

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	-----	
Rattus_norvegicus	-----	
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Equus_caballus	-----	
Canis_lupus_familiaris	-----	
Bos_taurus	-----	
Heterocephalus_glaber	-----	
Chelonia_mydas	-----	
Rhinatrema_bivittatum	-----	
Latimeria_chalumnae	-----	
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	MGVVRIPAMKVPKFGVRAEGSDGGGTAPVGGPPQKGPAGGEWKGAQFRKTETPHISLSDV	60
Xenopus_tropicalis	1.....10.....20.....30.....40.....50.....60	
Mus_musculus	-----MEKEEETTRELLLPNWQSGSGHGLTIA	27
Rattus_norvegicus	-----MEKEEETTRELLLPNWQSGSGHGLTIA	27
Homo_sapiens	-----MEKEEETTRELLLPNWQSGSGHGLTIA	26
Pan_troglodytes	-----MEKEEETTRELLLPNWQSGSGHGLTIA	27
Macaca_mulatta	-----MEKEEETTRELLLPNWQSGSGHGLTIA	27
Callithrix_jacchus	-----MEKEEETTRELLLPNWQSGSGHGLTIA	27
Equus_caballus	-----MEKEEETTRELLLPNWQSGSGHGLTIA	27
Canis_lupus_familiaris	-----MEKEEDTTRELLLPNWQSGSGHGLTIA	27
Bos_taurus	-----MEKEEETTRELLLPNWQSGSGHGLTIT	27
Heterocephalus_glaber	-----MEKEEETTRELLLPNWQSGSGHGLTIA	27
Chelonia_mydas	-----MEKEEETTRELLLPNWQSGSGHGLTID	27
Rhinatrema_bivittatum	-----MEKEEETTRELLLPNWQSGSGHGLTID	27
Latimeria_chalumnae	-----MEKKE-VTREILLPDWAGTGSQGITID	26
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	SVSLKGSQRGAAPKGGHGDPKGLRGDTPVGAVGLEGKGTDTVGGDGKGPQWGVGGHVRVGVG	120
Xenopus_tropicalis	.....70.....80.....90.....100.....110.....120	19
Mus_musculus	QRDDGVFVQEVNQNSP	43
Rattus_norvegicus	QRDDGVFVQEVNQNSP	43
Homo_sapiens	QRDDGVFVQEVNQNSP	42
Pan_troglodytes	QRDDGVFVQEVNQNSP	43
Macaca_mulatta	QRDDGVFVQEVNQNSP	43
Callithrix_jacchus	QRDDGVFVQEVNQNSP	43
Equus_caballus	QRDNGVFVQEVNQNSP	43
Canis_lupus_familiaris	QRDDGVFVQEVNQNSP	43
Bos_taurus	QRDDGVFVQEVNQNSP	43
Heterocephalus_glaber	QRDGGVFVQEVQDQSP	43
Chelonia_mydas	QTEDGVFVKQVQVQTS	43
Rhinatrema_bivittatum	QTEDGVFVKQVQVQNSP	43
Latimeria_chalumnae	TNEEGVFVKEVQKQDSP	42
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	AAGGGVLGAKGGVKGPTFGVEAPOVDIRGPQFGGEAPKVDVKGPVVDIKGPQFGVEAPKG	180
Xenopus_tropicalis	.....130.....140.....150.....160.....170.....180	35

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Mus_musculus          -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Rattus_norvegicus     -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Homo_sapiens          -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      86
Pan_troglodytes       -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Macaca_mulatta        -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Callithrix_jacchus    -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Equus_caballus        -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Canis_lupus_familiaris -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Bos_taurus            -----AARTGVVKEGDIIVGATIIYFDNLSGEVTQLLNTMGHHTVGLKL      87
Heterocephalus_glaber -----AARAGVVQEGDIIVGATIIYFDNLSGEVQALLSTVGHHTVGLKL      87
Chelonia_mydas        -----AART--VKEGDIIVSATIIYFDNLSGEVTQLLNSMGHHTVGLRL      85
Rhinatrema_bivittatum -----AAKMGIIVHEGDIIVSATIIVYFDNLSGEVKKQLLDSMGHHTVGLRL      87
Latimeria_chalumnae   -----AAQIADVKKGDIVVSATIIYFDNLSGEVQALLSTVGHHTVGLRL      86
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         DIKGPEVDIKGPQFDIEAPKGDIKGPKVDIKGPQFGVEVPKVDIKGPKVDIGGPQFGVEV      240
Xenopus_tropicalis    -----QVNVEVSDVELEGPEGLKMPKFKMPKFGFSGSKVDGKDVDIKL      79
.....190.....200.....210.....220.....230.....240

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Mus_musculus          HRKGDRSPEPGQTWTHEVFSSRSSEVVLSGDDEEYQRIYTTKIKPRLRSEDG-----      139
Rattus_norvegicus     HRKGDRSPEPGQTWAHEVFSSRSSEVVLSGDDEEYQRIYTTKIKPRLRSEDG-----      139
Homo_sapiens          HRKGDRSPEPGQTWTREVFSSCSSEVVLSGDDEEYQRIYTTKIKPRLKSEDG-----      138
Pan_troglodytes       HRKGDRSPEPGQTWTREVFSSRSSEVVLSGDDEEYQRIYTTKIKPRLKSEDG-----      139
Macaca_mulatta        HRKGDRSPEPGQTWTREVFSSRSSEVVLSGDDEEYQRIYTTKIKPRLKSEDG-----      139
Callithrix_jacchus    HRKGDRSPEPGQTWTHEVFSSRSSEVVLSGDDEEYQRIYTTKIKPRLKSEDG-----      139
Equus_caballus        HRKGDRSPEPGQTWTHEVFTARSSEVVLSGDDEEYQRIYTTKIKPRLKSEDG-----      139
Canis_lupus_familiaris HRKGDRSPEPGQTWTHEVFSSRSSEVVLSGDDEEYQRIYTTKIKPRLRSEDG-----      139
Bos_taurus            HRKGDRSPEPGQTWTHEVFSSHSSEVVLSGDDEEYQRIYTTKIKPRLKSEDG-----      139
Heterocephalus_glaber HRRGDHSPEPGQAWAHEAVGSQSPSEMILSGADEEYQRIYATKIKPRLRPEDG-----      139
Chelonia_mydas        QRKGDKSPLPGQSWSHDVFSPRSPEVVLSGDDEEYRRIYTTKIKPRLKSEDA-----      137
Rhinatrema_bivittatum QRKGDRSPQPGMAWSEDVFSVKSPIVLSGDDEEYRRIYTTKIKPRLKSDDM-----      139
Latimeria_chalumnae   QRKGDKSPTHRLSWSQERSGATSPDIVLSGDDEEYRRIYTTKIKPRLKSEEL-----      138
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         PKVDIKGPQFGVEAPKGDVKGPKVDIKGPQFGVEVPKVDIKGPKVDIGGPQFGVEVPKGD      300
Xenopus_tropicalis    PEGEIDVSGPKVDIGAPELDIQCEGKVKDPKFKMPSLHMPDIDFNLKGPKM-----      131
.....250.....260.....270.....280.....290.....300

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Mus_musculus          -----VEGDLGETQSRITITVTRRVITAYTVDVTGREG-----      170
Rattus_norvegicus     -----VEGDLGETQSRITITVTRRVITAYTVDVTGREG-----      170
Homo_sapiens          -----VEGDLGETQSRITITVTRRVITAYTVDVTGREG-----      169
Pan_troglodytes       -----VEGDLGETQSRITITVTRRVITAYTVDVTGREG-----      170
Macaca_mulatta        -----VEGDLGETQSRITITVTRRVITAYTVDVTGREG-----      170
Callithrix_jacchus    -----VEGDLGETQSRITITVTRRVITAYTVDVTGREG-----      170
Equus_caballus        -----VEGDPGETQSRITITVTRRVITAYTVDVTGREG-----      170
Canis_lupus_familiaris -----IEGDPGETQSRITITVTRRVITAYTVDVTGREG-----      170
Bos_taurus            -----VEGDAGETQSRITITVTRRVITAYTVDVTSREG-----      170
Heterocephalus_glaber -----VSGDPGETQSRITITVTRRVITAYTVDVTAPEG-----      170
Chelonia_mydas        -----AEAE--HTESRTITVTKKVITAYTVDVTGHEG-----      166
Rhinatrema_bivittatum -----PDIEPMETQSRITITVTRKVITAYTVDVTGPEE-----      170
Latimeria_chalumnae   -----METEHSSETQSRITITVTRKVITAYTVDVTGTEG-----      169
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         IKGPKVDIGGPKVDIGGPQFGVEVPKVDIKGPQFGVEAPKGDVKGPKVDIKGPQFGV---      357
Xenopus_tropicalis    -----EGDLKGPKVDIKAPEVNLEAPDVVDGKVKGPKFKF-----      166
.....310.....320.....330.....340.....350.....360

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Mus_musculus      ---VKDIDITSPEFMKIPRHE---VTEISNTDVETQPGKTVIRLPSGSGPASPTTGSA 223
Rattus_norvegicus ---VKDIDISSPEFMKIPRHE---VTEISNTDVETQPGKTVIRLPSGSGAASPTTGSA 223
Homo_sapiens      ---AKDIDISSPEFKIKIPRHE---LTEISNVDVETQSGKTVIRLPSGSGAASPT-GSA 221
Pan_troglodytes   ---AKDIDISSPEFKIKIPRHE---LTEISNVDVETQSGKTMIRLPSGSGAASPT-GSA 222
Macaca_mulatta    ---AKDIDISSPEFKIKIPRHE---RTEISNVDVETQSGKTVIRLPSGSGAASPTPGSA 223
Callithrix_jacchus ---AKDIDISSPEFKIKIPRHE---LTEISNVDVETQSGKTVIRLPSGSGAASATTGSA 223
Equus_caballus    ---AKDIDISSPEFKIKIPRHE---LTEISTVGVDTPGKTVIRLPSGSGAVSPTTGSA 223
Canis_lupus_familiaris ---AKDIEFSSPEFKIKIPQHE---MTEISTVDVATHPGKTVIRLPSGSGAVSPTAGSV 223
Bos_taurus        ---AKDIDISSPEFKIKIPRHE---LTEISTVDVETQPGKTVIRLPSGSGAGSPITAST 223
Heterocephalus_glaber ---AKDIDISSPEFMVKIPRHE---VTEISTVDVETWPGKTVIKLPSG----- 212
Chelonia_mydas    ---AREIDISSPEFKVKIPSHQ---LTHITTTIEIEKEPGKTVIKIPQVDLSGKTIIRSTD 219
Rhinatrema_bivittatum ---VKEIDISSPEFKIKIPRHE---FTEFSKMDQEREKKTVIKIPQTDVSGKHLQMRD 223
Latimeria_chalumnae ---GKDIDVSSPEFKIKIPRRE---ETGLTKMDVEMEQQKKMIKIPQVVMMSGKPVEMSD 222
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     --EVPKVDIGGPPQFGVEVPKGDIGKPKVDIGGPKVDIGGPPQFGVEVPKVDIRGPPQFGVEV 415
Xenopus_tropicalis MPSMPKVSMPDVLNVKGPKEG-----DLKGPKIDMKGPEVDVAVPDVELEGPEGKLM 221
.....370.....380.....390.....400.....410.....420

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Mus_musculus      VDIRAGA---ISASGPELEGAG---HSKFQVTVPGAKVGSGLDVNVKA----- 264
Rattus_norvegicus VDIRAGA---ISASGPELEGAS---HSKFQVTVPGTKVGSGLDVNVKA----- 264
Homo_sapiens      VDIRAGA---ISASGPELQAGAG---HSKLQVTMPGIKVGSGVNVNA----- 262
Pan_troglodytes   VDIRAGA---ISASGPELQAGAG---HSKLQVTMPGIKVGSGGVNVNA----- 263
Macaca_mulatta    VDIRAGA---ISASGPELQAGAG---HSKLQVTMPGIKVGSGGVNVSA----- 264
Callithrix_jacchus VDIRAGA---ISASGPELQAGAG---HSKLQVTMPGIKVGSGGVNVSA----- 264
Equus_caballus    G---S---ISASGPELQAGAG---HSKLQVTVPGIKVGSPPGVSVSA----- 259
Canis_lupus_familiaris MDNWAGS---VSASGPELQAGAG---HSKLQVTMPGIKVGSPGINVSA----- 264
Bos_taurus        VDIRAGS---ISTAGPELPGAG---HSKVQVTVPGVKVGSPPGVSVNA----- 264
Heterocephalus_glaber -----PELQAGAG---TSKVQVTVMPGVKVGSPGISVSE----- 241
Chelonia_mydas    FSMGIRGRPSGISYSGPTVESSTKRLDFGAPDVHMRPKVDIT-EINVSQGPQV----- 270
Rhinatrema_bivittatum IGIDLKS---TTFSGPTAESLSRKVDVGASDVHKREAILGKPDINISKPPI----- 271
Latimeria_chalumnae ISVDLKGKHSGFSSASGPKVDATKKTLDFFSSSGVSSSVSELETSRIRVSG----- 271
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     PKVDIRGPPQFGVEVPKGDIGKPKVDIGGPPQFGVEVPKVDIRGPPQFDVEVPKVDIRGPPQFG 475
Xenopus_tropicalis PKFKMPKFG--IPGSNVDVKDVKIKLPKGEIDVSPKMDIGAPELDFQCP----- 269
.....430.....440.....450.....460.....470.....480

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Mus_musculus      ---KGLDLGGKGGIR-----VPGVDVSSSLG----- 287
Rattus_norvegicus ---KGLDLGGKGGIQ-----VPGVDVSSSLG----- 287
Homo_sapiens      ---KGLDLGGRGGVQ-----VPAVDISSSLG----- 285
Pan_troglodytes   ---EGLDLGGRGGVQ-----VPAVDISSSLG----- 286
Macaca_mulatta    ---KGLDLGGRGGVQ-----VPAVDISSSLG----- 287
Callithrix_jacchus ---KGLDLGGGGGGVQ-----VPAVDISSSLG----- 287
Equus_caballus    ---KGFDLGGKGGVQ-----VPGVDISSSLG----- 282
Canis_lupus_familiaris ---KGLDLGGKGGVH-----IPGVDVSSSLG----- 287
Bos_taurus        ---KGLDLGSKGGIQ-----VPGVDVSSFLG----- 287
Heterocephalus_glaber ---KGLDLGGRAAVH-----IPGGNVPSLGL----- 264
Chelonia_mydas    ---TGAHLRTQTFDKPAEIQVPGVDVVKSVNVSGTRVTSPESSLPRIDANGQQGNLDAN 326
Rhinatrema_bivittatum ---RDSVDNIRSDLN-----IP-----SDMEKNKLPRFDISGHK----- 303
Latimeria_chalumnae ----- 271
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     VEVPKGDIKGPVKVDIGGPKVDIGGPPQFGVEVPKVDIRGPPQFDVEAPKVDIKGPVKVDIGGP 535
Xenopus_tropicalis ---EGKVKGSKFKMP-----SLHMPDIDFNLK----- 293
.....490.....500.....510.....520.....530.....540

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Mus_musculus          -----AGSVEVQAPSLSQSGDIGKIKIPTMKVPKFGVSAGLDGQIPEVGLSVSAPESSVG 341
Rattus_norvegicus     -----GGSVEGQGPSLSQSGDIGKVKIPTMKMPKFGVSAGLEGQIPEGGLNVSAPPEFSVG 341
Homo_sapiens          -----GRAVEVQGPSLESQSGDHGKIKFPTMKVPKFGVSTGREGQTPKAGLRVSAPEVSVG 339
Pan_troglodytes       -----GRAVEVQGPSLESQSGDHGKIKFPTMKVPKFGVSTGREGQTPKAGLRVSAPEVSVG 340
Macaca_mulatta        -----GGAVEVQGPSLESQSGDHGKIKIPTMKVPKFGVLTGPEGQTPKAGLRVSAPEVSVG 341
Callithrix_jacchus    -----GGTVEVQGPSLESQSGDHGKMKVPTMKMPKFGVSTGPEGQTPKAGLRVSAPEVSVG 341
Equus_caballus        -----GGAVEVQGSLSQSGSNGRIKIPTMKMPKFGVSTGP-VEGQAPGLSVSAPEFSVG 335
Canis_lupus_familiaris -----GGAVEVQDPSLESQSGSNGRIKIPTLKVPKFGVSTVPEGQAPVAGLSISTPEFSVG 341
Bos_taurus            -----GMAVEGQGPSLD-----GKIKFPTMKVPKFGVSVGPEGQAPEAGLSVSPPELSVG 337
Heterocephalus_glaber -----AGAAEVDS-----GKVKIPTLKMPKFAVSPGPEGQASGAGLSVSG----- 304
Chelonia_mydas        IH-----ITGPKLNGKMGVSGIDVKTVEPGGKLPQFDISGSKIKSMDMEGPKVDVVSFSKIKG 382
Rhinatrema_bivittatum -----LKSPDQVDVVKLTGKGISIKPDVD-IKVNPVDIQAHISPPKNE-----ANVKM 348
Latimeria_chalumnae   -----PQIKTPNVDV----- 281
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         KVDIRGPQCQDVEAPDQVDVHGGPSKLMKPKLKMFKFGVPGLGQDVDASLEPKGEVDVSAPKV 595
Xenopus_tropicalis    -----GPKLEGDLKGPKVDMKAPEVNLEAPDQVDFDGKVKGPKEFKMPSMPKVSMSD 343
.....550.....560.....570.....580.....590.....600

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Mus_musculus          HKGDKPGLAIGGNIQAPHLEVNPSVNIIEGLEGLKKGPO-----ITGPSLEG-D 389
Rattus_norvegicus     HKGDKPGLAIGGNIQAPHLEVSTSSVNIIEGLEGLKKGPO-----ITGPSLEG-D 389
Homo_sapiens          HKGGKPGLTI---QAPQLEVSVPSANIEGLEGLKKGPO-----ITGPSLEG-D 383
Pan_troglodytes       HKGGKPGLTI---QAPQLEVSVPSANIEGLEGLKKGPO-----ITGPSLEG-D 384
Macaca_mulatta        HKGGKPGLTI---QAPQLEVSVPSANIEGLEGLKKGPO-----ITGPSLEG-D 385
Callithrix_jacchus    HKGGKPGLTV---QAPQLEVSVPSANIEGLEGLKKGPO-----ITGPSLEG-D 385
Equus_caballus        HKDSKPGLAIGGNIQAPQLEVSVPSLNVEGIEGLKKGPO-----ITGPSLEG-D 383
Canis_lupus_familiaris RQGGKPGLMVGGNIQTPQLEVSVPSVNIIEGLEGLKKSPO-----IAGPSHEG-D 389
Bos_taurus            HKGGKPGLTVAGSIQTPQPEVSAPSANTEGLEGLKKGPO-----ITGPSLEG-A 385
Heterocephalus_glaber --GSGPGVVRIRGNIQAPHLDSV-----EGILKSPO-----VAGPPLEG-E 342
Chelonia_mydas        PSVDISGPKIQSDIKAPRVDIPLSSIEGDMQDIKAPGINIESPGKIKMPVMKMPKFGF-S 441
Rhinatrema_bivittatum PEVNLMSPKIKVDITKTPKINFQGLQELSMPPFKLSGT-----EMKALDF-S 394
Latimeria_chalumnae   ---NLKAPKAEGDITAPKVDFKMSKVSIN-----IQVPDQVDV-E 316
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         NVVVPEGQMKGPPEMHVTVPHISMPDIDLNLKGPKVKGDVG-----ITAPKLEG-E 644
Xenopus_tropicalis    VGLNVKGPKVEGELKKGPKIDMKGPVVDVAIPDVELEGPEGK-----LKMPKFKMPK 394
.....610.....620.....630.....640.....650.....660

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Mus_musculus          LGLKGTKLQGNIGMD-ACASKIEG----- 412
Rattus_norvegicus     LGLKGTKLQGNIGMDACASKIEG----- 413
Homo_sapiens          LGLKGAKPQGHIGVD-ASAPQIGG----- 406
Pan_troglodytes       LGLKGAKPQGHIGVD-ASAPQIGG----- 407
Macaca_mulatta        LGLKGAKPQGRIGVD-ASAPQIGG----- 408
Callithrix_jacchus    LGLKGAKPQGSIGVH-ASVPQIGG----- 408
Equus_caballus        LGLKGAKPQGSVGV-ISPAPKIEG----- 406
Canis_lupus_familiaris LGLKGAKPQGSTGVG-ISVPQIDS----- 412
Bos_taurus            LGLKGAKPQGSIGVD-ISVPQIEG----- 408
Heterocephalus_glaber LGLKRAEPQGSIGVD-VSPQVEG----- 365
Chelonia_mydas        PSASDIDVRAPQAGVDVSAPKIQAPHLDITAPSVHMEGPKEKLFVPSVEGAKVAKPHV 501
Rhinatrema_bivittatum ISTSKTEAGIKAPTVDGTSKPKIMD----- 418
Latimeria_chalumnae   TAGSQS-IKIKMPGSTISGAKFOG----- 339
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         LRAPGVDIKAPKVDVEAPKVDVKGPKVDIG----- 674
Xenopus_tropicalis    FGFSGSKVDSKDVIDIKLPEREIDVS----- 419
.....670.....680.....690.....700.....710.....720

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Mus_musculus          -----SITGPSVEIGTPDVDVHGLGGKLNMPKMKVPKFS- 447
Rattus_norvegicus     -----SITGPCVEIGTPDVDVHGLGGKLN-----VPKFS- 443
Homo_sapiens          -----SITGPSVEVQAPDIDVQGP GSKLNVPKMKVPKFSV 441
Pan_troglodytes       -----SITGPSVEVQAPDIDVQGP GSKLNVPKMKVPKFSV 442
Macaca_mulatta        -----SITGPSVEVQAPDIDVQGP GSKLNVPKMKVPKFSV 443
Callithrix_jacchus    -----SITGPSVEIQVPDVIDHGTGSKLNLPKMKVPKFSV 443
Equus_caballus        -----SVLGPSVEVRAPDVIDHGP GSKLNLPKMNVPKFS- 441
Canis_lupus_familiaris -----TVTGPSVEVQAPDAGIHGSGGKLNMPKMQVPKFSV 447
Bos_taurus            -----SISGSRVEVQAPDIDHGP GSKVNVPKVKAPQFSV 443
Heterocephalus_glaber -----SVMCPSGEVRAP-----GVHVPKLKGPFSP 391
Chelonia_mydas        -----DMALKGLQLKGVVEVSSPTLEGPKVGKDPKIDLAAPVDIQSGEGKIKLPAMKFPKFTA 561
Rhinatrema_bivittatum -----IKTKEFEIKTPGADTENYEKFNIPVTKLPKFGF 452
Latimeria_chalumnae   -----PDAKVDLDIPKTVGHAKDPKLDG-----SVKIST 368
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         -----VPKVELKGPKVEVEAPDVIDHGP DGLKMPKLPKPKFGV 713
Xenopus_tropicalis    -----GPKVDISAPDLNMECPGKVKGPKFKMPSLHM 451
.....730.....740.....750.....760.....770.....780

