_platyrhynchos GLGADSPPPASPNGTRH-----PLAAVPSAAERCWPVRPTLRNELDTFSVH 414
Chelonia_mydas    SLG-ESLPAAAPKGTQPP-----PAGPPPGVCCWPPIRPTLRNELDTFSVH 359
Latimeria_chalumnae SFPDHLPSPGQTPMQRNDSTSLTPLTEDSPNLQSPSAMDKCWPPIRPTLRNELDTFSVH 357
Rhinatrema_bivittatum SSTGSLPAAGVSSRPGNKTRGAPG---ESP-SAPRPPERSCWPIRPTLRNELDTFSVH 366
Xenopus_tropicalis ASMEGLPSPGVSLASNVS-----WADAASLLPSCWPPIRPTLRNELDTFSVH 370
Pan_troglodytes   ----PLPPEPPSLGTPAEG-----PGTTSPPPEHCWPVRPTLRNELDTFSVH 504
Macaca_mulatta    ----PLPPEPPSLGTPAEG-----PGTTSPPPEHCWPVRPTLRNELDTFSVH 504
Callithrix_jacchus ----PLPPEPPSLGTPAEG-----PGATSPPEHCWPVRPTLRNELDTFSVH 504
Canis_lupus_familiaris ----PLPPEPPSLGASAEG-----PGATSPPEHCWPVRPTLRNELDTFSVH 509
Bos_taurus        ----PLPPEPPSLRTPAEG-----PGATSPPEHCWPVRPTLRNELDTFSVH 510
Homo_sapiens       ----PLPPEPPSLGTPAEG-----PGTTSPPPEHCWPVRPTLRNELDTFSVH 504
Mus_musculus       ----PLPPEPPSLGTPIEG-----SGAIAPTEHCWPVRPTLRNELDTFSVH 511
Rattus_norvegicus  ----PLSLEPPSLGTPIEG-----SGAMAPPEHCWPVRPTLRNELDTFSVH 510
.....490.....500.....510.....520.....530.....540

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*****.:***:**: :*:*****.***:**:
Pavo_muticus      FYIFFGPNVSVPPDRPAVFVINLLPVLDSGGVNLLELRNVSSLC---GENVTVFGCLNH 429
Pavo_cristatus    FYIFFGPNVSVPPDRPAVFVINLLPVLDSGGVNLLELRNVSSLC---GENVTVFGCLNH 429
Gallus_gallus     FYIFFGPNVSVPPDRPAVFVINLLPVLDSGGVNLLELRNVSSLC---GENVTVFGCLNH 436
Taeniopygia_guttata FYIFFGPNVSVPPDRPAVFVINLLPVLDSGGVNLLELRNVSSLC---GENVTVFGCLNH 232
Anas_platyrhynchos FYIFFGPNVSVPPDRPAVFVINLLPVLDSGGVNLLELRNVSSLC---GENATVFGCLNH 471
Chelonia_mydas    FYIFFGPNVSVPPNRPAVFGISLLPVLDSGGVNLLELRNVSSLC---GENVTVFGCLTH 416
Latimeria_chalumnae FYIFFGPNISVPPDRPAIFAINLMPVLDSGGVNLLELRNVSSLC---GENVTVFGCLTH 417
Rhinatrema_bivittatum FYIFFGPNISVPPDRPAVFVINLLPVLDSGGVNLLELRNVSSLC---GENVTVFGCLNH 423
Xenopus_tropicalis FYIFFGPNVSVPPDRPAVFSINLLPVLDSGGVNLLELRNVSSLC---GENLTVFGCLNH 427
Pan_troglodytes   FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 561
Macaca_mulatta    FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 561
Callithrix_jacchus FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 561
Canis_lupus_familiaris FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 566
Bos_taurus        FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 567
Homo_sapiens      FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 561
Mus_musculus      FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 568
Rattus_norvegicus FYIFFGPSVALPPERPAVFAMRLLPVLDSGGVLSLELQNLASSVR---QENVTVFGCLTH 567
.....550.....560.....570.....580.....590.....600