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Mus_musculus          -----SGSKGEGIGLDVALPTG-----EVTLPGVSGDVSLPEIATGGLE 486
Rattus_norvegicus     -----SGSKGEGVGIDVALPTG-----KVTLPGVSGDVNLPEIATGGLE 482
Homo_sapiens          -----SGAKGEETGIDVTLPTG-----EVTVPGVSGDVSLPEIATGGLE 480
Pan_troglodytes       -----SGAKGEETGIDVTLPTG-----EVTVPGVSGDVSLPEIATGGLE 481
Macaca_mulatta        -----SGAKGEETGIDVTLPTG-----EVTVPGVSGDVSLPEIATGGLE 482
Callithrix_jacchus    -----SGTKGEETGIDVTLPTG-----EVAVPGVSGDISLPEIATGGLE 482
Equus_caballus        -----SGSKGEGAGIDVTLPTG-----EVTLPGISGDIRLPEVAPGGLE 480
Canis_lupus_familiaris -----SGSKGEGAGVDVTLPTG-----AVTLPGVSEDVSLPEVAVGGLE 486
Bos_taurus            -----SGSKGDRPGIDVTLPTG-----EVTLPGVSGNVDLPEVASGDLE 482
Heterocephalus_glaber -----GSKAEGAGIDVTLPMG-----EVTLPGVPGGVGLPEIVPGGLE 429
Chelonia_mydas        -----SGFKGEGPGVGVTLPKG-----EVAIAGPKVDISTPDIDIG--- 597
Rhinatrema_bivittatum -----SENTASGYDIHTNVSKADN-----ESDIKAPQIGISRTNIKSN--- 490
Latimeria_chalumnae   -----TGFOIDATDLKYKGADG----- 385
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         -----PGLKGELPDVDVSLPKGEIGVSAPKVDIEVPDVLKAPKVELKGPKVDIEAPDVIDHGP 773
Xenopus_tropicalis    -----PDIDLNLKGPKVEGDLKGP-----KVDIKAPEVNLEAPVDIDG--- 490
.....790.....800.....810.....820.....830.....840

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Mus_musculus          -----GKMKGAKVKTPEMIIQKP-----KISMQDVDLSLGSKCLKG- 522
Rattus_norvegicus     -----GKMKGAKVKTPEMIVQKP-----KISMQDVDLSLGSKCLKG- 518
Homo_sapiens          -----GKMKGTKVKTPEMIIQKP-----KISMQDVDLSLGSPKLKG- 516
Pan_troglodytes       -----GKMKGTKVKTPEMIIQKP-----KISMQDVDLSLGSPKLKG- 517
Macaca_mulatta        -----GKMKGTKVKTPEMIIQKP-----KISMQDVDLSLGSPKLKG- 518
Callithrix_jacchus    -----GKVKGTVKVTPEMIVQKP-----KISMQDVDLSLGSSKLKG- 518
Equus_caballus        -----GKVKGTVKVKSPEMVIQRP-----KISMQDVDLSLGSPKLKG- 516
Canis_lupus_familiaris -----GKVKGTVKVTPEMVIQKP-----KISMQDVDLSFGSPKLKG- 522
Bos_taurus            -----GKLKGPKIKAPEVTIQKP-----KISMQDVDLSLGSSKLKG- 518
Heterocephalus_glaber -----VKTGAKMKTPMIIQKP-----KISMQDVDLSLRSPRLKG- 465
Chelonia_mydas        -----GEWKVPKFRKPELISQTP-----KIMSDVDLSLKGPSLKG- 633
Rhinatrema_bivittatum -----ISVPKMAINVPDVIDTKVPE-----GKVKIAKIDFTKFG----- 523
Latimeria_chalumnae   -----RPTRKIEMPTQVVTGP-----KLPSVDVKQKKG--AV- 415
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         -----GKLKMPKLPKPKFGVPGPKLKGELPDVDVSLPKGEFDVSAPKVDIEVPDVLKAPKVELKAP 833
Xenopus_tropicalis    -----KVKGSKFKMPSLHMPDIDLNLKGPKMEG-----DLKGPKVDIKAIKANLEAPDIDID 542
.....850.....860.....870.....880.....890.....900

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.fab 1 13:55:52 2022

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Mus_musculus          -----NMKTSAPGVKGDVKGPOMAVKGSRVDIETP----- 552
Rattus_norvegicus     -----NMKVSAPGVKGGVKGPOVAVKGFVDTETP----- 548
Homo_sapiens          -----DIKVSAPGVGDVKGPOVALKGSRVDIETP----- 546
Pan_troglodytes       -----DIKVSAPGVGDVKGPOVALKGSRVDIETP----- 547
Macaca_mulatta        -----DIKVSAPGVGDVKGPOVAVKGPRVNIETP----- 548
Callithrix_jacchus    -----DIKVSAPGVGDVKGPOVAVKGSRVDIETP----- 548
Equus_caballus        -----DIQVSAPGVGDVKGPOVAIKGSKVDIETP----- 546
Canis_lupus_familiaris -----DMKVSVPGVGDVVRGLQVAIKGSKVDIETP----- 552
Bos_taurus           -----DIKVSAPGVKGDVKGPOVAVKGAKVDIETP----- 548
Heterocephalus_glaber -----DIKVSAPGVKGDVKGPOVALKGSKVDIETP----- 495
Chelonia_mydas        -----DVGISGPRIEGDLKGPTVDIKGPKLDIDAPDID----- 666
Rhinatrema_bivittatum -----IIEAEIK--LPSSDLEISGPKLDIDEKRVG----- 551
Latimeria_chalumnae   -----DISVAGPKLEHDVSTPKFTVITSKENVKAP----- 445
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         -----KVDIAVPDVLKGPVKVDIAVPDVLKAPKVELKGPKVDIETPVDGKLGKMPKLG 887
Xenopus_tropicalis    GKVKGSKFKMPSLHMPDIDFNLGKPKVEGDLKGPKVDFKVPVNLLEAP----- 590
.....910.....920.....930.....940.....950.....960

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Mus_musculus          -----NLEGTLTGPKISSPSGKIG-----ACRI 575
Rattus_norvegicus     -----NLEGTLTGPKLSSPSGKIG-----TCRI 571
Homo_sapiens          -----NLEGTLTGPRLGSPSGKTG-----TCRI 569
Pan_troglodytes       -----NLEGTLTGPRLGSPSGKTG-----TCRI 570
Macaca_mulatta        -----NLEGTLTGPRLGSPSGKTG-----TCRI 571
Callithrix_jacchus    -----NLEGTLTGPRLGSPSGKTG-----TCRI 571
Equus_caballus        -----SLEGTLTGPKLSGSPSGKTG-----TCKI 569
Canis_lupus_familiaris -----SLEGTLAGPTLSSPSGKMG-----TCRI 575
Bos_taurus           -----SLEGTVTGPKLSGSPSGQAG-----TCRI 571
Heterocephalus_glaber -----DLEGTLTAPKLGGPSGKTG-----TCRI 518
Chelonia_mydas        -----IKGPEGHLKGPVKFMPPEMHK-----TPKI 691
Rhinatrema_bivittatum -----TEDSERKLTGSKFSLNTHSLND-----HVTIDV 579
Latimeria_chalumnae   -----EVSIFGKRVDKFTPKTT-----NVDI 466
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         MPKFGVPGLKGDLPDVDVSLPKGEVDISAPKVDIHAPKVDIAGPHGQLKGPEMHVKVPHI 947
Xenopus_tropicalis    -----DVDGKVGKPKFKMPSLHMPDIDLNLKGPKVEGDLKGPKV----- 629
.....970.....980.....990.....1000.....1010.....1020

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Mus_musculus          SMADV-DLNVAAPKKGKGG-----VDVILPNVEGKAKGLEVDVK 612
Rattus_norvegicus     SMADV-DLNVAAPKKGKGG-----IDVTLPKVEGKVKGPVEVDVK 608
Homo_sapiens          SMSEV-DLNVAAPKVKGG-----VDVTLPRVEGKVKVPEVDVR 606
Pan_troglodytes       SMSEV-DLNVAAPKVKGG-----VDVTLPKVEGKVKVPEVDVR 607
Macaca_mulatta        SMAEV-DLNVAATPKVKGG-----VDVTLPKVEGKVKVPEVDVK 608
Callithrix_jacchus    SMAEV-DLNVAAPKVKGG-----VDITLPKVEGKVKVPEGEVK 608
Equus_caballus        SMADV-DLSVAAPKLGKGG-----VDVTVPVEGKVRVPEVDVK 606
Canis_lupus_familiaris SIADV-DLNAAAPRAKGG-----VDI--PKVEGKVKVPGVDVR 610
Bos_taurus           SMADV-DLNVAAPKVKGG-----VDVMLPKVEGKVSVPPEADV 608
Heterocephalus_glaber SMADV-DLNVAAPRVKGG-----VDVTLPKVEGKFKVPEVDVK 555
Chelonia_mydas        SMPDI-DLNLKDPKLGKGD-----VDVSVPKLEGEELKAPGIDIK 728
Rhinatrema_bivittatum AIPDV-DLNLKGPKLKT-----VGISGPKIASDEQVPKVDIK 616
Latimeria_chalumnae   SVPNVKDHNVDIKFTKPD-----GKTSGTKLTGNIQDPKINIS 504
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus          SMPDI-DLNLKGPKVKGD-----VGVSAPKLEGEFRAPEFDIK 984
Xenopus_tropicalis    DIKAP-EVNLEAPDVDVDGKVKGLKFKMPSMPKVSMPDVGLNVKGPKEGELKGPKIDMK 688
.....1030.....1040.....1050.....1060.....1070.....1080

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus      GPKMDISA-----PDVEVHGPEWN--LKMP-----KFSVPGVKGEGLDENVTLPEGDI 658
Rattus_norvegicus GPKTDISA-----PGVEVHGPEWN--LKMP-----KFSIPGVKGEADNVNVLAKGDI 654
Homo_sapiens      GPKVDVSA-----PDVEAHGPEWN--LKMPKMKMPTFSTPGAKGEGPDVHMTLPKGDI 657
Pan_troglodytes   GPKVDVSA-----PDVEAHGPEWN--LKMPKMKMPTFSTPGAKGEGPDVHMTLPKGDI 658
Macaca_mulatta    GPKVDISA-----PDVEAHGPEWN--LKMPKMKMPTFSTPGAKGEGPDVHMTLPKGDI 659
Callithrix_jacchus GPKVDLSA-----PDVEVHGPEWN--LKMPKMKMPTFSTPGAKGEGPDVHMTLPKGDI 659
Equus_caballus    GPKVDVSA-----PDVNVHSPEWN--LQMPKMKMPTFSTPGVRGEGPDVDMSLPKGDI 657
Canis_lupus_familiaris GPRVDVSA-----PDVEVHGPEWN--LKMP-----QFGTPGVGEGLDNDVVKLPKGEV 656
Bos_taurus        GPKVDVSA-----PDVEVHGPEWN--LKMPKMKMPTFSTPGVKGEGLDNDVSLPKGDI 659
Heterocephalus_glaber GPKVDVSG-----PDVEIHGPEWN--LKMP-----TVSIPGVKGDAPHVGVTVPKGNA 601
Chelonia_mydas    GPKVDIDA-----PDVNIHSPDGK--LKMPKMKMPTFSTPGVKGEGLDNDVSLPKGDI 779
Rhinatrema_bivittatum GTELDIKA-----PSIDIEGPKGQGNLYFPKFNIPKYGISEIKPKSPDVAKFPGKDI 669
Latimeria_chalumnae GLPIESDINDL---KPKIDIQSGDGNLNLKIKFSSPKFGIKGENERDDNINVLQKSKI 561
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     APEVDIKAPKVDIEAPDVDICGPEGK--LKMPKMKMPTFSTPGVKGEGLDNDVSLPKGDI 1042
Xenopus_tropicalis GPEVDVAI-----PDVELEGPEGK--LKMPKMKMPTFSTPGVKGEGLDNDVSLPKGDI 739
.....1090.....1100.....1110.....1120.....1130.....1140

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Mus_musculus      SISGPKVNVEAPNVNMEGLGGLKKG-----PDINLPEVSVKTPKISMPDND 704
Rattus_norvegicus SLSGPKVNVEAPDNDVNEGLGGLKKG-----PDINLPEVSVKTPKISMPDND 700
Homo_sapiens      SISGPKVNVEAPDNDVNEGLGGLKKG-----PDVKLPDMSVKTPKISMPDND 703
Pan_troglodytes   STSGPKVSVEAPDNDVNEGLGGLKKG-----PDVKLPDMSVKTPKISMPDND 704
Macaca_mulatta    SISGPKVSVEAPDNDVNEGLGGLKKG-----PDVKLPDMSVKTPKISMPDND 706
Callithrix_jacchus SLSGPKVSVEAPDNDVNEGLGGLKKG-----PDVKLPDMSVKTPKISMPDND 705
Equus_caballus    SISGPKVNVEAPDNDVNEGLGGLKKG-----SDIKLPEVSVKTPKISMPDND 703
Canis_lupus_familiaris SIAGSTINVEAPNVNIGGLGGLKKG-----SDVKLPDMSVKTPKISMPDND 702
Bos_taurus        SISGPKVNVEAPNVNIGGLAANLKG-----PDVKLPDMSVKTPKISMPDND 705
Heterocephalus_glaber SVSGPKVNVEAPGFHMEGFGGLKKG-----PDTKLPEVGLKTPKISMPDND 647
Chelonia_mydas    DISSPKVETDAPGLDVEGPKGELKG-----PKFKMPEMHKTPKISMPDND 825
Rhinatrema_bivittatum DISGPSVDLRGP-----EISKIRL-----P--TMSPLNVHALDVSIPDND 707
Latimeria_chalumnae DVSQPKVDIQVPSVNLQGAEGEIKG-----PDFQLPSFGIKGQEMSTSAID 607
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     DVSAPKVDIEVPPDVELKGPKVDIEAPDNDIHGPDVKLMPKMKMPTFSTPGVKGEGLDNDVSLPKGDI 1102
Xenopus_tropicalis DLSGPKLDISAPELDIECPGKVKG-----SKFKMPSLHMPDND 778
.....1150.....1160.....1170.....1180.....1190.....1200

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Mus_musculus      LHIK-GPKVKGEYEVTPPKLEGELEGKSGKVDIDTPQVDVHGP--DLKIPK----- 750
Rattus_norvegicus LHIK-GPKVKGEYDVTTPKLEGELEGKSGKVDIDTPQVDVHGP--NLKIPK----- 746
Homo_sapiens      LHVK-GTKVKGEYDVTVPKLEGELEGKSGKVDIDAPDNDVHGPDWHLKMPK----- 751
Pan_troglodytes   LHVK-GTKVKGEYDVTVPKLEGELEGKSGKVDIDAPDNDVHGPDWHLKMPK----- 752
Macaca_mulatta    LHVK-GTKVKGEYDVTVPKLEGELEGKSGKVDIDAPDNDVHGPDWHLKMPK----- 754
Callithrix_jacchus LHVK-GTKVKGEYDVTVPKLEGELEGKSGKVDIDAPDNDVHGPDWHLKMPK----- 753
Equus_caballus    LHVK-GTKVKGECDITVPKLEGELEGKSGKVDIDAPDNDVHGPDWHLKMPK----- 751
Canis_lupus_familiaris LHVK-GTKVKGEYDVTVPKLEGELEGKSGKVDIDVDPDNIQGPDWHLKMPK----- 750
Bos_taurus        FHVK-GPKVKGEYDVTAPKLEGELEGKSGKVDIDVDPDNIQGPDWHLKMPK----- 753
Heterocephalus_glaber LHAE-GTEVK-ECDATVPKLEAEVQSGKGGVSVDPDVGVDVHGPDWHLKMPK----- 694
Chelonia_mydas    MNLN-APKLKGDGGISGPRIAGDLKGPTVDIKGPKLDIEAPGINLENPEGQLEG----- 878
Rhinatrema_bivittatum LKLK-GPKWKGDVDISGPKIEGEVKKHPKVDIKSPKLDVHAPDIDIEGPEGKKE----- 759
Latimeria_chalumnae LGLS-GKKIQGDVDIS-----GPKVAIEKSKADIEGPDGKIHLPK----- 646
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     VSLPKGEIDVSAPKFDIEVPPDVELKGPKVDIAVDPDNLKALKVELKGPKVDIEAPDNDGK 1162
Xenopus_tropicalis FNLK-----GPKLEGLDKSPKVDIAKAEVNLKAEVAVDIDGKV----- 815
.....1210.....1220.....1230.....1240.....1250.....1260

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Mus_musculus      -----MKMPKFSVPGFKAEGPEVDVNL-----KADLDIS-----780
Rattus_norvegicus -----MKMPKFSVPGFKAEGPEVDVNL-----KVDIDIS-----776
Homo_sapiens      -----MKMPKFSVPGFKAEGPEVDVNL-----KADVDIS-----781
Pan_troglodytes   -----MKMPKFSVPGFKAEGPEVDVNL-----KADVDIS-----782
Macaca_mulatta    -----MKIPKFSAPGFKAEGPEVDVNL-----KADVDIS-----784
Callithrix_jacchus -----MKMPKFSVPGFKAEGPEVDANL-----KADVDIS-----783
Equus_caballus    -----MKMPKFSVPGLTAEGLPEVDVNL-----KPAVDIS-----781
Canis_lupus_familiaris -----MKMPKFSVPGFKAEGPEVYMNL-----EADVDIS-----780
Bos_taurus        -----MKMPKFTVPGFKAEGPEVNVNL-----KPDVDIS-----783
Heterocephalus_glaber -----MKMPKFSMPGFKAEGPEVDVNL-----KADVDFS-----724
Chelonia_mydas    ---PKFSVPSWKMSPSKVSMSDVDINLQGP-----KLGDMVSEPIGGDL-----922
Rhinatrema_bivittatum -----FKMSGFGISGSKPKGPDADVKLP-----KGDIDIS-----789
Latimeria_chalumnae -----ISPPKFGFKVGKDGADIDVNF-----KGVVEVS-----676
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     LKMPKPKMPKFGVPGKLGELPDVDVSL-----KGEIDVSAKVDLDLPDVLKGPVKVDIA 1218
Xenopus_tropicalis -----KGSKFKMPSLHMPDIDFNLKGP-----KVEGDLK-----844
.....1270.....1280.....1290.....1300.....1310.....1320

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Mus_musculus      -----GKVEVSAPDVSIEGSEGLKKG-----KFKMPEMNIRAPKISM 819
Rattus_norvegicus -----GKVEVSAPDVSIEGSEGLKKG-----KFKMPEMNIRAPKISM 815
Homo_sapiens      -----GPKIDVTAPDVSIEEPEGKLGK-----KFKMPEMNIRAPKISM 820
Pan_troglodytes   -----GPKIDVTAPDVSIEEPEGKLGK-----KFKMPEMNIRAPKISM 821
Macaca_mulatta    -----GPKVDVSVDPVSIEGSEGLKKG-----KFKMPEMNIRAPKISM 823
Callithrix_jacchus -----RPKVDVSVDPVSIEGSEGLKKG-----KFKMPEMNIRAPKISM 822
Equus_caballus    -----GPKVDVSVDPVSIEGSEGLKKG-----KFKMPEMNIRAPKISM 820
Canis_lupus_familiaris -----GPKVDVSVDPVSIEGSEGLKKG-----KFKMPEMNIRAPKISM 819
Bos_taurus        -----GPKVDVSVDPVSIEGSEGLKKG-----KFKMPEMNIRAPKISM 822
Heterocephalus_glaber -----GPKVEAGVLGVSLGPDGRLKEP-----KFKMPEMNIRAPKISM 763
Chelonia_mydas    -----KGPQIDIKGPNLDIDAPDIDIKGPEGLKSPKFKMPEMHIKTPKISM 969
Rhinatrema_bivittatum -----GPSVDFKGP-----EVPKFKLP-----AMPSLNVNAPDISI 820
Latimeria_chalumnae -----GPKVDIQAEVDVVGSEGIKGP-----KFNLPMSGIKAPKFSI 715
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     VPDVDLKAAPKVELKGPVKDIEAPDVIDHGPDKGLKMP-----KLKMPKFGVPGKLGEL 1271
Xenopus_tropicalis -----GPKVDIRAPEVNLEAPDVIDGKVK-----GPKFKMPSM-----PKVSM 883
.....1330.....1340.....1350.....1360.....1370.....1380

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Mus_musculus      PDVDLHLKGNPNVKG---EYDVTVPRAEGEIKVPDVELKSAKLDIDVNPVDVGPGLHMKM 876
Rattus_norvegicus PDVDLHLKGNPNVKG---EYDVTVPRAEGEIKVPDVELKSAKVDIDVNPVDAQGPGLHMKM 872
Homo_sapiens      PDVDLHLKGNPNVKG---EYDVTMPKVESEIKVPDVELKSAKMDIDVPDVEVGPDPWHLKM 877
Pan_troglodytes   PDVDLHLKGNPNVKG---EYDVTMPKVESEIKVPDVELKSAKMDIDVPDVEVGPDPWHLKM 878
Macaca_mulatta    PDVDLHLKGNPNVKG---EYDVTMPKVESEIKVPDVELKSAKVDIDAPDVEVGPDPWHLKM 880
Callithrix_jacchus PDVDLHLKGNPNVKG---EYDVTVPKVEGDMKVPDVELKSAKVDIDAPDVEVGPDPWHLKM 879
Equus_caballus    PDVDLHLKGNPNVKG---EYDVTVPKVEGEIKVPDVELKSAKMDIDAPDVDVHGPDPWHLKM 877
Canis_lupus_familiaris PDVDLHLKGNPNVKG---EYDVTVPKVEGEIKVPDVELKSAKVDIDAPDVAVGPDPWHLKM 876
Bos_taurus        PDVDLHLKGNPNVKG---EYDVTVPKVEGEIKVPDVELKSAKVDIDAPDVDVHGPDPWHLKI 879
Heterocephalus_glaber LDMDLHLKGNPNVKG---EYDVTVPKVEGEIKVPDVELKSAKVDIDAPDVAVGPDPWHLKM 820
Chelonia_mydas    PDIDLNLKGNPNVKG---DVDVSVPKRQSDLKGPEDIKGPKVDLDAPDVLHG-LEG--- 1022
Rhinatrema_bivittatum PHVDLNLKGNPNVKG---DVDVSGPNIEGDVKIPKVDIKSPELDVPNAPDIDIEG-KKGLKF 876
Latimeria_chalumnae PKIGLDLSGPNPNVKG---DVDLSCP-----KVDLDKPEGDIKGPDPGKIQI 756
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     PDVDVSLPKGEIDVSAKVDIEVPDVELKGPVKDIEVPDIDLKGPVKDIEAPDVGKGLKM 1331
Xenopus_tropicalis PDLGLNLKGNPNVKG---ELKGPKIDMKGPEDVVAIPDVELEGPEGLKLM 929
.....1390.....1400.....1410.....1420.....1430.....1440

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	PKIKMPKFGMPGFKAESPEMEVNLPKSDIDVSGPNVDVKVPDNIIEG-----	923
Rattus_norvegicus	PTIKMPKFGMPGFKAESPEVEMNLPKADIDVSGPKVDVKVPDNIIEG-----	919
Homo_sapiens	PKMKMPKFSMPGFKAEGLPEVDVNLPAKADVDISGPKVGVVDPDNIIEG-----	924
Pan_troglodytes	PKMKMPKFSMPGFKAEGLPEVDVNLPAKADVDISGPKVGVVDPDNIIEG-----	925
Macaca_mulatta	PKMKMPKFSMPGFKAEGLPEVDVNLPAKAEVDISGPKVDVEVPDNIIEG-----	927
Callithrix_jacchus	PKVKMPKFGMPGFKAEGLPEVDVNLPAKADVDISGPKVNVVDPDNIIEG-----	926
Equus_caballus	PKVKMPKFGMPGFKAEGLPEVDVNLPAKADIDISGPKVDVEVPDVSIEG-----	924
Canis_lupus_familiaris	PKMKMPKFSMPGFKAEGLPEVDMNLPKADVDVSGPKVDIDVPDNIIEG-----	923
Bos_taurus	PKMKMPKFSMAGFKAEGLPEVDVNLPKTDIDIAEPKLDVEGPDNIIEG-----	926
Heterocephalus_glaber	PKMKMPKFSVPGVKAESAELVDMNLPKANMDVSGPKVEVGVPDNIIEG-----	867
Chelonia_mydas	-KFKMPKFGIPGFKAEGLPDVDVSLPKGEIALSGPKVDIDAPDLIEG-----	1068
Rhinatrema_bivittatum	PKLKMPPKIGIKSPKLEGPVDASLPKGDIEISGPKVDINAPGVNIEG-----	923
Latimeria_chalumnae	PKLNPPKFGFRAGKAGADIDVTLPKGEIDVSGPKVNIQAPEFDVEG-----	803
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	PKLKMPPKFGVPGKADLDPDVDVSLPKGEIDVSAKFDLDLPDVIDEAPVKAAGLKFRMP	1391
Xenopus_tropicalis	PKFKMPKFGFSGSKVDGKEIDIKLPEGEIDLSGPKLDISAPELDIEC-----	976
	.....1450.....1460.....1470.....1480.....1490.....1500	

Mus_musculus	-----P	924
Rattus_norvegicus	-----L	920
Homo_sapiens	-----P	925
Pan_troglodytes	-----P	926
Macaca_mulatta	-----P	928
Callithrix_jacchus	-----P	927
Equus_caballus	-----P	925
Canis_lupus_familiaris	-----A	924
Bos_taurus	-----P	927
Heterocephalus_glaber	-----P	868
Chelonia_mydas	-----P	1069
Rhinatrema_bivittatum	-----P	924
Latimeria_chalumnae	-----P	804
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	ELNVQSPKLSIPDVIDISLKGPKVKGDVSAKLSGELRGPKVDVEGPGLVDPVPEVDLECP	1451
Xenopus_tropicalis	-----P	977
	.....1510.....1520.....1530.....1540.....1550.....1560	

Mus_musculus	EGKLKGPKLKMP-----EM	938
Rattus_norvegicus	EGKLKGPKLKMP-----EM	934
Homo_sapiens	EGKLKGPKFKMP-----EM	939
Pan_troglodytes	EGKLKGPKFKMP-----EM	940
Macaca_mulatta	EGKLKGPKFKMP-----EM	942
Callithrix_jacchus	EGKLKDPKFKMP-----EM	941
Equus_caballus	EGKLKGPKFKMP-----EM	939
Canis_lupus_familiaris	EGKLKGPKFKMP-----EM	938
Bos_taurus	EGKLKGHKFRMP-----EM	941
Heterocephalus_glaber	EGKLKGPKLKMP-----EM	882
Chelonia_mydas	EGKLKGPKFRMP-----EM	1083
Rhinatrema_bivittatum	EGKLKTPNISMP-----SI	938
Latimeria_chalumnae	EGKIKGAKIKMP-----DF	818
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	EGKIKGPKFKMP-----KL	1465
Xenopus_tropicalis	EGKVKGSKFKMPSLHMPDIDFNLKGPKLEGDLKSPKVDIKAPEVNLEAPAVDIDGKVKGS	1037
	.....1570.....1580.....1590.....1600.....1610.....1620	

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Mus_musculus	NIKAPKISMPDVLHMKGPVKGEY-----	963
Rattus_norvegicus	NIKAPKISMPDVLHMKGPVKGEY-----	959
Homo_sapiens	NIKAPKISMPDVLHMKGPVKGEY-----	964
Pan_troglodytes	NIKAPKISMPDVLHMKGPVKGEY-----	965
Macaca_mulatta	NIKAPKISMPDVLHMKGPVKGEY-----	967
Callithrix_jacchus	NIKAPKISMPDVLHVKGPVKGEY-----	966
Equus_caballus	NIKAPKISTPMDLHMKGPVKGEY-----	964
Canis_lupus_familiaris	NIKAPKISMPDVLHMKGPVKGEY-----	963
Bos_taurus	NIKAPKISMPDVLHVKGPVKGEY-----	966
Heterocephalus_glaber	IIKGPKISMPDVLHVKGPVKGEY-----	907
Chelonia_mydas	HIKAPKISMPDVLHKLKSGKLGKDV-----	1108
Rhinatrema_bivittatum	HV--PKVSMPDVLNLKGPVKWGDV-----	961
Latimeria_chalumnae	DISAPKFSGPDVGFKLSGPKMKRDG-----	843
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	NIKTPKLSKPEADLNKVGPKIKGEL-----	1490
Xenopus_tropicalis	KFKMPSLHMPDIDFNLKGPVKVEGDLKGPVDIRAPEVNFEAPDVIDGKVGPKFKMPSM-----	1097
	.....1630.....1640.....1650.....1660.....1670.....1680	

Mus_musculus	-----DVTMPKLEGDLKGPVKDVS-----VPDVDVHGPDWN--LKMPKIKMPK	1004
Rattus_norvegicus	-----DVTMPKLEGDLKGPVKDVS-----APDVDVHGPDWN--MKMPKIKMPK	1000
Homo_sapiens	-----DMTVPKLEGDLKGPVKDVS-----APDVEMQGPDWN--LKMPKIKMPK	1005
Pan_troglodytes	-----DMTVPKLEGDLKGPVKDVS-----APDVEMQGPDWN--LKMPKIKMPK	1006
Macaca_mulatta	-----DVTVPKLEGELKGPVKDVS-----APDVEMQGPDWN--LKMPKIKMPK	1008
Callithrix_jacchus	-----DVTEPKLAGDLKGPVKDVS-----APDVEMQGPDWN--LKMPKIKMPK	1007
Equus_caballus	-----DVTVPKLEGDLKGPVKDVS-----APDVEVHGPDWN--LKMPKMKMPK	1005
Canis_lupus_familiaris	-----DVTVPKMEGELKGPVKDIS-----APDIEVHGPEN--LKMPKIKMPK	1004
Bos_taurus	-----DVTVPKLEGDLKGPVKDLS-----APDVEVHGPDWN--LKMPKMKMPK	1007
Heterocephalus_glaber	-----DVTVPKLEGDLKSPKIDVG-----APDIDIHGPDS--LKMPKIKMPK	948
Chelonia_mydas	-----DVAVPKTQGDLDKGPFEFDLKGPKVIDAPVDIHGPEG--KLKMPKIKMPK	1156
Rhinatrema_bivittatum	-----DISGPKLEGELKAPKLDIQSPELNVNAPHIDIEGPEVREKLKMPKFKMPPG	1011
Latimeria_chalumnae	-----DVSVPKLDIDK-----PEVDIKGSDGK--VHFPMRVPK	875
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	-----DVSAPKIEGELKGPGLHVG--PAVEVPDVLCEPEAK--LKGPCKMKLPH	1536
Xenopus_tropicalis	PKVSMPDLGLNVKGPKEGELKGPVIDMKGPEVDVEIPDVELEGPEGK--LKMPKFKMPPG	1155
	.....1690.....1700.....1710.....1720.....1730.....1740	

Mus_musculus	FSMPSLKGEPELDVNMPKAD-----	1025
Rattus_norvegicus	FTMPSLKGEPELDVSMPKAD-----	1021
Homo_sapiens	FSMPSLKGEPEFDVNLSKAN-----	1026
Pan_troglodytes	FSMPSLKGEPEFDVNLSKAN-----	1027
Macaca_mulatta	FSMPSLKGEPELDVNLSKAN-----	1029
Callithrix_jacchus	FSMPSLKGEPELDVNLSKAN-----	1028
Equus_caballus	FTMPSLKGEPELDVNLPKAD-----	1026
Canis_lupus_familiaris	FTMPSLKGEDPQVDVNLPKAD-----	1025
Bos_taurus	FTMPSLKGEPELDVNLPKVD-----	1028
Heterocephalus_glaber	FSMPSLKGEPEGDVNLSKAD-----	969
Chelonia_mydas	FGVPGLKGEPEPDVDIALPKGE-----	1177
Rhinatrema_bivittatum	FGMSAPKFEKPDVDVKLPKGD-----	1032
Latimeria_chalumnae	FGFGGGHGDADIDVNVPKAQ-----	896
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	FSLSGPKFEGADIDVGVPKGEVEVSGPEVDVEGPEVDVGGVEGKWKGPFRMPKLNKTS	1596
Xenopus_tropicalis	FGFSGSKVDGKDVIDIKLPEGE-----	1176
	.....1750.....1760.....1770.....1780.....1790.....1800	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.Fab 1 13:55:52 2022

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Mus_musculus          -----VDISVPKLDISAPDLNLEGPEGKLLK 1050
Rattus_norvegicus     -----VDISVPKLDISAPDLNLEGPEGKLLK 1046
Homo_sapiens          -----VDISAPKVDINAPDLSLEGPEGKLLK 1051
Pan_troglodytes       -----VDISAPKVDINAPDLSLEGPEGKLLK 1052
Macaca_mulatta        -----VDISAPKVDISAPDLNLEGPEGKLLK 1054
Callithrix_jacchus    -----VDVSAPKVDISAPDLNLEGPEGKLLK 1053
Equus_caballus        -----VDISAPKVDISAPDLNLEGPEGKLLK 1051
Canis_lupus_familiaris -----VDISAPKVDISAPDLSLEGPEGKLLK 1050
Bos_taurus            -----LDISAPKVDINAPDLSLEGPEGKLLK 1053
Heterocephalus_glaber -----LDISAPKVDISAPDLSLEGPEGKLLK 994
Chelonia_mydas        -----VDISGPKIDIDAPGLNMEGPEGHLK 1202
Rhinatrema_bivittatum -----IDISGPSVDFKGP-----FVPKFKLP 1053
Latimeria_chalumnae   -----IDVSGPKVDIQAPGVDVQGPQGOMK 921
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         KISVPDVDLNLKGPKVKGDVDVSVPKLEGELKGPEIDVKGPKVDVLPDVELEGPEGKVK 1656
Xenopus_tropicalis    -----IDLAPKVDISAPELDIECPGKVK 1201
.....1810.....1820.....1830.....1840.....1850.....1860

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Mus_musculus          GPKFKMPEMHFKAPKVSLLPDVDLDLKGPKMKGNLMSAPKIEGEMKAPVDVDIKGPNVDIK 1110
Rattus_norvegicus     GPKFKMPEMHFKAPKMSLPDVDLDLKGPKMKGNVMSAPKIEGEMKVPDVDIKGPNVDVQ 1106
Homo_sapiens          GPKFKMPEMHFRAPKMSLPDVDLDLKGPKMKGNVDISAPKIEGEMQVPDVIDIRGPKVDIK 1111
Pan_troglodytes       GPKFKMPEMHFKAPKMSLPDVDLDLKGPKMKGNVDISASKIEGEMQVPDVIDIKGPKVDIK 1112
Macaca_mulatta        GPKFKMPEMHFKAPKMSLPDVDLDLKGPKMKGNVDISAPKIEGEMQVPDVIDIRGPKVDIK 1114
Callithrix_jacchus    GPKFKMPEMHFKAPKMSLPDVDLDLKGPKMKGNVDISAPKIEGEMQVPDVIDIQGPKVDIK 1113
Equus_caballus        GPKFKMPEMHFKAPKMTLPDVDLDLKGPKMKGDLDSAPKIEGEMKVPDVDVKGPKVDIK 1111
Canis_lupus_familiaris -----GPKFKMPEMHFKAPKMTLPDVDLDLKGPKMKGNLDSAPKIEGEMKVPDVDIK----- 1103
Bos_taurus            GPKFKMPEMHFRAPKMTLPDVDMDLKGPKMKGSLDSAPKIEGEMKAPEVDIKGPKLDVK 1113
Heterocephalus_glaber GPKFKMPEMHFKAPKMTLPDVDMDLKGPK----- 1022
Chelonia_mydas        GPKFKMPEMHFKAPKMTLPDVDMDLKGPK----- 1022
Rhinatrema_bivittatum -----AMPSLNVAHAPDISIPHFDNMVKGPKWKGDVDVSGPNIEGDVKIPKVDIKCPELDVN 1109
Latimeria_chalumnae   GPKFNLPSMGIAKPKFSTPEIGLDLSGHKAKGHVDVSCP-----KVDLG 965
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         GPKFKMPEMHFRGPKISMPDVDVFNLKGPKVKGDVDVSVPKVEGELKGPEVDIKGPKVDVD 1716
Xenopus_tropicalis    GPKFKMPSLHM-----PDIDFNLKGPKLDG-----DLKGPKVDIKAPEVNFE 1243
.....1870.....1880.....1890.....1900.....1910.....1920

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Mus_musculus          APEVDVQGPESLSKMPKMKMPKFSMPITLKGEGPDVDVSLPKATIDVSGPKLDIETSDVSL 1170
Rattus_norvegicus     S-----PDWSLKMPKMKMPKFSMPITLKGEGPDVDVSLPKATIDVSGPKLDIETSDVSF 1159
Homo_sapiens          APDVEGQGLDWSLKIPKMKMPKFSMPISLKGEGPEVDVNLPAKADVVVSGPKVDIEAPDVSL 1171
Pan_troglodytes       APDVEGQGLDWSLKIPKMKMPKFSMPISLKGEGPEVDVNLPAKADVVVSGPKVDIEAPDVSL 1172
Macaca_mulatta        APDVEGQGLDWSLKIPKMKMPKFSMPISLKGEGPEVDVNLPAKADIAVSGPKVDIEAPDVSL 1174
Callithrix_jacchus    APDVEGQGLDWSLKIPKMKMPKFSMPISLKGEGPEVDVNLPAKADIVVSGPKVDIEAPDVSL 1173
Equus_caballus        APDVEVQGPDSLSKMPKMKMPKFSMPISLKGEGPDVDVNLPAKADIDVTGPKVGIEAPDVSL 1171
Canis_lupus_familiaris APDVDVQADWSLKMPKMKMPKFSVPSLKGEGLDVDMNLPAKADIDISGPKVDIESPDVSL 1163
Bos_taurus            APDVEVQADWSLKMPKMKMPKFSMPISLKGEGPDVDVNLPAKADIDVSGPKVDIEAPDVSL 1173
Heterocephalus_glaber ----- 1022
Chelonia_mydas        APDVDIHGPDGKLKMPKLPKPKFGVSLKGERPDMDITFPKGDVGISGPKVDIDIPSVDI 1322
Rhinatrema_bivittatum DPDVDIEGKGG-LKFPKMKMPKIGIKSPKLEGPVDASLPKGDIEISGPKVDINAPGVNI 1168
Latimeria_chalumnae   KPEFOIKGPDGKIQIPKLNPPKFGFKAGKTGDADIDVTIPKAQIDVSGPKVDIQAPEVDV 1025
Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus         LPDVDVHGPEGKLLRPFKMPKFSMPGFRAEGPEVDVELPKGDVDVSVPKVDIEGPEVEL 1776
Xenopus_tropicalis    APDVDGKVKGSKFKMPSLHMPDIDFN---LKGPKVEGDLKGPKVDIKAPEVNLEAPDVDV 1300
.....1930.....1940.....1950.....1960.....1970.....1980

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVTVPKIEGEMKVPDVDI	1230
Rattus_norvegicus	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVDI	1219
Homo_sapiens	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVEI	1231
Pan_troglodytes	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVEI	1232
Macaca_mulatta	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVDI	1234
Callithrix_jacchus	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVDI	1233
Equus_caballus	EGPEGKLGPKFKMPDMHFKAPKISTPDVDLHMGPKVKGDMVAVPEIEGKMKVPDVDI	1231
Canis_lupus_familiaris	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVDI	1223
Bos_taurus	EGPEGKLGPKFKMPDMHFKAPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVDI	1233
Heterocephalus_glaber	-----NVKGNLDMVSPKIEGEMKVPDMDM	1046
Chelonia_mydas	EGPEGKLVGPKFKLPENIOTPKVSMPDVLGLKAPKLGDMISVPKMEGDLKGPSIDV	1382
Rhinatrema_bivittatum	ESPEGKLGSPKISMP--SIHVPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVEI	1226
Latimeria_chalumnae	QGPEGQIKGPKFNLPSMGIKAPKFSPEIGLDLSGHLKLGDMVAVS-----	1070
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	GLPEGKLVGPKFKMP--DIKTTKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVEI	1834
Xenopus_tropicalis	DG---KVGPKFKMP---SMKVSMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVEI	1342
	.....1990.....2000.....2010.....2020.....2030.....2040	

Mus_musculus	KGPKVDISAPDVDVQGP-----	1247
Rattus_norvegicus	KGPKVDVDAPDVDVQGP-----	1236
Homo_sapiens	KGPKMDIDAPDVEVQGP-----	1248
Pan_troglodytes	KGPKMDIDAPDVEVQGP-----	1249
Macaca_mulatta	KGPKVDIDAPDVDVHGP-----	1251
Callithrix_jacchus	KGPKVDIDAPDVEVQGP-----	1250
Equus_caballus	KGPKVDVDVDPDVDVHGP-----	1248
Canis_lupus_familiaris	KGPKVDVDVDPDVDVHGP-----	1240
Bos_taurus	KGPKVDVDVDPDVDVHGP-----	1250
Heterocephalus_glaber	KGPKVDIKATDVDVQGP-----	1063
Chelonia_mydas	KGPKIDIEGQMDIDVPLNLDLECEGKLGPKFKRMPKMNIAKPKISMPDVLNMGPKVKGDMVAVPEIEGKMKVPDVEI	1442
Rhinatrema_bivittatum	KGPELDVNAPHIDIEGP-----EARKK-	1248
Latimeria_chalumnae	-GPOVDLEKPEVDIKGR-----	1086
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	KGPKVDVDLPDVDVHGP-----	1851
Xenopus_tropicalis	KGPEVDVAIPDVELEGP-----	1359
	.....2050.....2060.....2070.....2080.....2090.....2100	

Mus_musculus	-----DWHLKMPKMKMPKFSMPGFKAEG	1270
Rattus_norvegicus	-----DWHLKMPKVKMPKFSMPGFKAEG	1259
Homo_sapiens	-----DWHLKMPKMKMPKFSMPGFKAEG	1271
Pan_troglodytes	-----DWHLKMPKMKMPKFSMPGFKAEG	1272
Macaca_mulatta	-----DWHLKMPKMKMPKFSMPGFKAEG	1274
Callithrix_jacchus	-----DWHLKMPKMKMPKFSMPGFKAEG	1273
Equus_caballus	-----DWHLKMPKMKMPKFSMPGFKAEG	1271
Canis_lupus_familiaris	-----DWHLKMPKMKMPKFSMPGFKAEG	1263
Bos_taurus	-----DWHLKMPKVKMPKFSMPGFKAEG	1273
Heterocephalus_glaber	-----DWHLKMPKVKMPKFSMPGFKAEG	1086
Chelonia_mydas	EMDISVPMKMGDFKGPSIDIKGPKVDADVPDIDLECEAKLMPKMKFPKFGMPGFKAEG	1502
Rhinatrema_bivittatum	-----FKMPKFKMPGFGISAPKLEG	1268
Latimeria_chalumnae	-----DGKMNFPKINFPKFGFGGNDGD	1109
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	-----EGKFKLPKFKMPKFSMPGFKAEG	1874
Xenopus_tropicalis	-----EGKLMKPKFKMPKFGFGSGSKVDG	1382
	.....2110.....2120.....2130.....2140.....2150.....2160	



# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	P--EVSLPKADLDVSGPKVDIDVPDVNIEGPDALKGPKFKMPKEMNIKAPKISMP--DLH	1326
Rattus_norvegicus	PEVDVSLSKADLDVSGPKVDIDVPDVNIEGPDALKGPKFKMPKEMNIKAPKISMPDFDLN	1319
Homo_sapiens	REVDVNLPKADIDVSGPKVDVEVPDVSLEGPEGKLGPKFKMPKEMHFKAPKISMPDVDLN	1331
Pan_troglodytes	PEVDVNLPKADIDVSGPKVDVEVPDVSLEGPEGKLGPKFKMPKEMHFKAPKISMPDVDLN	1332
Macaca_mulatta	PEVDVNLPKADIDVSGPKVDVEVPDVSLEGPEGKLGPKFKMPKEMHFKTPKISMPDVDLN	1334
Callithrix_jacchus	PEVDVNLPKADIDVSGPKVDVEVPDVSLEGPEGKLGPKFKMPKEMHFKAPKISMPDVDLN	1333
Equus_caballus	PEVDVNLPKADIDISGPKVDIEAPDVSLEGPEGKLGPKFKMPKEMHFKAPKISMPDANLN	1331
Canis_lupus_familiaris	PEVDVNLPKADIDVSGPKVDIEAPDVSLEGPEGKLGPKFKMPKEMHFKAPKISMPDVNLN	1323
Bos_taurus	PEVDVNLPKADIDISGPKVDIEAPDVSLEGPEGKLGPKFKMPKEMHFKGPKISMPDVDLN	1333
Heterocephalus_glaber	PEVDVNLPKANIDISAP-----	1103
Chelonia_mydas	SDMDVKLPKGQVDICGPKVDIDAPGLDIEGPEGKIKGPKFKMPKEMHIKTPKISMPDIDLN	1562
Rhinatrema_bivittatum	PDIDASLPKGDIEISGPKVDINAPGVNIEGPEGKLGPKFKMPKEMHFKAPKISMPDIDLN	1326
Latimeria_chalumnae	ANVDVNLPKGKIDVSGPKVDIQVPEADIQGPEGKVKGHKVKMPDFNISAPKFSAPDIDLG	1169
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	PEVDVELPKGDVDISVPKVDIDVPEVELECPEGKVKGPKFKMPKEMHIKTPKISMPDIDLN	1934
Xenopus_tropicalis	KEIDIKLPEGEIDVSGPKLDISVPELDIECPEGKVKGSKFKMPSLH-----MPDIDFN	1435
	.....2170.....2180.....2190.....2200.....2210.....2220	