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*: : * : ** :* : :*:***:***:***:
Pavo_muticus      EVPLMS--GDNASVTCETESLAGFLLSVNATASLSHLHIPYPQTGSWYLSLRSLCATEHG 487
Pavo_cristatus    EVPLMS--GDNASVTCETESLAGFLLSVNATASLSRLHIPYPQTGSWYLSLRSLCATEHG 487
Gallus_gallus     EVPLTS--SDNASVTCETESLAGFLLSVNATASLSRLRIPYPQTGSWYLSLRSLCATEHG 494
Taeniopygia_guttata GVPLTS--SDNTSVICETESLAGFLLSVNATASLSRLRIPYPQTGSWYLSLRSLCATEHG 290
Anas_platyrhynchos EVPLAS--SDNASVTCETESLAGFLLSVNATASLSRLRIPYPQTGSWYLSLRSLCATEHG 529
Chelonia_mydas    EVPLTA--GDNASVTCETESLAGFLLSVNATASLARLRIPYPQTGSWYLSLRSLCATEHG 474
Latimeria_chalumnae SIPFLHGVSVDCVTSCLPGASAGFVLSVNTTSMNTRLRIPYPQTGSWYLSLRSLCANDHG 477
Rhinatrema_bivittatum GVPLVS--EDNATVNCETESLAGFLLTVNATVNLTRLRIPYPQTGSWYLSLRSLCANEHR 481
Xenopus_tropicalis GVPLIS--GDNATISCHTESLSGFSVSNMADPVSRLRIPYPQTGTWYLSLRSLCASEHG 485
Pan_troglodytes   EVPLSLG---DAAVTCSKESLAGFLLSVSATTRVARLRIPFPQTGTWFLALRSLCGVGPR 618
Macaca_mulatta    EVPLSLG---DAAVTCSKESLAGFLLSVSATTRVARLRIPFPQTGTWFLALRSLCGVGPR 618
Callithrix_jacchus EVPLSLG---DAAVTCSKESLAGFLLSVSATTSVARLRIPFPQTGTWFLALRSLCGVGPR 618
Canis_lupus_familiaris EVPLSLG---DAAVTCSKESLAGFLLSVSATSRVARLRIPFPQTGTWFLTLRSLCGVGPR 623
Bos_taurus        EVPLSLG---DAAVTCSKESLAGFLLTVSAASRVARLRIPFPQTGTWFLTLRSLCGVGPR 624
Homo_sapiens      EVPLSLG---DAAVTCSKESLAGFLLSVSATTRVARLRIPFPQTGTWFLALRSLCGVGPR 618
Mus_musculus      EVPLSLG---DAAVTCSKESLAGFLLSVSATSRVARLRIPFPQTGTWFLTLRSLCGVGPR 625
Rattus_norvegicus EVPLSLG---DAAVTCSKESLAGFLLSVSVTSRVARLRIPFPQTGTWFLTLRSLCGVGPR 624
.....610.....620.....630.....640.....650.....660

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: * ..*: :* :*:***:*** ***** *.*:***:*** *****:
Pavo_muticus      FEPCTNVTAEVYLRAYLSPCINDCGIYGCKLLRTNNYLYAAACECKAGWNGWGCTDNAEA 547
Pavo_cristatus    FEPCTNVTAEVYLRAYLSPCINDCGIYGCKLLRTNNYLYAAACECKAGWNGWGCTDNAEA 547
Gallus_gallus     FEPCTNVTAEVYLRVYLSPCINDCGIYGCKLLRTNNYLYAAACECKAGWNGWGCTDNAEA 554
Taeniopygia_guttata FEPCTNVTAEVYLRAYLSPCINDCGIYGCKLLRTNNYLYAAACECKAGWNGWGCTDNAEA 350
Anas_platyrhynchos FEPCTNVTAEVYLRAYLSPCINDCGIYGCKLLRTNNYLYAAACECKAGWNGWGCTDNAEA 589
Chelonia_mydas    FEPCATVAAEVYLRITLSPCIEDCGPYGCKLLRTSNYLYAAACECKAGWNGWGCTDSAEA 534
Latimeria_chalumnae FEACSNVTAEVYLRITLSPCINDCGTYGCKLLRTNNFLYAAACECKAGWDGWGCTDNAEA 537
Rhinatrema_bivittatum YEPCGNVTAEVYLRITLSPCINDCGIYGCKLLRTNNYLYAAACECKAGWNGWGCTDNTEA 541
Xenopus_tropicalis WRPCSNVSAELYLRITLSPCINECGTYGCKLLRTNNYLYAAACECRAGWSGWGCTDNAQA 545
Pan_troglodytes   FVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 678
Macaca_mulatta    FVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 678
Callithrix_jacchus FVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 678
Canis_lupus_familiaris YVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 683
Bos_taurus        FVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 684
Homo_sapiens      FVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 678
Mus_musculus      FVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 685
Rattus_norvegicus FVRCRNATAEVRMRITFLSPCVDDCGPYGCKLLRTHNYLYAAACECKAGWRGWGCTDSADA 684
.....670.....680.....690.....700.....710.....720