Mus_musculus	LKGPKVKGDVDVSLPKVEGDLKGPDIDIKGPKMDINAPDMDVQGPDW-----	1373
Rattus_norvegicus	LKGPKVKGDMVSLPKVEGEIKVPEVDIKGPKVDIDVPDVDVQGPDW-----	1366
Homo_sapiens	LKGPKLKGDVDVSLPEVEGEMKVPDVDIKGPKVDISAPDVDVHGPDW-----	1378
Pan_troglodytes	LKGPKLKGDVDVSLPEVEGEMKVPDVDIKGPKVDISAPDVDVHGPDW-----	1379
Macaca_mulatta	LKGPKLKGDVDVSLPEVEGDMKVLVDIKGPKVDISAPDVDVHGPDW-----	1381
Callithrix_jacchus	LKGPKLKGDVDVSVPKVEGEMKVPDVDIKGPKVDVADPMEVHGPDW-----	1380
Equus_caballus	LKGPKLKGDVDVTLDPVEGEIKVPDVDIKGPKVDISAPDVDVHGPDW-----	1378
Canis_lupus_familiaris	LKGPKLKGDVDVSVPDVEDEVKVPVHVDIKGPKVDIGAPDVDVHGPDW-----	1370
Bos_taurus	LKGPKVKGDVDVSVPKIEGEMKVPDVDIKGPKVDVDPDVKGPDW-----	1380
Heterocephalus_glaber	-----	1103
Chelonia_mydas	LKGPKLKGDVDVSIKPKLEGDLKGPVDIDIKAPSIDINAPDIELOQSGG-----	1609
Rhinatrema_bivittatum	LKGPKWKGDVDISGPKLEGDLKAPKLDIQSPELDVNAPHIDIEGPEAR-----	1374
Latimeria_chalumnae	NDG-----	1172
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	LKGPKVKGDVDVSVPKIEGDLKGPDIDIKGPKVDVLDVLDIEGPEGKLGPKFKMPKEMH	1994
Xenopus_tropicalis	LKGPK-----LEGDLKSPKVDIKAPEVNLEAPAVDIDGKVKG-----	1472
	.....2230.....2240.....2250.....2260.....2270.....2280	

Mus_musculus	-----	1373
Rattus_norvegicus	-----	1366
Homo_sapiens	-----	1378
Pan_troglodytes	-----	1379
Macaca_mulatta	-----	1381
Callithrix_jacchus	-----	1380
Equus_caballus	-----	1378
Canis_lupus_familiaris	-----	1370
Bos_taurus	-----	1380
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----	1609
Rhinatrema_bivittatum	-----	1374
Latimeria_chalumnae	-----	1172
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	LKGPKFSMPDVFDFNLKGPKVKGDVDVSVPKLEGDLKGPVEVDIKGPKVDVLDVLDIECPE	2054
Xenopus_tropicalis	-----	1472
	.....2290.....2300.....2310.....2320.....2330.....2340	

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Mus_musculus	-HLKMPKMKMPKFSM-----PGFKAEGPEVDV-----	1399
Rattus_norvegicus	-HLKMPKMKMPKFSM-----PGFKAEGPEVDV-----	1392
Homo_sapiens	-HLKMPKVKMPKFSM-----PGFKGEGPEVDV-----	1404
Pan_troglodytes	-HLKMPKVKMPKFSM-----PSFKGEGPEVDV-----	1405
Macaca_mulatta	-HLKMPKVKMPKFSM-----PGFKGEGPEVDV-----	1407
Callithrix_jacchus	-HLKMPKVKMPKFSM-----PGFKAEGPEVDV-----	1406
Equus_caballus	-HLKMPKMKMPKFSM-----PGFKGEGPEVDV-----	1404
Canis_lupus_familiaris	-HLKMPKVKMPKFSM-----PGFKGEGPDVDV-----	1396
Bos_taurus	-HLKMPKVKMPKFSM-----PGFKGEGPEVDV-----	1406
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-KLKMPKMKMPQFNV-----SGPKLEGPDIDV-----	1635
Rhinatrema_bivittatum	KKFKMPKFKMPGFGI-----SVPKLEGPDIDA-----	1401
Latimeria_chalumnae	-----DANIDV-----	1178
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	GKVKGPVKFKMPKEMHF-----KTPKISMPPIDLN-----LKGPKVKGD	2091
Xenopus_tropicalis	SKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDISAPDVIDGKVKGSKFKMPSLHMPDID	1532
	.....2350.....2360.....2370.....2380.....2390.....2400	

Mus_musculus	---NLPKADIDVSGPKVDIEAPDVSIIEGP---EGKLKGPKFKMPDMHFKAPKISM--PD	1450
Rattus_norvegicus	---SLPKADLDVSGPKVDIDVPDVNIEGP---EGKLKGPKFKMPKEMHFKAPKISM--PN	1443
Homo_sapiens	---KLPKADVDVSGPKMDAEVPDVNIEGP---DAKLKGPKFKMPKEMSIKPKKISI--PD	1455
Pan_troglodytes	---KLPKADVDVSGPKMDAEVPDVNIEGP---DAKLKGPKFKMPKEMSIKPKKISI--PD	1456
Macaca_mulatta	---KLPKADLDVSGPKVDVEVPDVNIEGP---DAKLKGPKFKMPKEMNIKPKKISM--PD	1458
Callithrix_jacchus	---NLPKADIDVSGPKVDVEVPDVN-----LKGPKFKMPKEMNIKPKKISM--PD	1450
Equus_caballus	---NLPKADIDVAGPKVDVEVPDVNIEGP---NAKLKGPKFKMPKEMNIKPKKISM--PD	1455
Canis_lupus_familiaris	---NLPKANVDVSGPKVDVEVPDVNIDGP---EAKVKGPKFKMPKEMNIKPKKISM--PD	1447
Bos_taurus	---NLPKADIDISGPKVDIEAPDVSLIEGP---EGKLKGPKFKMPKEMHFKGPKISM--PD	1457
Heterocephalus_glaber	-----	1103
Chelonia_mydas	---NVPKGEVDISAPKVDIEAPELDIEGP---EGKWKGPVKFKMPKLNKAPKISM--PD	1686
Rhinatrema_bivittatum	---SLPKGDIEISGPKVDINAPGVNIEGP---EGKLKTPKISMPP--SIHVPKVSMM--PD	1450
Latimeria_chalumnae	---NLPKGKIDVSGPKVDIQAPEVDVQGP---KGKVKGHKVKMPDFNISAPKFS--PD	1229
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	VDSVVPKIEGDLKGPKVDVLDPDVDIEGP---EGKLKGPKFKMPKEMHFKGPKVSMM--PD	2145
Xenopus_tropicalis	FNLKGPKVEGDLKGPKVDINAPEVKLEGPDVIDGKVKGSKFKMPSLHMPDLDFNLKGPK	1592
	.....2410.....2420.....2430.....2440.....2450.....2460	

Mus_musculus	VDLNKGPKGKA-----DVDASLPEVEGGVKVPDVIDIKG	1484
Rattus_norvegicus	IDLNKGPKVKVG-----DMDVAVPEIEGEMKVPDVIDIKG	1477
Homo_sapiens	VGLHLKGPKMKG-----DYDVTVPKVEGEIKAPDVIDIKG	1489
Pan_troglodytes	VGLHLKGPKMKG-----DYDVTVPKVEGEIKAPDVIDIKG	1490
Macaca_mulatta	VGLHLKGPKMK-----DYDVTVPKVEGEIKASDVIDIKG	1491
Callithrix_jacchus	VGLHLKAPKMKG-----DYDVTVPKVEAEIKPPDVIDIKG	1484
Equus_caballus	VGLHLKGPKMKG-----DYDVAVPKVEGEIKAPDVIDIKG	1489
Canis_lupus_familiaris	VGLHLKGPKMKG-----DYDVTIPKVEGEIKAPDVIDIKG	1481
Bos_taurus	VDLNKGPKVKVG-----DVDVSVPKIEGEMKVPDVIDIKG	1491
Heterocephalus_glaber	-----	1103
Chelonia_mydas	VDLNKGPKMKG-----EMDVTVPKIEGELTGPEIDIKG	1720
Rhinatrema_bivittatum	IDLNKGPKWKVG-----DVDISGPKLEGDLKAPKLDIQS	1484
Latimeria_chalumnae	IGLNLSPPKAKG-----DVDVS-----	1246
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	VDFNLKGPKVKVG-----DVDVSVPKLEGDLKGPEVDIKG	2179
Xenopus_tropicalis	VEGDLKGPKVDISAPDVIDGKVKGSKFKMPSLHMPDIDFNLKGPKVEGDLKGPKVDINA	1652
	.....2470.....2480.....2490.....2500.....2510.....2520	

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Mus_musculus      PKVGIDAPDVEVHGPDW--HLKMPKVMPKFSMPGFKGEGPEVDI--P----- 1528
Rattus_norvegicus PKVDINAPDVDVQGPDW--HLKMPKIKMPKFSMPGFKAEGLPEVDVSLP----- 1523
Homo_sapiens      PKVDINAPDVEVHGPDW--HLKMPKVMPKFSMPGFKGEGPEVDMNLP----- 1535
Pan_troglodytes   PKVDINAPDVEVHGPDW--HLKMPKVMPKFSMPGFKGEGPDVDMNLP----- 1536
Macaca_mulatta    PKVDINAPDVEVHGPDW--HLKMPKVMPKFSMPGFKGEGPEVDVNLNLP----- 1537
Callithrix_jacchus PKVDMNAPDVEVHGPDW--HLKMPKVMPKFSMPGFKGEGPEVDVNLNLP----- 1530
Equus_caballus    PKVDINAPDVGVGHPDW--HLKMPKVMPKFSMPGFKGEGPEVDVKLP----- 1535
Canis_lupus_familiaris PKVDINAPDVGVGHPDW--HLKMPKVMPKFSMPGFKGEGPEVDVNLNLP----- 1527
Bos_taurus        PKVDVDVDPDVKGPDW--HLKMPKMKMPKFSMPGFKGEGPEVDVSLP----- 1537
Heterocephalus_glaber ----- 1103
Chelonia_mydas    PKLDIEAPDMDLECPEG--KLKGPKFSMPSWKMSPSKISMPEVDLNLKGPKL----- 1770
Rhinatrema_bivittatum PELNVNAPHIDIEGPEGTEKLKMPKLMKMPGFGMSAPKFEKPDVDVKLP----- 1532
Latimeria_chalumnae ----- 1246
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     PKVDVLDPDVLECP--KLKGPKFKMP--MHFKAPKISM--PDIDLNLKGPKVKGDVDVSM 2237
Xenopus_tropicalis PEVKLEGPDDVDIDGKVKGSKFKMPSLHMPDLDFN--LKGPKVEGDFKGP----- 1699
.....2530.....2540.....2550.....2560.....2570.....2580

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Mus_musculus      -----KANIDVSGPKVDIDVPDVNIE----- 1549
Rattus_norvegicus -----KADLDVSGPKVDIDVPDVNIE----- 1544
Homo_sapiens      -----KADLGVSGPKVDIDVPDVNLEAPEGKLGPKFKMPSMNIQTHKISM--PDVGLN 1587
Pan_troglodytes   -----KADLGVSGPKVDIDVPDVNLEAPEGKLGPKFKMPSMNIQTHKISM--PDVGLN 1588
Macaca_mulatta    -----KADIGVSGPKVDIDVPDVNLEAPEGKLGPKFKMPSMNIQTHKISM--PDVGLN 1589
Callithrix_jacchus -----KADLGVSGPKVDIDVPDVNLEAPEGKLGPKFKMPSMNIQTHKISM--PDVGLN 1582
Equus_caballus    -----KADIDVSGPKVDIDAPDVNIEGPEGKLGPKFKMPSMNIQTHKISM--PDVGLN 1587
Canis_lupus_familiaris -----KADIDISGPKMDIDAPDVNIEGPEGKLGPKFKMPSMNIQTHKISM--PDVGLN 1579
Bos_taurus        -----KADIDISGPKVDIEAPDVSL----- 1558
Heterocephalus_glaber ----- 1103
Chelonia_mydas    -----KGDNLVSVPKIEGDLKGPEID----- 1791
Rhinatrema_bivittatum -----KGDIDIS-----GPSVD----- 1544
Latimeria_chalumnae ----- 1246
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     PKIEGDLKGPEVDIKGPKVDVNLDPVELEGPEGVKGPKFKMPEMHLKGPKFSMPDVDFN 2297
Xenopus_tropicalis -----KVDISAPDVIDIDGKVKGSKFKMPSLHMPDIDFNLKGPKVEG----- 1740
.....2590.....2600.....2610.....2620.....2630.....2640

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Mus_musculus      -----GDTKLKGPKFKMPEMN----- 1566
Rattus_norvegicus -----GPDALKGPKFKMPEMN----- 1561
Homo_sapiens      LKAPKLKTDVDVSLPKVEGDLKGPEIDVKAPKMDVNVGDIDIEGPEGKLGPKFKMPEMH 1647
Pan_troglodytes   LKAPKLKTDVDVSLPKVEGDLKGPEIDVKAPKMDVNVGDIDIEGPEGKLGPKFKMPEMH 1648
Macaca_mulatta    LKAPKLKTDVDVSLPKVEGDLKGPEIDVKAPKMDVNVGDIDIEGPEGKLGPKFKMPEMH 1649
Callithrix_jacchus LKAPKLKTDVDVSLPKVEGDLKGPEIDVKAPKMDANVGDIDIEGPEGKLGPKFKMPEMH 1642
Equus_caballus    LKAPKLKTDVDVSLPKVEGNLKGPEIDVKAPKMDVDVGDIDIECPEGKVGPKFKMPEMH 1647
Canis_lupus_familiaris LKAPKLKTDVDVSLPKVEGDLKGPEIDMKAPKMDVDVGDIDIEGPEGKLGPKFKMPEMH 1639
Bos_taurus        -----GPEGKLGPKFKMPEMH----- 1575
Heterocephalus_glaber ----- 1103
Chelonia_mydas    -----MKGPRLDIDASDISIDRPEGKMKGPKFKMPEMH----- 1824
Rhinatrema_bivittatum -----VKGP-----HVPKFKLP--AMPSLN----- 1562
Latimeria_chalumnae ----- 1246
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     LKGPKVKGDVDVSVPTLEGDLKGPEVDIKGPKVDVLDPDVDIEGPEGKLGPKFKMPEMH 2357
Xenopus_tropicalis -----DLKGPKVDISAP--VNLEAPD--VDGKVKGPKFKM----- 1774
.....2650.....2660.....2670.....2680.....2690.....2700

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.Fab 1 13:55:52 2022

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Mus_musculus	IKPQKISMPDVS LN LKGPVKADCDVSVPKVGGEIKAPAVDIKGP--VEAPDVEVHGPD	1624
Rattus_norvegicus	IKPQKISMPDVS LN LKGPKAKEYDVSVPKVGGEIKAPAVDLKGP--VEAPDVEVHGPD	1619
Homo_sapiens	FKAPKISMPDVLHLKGPVKGDMDVSVPKVEGEMKVPDVIKGPVDDIDAPDVEVHGPD	1707
Pan_troglodytes	FKAPKISMPDVLHLKGPVKGDMDVSVPKVEGEMKVPDVIKGPVDDIDAPDVEVHGPD	1708
Macaca_mulatta	FKTPKISMPDVLHLKGPVKGDVDVSVPKVEGEMKVPDVIKGPVDDIDAPDVEVQGP	1709
Callithrix_jacchus	FKAPKISMPDVLHLKGPVKGDVDVSVPKVEGEMKVPDVIKGPVDDIDVDPDVEVHGPD	1702
Equus_caballus	FKAPKISMPDVLHLKGPVKGDMDVSVPKIEGEMKVPDVKGPVDDVDPDVEVHGPD	1707
Canis_lupus_familiaris	FKAPKISMPDVLHLKGPVKGDVDVSVPKIEGEMKMPGVDIKGPVDDVDPDVEVHGPD	1699
Bos_taurus	FKGPKISMPDVLNLKGPVKGDVDVSVPKIEGEMKVPDVIKGPVDDIDVDPDVEVQGP	1635
Heterocephalus_glaber	-----	1103
Chelonia_mydas	IKAPKISVPDVLNLKAPKIKGEADISAPKLEGDLKGPDFDFKGPVDDIDAPDVTGHP	1884
Rhinatrema_bivittatum	VHAPDISIPHFDMNVKGPVKWGDVDVSGPNIERDVKIPKVDIKCEPDLINDPDIDIEG-K	1621
Latimeria_chalumnae	-----CPEVDIDKPEGDIKGP	1263
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	FKGPKISMPDFDL SLKGPVKGDMDVSVPKVEGDIKGPVEVDIKGPVDDIDVDPDVEVHGPD	2417
Xenopus_tropicalis	PSMPKVSMPDVLNVKGP--VEGELKGPKIDMKGPVEVDVAIPDVELEGPD	1823
	.....2710.....2720.....2730.....2740.....2750.....2760	

Mus_musculus	WHLKMPKVKMPKFSMPGFKGEGAEVDVNLQKANIDVSGP-----	1663
Rattus_norvegicus	WHLKMPKVKMPKFSMPGFKGEGAEVDVNLQKANIDVSGP-----	1658
Homo_sapiens	WHLKMPKMKMPKFSMPGFKGEGAEVDVNLPKADIDVSGP-----	1746
Pan_troglodytes	WHLKMPKMKMPKFSMPGFKGEGAEVDVNLPKADIDVSGP-----	1747
Macaca_mulatta	WHLKMPKMKMPKFSMPGFKGEGAEVDVNLPKADIDVSGP-----	1748
Callithrix_jacchus	WHLKMPKMKMPKFSMPGFKGEGAEVDVNLPKADIDVSGPKVDVEVPDVSLEGPEGKLKGP	1762
Equus_caballus	WHLKMPKVKMPKFSMPGFKGEGAEVDVNLPKADINVS GP	1746
Canis_lupus_familiaris	WHLKMPKVKMPKFGMPGFKGEGAEVDVNLPKADIDISGP-----	1738
Bos_taurus	WHLKMPKMKMPKFSVPGFKGEGAEVDVNLPKADIDISGP-----	1674
Heterocephalus_glaber	-----	1103
Chelonia_mydas	GKFRMPKFKMPKFSMPGFKGEGPDVDVKLPKGEMDISGP-----	1923
Rhinatrema_bivittatum	GGLKFPKMKMPKIGIKSPKLEGPDVDASLPKGDIEISGP-----	1660
Latimeria_chalumnae	GKMHFPPKMKLPKFGFGGGHGDADIDINLPKGQIDVSGP-----	1302
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	GKFKLPKFKMPKFSMPGFRAEGPEVDVELPKGDVDVSVPKVDIDVDPDIEGPEGKLKGP	2477
Xenopus_tropicalis	GKLKMPKFKMPKFGFSGLDGDIDIKLPEGEIDLSP-----	1862
	.....2770.....2780.....2790.....2800.....2810.....2820	

Mus_musculus	-----	1663
Rattus_norvegicus	-----	1658
Homo_sapiens	-----	1746
Pan_troglodytes	-----	1747
Macaca_mulatta	-----	1748
Callithrix_jacchus	KFKMPEMHFKAPKISMPDVLNLKGPVKLGDVNVSVPKVEGEMKVPDVIKGPVDDIDAP	1822
Equus_caballus	-----	1746
Canis_lupus_familiaris	-----	1738
Bos_taurus	-----	1674
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----	1923
Rhinatrema_bivittatum	-----	1660
Latimeria_chalumnae	-----	1302
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	KFKMPEMHITPKISMPDIDLNLKGPVKGDVDVSVPKIEG-----	2518
Xenopus_tropicalis	-----	1862
	.....2830.....2840.....2850.....2860.....2870.....2880	



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Mus_musculus      -----KVDIDVPDVNIEG 1676
Rattus_norvegicus -----KMDIDVPDVNIEG 1671
Homo_sapiens      -----SVDTDAPDLIDIEG 1759
Pan_troglodytes   -----SVDIDAPDLIDIEG 1760
Macaca_mulatta    -----SVDIDAPDLIDIEG 1761
Callithrix_jacchus DVDVHGPDWHLKMPKMKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPIVDIDAPDLIDIEG 1882
Equus_caballus    -----KVDIDAPDLIDIEG 1759
Canis_lupus_familiaris -----KVDIDTPDLIDIEG 1751
Bos_taurus        -----KVDIEAPDVSLEG 1687
Heterocephalus_glaber ----- 1103
Chelonia_mydas    -----KIDIDAPELDIEG 1936
Rhinatrema_bivittatum -----KVDINAPGVNIEG 1673
Latimeria_chalumnae -----KVDIEAAEFDVQ 1315
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     -----DLKGPVDIKGPKVDLPDVELHG 2541
Xenopus_tropicalis -----KVDISAPELDIEG 1875
.....2890.....2900.....2910.....2920.....2930.....2940

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Mus_musculus      PEGKLGPKFKMPSMNIQTHKISMPDVGLNLKGPKLKS GVDVSLPKVEGELKGPE----- 1731
Rattus_norvegicus PEGKLGPKFKMPSMSIQTHKISMPDVGLNLKGPKLKS GVDVSLPKVEGDLKGPE----- 1726
Homo_sapiens      PEGKLGSKFKMPKLNIAKPKVSMPPVDLNLKGPKLKG EIDASVPELEGLDRLGPOVDVKG 1819
Pan_troglodytes   PEGKLGSKFKMPKLNIAKPKVSMPPVDLNLKGPKLKG EIDASVLELEGLDRLGPOVDVKG 1820
Macaca_mulatta    PEGKLGSKFKMPKLNIAKPKISMPDVLNLKGPKLKG EIDASVPELEGLDRLGPOVDIKG 1821
Callithrix_jacchus PEGKLGSKFKMPKLNIAKPKISMPDVLNLKGPKLKG EIDASVPELEGLDRLGPOVDIKG 1942
Equus_caballus    PEGKLGSKFKMPKLNIAKPKISMPDVLNLKGPKLKG EIDASVPELEGLDRLGPOVDIKG 1819
Canis_lupus_familiaris PEGKLGSKFKMPKLNIAKPKISMPDVLNLKGPKMKGEMDSSVPELEGLDRLGPOVDIKG 1811
Bos_taurus        PEGKLGK----- 1694
Heterocephalus_glaber ----- 1103
Chelonia_mydas    PEGRLKG----- 1943
Rhinatrema_bivittatum PEGKLKT----- 1680
Latimeria_chalumnae PEGKIKG----- 1322
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     PEGKVKGPKFKMPEMHLKGPKFSMPDVLHLKGHKVKGEMDVTVPKIEGDLKGADLELKG 2601
Xenopus_tropicalis PEGKVKGK----- 1883
.....2950.....2960.....2970.....2980.....2990.....3000

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Mus_musculus      --VDVDVGDIIDIECPEGKLGPKFKMPDMHFKTPKISMPDVLHLKGPKVKGDMVDVTMPK 1789
Rattus_norvegicus --VDVDVGDDVIECPEGKLGPKFKMPDMHFKA PKISMPDVLHLKGPKVKGDMVDVAVPE 1784
Homo_sapiens      PFVEAEVDPDVL ECPDAKLKGPKFKMPEMHFKAPKISMPDVLHLKGPKVKGDADVSVPK 1879
Pan_troglodytes   PFVEAEVDPDVL ECPDAKLKGPKFKMPEMHFKAPKISMPDVLHLKGPKVKGDADVSVPK 1880
Macaca_mulatta    PSVGAEVDPDVL ECPDAKLKGPKFKMPEMHFKAPKISMPDVLHLKGRVKGDVDVSVPK 1881
Callithrix_jacchus PSVDVEVPDVL ECPDAKLKGPKFKMPEMHFKAPKISMPDVLHLKGRVKGDVDVSVPK 2002
Equus_caballus    PSVDVEVPDVL ECPDAKLKGPKFKMPEMHFKAPKISMP--DVHLKGPKVKGDMVDVSVPK 1877
Canis_lupus_familiaris PNL DVEVPDVL ECPDAKLKGPKFKMPEMHFKAPKMSMPDVLHLKGPKVKGDVDVSVPK 1871
Bos_taurus        -----PKFKMPEMHFKTPKISMPDIDLNLKGPTVKGDVDVSVPK 1733
Heterocephalus_glaber ----- 1103
Chelonia_mydas    -----PKFKMPEMHFKAPKISMPDIDLNLKGPKMKGDVDVSVIPK 1982
Rhinatrema_bivittatum -----PKISMP SIHV--PKVSMPPDIDLNLKGPKWKGDVDISGPK 1717
Latimeria_chalumnae ----- 1322
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     PKVDIDVPDVELECEGKVKGPKFKMPEMHFKAPKISMPDFDL SLKGPKVKGDVDVSVPK 2661
Xenopus_tropicalis -----KFKMPSLHMPDIDFNLKG-----PK 1903
.....3010.....3020.....3030.....3040.....3050.....3060

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	IEGEMKVPDVDIKGPKVDINAPDVDVR-----	1816
Rattus_norvegicus	IEGEMKVPDVDIKGPKVDINAPDVDVQ-----	1811
Homo_sapiens	LEGDLTGPSVGVEVPDVELECPDAKLK-----	1906
Pan_troglodytes	LEGDLTGPIVDVEVPDVELECPDAKLK-----	1907
Macaca_mulatta	VEGEMKVPDVDIKGPKVDIDAPDVDVH-----	1908
Callithrix_jacchus	VEGEMKVPDVDIKGPKVDIDVPDVDLH-----	2029
Equus_caballus	LEGDLKGPSVDVEVPDVELECPDAKLK-----	1904
Canis_lupus_familiaris	IEGEMKVPDVDIKGPKVDVDVPDVDVHGPDWHLKMPKMKMPKFSVPGFKTEGPEVDVNL	1931
Bos_taurus	VEGDLKGPDVDIKGPKVDVDIPDVDVQ-----	1760
Heterocephalus_glaber	-----	1103
Chelonia_mydas	LEGDLKGPEFHLGGPKVDIEAPDVDVHG-----	2010
Rhinatrema_bivittatum	LEGDLKAPKLDIQSPELDVNAPHIDIGG-----	1745
Latimeria_chalumnae	-----	1322
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	VEGDIKGPEVDIKGPKVDVEVPDVELEVPEGKL-----	2694
Xenopus_tropicalis	LEGDLKGPKVDIKAPEVNFEAPDVDGK-----	1930
	.....3070.....3080.....3090.....3100.....3110.....3120	

Mus_musculus	-----GPDWHLKMPKVKMPKFSMP--GFKAEGP----	1842
Rattus_norvegicus	-----GPDWHLKMPKVKMPKFSMP--GFKAEGP----	1837
Homo_sapiens	-----GPKFKMPDMHFKAPKISMPDVLHLKGPKVKKG	1938
Pan_troglodytes	-----GPKFKMSDMHFKAPKISMPDVLHLKGPKVKKG	1939
Macaca_mulatta	-----GPDWHLKMPKMKMPKFSMP--GFKAEGP----	1934
Callithrix_jacchus	-----GPDWHLKMPKMKMPKFSMP--GFKAEGP----	2055
Equus_caballus	-----GPKFKMPDMHFKAPKISMP--DIHLKGPKVKKG	1934
Canis_lupus_familiaris	KADIDVSGPRVDIEAPDVSLEGPEGKLGPKFKMPEMHFKAPKISMPDVLNHLKGPKLKG	1991
Bos_taurus	-----GPDWHLKMPKIKMPKFSMP--GFKGEGP----	1786
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----PEG--KLKMPKFKMPKFGVP--GFKGEDP----	2035
Rhinatrema_bivittatum	-----PEGTEKLKMPKFKMPGFGMS--APKFAGP----	1772
Latimeria_chalumnae	-----	1322
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	-----KGPKFKMPEMHFKTPKISMPDIDLNLKGPKVKKG	2727
Xenopus_tropicalis	-----VKGSKFKMPSLHMPDIDFNLKGP----	1953
	.....3130.....3140.....3150.....3160.....3170.....3180	

Mus_musculus	EVDVNLPAKADIDVSGPKVDIDVPDLIEGPEGKLGSKFKMPKLNIAAKISMPDVDLNF	1902
Rattus_norvegicus	EVDVSLPAKADLDVSGPKVDIEVPDVNIEGPEGKLGSKFKMPKLNIAAKISMPDVDLNL	1897
Homo_sapiens	DVDVSVPKLEGDLTGPSVGVEVPDVELECPDAKLKGPKFKMPEMHFKTPKISMPDVLHL	1998
Pan_troglodytes	DADVSLPKLEGDLTGPSVGVEVPDVELECPDAKLKGPKFKMPEMHFKTPKISIPDVDLHL	1999
Macaca_mulatta	EVDVNLPAKADVDSGPKVDVEVPDVSLEGPEGKLGPKFKMPEMHFKTPKISMPDVLHL	1994
Callithrix_jacchus	EVDVNLPAKADFDVSGPKVDVAVPDVSLEGPEGKLGPKFKMPEMHFKAPKISMPDVLNL	2115
Equus_caballus	DMDVSVPKLEGDLKGPSVDVEVPDVELECPDAKLKGPKFKMPDMHFKAPKISMPDVLHL	1994
Canis_lupus_familiaris	EVDVSVPKLEGDLKGPSVDVEVPDVELECPDAKLKGPKFKMPEMHFKAPKMSMPDVLHL	2051
Bos_taurus	EVDVNLPAKADIDVSGPKVDVEVPDVNIEGPDAKVGPKFKLPENNIKPKKISMPDVLHL	1846
Heterocephalus_glaber	-----	1103
Chelonia_mydas	DVDVKLPKGEVDISGPKVDINAPDLNIEGPEGKLGPKFKMPEMHFKAPKISMPDLDLKL	2095
Rhinatrema_bivittatum	DVDVKLRKGDIDISGPSVDFKGP-----EVPKFKLP-----AMPSLNVNAPDISIPHFDMNV	1824
Latimeria_chalumnae	-----	1322
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	DVDVSVPKIEGDLKGPKVDVDLPDVEIEGPEGKVGKPKFKMPEMHFKAPKISMPDVFNL	2787
Xenopus_tropicalis	-----KVEGDLKGPKVDIKAPEVNLEAPDVDVDGKVGKPKFKMPSMPKVSMPDVLNV	2006
	.....3190.....3200.....3210.....3220.....3230.....3240	

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Mus_musculus	KGPKLKGEIDASVPMEADLRGPQVDIK-----	1930
Rattus_norvegicus	KGPKLKGEIDASVPMEADLRGPQIDVK-----	1925
Homo_sapiens	KGPKVKGDMDVSVPKVEGEMKVPDVIDIKGPKMDIDAPDVDVHGPDWHLKMPKMKMPKFSM	2058
Pan_troglodytes	KGPKVKGDMDVSVPKVEGEMKVPDVIDIKGPKMDIDAPDVDVHGPDWHLKMPKMKMPKFSM	2059
Macaca_mulatta	KGPKIKGDVDVSVPKLEGDL-----	2014
Callithrix_jacchus	KGPKLKGDVDVSVPKLEGEL-----	2135
Equus_caballus	KGPKVKGDMDVSVPKIEGEMKVPDVIDIKGPKVDVDVDPDVGPDWNLKMPKMKMPKFSV	2054
Canis_lupus_familiaris	KGPKVKGDVDVSVPKIEGEMKVPDVIDIKGPKVDVDVDPDVGPDWHLKMPKMKMPKFSV	2111
Bos_taurus	KGPKMKGDYDVTVPKVEGEIKAPDVIDIKGPKVDINAPDAGVHGPDWHLKMPKVKMPKFSM	1906
Heterocephalus_glaber	-----	1103
Chelonia_mydas	KGPKVKGDVDMSPVKIEGDLKGPEFDIK-----	2123
Rhinatrema_bivittatum	KGPKWKGDVDVSGPNIEGDVKIPKVDIK-----	1852
Latimeria_chalumnae	-----	1322
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	KGPKVKGDVDVSVPKIEGDLKGPEVDIKGPKVDVDLPDVLQCPGKVKGPKFKMPKMFHF	2847
Xenopus_tropicalis	KGPKVEGELKGPKIDMK-----	2023
	.....3250.....3260.....3270.....3280.....3290.....3300	

Mus_musculus	-----GTNVDVKVPDLDLECPDA	1948
Rattus_norvegicus	-----GPSVDVEVPDLDLECPDA	1943
Homo_sapiens	PGFKAEGPEVDVNLPAKADV-----VSGPKVDVEVPDVSLEGPEG	2098
Pan_troglodytes	PGFKAEGPEVDVNLPAKADV-----VSGPKVDVEVPDVSLEGPEG	2099
Macaca_mulatta	-----TGPSVDLEMPDVELECPDA	2033
Callithrix_jacchus	-----TGPSVDVEVPDVELECPDA	2154
Equus_caballus	PGFKAEGPEVDVNLPAKADID-----ISGPKVDIEAPDVSLEGPEG	2094
Canis_lupus_familiaris	PGFKTEGPEVDVNLPAKADID-----VSGPRVDIEAPDVSLEGPEG	2151
Bos_taurus	PGFKGEGPEVDVNLPAKADID-----ISGPKVDIDAPDVNIEGPEG	1946
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----GPEVDIAAPDVLHGPEG	2141
Rhinatrema_bivittatum	-----CPELDVNDPDIIDIEG-KG	1869
Latimeria_chalumnae	-----	1322
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	KAPKISMPPDFDLSLKGPKVKGDVDVSVPKIEGDLKGPIDIDIKGPKVDVDLPDVLIEGPEG	2907
Xenopus_tropicalis	-----GPEVDVAIPDVELEGPEG	2041
	.....3310.....3320.....3330.....3340.....3350.....3360	

Mus_musculus	KLKGPKFKMPDMHFKAPKISMPPDVLHHLKGPKVKG--DMDVTVPKLEGELKGPSVDVEVP	2006
Rattus_norvegicus	KLKGPKFKMPDMHFKAPKISMPPDVLHHLKGPKVKG--DMDVTVPKLEGELKGPSVDVDVP	2001
Homo_sapiens	KLKGPKLKMPDMHFKAPKISMPPDVLHHLKGPKVKG--DVDVSLPKLEGDLTGPSVDVEVP	2156
Pan_troglodytes	KLKGPKFKMPDMHFKAPKISMPPDVLHHLKGPKVKG--DVDVSVPKLEGDLTGPSVDVEVP	2157
Macaca_mulatta	KLKGPKFKMPDMHFKTPKISMPPDVLHHLKGPKVKG--DVDVSVPKLEGDLTGPSVDVEVP	2091
Callithrix_jacchus	KLKGPKFKMPDMHFKAPKISMPPDVLHHLGPRVKGDVDVDVSAPKLEGELTGPSVDVEVP	2214
Equus_caballus	KLKGPKFKMPDMHFKAPKISMPPDVLHHLKGPKVKG--DMDVSVPKLEGDLKGPSVDVEVP	2152
Canis_lupus_familiaris	KLKGPKFKMPDMHFKAPKISMPPDVLNHLKGPKLKG--EVDVSVPKLEGDLKGPSVDVEVP	2209
Bos_taurus	KLKGPKFKMPSMHIQTHKISMPPDVLNHLKSPKLKT--DVDVSLPKVEGDLKGPGIDVKAP	2004
Heterocephalus_glaber	-----	1103
Chelonia_mydas	KLKMPKFKMPKFGMPGFKGEGPD-----VDVSLPKGEIDLSPKVDINAP	2186
Rhinatrema_bivittatum	GLKFPKMKMPKIGIKSPKLEGPD-----VDASLPKGNIEISGPKVDINAP	1914
Latimeria_chalumnae	-----	1322
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	KVKGPKFKMPDMHFKAPKISMPPDVLHHLKGPKVKG--DVDVSVPTLEGDLKGPEVDIKGP	2965
Xenopus_tropicalis	KLKMPKFKMPKFGFSGSKVDGKD-----IDIKLPEGEIDLSPKVDISAP	2086
	.....3370.....3380.....3390.....3400.....3410.....3420	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.Fab 1 13:55:52 2022

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Mus_musculus	-----DVDLECPDAKLKGPKFKMPDMHFKAPKISMPDVDLHLKGPKVKGDMDVTVPKL	2059
Rattus_norvegicus	-----DVDLECPEAKLKGPKFKMPDMHFKAPKISMPDVDLHLKGPKVKGDMDVTVPKL	2054
Homo_sapiens	-----DVELECPDAKLKGPKFKMPEMHFKTPKISMPDVNLNLKGPKVKGDMDVSVPKV	2209
Pan_troglodytes	-----DVELECPDAKLKGPKFKMPEMHFKTPKISMPDVNLNLKGPKVKGDMDVSVPKV	2210
Macaca_mulatta	-----DVELECPDAKLKGPKFKMPEMHFKTPKISMPDVNLNLKGPKVKGDVDVSVPKV	2144
Callithrix_jacchus	-----DVELECPDAKLKGPKFKMPEMHFKTPKISMPDVNLNLKGPKVKGDVDVSVPKV	2267
Equus_caballus	-----DVDLECPDAKLKGPKFKMPDMHFKAPKISMPDIHL--KGPKVKGDVDVSVPKI	2203
Canis_lupus_familiaris	-----DVDLECPDAKLKGPKFKMPEMHFKAPKMSMPDVDLHLKGPKVKGDVDVSVPKI	2262
Bos_taurus	KMDVDVGDIDIECEGKLKGPKFKMPEMHFKAPKISMPDVDLNLKGPKVKGDVDVSVPKI	2064
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----DLEIEGPEGHIKGPVKFKMPEMHIKTPKISMPDVDLHLKGPKVKGDVDVSVPKI	2239
Rhinatrema_bivittatum	-----DVNIEGPEGKLKTPKISMPISIHV--PKISMPDVDLNLKGPKVKGDVDISGPKF	1965
Latimeria_chalumnae	-----PKFKMPSLDVHAPKFSGPDFGLNLSGPKAKVDVDVSCP--	1360
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	KMDVDLDPVDIEGPEGKVKGPVKFKMPEMHIKTPKISMPDIDLNLKGPKVKGDVDVSVPKI	3025
Xenopus_tropicalis	-----ELDIECEGKVKGPVKFKMPSLH-----MPDIDFNLKGPKLEGLDK-----	2126
	.....3430.....3440.....3450.....3460.....3470.....3480	

Mus_musculus	EGELK-----	2064
Rattus_norvegicus	EGELK-----	2059
Homo_sapiens	EGEMKVPDVDIRGPKVDIDAPDVDVHGPDWHLKMPKMKMPKFSMPGFKG-----	2258
Pan_troglodytes	EGEMKVPDVDIKGPKVDIDAPDVDVHGPDWHLKMPKMKMPKFSMPGFKG-----	2259
Macaca_mulatta	EGEMKVPDVDIKGPKVDIDAPDVDVHGPDWHLKMPKMKMPKFSMPGFKA-----	2193
Callithrix_jacchus	EGEMKVPDVDIKGPKVDIDAPDVDVHGPDWHLKMPKMKMPKFSMPGFKA-----	2316
Equus_caballus	EGEMKVPDVDIKGPKVDVDVDPDVDVHGPDWHLKMPKMKMPKFSMPGFKA-----	2252
Canis_lupus_familiaris	EGEMKVPDVDIKGPNVDVDVDPDVDVHGPDWHLKMPKMKMPKFSVPGFKT-----	2311
Bos_taurus	EGEMKVPDVDIKGPKVDVDVDPDVDIKGPDWHLKMPKVKMPKFSMPGFKG-----	2113
Heterocephalus_glaber	-----	1103
Chelonia_mydas	EGDLKGPEFDIR-----	2251
Rhinatrema_bivittatum	EGHGKIPEVDIK-----	1977
Latimeria_chalumnae	-----	1360
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	EGDLKGPKVDIEAPDVDIELPEGKVKGPVKFKMPEMHFKAPKISMPDFDLSLKGPVKVKGDV	3085
Xenopus_tropicalis	-----	2126
	.....3490.....3500.....3510.....3520.....3530.....3540	

Mus_musculus	-----GPSVDVEVPDVDLECPDA--KLKGPKFKMPDMHFKAPKISM	2103
Rattus_norvegicus	-----GPSVDVDVPDVDLECPDA--KLKGPKFKMPDMHFKAPKISM	2098
Homo_sapiens	--EGPEVDVNLPKADVDSGPKVDVEVPDVSLEGPEG--KLKGPKFKMPEMHFKTPKISM	2314
Pan_troglodytes	--EGPEVDVNLPKADVDSGPKVDVEVPDVSLEGPEG--KLKGPKFKMPEMHFKTPKISM	2315
Macaca_mulatta	--EGPEVDVNLPKADIDVSGPKVDVEVPDVSLEGPEG--KLKGPKFKMPEMHFKTPKISM	2249
Callithrix_jacchus	--EGPEVDVNLPKADIDISGPKVDVEVPDMSLEGPEG--KLKGPKFKMPEMHFKAPKISM	2372
Equus_caballus	--EGPEVDVNLPKADIDITGPKVDIEAPDVNIEGPEG--KLKGPKFKMPEMHFKAPKISM	2308
Canis_lupus_familiaris	--EGPEVDVNLPKADIDVSGPKVDIEAPDVSLEGPEG--KLKGPKFKMPEMHFKAPKISM	2367
Bos_taurus	--EGPEVDVNLPKADIDISGPKVDVEAPDVSLEGPEG--KLKGSKFKMPKLNIAKAPKISM	2169
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----GPKVDLDAPDVDLHGPEG--KLKMPKFKMPKFGMPGFKGEG	2290
Rhinatrema_bivittatum	-----GPELDVNAPHIDIEGPEARKKFKMPKFKMPGFGISAPKLEG	2018
Latimeria_chalumnae	-----EVDIDKPEGDIKGPDC-----	1376
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	DVSVPKVEGDIKGPEVDIKGPKVDIDVPDVIDIEGPEG--KVKGPVKFKMPEMHFKAPKISM	3143
Xenopus_tropicalis	-----GPKVDIKAPEVNLEAPDVGKVKGPVKFKMP-----SVPKVSM	2163
	.....3550.....3560.....3570.....3580.....3590.....3600	



# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	PDVDLHLKGPKVKGDVDVTPKLEGEELKGPSVDVEVP-----DVDLECPDAKLKGPKF	2156
Rattus_norvegicus	PDVDFNLKGPKIKGDIDVSPKLEGEELKGPELDVKSPKLDANIPEVAVEGPEGKWKSPKF	2158
Homo_sapiens	PDVDFNLKGPKIKGDVDVSAPKLEGEELKGPELDVKGPKLDADMPEVAVEGPNKGWKTPKF	2374
Pan_troglodytes	PDVDFNLKGPKIKGDVDVSAPKLEGEELKGPELDVKGPKLDADMPEVAVEGPNKGWKTPKF	2375
Macaca_mulatta	PDVDFNLKGPKIKGDVDVSAPKLEGEELKGPELDVKGPKLDADMPEVAVEGPNKGWKTPKF	2309
Callithrix_jacchus	PDVDFNLKGPKIKGDVDVSAPKLEGEELKTPELDVKGPKLDVDMPEVAMEGPDGKWKTPKF	2432
Equus_caballus	PDVDFNLKGPKVKGDFDVSAPKMEGEFESPELDVKGPKLDADMPEVAVEGPDGKWKSPKF	2368
Canis_lupus_familiaris	PDVNLNLKGPKLKGEVDVSPKLEGLDK-----GPSVDVEVPDLDLECPDAKLKGPKF	2420
Bos_taurus	PDVDLNLKGPKLKGEIDVSPVELEGLDKGPQVDIKGPSVDVEVPDLDLECPDAKLKGPKF	2229
Heterocephalus_glaber	-----	1103
Chelonia_mydas	PDVDVSLP-----KGEIDLS-----GPKVDINAPELDIEGPEGHLKGPKF	2330
Rhinatrema_bivittatum	PDIDASLP-----KGDIEIS-----GPKVDINAPGVNIEGPEGKLKTPKI	2058
Latimeria_chalumnae	-----	1376
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	PDFDLSLKGPKVKGDVDVSPKIEGDLKGPDVDIKGPKVDVLPDVIDIEGPEGKLKGPKF	3203
Xenopus_tropicalis	PDLGLNVKGPKVEGELKGP-----NIDMKGEVDVAVPDVELEGPEGKLKMPKF	2212
	.....3610.....3620.....3630.....3640.....3650.....3660	