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/TM148B.fst Tue Feb 1 14:46:48 2022

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:*****:****:***:*.*** :*: .:*.***:*. *****
Pavo_muticus      FSYGFQLLSTLLLCLSNVMFVPPVAIAVRSHYLLEAAVYIFTMFFST----- 594
Pavo_cristatus    FSYGFQLLSTLLLCLSNVMFVPPVAIAVRSHYLLEAAVYIFTMFFST----- 594
Gallus_gallus     FTYGFQLLSTLLLCLSNVMFVPPVAIAVRSHYLLEAAVYIFTMFFST----- 601
Taeniopygia_guttata FSYGFQLLSTLLLCLSNVMFVPPVAIAVRSHYLLEAAVYIFTMFFST----- 397
Anas_platyrhynchos FSYGFQLLSTLLLCLSNVMFVPPVAIAVRSHYLLEAAVYIFTMFFST----- 636
Chelonia_mydas    FSYGFQLLATLLLCLSNLMFLPPVAIALRSRYLLEASVYVFTMFFST----- 581
Latimeria_chalumnae YSYGFQLLSTLLLCLSNLMFFPPVAIAICNHYLLEASVYIFTMFFST----- 584
Rhinatrema_bivittatum FSYGFQLLSTLLLCLSNLMFMPPVAIAIRSHYLLEASVYIFTMFFST----- 588
Xenopus_tropicalis FTYGFQLLSTLLLCLSNLMFLPPVLIARSHYLLEASVYIFTMFFST----- 592
Pan_troglodytes   LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFST----- 725
Macaca_mulatta    LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFST----- 725
Callithrix_jacchus LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFST----- 725
Canis_lupus_familiaris LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFSTITVPGHTGLSSSL 743
Bos_taurus        LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFST----- 731
Homo_sapiens      LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFST----- 725
Mus_musculus      LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFST----- 732
Rattus_norvegicus LTYGFQLLSTLLLCLSNLMFLPPVLAIRSRVLEAAVYTFMFFST----- 731
.....730.....740.....750.....760.....770.....780

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Pavo_muticus      -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 633
Pavo_cristatus    -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 633
Gallus_gallus     -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 640
Taeniopygia_guttata -----FYHACDQPGIVVFCIMEYDVLQFCDFLGSLSMSVWVTVIA 436
Anas_platyrhynchos -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 675
Chelonia_mydas    -----FYHACDQPGIAVFCIMEYDVLQFCDFLGSLSMSVWVTVIA 620
Latimeria_chalumnae -----FYHACDQPGIVVFCIMEYDVLQFCDFLGSLSMSVWVTVIA 623
Rhinatrema_bivittatum -----FYHACDQPGIVVFCIMEYDVLQFCDFLGSLSMSVWVTVIA 627
Xenopus_tropicalis -----FYHACDQPGIVVFCIMEYDVLQFCDFLGSLSMSVWVTVIS 631
Pan_troglodytes   -----VCG----- 728
Macaca_mulatta    -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 764
Callithrix_jacchus -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 764
Canis_lupus_familiaris SSKPGESTPGSRTLIPIQGMGFYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 803
Bos_taurus        -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 770
Homo_sapiens      -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 764
Mus_musculus      -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 771
Rattus_norvegicus -----FYHACDQPGIVVFCIMDYDVLQFCDFLGSLSMSVWVTVIA 770
.....790.....800.....810.....820.....830.....840

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* . :*: . * **
Pavo_muticus      MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGIMAIWT----- 683
Pavo_cristatus    MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGIMAIWT----- 683
Gallus_gallus     MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGIMAIWT----- 690
Taeniopygia_guttata MARLPQIVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGIMAVAWT----- 486
Anas_platyrhynchos MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGIMAIWT----- 725
Chelonia_mydas    MARLPQPLAKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAVGIMAIWT----- 670
Latimeria_chalumnae MARLPQVQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGIMAIWT----- 673
Rhinatrema_bivittatum MARLPQVQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGIMAMAWT----- 677
Xenopus_tropicalis MARLPQVQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAVGIMAVAWT----- 681
Pan_troglodytes   -----GVCILSLG-----ACAWW----- 741
Macaca_mulatta    MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGILATAWY----- 814
Callithrix_jacchus MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGILATAWY----- 814
Canis_lupus_familiaris MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGILATAWY----- 853
Bos_taurus        MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGILATAWSRTIRLGRRRGS 830
Homo_sapiens      MARLPVVKQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGILATAWT----- 814
Mus_musculus      MARLPQVQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGILATAWT----- 821
Rattus_norvegicus MARLPQVQVLYLLGAMLLSMALQMDRHGLWNLLGPSLFAFGILATAWT----- 820
.....850.....860.....870.....880.....890.....900

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/TM148B.fasta Tue Feb 1 14:46:48 2022

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		:	.	:		
Pavo_muticus	-----	ARS	IRRRHCYPPTWKR	WAFYLC	PGALIA 711	
Pavo_cristatus	-----	ARS	IRRRHCYPPTWKR	WAFYLC	PGALIA 711	
Gallus_gallus	-----	ARS	IRRRHCYPPTWKR	WAFYLC	PGALIA 718	
Taeniopygia_guttata	-----	ART	IRRRHCYPPTWKR	WAFYLC	PGALIA 514	
Anas_platyrhynchos	-----	ART	IRRRHCYPPTWKR	WAFYLC	PGALIA 753	
Chelonia_mydas	-----	ARS	IRRRHCYPPTWQ	RWAFYLC	PGALIA 698	
Latimeria_chalumnae	-----	VRT	IRRRHCYPPTWKR	WVFYLC	PGTLIA 701	
Rhinatrema_bivittatum	-----	VRT	IRRRHCYPPTWKR	WLFYLC	PGTLIA 705	
Xenopus_tropicalis	-----	FRT	IRRRHCYPPTWKR	WLFYLC	PGTLIA 709	
Pan_troglodytes	-----	WVT	VCISITFSEGLG	--MSVPS	LCLLQT 767	
Macaca_mulatta	-----	AASA	AGTATHPRGAAGF	STCARA	ALLQA 842	
Callithrix_jacchus	-----	AASA	ADTATHPHGAAGF	STCAQA	ASLQA 842	
Canis_lupus_familiaris	-----	AASA	AGTATHPRGAAGF	STCVQA	ALLQA 881	
Bos_taurus	PPGLRGHLRATGSG	GLGSR	VIPEPHFSASPR	OYAASA	AGTATHPRGAAGFSTACARAASSQA 890	
Homo_sapiens	-----	VR	SVRRRH	CYPPTWRR	WLFYLC	PGSLIA 842
Mus_musculus	-----	VR	SVRRRH	CYPPTWRR	WLFYLC	PGSLIA 849
Rattus_norvegicus	-----	VR	SVRRRH	CYPPTWRR	WLFYLC	PGSLIA 848
	.....910.....920.....930.....940.....950.....960					