Mus_musculus	KMPDMHFKAPKISMPDVLHLKGPKVKGDMDVTPKIEGEMKVP-----	2200
Rattus_norvegicus	KMPDMHFKAPKISMPDIDLHLKSPKIKGDVDVDPKLEGLDKGP-----	2202
Homo_sapiens	KMPDMHFKAPKISMPDLDLHLKSPKAKGEVDVDVPKLEGLDKGP-----	2418
Pan_troglodytes	KMPDMHFKAPKISMPDLDLHLKSPKAKGEVDVDVPKLEGLDKGP-----	2419
Macaca_mulatta	KMPDMHFKAPKISMPDLDLHLKSPKAKGEVDVDVPKLEGLDKGP-----	2353
Callithrix_jacchus	KMPDMHFKAPKISMPDLDLHLKSPKIKGEVDVDVPKLEGLDKGP-----	2476
Equus_caballus	KMPDMHFKAPKISMPDIDLHLKSPKIKGEVDVDAPKLEGGGLKGPDL-----	2414
Canis_lupus_familiaris	KMPDMHFKAPKMSMPDVLHLKGPKVKGDVDVSPKIEGEMKVPDVIDKGPKVDVDPDV	2480
Bos_taurus	KMPDMHFKAPKISMPDVLHLKGPKVKGDVDVSPKLEGLDKGPSVDVEVPDLDLECPDA	2289
Heterocephalus_glaber	-----	1103
Chelonia_mydas	KMPDMHFKAPKISMPDVLHLKGPKVKGDVDVSPKIEGDLKGP-----	2374
Rhinatrema_bivittatum	SMPSIHV--PKVSMPDIDLNLKGPKWKGDVDISGPKLEGLDKAP-----	2100
Latimeria_chalumnae	-----	1376
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	KMPDMHFKAPKISMPDIDLNLKGPKVKGDVDVSPKIEGDLKGPKVD-----	3250
Xenopus_tropicalis	KMPDMHFKAPKISMPDIDLNLKGPKVKGDVDVSPKIEGDLKGPKVD-----	2254
	.....3670.....3680.....3690.....3700.....3710.....3720	

Mus_musculus	-----	2200
Rattus_norvegicus	-----	2202
Homo_sapiens	-----HVDVSGPDI	2427
Pan_troglodytes	-----HVDVSGPDI	2428
Macaca_mulatta	-----HVDVSGPDI	2362
Callithrix_jacchus	-----HVDVSGPDI	2485
Equus_caballus	-----KGDISGPDI	2423
Canis_lupus_familiaris	DVHGPDWHLKMPKMKPKFSPVPGFKTEGPEVDVN-----LPKADIDVSGPKVDIEAPDV	2534
Bos_taurus	KLKGPKFKMPDMHFKAPKISMPDVLHLKGPKVKGDVDVSPKLEGLDKGPSVDVEVPDV	2349
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----	2374
Rhinatrema_bivittatum	-----	2100
Latimeria_chalumnae	-----	1376
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	-----IKGPKVDVLDLPDV	3263
Xenopus_tropicalis	-----	2254
	.....3730.....3740.....3750.....3760.....3770.....3780	

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Mus_musculus                -----DV 2202
Rattus_norvegicus           -----NV 2204
Homo_sapiens                DIEGPEGKLGPKFKMPDMHFKAPNISMPDVLNLKGPKIKGDVDVSVPEVEGKLEVPDM 2487
Pan_troglodytes             DIEGPEGKLGPKFKMPDMHFKAPNISMPDVLNLKGPKIKGDVDVSVPEVEGKLEVPDM 2488
Macaca_mulatta              DIEGPEGKLGPKFKMPDMHFKAPNISMPDVLNLKGPKIKGDVDVSVPEVEGKLEVPDV 2422
Callithrix_jacchus          DIEGPEGKLGPKFKMPDMHFKAPNISMPDVLNLKGPKIKGDVDVSVPEVEGKLEVPDV 2545
Equus_caballus              DIEGPEGKLGPKFKMPDMHFKVPSISMPDVLNLKGPKVKGDVDVSVPEAEKGKIKVPDV 2483
Canis_lupus_familiaris      SLEGPEGKLGPKFKMPEMHFHAPKISMPDVFNLKGSVKVGDFDVSAPKLEGEELKGPEV 2594
Bos_taurus                  DLECPDAKLGPKFKMPEMHFKAPKISMPDVLNLKGPKVKGDVDVSVPKIEGEMKVPDV 2409
Heterocephalus_glaber      ----- 1103
Chelonia_mydas              -----EF 2376
Rhinatrema_bivittatum      -----KL 2102
Latimeria_chalumnae        ----- 1376
Pavo_muticus                -----
Pavo_cristatus              -----
Gallus_gallus              DIEGPEGKLGPKFKMPEMHIKTPKISMPDIDLNLKGPKLGKGDVDVSVPHLEGLDKGPDV 3323
Xenopus_tropicalis         -----DV 2256
.....3790.....3800.....3810.....3820.....3830.....3840

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Mus_musculus                DIKGPKVDINAPDVDVVRGPDW--HLKMPKMKMPKFSMPGFKAEGP-----EV 2247
Rattus_norvegicus           DMSGP----- 2209
Homo_sapiens                NIRGPKVDVNAPDVQ--APDW--HLKMPKMKMPKFSMPGFKAEGP-----EV 2530
Pan_troglodytes             NIRGPKVDVNAPDVQ--GPDW--HLKMPKMKMPKFSMPGFKAEGP-----EV 2531
Macaca_mulatta              NIKGPKVDVNAPDVQ--GPDW--HLKMPKMKMPKFSMPGFKAEGP-----EV 2465
Callithrix_jacchus          NIKGAKLDVNAPDVQ--GPDW--HLKMPKMKMPKFSMPGFKAEGP-----EV 2588
Equus_caballus              NIKGPKVDISAPEVH--GPDW--HLKMPKMKMPKFSMPGFKGEGP-----EV 2526
Canis_lupus_familiaris      DVKGPKLDVEMPDVAVEGPDG--KWKGPVKFKMPDMHFKAPKISMPDIDLHLKSPKIKGEV 2652
Bos_taurus                  DIKGPKVDVDVDPDVKGPDW--HLKMPKMKMPKFSMPGFKGEGP-----EV 2454
Heterocephalus_glaber      ----- 1103
Chelonia_mydas              DIKGPKIDLDAPDVLHGPEG--KLKMPKFKMPKFGMPGFKGEGP-----DV 2421
Rhinatrema_bivittatum      DIQSPELDVNAPHIDIGGPEGTEKLKMPKFKMPGFGMSAPKFAGP-----DV 2149
Latimeria_chalumnae        ----- 1376
Pavo_muticus                -----
Pavo_cristatus              -----
Gallus_gallus              DIKGPKVDVLDLPDVELEGPEG--KLKGPKFKMPEMHLKGPKFSMPDVFNLKGPKVKGDV 3381
Xenopus_tropicalis         EIKSPEIDIDVPLDIDGGPEAKVKNKKS RFHMPKFGFSSSKAEAP-----DV 2303
.....3850.....3860.....3870.....3880.....3890.....3900

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Mus_musculus                DVNLPKADIDVSGP-----KVDIDVDPVNIIEGPEGKLGPKFKMPDMHFKAPKISMPD 2300
Rattus_norvegicus           -----DVEIEGPEGKLRGPKFKMPDMNIKAPKISMPD 2241
Homo_sapiens                DVNLPKADVDISGP-----KVDIEGPDVNIIEGPEGKLGPKLKMPENNIKAPKISMPD 2583
Pan_troglodytes             DVNLPKADVDISGP-----KVDIEGPDVNIIEGPEEKLGPKLKMPENNIKAPKISMPD 2584
Macaca_mulatta              GVNLPKADIDVSGP-----KVDIEGPDVNIIEGPDGKLGPKFKMPEMNIKAPKISMPD 2518
Callithrix_jacchus          DVNLPKADIDVSGP-----KVDIESPDVNIIEGPEGKLGPKFKMPEMNIKAPKISMPD 2641
Equus_caballus              DMNLPKADIDVSAP-----KVDIEGPDVNIIEGPEGKVKGPFKMPEMNIKAPKISMPD 2579
Canis_lupus_familiaris      DADIPKLES DLKGPD-----KGDISGPDINIKGPEGKLGPKFKMPDMHFKVPNISMPD 2707
Bos_taurus                  DVNLPKADIDISGP-----KVDIEAPDVSLEGPEGKLGPKFKMPEMHFKGPKISMPD 2507
Heterocephalus_glaber      ----- 1103
Chelonia_mydas              DVSLPKGEIDLSGP-----KVDIDAPDLEIEGPDGKWKGPFKMPEMHFKAPKISMPD 2474
Rhinatrema_bivittatum      DVKLPKGDIDISGP-----SVDFKGPEIP-----KFKLP--AMPSLNVHAPDISIPH 2194
Latimeria_chalumnae        --K----- 1377
Pavo_muticus                -----
Pavo_cristatus              -----
Gallus_gallus              DVSVPKVEGELKGPEVDIKGPKVDVDIPDVELEGPEGKLGPKFKMPEMHLKGPKFSMPD 3441
Xenopus_tropicalis         DVKLPKTNLNVSGP-----KVNIDTPTLDIEGPEAKVKGTKFKMPS----IPKMSIPD 2352
.....3910.....3920.....3930.....3940.....3950.....3960

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	VDFNLKGPVKIKGDDVSVPKIEGELKGPELDLKGPKLDANIPEVAVEGPEGK--WKS	2358
Rattus_norvegicus	IDLHLKGPVKVGDDVSLPKVEGDLKGPEVDIKGPKVDIDVPDVGPDWH--LKMPKV	2299
Homo_sapiens	FDLHLKGPVKVGDDVSLPKVEGDLKGPEVDIKGPKVDINAPDVGVOGPDWH--LKMPKV	2641
Pan_troglodytes	FDLHLKGPVKVGDDVSLPKVEGDLKGPEVDIKGPKVDINAPDVGVOGPDWH--LKMPKM	2642
Macaca_mulatta	FDLHLKGPVKVGDDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVGVOGPDWH--LKMPKV	2576
Callithrix_jacchus	FDLHLKGPVKVGDDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVGVOGPDWH--LKMPKV	2699
Equus_caballus	VDLHLKGPVKVGDDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVGVOGPDWH--LKMPKM	2630
Canis_lupus_familiaris	VDLNLKGPEMKGDDVSVPEVEGKIKAPDVNIKGPVKVDINAPDV--HGSDWH--LKMPKM	2763
Bos_taurus	VDLNLKGPVKVGDDVSVPKIEGEMKVPDVIKGPVKVDIDVPDVGVOGPDWH--LKMPKM	2565
Heterocephalus_glaber	-----	1103
Chelonia_mydas	VDLHLKGPVKVGDDVSVPKIEGDLKGPEFDIKGPKVDLDAPDVLHGPEGK--LKMPKF	2532
Rhinatrema_bivittatum	FDMNVKGPVKVGDDVSGPNIEGDVKIPKVDIKCELDVNDPDIDIEG-KGG--LKFPKM	2251
Latimeria_chalumnae	-----	1377
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	VDFNLKGPVKVGDDVSVPKIEGDLKGSEVDIKGPKVDVLDPDVDVPTPEGK--VKLPKF	3499
Xenopus_tropicalis	VDLNISKPKWKG--TDISGPKIEGELKGPEIDIKAPKVELDSEPTLDIESPEGKGLKMPKF	2411
.....3970.....3980.....3990.....4000.....4010.....4020		

Mus_musculus	KMPDMHFKTPKISMPDIDLHLKSPKIKGEVDVDPKLEGLKGNVDMSRPDIEIEGPEG	2418
Rattus_norvegicus	KMPKFSMPGFKAEKP-----EVDVSLPKADLDVSGPKVDIDVPDVNIEGPDA	2346
Homo_sapiens	KMPKFSMPGFKGEGP-----DGDVKLPKADIDVSGPKVDIEGPDVNIEGPEG	2688
Pan_troglodytes	KMPKFSMPGFKGEGP-----DVDVKLPKADIDVSGPKVDIEGPDVNIEGPEG	2689
Macaca_mulatta	KMPKFSMPGFKGEGP-----DVDVKLPKADIDVSGPKVDIEGPDVNIEGPEG	2623
Callithrix_jacchus	KMPKFSMPGFKGEGP-----DVDVKLPKADLDISGPKVDVDPDVNIEGPEG	2746
Equus_caballus	KMPKFSMPGFKGEGP-----EVDVNLPAKADIDVSAPKVDIEGPDVNIEGPEG	2677
Canis_lupus_familiaris	KMPKLSMPGFKAEKP-----EVDENLPKADIDVSAPKVDIEVPDVSIENPEG	2810
Bos_taurus	KMPKFSMPGFKGEGP-----EVDVNLPAKADINISGPKMDIKGPDVNIEGPEG	2612
Heterocephalus_glaber	-----	1103
Chelonia_mydas	KMPKFGMPGFKGEGP-----DVDVSLPKGEIDLKSGPKVDIDAPDLIDIEGPDG	2579
Rhinatrema_bivittatum	KMPKIGIKSPKLEGP-----DVDASLPKGDIEISGPKVDINAPDVNIEGPEG	2298
Latimeria_chalumnae	-----IIDVNLPGQIDVSGPKVDIEAAEFDVQGPGE	1409
Pavo_muticus	-----P-----EVEVGLPEADVAVCAPKVDVTLDPDVEGPEG	33
Pavo_cristatus	-----P-----EVEVGLPEADVAVCAPKVDVTLDPDVEGPEG	33
Gallus_gallus	KMPKFGVPGFKAEKP-----EVDVGLPEADVTVSAPKVDVSLPDVDIEGPEG	3546
Xenopus_tropicalis	KMPKFGFSGSKVEGK-----DVDITLPEGEMDVSAPKVDISAPDLIDIECPEG	2458
.....4030.....4040.....4050.....4060.....4070.....4080		

Mus_musculus	KLKGPVKFKMPEMNI-----KAPKISMPDFDLHLKGPKV-----	2451
Rattus_norvegicus	KLKGPVKFKMPEMNI-----KAPKISMP--DLHLKGPKI-----	2377
Homo_sapiens	KLKGPVKFKMPEMNI-----KAPKISMPDIDLNLKGPKV-----	2721
Pan_troglodytes	KLKGPVKFKMPEMNI-----KAPKISMPDIDLNLKGPKV-----	2722
Macaca_mulatta	KLKGPVKFKMPEMNI-----KAPKISMPDFDLNLKGPKV-----	2656
Callithrix_jacchus	KLKGPVKFKMPEMNI-----KAPKISMPDIDLNLKGPKV-----	2779
Equus_caballus	KLKGPVKFKMPEMNI-----KAPKISMPDFDLHLKGPKV-----	2710
Canis_lupus_familiaris	KIKGPVKFKMPEMNI-----KAPKISMPDIDLHLKGPKV-----	2843
Bos_taurus	KLKGPVKFKMPEMNI-----KAPKISMPDFDLHLKGPKV-----	2645
Heterocephalus_glaber	-----	1103
Chelonia_mydas	KWKGPVKFKMPEMHI-----KAPKISMPDIDLHLKGPKV-----	2612
Rhinatrema_bivittatum	KLKTPKISMPSIHV-----PKISMPPDIDLNLKGPKV-----	2329
Latimeria_chalumnae	KIKGPVKFKMPSLDI-----HAPKFSGPDFGLNLSGPNV-----	1442
Pavo_muticus	KLKGPVKLKKPEFG-----VPKISMPPDIDLNLKGPKV-----	64
Pavo_cristatus	KLKGPVKLKKPEFG-----VPKISMPPDIDLNLKGPKV-----	64
Gallus_gallus	KLKGPVKLKKPEFG-----VPKISMPPDIDLNLKGPKV-----	3577
Xenopus_tropicalis	KVKGPKVKMPSLHMPDLDFNLKGPKVEGDLKGPKVDINAPEVNLEAPDIGIDGNVKGSKF	2518
.....4090.....4100.....4110.....4120.....4130.....4140		

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Mus_musculus	-----KGDVDISLPKVEGDIKGPEVDIKGPKVDINAPDVDVQGPDW--HLKMPKMKM	2501
Rattus_norvegicus	-----KGDVDVSLPKVEGEIKVPEVDIKGPKVDVDPDVPDVGQPDW--HLKMPKMKM	2427
Homo_sapiens	-----KGDVDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVDVHGPDW--HLKMPKIKM	2771
Pan_troglodytes	-----KGDVDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVDVHGPDW--HLKMPKIKM	2772
Macaca_mulatta	-----KGDVDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVDVHGPDW--HLKMPKIKM	2706
Callithrix_jacchus	-----KGDVDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVDVQGPDW--HLKMPKIKM	2829
Equus_caballus	-----KGDVDVSLPKVEGDLKAPEVDLKGPKVDIDAPDVDVHGPDW--HLKMPKIKM	2760
Canis_lupus_familiaris	-----KGDVNVSLPKVEGDLKGPEVDLKGPKVDIDVPDVDVHGPDW--HLKMPKVKM	2893
Bos_taurus	-----KGDVDVSLPKVEGDLEAPEVDIKGPKVDVAVPDVDVHGPDW--HLKMPKMKM	2695
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----KGDVDVSVPKIEGDLKGPEFDIRGPKVDLDAPDVDLHGPEG--KLKMPKFKM	2662
Rhinatrema_bivittatum	-----KGDVDISGPKFEGHGKIPEVDIKGPELDVNAPHIDIEGPEARKKFKMPKFKM	2381
Latimeria_chalumnae	-----KGDVDVS-----GPQVDLEKPEVNIKGPDG--KMHFPKMKL	1476
Pavo_muticus	-----KGDFDLPAPKMEAEALGPKVDLKGPEFEAEAPKIDLEAKGK-----KSRFKL	111
Pavo_cristatus	-----KGDFDLPAPKMEAEALGPKVDLKGPEFEAEAPKIDLEAKGK-----KSRFKL	111
Gallus_gallus	-----KGDVDLSAPKVEAEALGPKVDLKGPEFEAEVPKIDLEAKGK-----KSRFKL	3624
Xenopus_tropicalis	KMPSLHMPDIDFNLKGPKVEGDLKGPKVDINAPEVNLEAPVDIDGKVKGSKFKMPSLHM	2578
	.....4150.....4160.....4170.....4180.....4190.....4200	

Mus_musculus	PKFSMPGFKAEGPEVDVNLPKADIDVSGPKVDIDVPDNIIEGPDALKGPKFKMPEMNIK	2561
Rattus_norvegicus	PKFSMPGFKAEGPEVDVSLPKADLDVSGQKVDIDVPDNIIEGPDALKGPKFKMPEMNIK	2487
Homo_sapiens	PKISMPGFKGEGPDVDVNLPKADIDVSGPKVDVECPDNIIEGPEGKWKSPKFKMPEMHFK	2831
Pan_troglodytes	PKISMPGFKGEGPDVDVNLPKADIDVTGPKVDVECPDNIIEGPEGKWKSPKFKMPEMHFK	2832
Macaca_mulatta	PKISMPGFKGEGPDVDVNLPKADLDVSGPKVDVECPDNIIEGPEGKWKSPKFKMPEMHFK	2766
Callithrix_jacchus	PKISMPGFKGEGPEVDMNLPKADLNVSGPKVDVECPDNIIEGPEGKWKSPKFKMPEMHFK	2889
Equus_caballus	PKISMPGFKGEGPEVDVNLPKADIDVTGPKVDIEGPDNIIEGPEGKWKSPKFKMPEMHFK	2820
Canis_lupus_familiaris	PKISMPGFKGEGPEVDVNLPKADIDVSGPKVDVECPDNIIEGPEGKWKSPKFKMPEMHFK	2953
Bos_taurus	PKFSMPGFKAEGPDMDVNLPKADIDVSGPKVDIEGPDVHLEGPEGKWKSPKFKMPEMHFK	2755
Heterocephalus_glaber	-----	1103
Chelonia_mydas	PKFGMPGFKGEGPDVDIKLPKGEVDISGPKVDIDAPDLNIEGPEGKLGPKFKMPDMHFN	2722
Rhinatrema_bivittatum	PGFGISVPKLEGPDIIDASLPKGDIEISGPKVDINAPGVNIEGPEGKLGTPKISMPSIH--	2439
Latimeria_chalumnae	PKFGFGGGHDGDADIDVNFPGQIDVSGPKVDIOTPDIELOGLEGKIKGPKFKMPDFNIN	1536
Pavo_muticus	PKFGFSGPKVQSPDVDVKLKKPEAEMSGPKVDVQGPVEVDVQ---AKAKGSKFKMPFLSIS	168
Pavo_cristatus	PKFGFSGPKVQSPDVDVKLKKPEAEMSGPKVDVQGPVEVDVQ---AKAKGSKFKMPFLSIS	168
Gallus_gallus	PKFGFSGPKVQSPDVDVKLKKPDVEMSGPKVDVQGPVEVDVQ---AKAKGSKFKMPFLSIS	3681
Xenopus_tropicalis	PDIDFN---LKGPKVEGDLKGPKVDINAPEVNLEAPVDIDG---KVKGSKFKMPSLH--	2630
	.....4210.....4220.....4230.....4240.....4250.....4260	

Mus_musculus	APKISMPPDIDLNLKGPKVKGDV-----	2583
Rattus_norvegicus	APKISMPPDFDLNLKGPKVKGDV-----	2509
Homo_sapiens	TPKISMPPDIDLNLTGPKIKGDV-----	2853
Pan_troglodytes	TPKISMPPDIDLNLTGPKIKGDV-----	2854
Macaca_mulatta	TPKISMPPDIDLNLTGPKIKGDV-----	2788
Callithrix_jacchus	TPKISMPPDIDLNLTGPKIKGDV-----	2911
Equus_caballus	TPKISMPPDIDLNLTGPKMKGEV-----	2842
Canis_lupus_familiaris	TPKISMPPDIDLNLTGPKIKGDV-----	2975
Bos_taurus	TPKISMPPDIDLNLTGPKIKGDV-----	2777
Heterocephalus_glaber	-----	1103
Chelonia_mydas	VPKISMPPDIDLNMKGPKLKGDV-----	2744
Rhinatrema_bivittatum	VPKVSMPDIDLNLKGPKWKGDV-----	2461
Latimeria_chalumnae	APKFSGPEIGLNLSGPELOGDV-----	1558
Pavo_muticus	TPRVSMPPDVELNLKGHKVKGEL-----	190
Pavo_cristatus	TPRVSMPPDVELNLKGHKVKGEL-----	190
Gallus_gallus	SPKVSMPDVELNLKGHKVKGEF-----	3703
Xenopus_tropicalis	----MPDIDFNLKGPKVEGDLKGPKVDINAPEVNLEALDVIDGKVKGPKFKMPSVPKV	2685
	.....4270.....4280.....4290.....4300.....4310.....4320	



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Mus_musculus      -----DVSLPKVEGEIKVPEVDIKGPKVDIDVPDVDVHGPDW--HLKMPKIKMPKFSM 2634
Rattus_norvegicus -----DVSLPKVEGEIKVPEVDIKGPKVDIDVPDVDVHGPDW--HLKMPKMKMPKFSM 2560
Homo_sapiens       -----DVTGPKVEGDLKGPEVDLKGPKVDIDVPDNNVQGPDW--HLKMPKMKMPKFSM 2904
Pan_troglodytes    -----DVTGPKVEGDLKGPEVDLKGPKVDIDVPDNNVQGPDW--HLKMPKMKMPKFSM 2905
Macaca_mulatta     -----DVTGPKVEGDLKGPEVDLKGPKVDIDVPDNNVQGPDW--HLKMPKMKMPKFSM 2839
Callithrix_jacchus -----DVTGPKVEGDLKGPEVDLKGPKVDIDVPDNNVQGPDW--HLKMPKMKMPKFSM 2962
Equus_caballus     -----DVTGPKVEGDLKGPEVDLKGPKVDIDVPDVDVHGPDW--HLKMPKMKMPKFSM 2893
Canis_lupus_familiaris -----DVTGPKLDGDLKGPEVDLKGPKVDINVPDVDVHGPDW--HLKMPKVKMPKFSM 3026
Bos_taurus         -----DVTCPKVEGDFKGPEIDLKGPKVDIDVPDVDVQGPDW--HLKMPKMKMPKFSM 2828
Heterocephalus_glaber -----DVTCPKVEGDFKGPEIDLKGPKVDIDVPDVDVQGPDW--HLKMPKMKMPKFSM 1103
Chelonia_mydas     -----DVSVPKLEGLDLKGPEFDIKGPKVDIDAPDVEIEGPDG--KWKGPKFKMPDMHF 2795
Rhinatrema_bivittatum -----DISGPKLEGLDLKAPKLDIQSPELDVNAPHIDIEGPEARKKFKMPKFKMPGFGI 2514
Latimeria_chalumnae -----DVS-----GPKVDLDAPDIDVHSPDG--KMKLPKLKLSFGI 1593
Pavo_muticus       -----DLSGPRVEGDLKGPEVDIRGPKAGVEAPDVEIEGPEG----- 227
Pavo_cristatus     -----DLSGPRVEGDLKGPEVDIRGPKAGVEAPDVEIEGPEG----- 227
Gallus_gallus      -----DLSGPKLEGLDLKGPEVDIAAPKVSVEAPDVDVSGPEGK--LKMPKFKMPKFGV 3754
Xenopus_tropicalis SMPDLGFNIKGPKMEGELKGNIDMKGPEAEVAIPDVELEGPEG--RLKMPKFKMPKFGF 2743
.....4330.....4340.....4350.....4360.....4370.....4380

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Mus_musculus      PGFKGEGPEVDVSLP-----NADLDVSGPKVDIDVPDNNIEGPDA 2674
Rattus_norvegicus PGFKAEGPEVDVSLP-----KADLDVSGPKVDIDVPDNNIEGPDA 2600
Homo_sapiens       PGFKAEGPEVDVNLPL-----KADVDVSGPKVDVEGPDVNNIEGPEG 2944
Pan_troglodytes    AGFKAEGPEVDVNLPL-----KADIDVSGPKVDVEGPDVNNIEGPEG 2945
Macaca_mulatta     PGFKAEGPDLDVNLPL-----KADIDVSGPKVDIEGPDVNNIEGPDG 2879
Callithrix_jacchus PGFKGEGPDVDVNLPL-----KADLDVSGPKVDIEVPDVSIEGPEG 3002
Equus_caballus     PGFKGEGPEVDVNLPL-----KADIDVTGPKVDIEGPDVNNIEGPEG 2933
Canis_lupus_familiaris PGFKGEGPEVDVNLPL-----KADIDVSGPKVDIEGPDVNNIEGPEG 3066
Bos_taurus         PGFKGEGPEVDVNLPL-----KADIDVSGPKVDIEGPDVNNIEGPEG 2868
Heterocephalus_glaber -----DVTCPKVEGDFKGPEIDLKGPKVDIDVPDVDVQGPDW--HLKMPKMKMPKFSM 1103
Chelonia_mydas     KAPKISMPDINLNLRGPKVKGDVDVSVPKLEGLDLKGPEVDIRGPKLDIDAPDVEIEGPDG 2855
Rhinatrema_bivittatum SAPKLEGPDIDASLP-----KG-DIEISGPKVDINAPRVNIEGPEG 2554
Latimeria_chalumnae SRGKGAGSNVDVNLPL-----KADIDVSGPKVDIEGPDVNNIEGPEG 1608
Pavo_muticus       -----DLSGPRVEGDLKGPEVDIRGPKAGVEAPDVEIEGPEG----- 227
Pavo_cristatus     -----DLSGPRVEGDLKGPEVDIRGPKAGVEAPDVEIEGPEG----- 227
Gallus_gallus      ---KGEPEVDVGLP-----KGELDIECPQVDIEGPEG 3784
Xenopus_tropicalis SGLKADGKDVDISLP-----EGEIDISGPKVDISAPKLDIECPG 2783
.....4390.....4400.....4410.....4420.....4430.....4440

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Mus_musculus      KLKGPKFKMPENNIKAPKISMPDLHL--KGPKVKGDVDVSLPKVEGDLKGPDVDIKGPKM 2732
Rattus_norvegicus KLKGPKFKMPENNIKTPKISMPDLNLNLKGPNVKGVDVDVSLPNVEGDLQGPSLDIKSPKL 2660
Homo_sapiens       KLKGPKFKMPENNIKAPKIPMPDFDLHLKGPKVKGDVDISLPKVEGDLKGPEVDIRGPQV 3004
Pan_troglodytes    KLKGPKFKMPENNIKAPKIPMPDFDLHLKGPKVKGDVDVSLPKVEGDLKGPEVDIRGPKV 3005
Macaca_mulatta     KLKGPKFKMPENNIKAPKISMPDFDLHLKGPKVKGDVDVSLPKVEGDLKGPEVDIKGPKV 2939
Callithrix_jacchus KLKGPKFKMPENNIKAPKISMPDIDLNLKGPKVKGDVDVSLPKVEGDLKGPEVDIKGPKV 3062
Equus_caballus     KLKGPKFKMPENNIKAPKISMPDFDLHLKGPKVKGDVDVSLPKVEGDLKGPEVDIKGPKV 2993
Canis_lupus_familiaris KLKGPKFKMPENNIKAPKISMPDFDLHLKGPKVKGDVDVSLPNVEGDLKGPEVDIKGPKV 3126
Bos_taurus         KLKGPKFKMPENNIKAPKISMPDFDLHLKGPKVKGDVDVSLPKVEGDLEAPEVDIKGPKV 2928
Heterocephalus_glaber -----DVTCPKVEGDFKGPEIDLKGPKVDIDVPDVDVQGPDW--HLKMPKMKMPKFSM 1103
Chelonia_mydas     KWKGPKFKMPEMHKAPKISMPDIDLHLKGPKVKGDVDVSVPKIEGDLKGPEFDIKGPKV 2915
Rhinatrema_bivittatum KLKTPKISMPISIHV--PKVSMPDIDLNLKGPKVKGDVDISGPKLEGLDLKAPKLDIQSPEL 2612
Latimeria_chalumnae -----DVTCPKVEGDFKGPEIDLKGPKVDIDVPDVDVQGPDW--HLKMPKMKMPKFSM 1608
Pavo_muticus       KGKGLHFKMPEMHKIGPKVSMPPDVFNLKGPKVKGDVDVSVPKIEGDLKGPEVDIKGPKV 287
Pavo_cristatus     KGKGLHFKMPEMHKIGPKVSMPPDVFNLKGPKVKGDVDVSVPKIEGDLKGPEVDIKGPKV 287
Gallus_gallus      KGKGLHFKMPEMHLKGPKVSMPPDIDLNLKGPKVKGDVDVSVPKIEGDLKGPEVDIKGPKV 3844
Xenopus_tropicalis KVKGPKFKMPSLH-----MPDIDLNLKGPK-----VEGDLKGPKVDINAPPEI 2825
.....4450.....4460.....4470.....4480.....4490.....4500

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Mus_musculus	DINAPDMDVQGPDW--HLKMPKMKMPKFSMPGFKAEGPEDVNLPKA-----	2777
Rattus_norvegicus	DVNAPDIDIHGP-----	2672
Homo_sapiens	DIDVPDVGVGPDW--HLKMPKVKMPKFSMPGFKGEGPDVDVNLPKA-----	3049
Pan_troglodytes	DIDVPDVGVGPDW--HLKMPKVKMPKFSMPGFKGEGPDVDVNLPKA-----	3050
Macaca_mulatta	DIDVPDVGVGPDW--HLKMPKVKMPKFSMPGFKGEGPDVDVNLPKA-----	2984
Callithrix_jacchus	DIGAPDVGVGPDW--HLKMPKVKMPKFSMPGFKGEGPDVDVNLPKA-----	3107
Equus_caballus	DIDVPDVGVGPDW--HLKMPKVKMPKFSMPGFKGEGPEVDVNLPKA-----	3038
Canis_lupus_familiaris	DVDIPDVGVGPDW--HLRMPKVKMPKFSMPGFKGEGPEVDVNLPKA-----	3171
Bos_taurus	DVAVPDVGVGPDW--HLKMPKMKMPKFSMPGFKGEGPEVDVNLPKA-----	2973
Heterocephalus_glaber	-----	1103
Chelonia_mydas	DLDPDVLHGPEG--KLKMPKFKMPKFGMPGFKGEGPDVDSLPGK-----	2960
Rhinatrema_bivittatum	DVNAPHIDIGGLETEKLKMPKFKMPGFGMSAPKFAAGPDVDVKLPKG-----	2659
Latimeria_chalumnae	-----	1608
Pavo_muticus	DVDLPDVELEGPEG--KLKGPVKFKMPKEMHIKAPKISMPDVFNLKGP-----	332
Pavo_cristatus	DVDLPDVELEGPEG--KLKGPVKFKMPKEMHIKAPKISMPDVFNLKGP-----	332
Gallus_gallus	DVDIPDVLLEGPEG--KIKGPVKFKMPKEMHIKAPKISMPDVFNLKGPKLKGDVDVSMPLK-----	3902
Xenopus_tropicalis	NLEAPDVIDGKVKSGKFKMPSLHMPDLDFN---LKGPVKMEGDLKGP-----	2869
	.....4510.....4520.....4530.....4540.....4550.....4560	

Mus_musculus	-----DLDVDGPKVDIDVPDVIIEGPDALKGPVKFKMPKEMHIKAPKISMPDIDLNLKG-----	2830
Rattus_norvegicus	-----EGKLGPKLKMPPDMHVNMPKISMPDIDLNLKG-----	2704
Homo_sapiens	-----DLDVDGPKVDIDVPDVIIEGPEGLKGPVKFKMPKEMHIKAPKISMPDIDLNLKG-----	3102
Pan_troglodytes	-----DLDVDGPKVDIDVPDVIIEGPEGLKGPVKFKMPKEMHIKAPKISMPDIDLNLKG-----	3103
Macaca_mulatta	-----DIDVSGPKVDIDVPDVIIEGPEGLKGPVKFKMPKEMHIKAPKISMPDIDLNLKG-----	3037
Callithrix_jacchus	-----DLDVDGPKVDIDVPDVIIEGPEGLKGPVKFKMPKEMHIKAPKISMPDIDLNLKG-----	3160
Equus_caballus	-----DIDVSGPKVDIDVPDVIIEGPDALKGPVKFKMPKEMHIKAPKISMPDIDLNLKG-----	3091
Canis_lupus_familiaris	-----DIDVSGPKLDIEGPDVIIEGPDGKLGKHKFKIPEMHIKAPKISMPDIDLNLKG-----	3224
Bos_taurus	-----DIDISGPKVDIEGPDVSLGPEGLKGPVKFKMPKEMHIKAPKISMPDIDLNLKG-----	3026
Heterocephalus_glaber	-----	1103
Chelonia_mydas	-----EIDLSGPKVDIDAPDLEIEGPDGKWKGPVKFKMPKEMHFKAPKISMPDIDLNLKG-----	3013
Rhinatrema_bivittatum	-----DIDISGPSVDFKGPEV-----KFKLP--AMPSLVHAPDISIPHFDNVKKG-----	2704
Latimeria_chalumnae	-----	1608
Pavo_muticus	-----	332
Pavo_cristatus	-----	332
Gallus_gallus	EGDLKGPEVDIKGPKIDVDLPDVLLEGAEGLKGPVKFKMPKEMHIKGPVKFSMPDVFNLKKG-----	3962
Xenopus_tropicalis	-----KVDIKAPKVNLEAPDVFDFG---KVGKPKFKMPS---MPKVSMPLDLNLKKG-----	2915
	.....4570.....4580.....4590.....4600.....4610.....4620	

Mus_musculus	PKVKGDVDMSLPKVEGEIKVPEVDIKGPKVDIDVPDVGPDWHLKMPKVKMPKFSMPG-----	2890
Rattus_norvegicus	SKVKGDVDISGPKLEGDIKTPKVDVKGPELDISASKVNIDAKG---KKSRFKLPKFNFSG-----	2761
Homo_sapiens	PKVKGDMVSLPKVEGDMKVPDVIDIKGPKVDINAPDVGPDWHLKMPKIKMPKISMPG-----	3162
Pan_troglodytes	PKVKGDMVSLPKVEGDMKVPDVIDIKGPKVDINAPDVGPDWHLKMPKIKMPKISMPG-----	3163
Macaca_mulatta	PKVKGDVDVSLPKVEGDVKVPDVIDIKGPKVDIDAPDVGPDWHLKMPKIKMPKISMPG-----	3097
Callithrix_jacchus	PKVKGDVDVSLPKVEGDVEVPDVIDIKGPKVDINAPDVGPDWHLKMPKVKMPKFSMPG-----	3220
Equus_caballus	PKVKGDVDVSLPKVEGDLKGPEVDLKGPKVDIDVPDVGPDWHLKMPKVKMPKFSMPG-----	3151
Canis_lupus_familiaris	PKVKGDVDVSLPKVEDEIKVPEVDIKGPKVDIDIPDVGPDWHLKMPKIKMPKFSMPG-----	3284
Bos_taurus	PKVKGDVDVSLPKVEGEMKVPVIDIKAPKVDIDVPDVGPDWHLKMPKIKMPKISMPG-----	3086
Heterocephalus_glaber	-----	1103
Chelonia_mydas	PKVKGDVDVSVPKIEGELKGPECDIKGPKVDLDAPDVLHGPEGKLMKPKFKMPKFGMPG-----	3073
Rhinatrema_bivittatum	PKWKGDVDVSGPNIEGDVKIPKVDIKCELDVNDPIDIEG-KGGLKFKMPKMPKIGIKS-----	2763
Latimeria_chalumnae	-----SVELSG-----	1614
Pavo_muticus	-----	332
Pavo_cristatus	-----	332
Gallus_gallus	PKVKGDVDVSVPKIEGDLKGPEVDIKGPKVDIDVPDVGPDWHLKMPKFKLPKFKMPKFSMPG-----	4022
Xenopus_tropicalis	PK-----MEGELKGPKIDMKGPEVDVAIPDVELEGPEGMKMPKFKMPKFGFSG-----	2964
	.....4630.....4640.....4650.....4660.....4670.....4680	

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Mus_musculus	FKGEGPEVDVNLPAKADLDVSGPKVDIDVPDNIIEGPD	AKLKGPKFKMP	EVNIKAPKISMP	2950	
Rattus_norvegicus	SKVQTPEVDVKLKKPDVDVTAPKVDINAPEVEVQG---	KVKGPKFKMP	FLSISSPKVSMP	2818	
Homo_sapiens	FKGEGPEVDVNLPAKADLDVSGPKVDVDVPDNIIEGPD	AKLKGPKFKMP	EMNIKAPKISMP	3222	
Pan_troglodytes	FKGEGPEVDVNLPAKADLDVSGPKVDVDVPDNIIEGPD	AKLKGPKFKMP	EMNIKAPKISMP	3223	
Macaca_mulatta	FKGEGPEVDVNLPAKADLDISGPKVDIDVPDNIIEGPD	AKLKGPKFKMP	EMNIKAPKISMP	3157	
Callithrix_jacchus	FKGEGPDVDVNLPAKADIDVSGPKVDIDVPDNIIEGPD	AKLKGPKFKMP	EMNIKTTPKISMP	3280	
Equus_caballus	FKGEGPEVDVNLPAKADIDVSGPKVDIDVPDNIIEGPD	AKLKGPKFKMP	EMNIKAPKISMP	3211	
Canis_lupus_familiaris	FKGEGSEVDVNLPAKADIDVSGPKVDIDVPDNIIEGPD	AKLKGPKFKMP	EMNIKAPKISMP	3344	
Bos_taurus	FKGEVPEVDVNLPAKADIDVSGPKVDIDVPDNIIEGPD	AKLKGPKFKTPE	EMNIKAPKISMP	3146	
Heterocephalus_glaber	-----KVDIDVPDNIIEGPE	GKLKGPKFKMP	EMNIKAPNISMP	1141	
Chelonia_mydas	FKGEAPDVDVSLPKGEIDLSGPKVDIDAPDLEIEGPD	GKWKGP	FKMP	EMHIKAPKISMP	3133
Rhinatrema_bivittatum	PKLEGPDVDASLPKGDIEISGPKVDINAPGVNIEGPE	GKLKTPKISMP	PSIHV--PKVSMP	2821	
Latimeria_chalumnae	HKFEAPDVGVKSPKLDIEAS--DVNV	DIPDLNIEGSGGGIKIPKFKK	-----P	1660	
Pavo_muticus	-----	-----	-----	332	
Pavo_cristatus	-----	-----	-----	332	
Gallus_gallus	FRAEGPEVDVELPKGDVDVSV	PKVDIDVPD	VDIEGPEGKVGPKFKMP	EMHIKTTPKISMP	4082
Xenopus_tropicalis	SKVDGKEIDIKLPEGEIDVSGPKVDISAPDLNME	CPEGKVGPKFKMPS	-----LHMP	3017	
.....4690.....4700.....4710.....4720.....4730.....4740					

Mus_musculus	DLNLNLKGPNNVKG	-----VDVSLPNIEGDLKGPSLDIKSPKLDVNAPDIDVHG	-----	2999	
Rattus_norvegicus	DVELNLKGPVKGE	-----LDATVPNLEGDFKSPKVDIKAPDVQLNAPDVDVHG	QEWNLK	2873	
Homo_sapiens	DLDLNLKGPVKMGE	-----VDVSLANVEGDLKGPA	LDIKGPKIDVDAPDIDIHG	3271	
Pan_troglodytes	DLDLNLKGPVKMGE	-----VDVSLPNVEGDLKGPA	LDIKGPKIDVDAPDIDIHG	3272	
Macaca_mulatta	DLDLNLKGPVKMGE	-----VDVSLPNVEGDLKGPA	LDIKGPKIDVDAPDIDIHG	3206	
Callithrix_jacchus	DLDLNVKGPVKMGE	-----VDVSLPNVEGDLKGPTLDIKGPKIDVDAPHIDIHG	-----	3329	
Equus_caballus	DLDLNLKGPVKMGE	-----VDVSLPNVEGDLKGPTLDIKGPKIDVDAPDIDIHG	-----	3260	
Canis_lupus_familiaris	DLDLNLKSPKMKGE	-----LDVSLPNIEGDVKGPTLDIKGPKIDVEAPDIDIHG	-----	3393	
Bos_taurus	DLDLNLKGPVKGE	-----VDVSLPNVEGDLKGPSLDIKGPKMDVDAPDIDIHG	-----	3195	
Heterocephalus_glaber	DFDLNLKGPVKGD	-----VDVSLPNVEGDLKAPTLDIKGPKLDMVDVPDIDIHG	-----	1190	
Chelonia_mydas	DVDLHLKGPVKMGD	-----VDVSVPTIEGDLKGPEFDIKGPKVDLDAPDVDLHG	PEG--K	3186	
Rhinatrema_bivittatum	DIDLNLKGPVKWGD	-----VDISGPKLEGDLKAPKLDIQSPEFDVNAPHIDIGGPEGTEK	-----	2876	
Latimeria_chalumnae	KFGLGIKGAADAD	-----LSLTEGDLSDSPDSSLEIKGKGKFKMPKIHMTG	-----	1709	
Pavo_muticus	-----KVKGD	-----VDVSVPHLEGELKGP	DIDIKGPKVDIEVPDVKLEG	-----	372
Pavo_cristatus	-----KVKGD	-----VDVSVPHLEGELKGP	DIDIKGPKVDIEVPDVKLEG	-----	372
Gallus_gallus	DIDLNLKGPVKGD	-----VDVSVPKIEGDLKGP	DIDIKGPKLDVDLPDVEG	-----	4131
Xenopus_tropicalis	DIDLNLKGPVVEGDSKGP	KVDIKAPEVNLEAPDVIDGKVGSKFKMPSLHMPDLDFN	--	3075	
.....4750.....4760.....4770.....4780.....4790.....4800					

Mus_musculus	-----	-----	PEGKLGPKKL	3009
Rattus_norvegicus	MHKMKMPKFSV--SGVKAEGPDVAVDLPKGDINIEG	PSMNIIEGPELNVE	CPEGSLKGPKF	2931
Homo_sapiens	-----	-----	PDAGKLGPKKL	3281
Pan_troglodytes	-----	-----	PDAGKLGPKKL	3282
Macaca_mulatta	-----	-----	PDAGKLGPKKL	3216
Callithrix_jacchus	-----	-----	PDGKLGPKKL	3339
Equus_caballus	-----	-----	PEGKLGPKKL	3270
Canis_lupus_familiaris	-----	-----	PEGKLGSKL	3403
Bos_taurus	-----	-----	PEGKLGPKKL	3205
Heterocephalus_glaber	-----	-----	PEGKLGPKKL	1200
Chelonia_mydas	LKMPKFKMPKFGMSGLKGEAPDMDVSLPKGEIDLSGPKVDIDAPDLEIEGPD	GKWKGP	PKF	3246
Rhinatrema_bivittatum	LKMPKFKMPGFGMSAPKFAGPDVDVKLPKGDIDISGPSVD	FKGPEVP	-----KFKLF	2928
Latimeria_chalumnae	-----	-----	-----PKVKG	1714
Pavo_muticus	-----	-----	PEGKVGPKF	382
Pavo_cristatus	-----	-----	PEGKVGPKF	382
Gallus_gallus	-----	-----	PEGKVGPKF	4141
Xenopus_tropicalis	-----	-----	LKGPVVEGDL	3085
.....4810.....4820.....4830.....4840.....4850.....4860				