	VA-AVLLYAFVETEENYFYIHSIWHLLIAGSVGFLLPRAKPSGRLGPLPRRKG-CGYQL	769
Pavo_muticus	VA-AVLLYAFVETEENYFYIHSIWHLLIAGSVGFLLPRAKPSGRLGPLPRRKG-CGYQL	769
Pavo_cristatus	VA-AVLLYAFVETEENYFYIHSIWHLLIAGSVGFLLPRAKPSGRLGPLPRRKG-CGYQL	776
Gallus_gallus	AA-AVLLYAFVETEENYFYIHSIWHLLIAGSVGFLLPRAKPSRRLGPLPRRKG-CGYQL	572
Taeniopygia_guttata	AG-AVLLYAFVETEENYFYIHSIWHLLIAGSVGFLLPRAKPAAGRLGPLPRRKG-CGYQL	811
Anas platyrhynchos	AG-AVLLYACVETEENYFYIHSIWHMLIAGSVGFLLP RP KPAGRLGPLPRHKG-CGYQL	756
Chelonia_mydas	IS-AVALYAFVETEENYFYIHSIWHMLIAGSVGFLLPRAKPDGKIGPLPRRKGCGYQL	760
Latimeria_chalumnae	TS-AVALYAFVETEENYFYIHSIWHMLIAGSVGFLLPRAKTDGKVTPLPGRKG-CGYQL	763
Rhinatrema_bivittatum	SS-AVALYAFVETEENYFYIHSIWHMLIAGSVGFLLPRAKPDGRVAPLSRRKG-CGYQL	767
Xenopus_tropicalis	ET-----AVLPKLS-----CID	779
Pan_troglodytes	APSCFMLLWRPGTTTSTFTAFGICSLRAVWASCCPLVPRLTTGSPLEPGPGAVV-TSYAS	901
Macaca_mulatta	APSCFMLLWRPETTTSTFTAFGICSLRAVWASCCPLVPRLTTGSHLEPGPGAVV-TSYAS	901
Callithrix_jacchus	VLSYSMHLWRLETTTSTFTAFGICSLRAVWASCCPHELRLTTGSHLEPGPGAVV-TSCAS	940
Canis_lupus_familiaris	VPSCMLLWRPETTTSTFTASGTCSLRAVWASCCPLVPRLTAGSPLEPLGAAG-TSCAS	949
Bos_taurus	GS-AVLLYAFVETRDNYFYIHSIWHMLIAGSVGFLLPRAKTDHGVPSGARARG-CGYQL	900
Homo_sapiens	GS-AVLLYAFVETRDNYFYIHSIWHMLIAGSVGFLLPRAKTDRRVPSGARARG-CGYQL	907
Mus_musculus	GS-AVLLYAFVETRDNYFYIHSIWHMLIAGSVGFLLPRAKTDHRRVPSGARARG-CGYQL	906
Rattus_norvegicus	.....970.....980.....990.....1000.....1010.....1020	

Species	Sequence	Position
Pavo muticus	CVNEQEELGLVDPVASINSICTS	793
Pavo cristatus	CVNEQEELGLVDPVASINSICTS	793
Gallus gallus	CVNEQEELGLVDPVASINSICTS	800
Taeniopygia guttata	CINEQEELGLVDPVASINSICTS	596
Anas platyrhynchos	CVNEQEELGLVDPVASINSICTG	835
Chelonia mydas	CVNEQEELGLVGPASASISVCAS	780
Latimeria chalumnae	CVNEHEELGLVDPGVVSINICSS	784
Rhinatrema bivittatum	CVNEQEELGLVDPGSVSINSICTS	787
Xenopus tropicalis	CVNEQEELGLVDPGSVSINSICTS	791
Pan troglodytes	NGHFCKAH--WSK	790
Macaca mulatta	TSRRSWAS-WAQEGPLSAASVPAERGFPGPGGIWTLPRVLSGGVEPS	948
Callithrix jacchus	MSRRSSAS-WAQEGPLSAVSVP AERGFGPAPGGM	934
Canis lupus familiaris	MSRRSWAL-WAQEGPLSAASVPAERDFGPGPWGT	973
Bos taurus	MSRRSWAL-WAREGPLSAASVPAERGLGPALGELEPFLGAOSPWGSSWEHGALSGLRDK	1008
Homo sapiens	CINEQEELGLVGPGGATVSSICAS	924
Mus musculus	CINEQEELGLVGPGGTTVSSICVS	931
Rattus norvegicus	CINEQEELGLVGPGGATVSSICAS	930

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/TMDLMBT.msa Tue Feb 1 14:46:48 2022

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Pavo_muticus	-----	793
Pavo_cristatus	-----	793
Gallus_gallus	-----	800
Taeniopygia_guttata	-----	596
Anas_platyrhynchos	-----	835
Chelonia_mydas	-----	780
Latimeria_chalumnae	-----	784
Rhinatrema_bivittatum	-----	787
Xenopus_tropicalis	-----	791
Pan_troglodytes	-----	790
Macaca_mulatta	-----	948
Callithrix_jacchus	-----	934
Canis_lupus_familiaris	-----	973
Bos_taurus	LCFLRTWSLS	1018
Homo_sapiens	-----	924
Mus_musculus	-----	931
Rattus_norvegicus	-----	930
	.....	1090