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Mus_musculus	KMPDMHVSMPKISMP	----	EIDLNLKGSKVKG	-----	DVDISGPKLEGDIKVPVVDL	3057
Rattus_norvegicus	KMPDMHVSMPKISMP	----	EIDLNLKGSKVKG	-----	DVDVSLPKVEGDLKGPEVDI	2979
Homo_sapiens	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPSLDI	3329
Pan_troglodytes	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPSLDI	3330
Macaca_mulatta	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPGLDI	3264
Callithrix_jacchus	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPSLDV	3387
Equus_caballus	KMPDMHVNVPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPKLDV	3318
Canis_lupus_familiaris	KMPDMHVNMPKISMP	----	EIDLNLKGTKLKG	-----	DVDVSGPKLEVDPKAPKLDV	3451
Bos_taurus	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPKLDI	3253
Heterocephalus_glaber	KMPDMHVNMPKISMP	----	EIDLNLKGSKLRG	-----	DVDISGSKLEGDFKAPKLDV	1248
Chelonia_mydas	KMPDMHVNMPKISMP	----	EIDLNLKGSKVKG	-----	DVDVSGPKLEGDIKAPKLDI	3294
Rhinatrema_bivittatum	AMPSLNHVHAPDISIP	----	HFDMMNVGPKWKVG	-----	DVDVSGPNIEGDKVKKPKVDI	2976
Latimeria_chalumnae	KKPEIDIGL-KTPDA	----	DINIASPDANLKG	-----	DLNVKAPKVKKPPFG-KLHF	1760
Pavo_muticus	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPKLDI	406
Pavo_cristatus	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPKLDI	406
Gallus_gallus	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPKLDI	4189
Xenopus_tropicalis	KMPDMHVNMPKISMP	----	EIDLNLKGSKLKG	-----	DVDVSGPKLEGDIKAPKLDI	3145
	.....4870.....4880.....4890.....4900.....4910.....4920					

Mus_musculus	KGPEVDISAPKVNIDG	---	KAKKSRFKLPKFNFSGSKV	---	QTPEVDVKLKKP	-----	3104
Rattus_norvegicus	KGPKMDIDVPDVDV	Q	GPDWHLKMPKVKMPKFSMPGFK	A	EGPEVDVSLSKA	-----	3029
Homo_sapiens	KGPEVDVSGPKLNIEG	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKGKKP	-----	3376
Pan_troglodytes	KGPEVDVSGPKLNIEG	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKGKKP	-----	3377
Macaca_mulatta	KGPEVDVSGPKLNIEG	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKGKKP	-----	3311
Callithrix_jacchus	KGPEVDVSGPKLNIEG	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKGKKP	-----	3434
Equus_caballus	KGPEVDISGPKVNIEG	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKVKKP	-----	3365
Canis_lupus_familiaris	KGPEVDISGPKVNIEG	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKVKKP	-----	3498
Bos_taurus	KGPEVDIPGPKLNIEG	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKVKKP	-----	3300
Heterocephalus_glaber	KAPEVDISEPKLNIEA	---	KSKKSRFKLPKFNFSGSKV	---	QTPEVDVKVKKP	-----	1295
Chelonia_mydas	KGPKVDLDAPDVLH	GP	EGKLMKPKFKMPKFGMPGFKG	---	EGPDVDIKLPKG	-----	3344
Rhinatrema_bivittatum	KCPDLDVNDPDIIDIEG	---	KGGLKFPKMKMPKIGIKSPKL	---	EGPDVDASLPKG	-----	3025
Latimeria_chalumnae	PDVEFDIKSPKFKGDVS	---	PKAEGELKTPELDLS	---	APDLKDGLKSP	-----	1803
Pavo_muticus	-----	-----	-----	-----	-----	-----	406
Pavo_cristatus	-----	-----	-----	-----	-----	-----	406
Gallus_gallus	KGPKVDIDVPDVIDIEG	PEGKMKGPKFKMPKEMHFKAPKI	---	SMPD	FDLSLKGPVKGDVDV	-----	4247
Xenopus_tropicalis	NAPEVNLEAPDVIDIG	---	KVKGSKFKMPSLHMPDLDFNLKGP	VEGDLKGP	-----	-----	3194
	.....4930.....4940.....4950.....4960.....4970.....4980						

Mus_musculus	-----DVDITAPKVDINAPEVEVQ---	KVKGSKFKMPFLSISSPKVSM	PDVE	3149
Rattus_norvegicus	-----DLDVSGPKVDIDVPDVNIEGPD	AKLGPKFKMP	EMNIKAPKISMPDID	3077
Homo_sapiens	-----DIDITGPKVDINAPDVEVQ---	KVKGSKFKMPFLSISSPKVSM	PDVE	3421
Pan_troglodytes	-----DIDITGPKVDINAPDVEVQ---	KVKGSKFKMPFLSISSPKVSM	PDVE	3422
Macaca_mulatta	-----DIDITGPKVDINAPDVEVQ---	KVKGSKFKMPFLSISSPKVSM	PDVE	3356
Callithrix_jacchus	-----DIDITGPKVDINAPDVEIQ---	KGKGSKFKMPFLSISSPKVSM	PDVE	3479
Equus_caballus	-----DIDVTGPKVDINAPDVEVQ---	KVKGSKFKMPFLSISSPKVSM	PDVE	3410
Canis_lupus_familiaris	-----DIDVTGTKVDINAPDVEVQ---	KVKGSKFKMPFLSISSPKVSM	PDVE	3543
Bos_taurus	-----DLDVTGPKVDINAPDVEVQ---	KVKGPKFKMPFLSISSPKVSM	PDVE	3345
Heterocephalus_glaber	-----DIDVFSKADINAPDVEVQ---	KVKGSKFKMPFLSISSPKVSM	PDVE	1340
Chelonia_mydas	-----EVDISGPKVDLDAPDLNIEG	PEGKLGPKFKMPDMHFNVPKIS	MPDID	3392
Rhinatrema_bivittatum	-----DIEISGPKVDINAPDVNIEG	PEGKLGPKFKMPKISMSI	HPKISMPDID	3071
Latimeria_chalumnae	-----DIDITESGVNVGLPDASLEG	PEIKTKKSKIKLPKFNIS	VPKPKGPHAD	1851
Pavo_muticus	-----			406
Pavo_cristatus	-----			406
Gallus_gallus	-----SVPKIEGELKGPEIDIKGPKVDIDVRD	VEGPEGKLGPKFKMP	EMHFKAPKISMPDID	4307
Xenopus_tropicalis	-----KVEIKAPKVNLEAPD	VDVGKVGPKFEMP---	SMPKVSMPDLG	3235
	.....4990.....5000.....5010.....5020.....5030.....5040			



# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.Fab 1 13:55:52 2022

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Mus_musculus      LNLKGPKVKGDLDAAAGPNLEGDFKGPVKDIKAPDVQLNAPDVDVHGPEWN--LKMPKMKM 3207
Rattus_norvegicus LHLKGPKIKGDVDVSLPKVEGDLEGPVVDIKGPVKDINAPDVDVQGPDWH--LKMPKMKM 3135
Homo_sapiens      LNLKSPKVKGDLDIAGPNLEGDFKGPVKDIKAPVNLNAPDVDVHGPDWN--LKMPKMKM 3479
Pan_troglodytes   LNLKGPKVKGDLDIAGPNLEGDFKGPVKDIKAPVNLNAPDVDVHGPDWN--LKMPKMKM 3480
Macaca_mulatta    LNLKGPKVKGDLDVAGPNLEGDLKGPVKDIKAPVNLNAPDVDVHGPDWN--LKMPKMKM 3414
Callithrix_jacchus LNLKGPKVKGDLDVAGPNLEGDFKGPVKDVKEVNLNAPDVDVHGPDWN--LKMPKMKM 3537
Equus_caballus    LNLKGPKVKGDLDVAGPNLEGDFKGPVKDIKAPVHLDAPDVDVHGPDWN--LKMPKMKM 3468
Canis_lupus_familiaris LNLKGPKVKGDLDLTAPNLEGDFKGPVKDIKAPVHLDAPDVDVHGPDWN--LKMPKMKM 3601
Bos_taurus        LNLKGPKVKGDLDVAGPNLEGDLKGPVKDIKAPVHLDAPDVDVHGPDWN--LKMPKMKM 3403
Heterocephalus_glaber LNLKGPKVKGDLEVAGPTMEGDVKVPNMIDQAPVHLSAPDVDVHGPEWN--LKMPKMKM 1398
Chelonia_mydas    LNLKGPKVKGDVDVSVPKLEGLKGPVFDIKGPVKDIDAPDVEIEGPDG--KWKGPVKFKM 3450
Rhinatrema_bivittatum LNLKGPKVKGDVDISGPKFEGHGIPEVDIKGPVELDVNAPHIDIEGPEARKKFKMPKFKM 3131
Latimeria_chalumnae LDIKSPKMH--LNVSGPKNGAEVNAPDLNIN-----TSPTSIDLHGSAK-----LKA 1897
Pavo_muticus      ----- 406
Pavo_cristatus    ----- 406
Gallus_gallus     LNLKGPKVKGDVDVSVPKIEGDLKGPVFDIKGPVKDIDPDVIEGPEGK--LKGPVKFKM 4365
Xenopus_tropicalis LNIKGPK-----MEGELKGPVKIDMKGPEFDVAIPDVEIEGPEGK--LKMPKFKM 3282
.....5050.....5060.....5070.....5080.....5090.....5100

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Mus_musculus      PKFGVSGIKAEGPDVAVDLP-----KG-DINIEGSPSMNIEGPELNV 3247
Rattus_norvegicus PKFSMPGFKAEGPVDVSLP-----KA-DLDVSGPKVDIDVPDVNI 3175
Homo_sapiens      PKFSVSGLKAEGPDVAVDLP-----KG-DINIEGSPSMNIEGPDNLNV 3519
Pan_troglodytes   PKFSVPGLKAEGPDVAVDLP-----KG-DINIEGSPSMNIEGPDNLNV 3520
Macaca_mulatta    PKFSVPGLKAEGPDVALDLP-----KG-DINIEGSPSMNIEGPELNV 3454
Callithrix_jacchus PKFTVPGLKAEGPDVAVDLP-----KG-DINIEGSPSMNIEGPELNV 3577
Equus_caballus    PKFSVPGLKAEGPDVAVGLP-----KG-DVNIEAPRMDIEGPEINV 3508
Canis_lupus_familiaris PKFGAPGLKAEGPEMAVDLP-----KK-DISLEGPRMDIESPKINV 3641
Bos_taurus        PKFSVPGLKAEGPDMAVDLP-----KG-DINIEGPKMDIEGPEVKV 3443
Heterocephalus_glaber PKFSVPGLKAAGPDVTVDIP-----KG-DINMEGSPSLNIEGLDVS 1438
Chelonia_mydas    PDMHFKAPKISMPDIDFNLKGPVKGDVDVSVPKLEGLKGPVFDIRGPKLDIDAPDVEI 3510
Rhinatrema_bivittatum PGFGISAPKKEGPDIDASLP-----KG-DIETISGPKVDINAPGVNI 3171
Latimeria_chalumnae PKFKDVNIKLPKANVDLGGP-----KIEG-DIKVPKVDANLDAPDINI 1939
Pavo_muticus      ----- 406
Pavo_cristatus    ----- 406
Gallus_gallus     PEMHIKTPKISMPDIDLNLKGPVKGDVDVSVPKIEGDLKGVGLELKGPKVDVDVDPVDI 4425
Xenopus_tropicalis PKFGFSGLKADGKDVDISLP-----EG-EIDISGPKVDISAPELDI 3322
.....5110.....5120.....5130.....5140.....5150.....5160

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Mus_musculus      ECPEGSLKGPKFKMPDMNI-----KAPKISMPDIDLNLKGPVKVKGD--- 3288
Rattus_norvegicus EGPDALKKGPKFKMPDMNI-----KAPKISMPNIDLNLKGPVKVKGD--- 3216
Homo_sapiens      EGPEGGLKGPKFKMPDMNI-----KAPKISMPDIDLNLKGPVKVKGD--- 3560
Pan_troglodytes   EGPEGGLKGPKFKMPDMNI-----KAPKISMPDIDLNLKGPVKVKGD--- 3561
Macaca_mulatta    EGPEGGLKGPKFKMPDMNV-----KAPKISMPDLDFNLKGPVKVKGD--- 3495
Callithrix_jacchus EGPEGGLKGPKFKMPDMNI-----KAPKISMPDLNLKGPVKVKGD--- 3618
Equus_caballus    EGLEGGLKGPKLKMFDLNI-----KAPKISMPDIDLNLKGPVKVKGD--- 3549
Canis_lupus_familiaris EGVEGSLKGPKLKMFDLNI-----KTPKISMPDIDLNLKGPVKVKGD--- 3682
Bos_taurus        EGLDGGGLKGPKFKMPDINI-----KAPKISMPDIDLNLKGPVKVKGD--- 3484
Heterocephalus_glaber EGLEGGLKGPKFKMPDMNI-----KAPKISMPDIDLNLKGPVKVKGD--- 1479
Chelonia_mydas    EGPDGKWKGPVKFKMPDMNI-----KAPKISMPDIDLNLKGPVKVKGD--- 3551
Rhinatrema_bivittatum EGPEGGLKTPKISMPDIDFNLKGPVKVKGD---PKVSMPDIDLNLKGPVKVKGD--- 3210
Latimeria_chalumnae ESLDGS SKGSKFKIPSVNL-----SGPKINVPDLNLNLSGPKLKD--- 1980
Pavo_muticus      ----- 406
Pavo_cristatus    ----- 406
Gallus_gallus     EGPEGKWKGPVKFKMPDMNI-----KAPKISMPDIDLNLKGPVKVKGD--- 4466
Xenopus_tropicalis ECPEGKVKGPVKFKMPDIDFNLKGPVKVKGD---KAPKISMPDIDLNLKGPVKVKGD--- 3382
.....5170.....5180.....5190.....5200.....5210.....5220

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.fab 1 13:55:52 2022

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Mus_musculus      -----VDVSLPKVEGEIKVPEVDIKGPKVDIDVPDVDVHGPDPWH-- 3327
Rattus_norvegicus -----VDMSLPKVEGEIKVPEVDIKGPKVDINAPDVDVQGPDPWH-- 3255
Homo_sapiens      -----VDISLPKLEGLDLKGPEVDIKGPKVDINAPDVDVHGPDPWH-- 3599
Pan_troglodytes   -----VDISLPKLEGLDLKGPEVDIKGPKVDINAPDVDVHGPDPWH-- 3600
Macaca_mulatta    -----VDVSLPKLEGLDLKGPEVDIKGPKVDISAPDVDVHGPDPWH-- 3534
Callithrix_jacchus -----VDVSLPKLEGLDLKGPEVDIKGPKVDISAPDVDVHGPDPWH-- 3657
Equus_caballus    -----VDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVDVHGPDPWH-- 3588
Canis_lupus_familiaris -----VDVSLPKVEGDLKGPEIDIKGPKVDVDVPDVDVHGPDPWH-- 3721
Bos_taurus        -----VDISLPKVEGDLKGPDIDIKGPKVDIDVPDVDVHGPDPWH-- 3523
Heterocephalus_glaber -----VDLSLPKLEGLDLKGPEVDMKGPQMDINLPDVDVHGPNWN-- 1518
Chelonia_mydas    -----VDVSVPKIEGDLKGPEFDIKGPKVDLDAPDVDLHGPEG--K 3590
Rhinatrema_bivittatum -----VDISGPKLEGLDKAPKLDIQSPELDVNAPHIDIEGPEARKK 3251
Latimeria_chalumnae -----VDAS-----ADMKGSKIIGIEGPDVDAAGPEGN-- 2007
Pavo_muticus      ----- 406
Pavo_cristatus    ----- 406
Gallus_gallus     -----VDVSVPCVEGGLKGANVELKGPEMDVGAPGVSVCEPPEGK-- 4505
Xenopus_tropicalis -----KGPKFKMPSMPKVSMPDLGLNIKGPKMEGELKGPNIDMKGPEVDVAIPDVELEGPEGK-- 3440
.....5230.....5240.....5250.....5260.....5270.....5280

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Mus_musculus      -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVSLPK-----ANIDVSGPKV-- 3366
Rattus_norvegicus -----LKMPPKVKMPKFSMPGFKAEKP-----EVDVSLPK-----ADLDVSGPKV-- 3294
Homo_sapiens      -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVTLPK-----ADIDISGPNV-- 3638
Pan_troglodytes   -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVTLPK-----ADIDISGPNV-- 3639
Macaca_mulatta    -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVNLPK-----ADLDISGPKV-- 3573
Callithrix_jacchus -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVNLPK-----ADLDVSGPKV-- 3696
Equus_caballus    -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVTLPK-----ADIDISGPKV-- 3627
Canis_lupus_familiaris -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVNLPK-----ADIDVSGPKV-- 3760
Bos_taurus        -----LKMPPKVKMPKFSMPGFKGEGP-----EVDVNLPK-----ADIDVSGPKV-- 3562
Heterocephalus_glaber -----LKMPPKVKMPKFSMPGFKAEKP-----EVDVALPK-----ADIDISVPHV-- 1557
Chelonia_mydas    -----LKMPPKFKMPKFGMPGFKGEAP-----DMDVSLPK-----GEIDLSGPKV-- 3629
Rhinatrema_bivittatum -----FKMPKFKMPGFGISAPKPEGP-----DIDASLPK-----GDIEISGPKV-- 3290
Latimeria_chalumnae -----FKLPHLKLPSFGISGPKVKGSMD-----DLDVSVPT-----ADVDVSGPRTG 2049
Pavo_muticus      ----- 415
Pavo_cristatus    ----- 415
Gallus_gallus     -----VKGPKFKMPEMHFKAPKISMDFDLSLKGPKVKGDVDVSVPKVEGDIKGPDIDIKGPKV-- 4564
Xenopus_tropicalis -----LKMPPKFKMPKFGFSGLKADGK-----DVDISLPE-----GEIDISGPKVD 3480
.....5290.....5300.....5310.....5320.....5330.....5340

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Mus_musculus      -----*  *-----DIDVP-----DVNIEGP----- 3378
Rattus_norvegicus -----*  *-----DIDVP-----DVNIEGP----- 3306
Homo_sapiens      -----DVDVP-----DVNIEGP----- 3650
Pan_troglodytes   -----DVDVP-----DVNIEGP----- 3651
Macaca_mulatta    -----DIDVP-----DVNIEGP----- 3585
Callithrix_jacchus -----DADVP-----DVNIEGP----- 3708
Equus_caballus    -----DINAP-----DVNIEGP----- 3639
Canis_lupus_familiaris -----DIDVP-----DVNIEGP----- 3772
Bos_taurus        -----DIDVP-----DVNIEGP----- 3574
Heterocephalus_glaber -----DIEAP-----DVNIEGP----- 1569
Chelonia_mydas    -----DIDAP-----DLEIEGP----- 3641
Rhinatrema_bivittatum -----DINAP-----GVNIEGP----- 3302
Latimeria_chalumnae -----G-----DVRVPG-----MDVNLEGS----- 2064
Pavo_muticus      -----DIEVP-----DVKLEGP----- 427
Pavo_cristatus    -----DIEVP-----DVKLEGP----- 427
Gallus_gallus     -----DVDLP-----DVELEGP----- 4576
Xenopus_tropicalis -----ISAPELDIECPEGRVKGPKFKMPSLHMPDIDFNLKGPKLEGLDKAPKVDIKAPEVNLEAP 3540
.....5350.....5360.....5370.....5380.....5390.....5400

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.Fab 1 13:55:52 2022

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      :.* * *:::* : . *::* *: . .:. *: *
Mus_musculus      ----DAKLKGPKFKMPEMNIKAPKISMPDIDLNLKGPKVKGDVDVSLPKVEGEIKVPEVD 3434
Rattus_norvegicus ----DAKLKGPKFKMPEMNIKAPKISMPNIDLNLKGPKVKGDVMSLPKVEGEIKVPEVD 3362
Homo_sapiens       ----DAKLKGPKFKMPEMNIKAPKISMPDFDLNLKGPKMKGDVVVSLPKVEGDLKGPEVD 3706
Pan_troglodytes    ----DAKLKGPKFKMPEMNIKAPKISMPDFDLNLKGPKMKGDVDVSLPKVEGDLKGPEVD 3707
Macaca_mulatta     ----DAKLKGPKFKMPEMNIKAPKISMPDFDLNLKGPKMKGDVDVSLPKMEGDLKGPEVD 3641
Callithrix_jacchus ----DAKLKGPKFKMPEMNIKAPKISMPDFDLNLKGPKMKGDVDVSLPKVEGDLKGPDVD 3764
Equus_caballus     ----DAKLKGPKFKMPEMNIKAPKISMPDIDLNLKGPKMKGDVDVSLPKVEGDLKGPEVD 3695
Canis_lupus_familiaris ----DAKLKGPKFKMPEMNIKAPKISMPDLDFNLKGPKMKGGMDVSLPKVEGDLIGPAID 3828
Bos_taurus         ----DAKLKGPKFKMPEMNIKAPKISMPDIDLNLKGPKVKGDVDISLPKVEGDLKGPEVD 3630
Heterocephalus_glaber ----EAKLKGPKFKMPEMNIKAPRISMPDVLDLKGPEVK----- 1605
Chelonia_mydas     ----DGKWKGPFKMPEMHIKAPKISMPDVLHLKGPKVKGDVDVSVPKIEGDLKGPEFD 3697
Rhinatrema_bivittatum ----EGKLTTPKISMPSTHV--PKVSMPDIDLNLKGPKWKGDVDISGPKLEGELKAPKLD 3356
Latimeria_chalumnae ----NAKVKGPHFKIPGLNISTPQISTPDMKVNLSRPKLKGGVDAS----- 2106
Pavo_muticus       ----EGKVKGPKFKMPEMHFKTPKISMPDVFNLKGPKVKGDVDVSVPOVQIPIFRPKPP 483
Pavo_cristatus     ----EGKVKGPKFKMPEMHFKTPKISMPDVFNLKGPKVKGDVDVSVPOVQIPIFRPKPP 483
Gallus_gallus      ----EGKVKGPKFKMPEMHFKTPKISMPDIDLNLKGPKVKGDVDVSVPKIEGDLKGPEVD 4632
Xenopus_tropicalis DVDFDGIKIGPKFKMPSIGVSLPKVSIPETDHNVGPKFKGDIDLPEVNLEADLKPTKV 3600
.....5410.....5420.....5430.....5440.....5450.....5460

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Mus_musculus      IKGPKVDIDVDPDVGHPDWHLMKPKIKMPKFSMPGFKGEGPEVDVSLPKADLDVSGPKV 3494
Rattus_norvegicus IKGPKVDIDVDPDVGHPDWHLMKPKVKMPKFSMPGFKAGPEVDVSLPKADLDVSGPKV 3422
Homo_sapiens       IKGP-----KV 3712
Pan_troglodytes    IKGP-----KV 3713
Macaca_mulatta     IKGP-----KV 3647
Callithrix_jacchus IKAP-----KV 3770
Equus_caballus     IKGP-----KV 3701
Canis_lupus_familiaris IKGP-----KV 3834
Bos_taurus         IKGP-----KV 3636
Heterocephalus_glaber ----- 1605
Chelonia_mydas     IKGP-----KV 3703
Rhinatrema_bivittatum IQSP-----EL 3362
Latimeria_chalumnae ----- 2106
Pavo_muticus       ILGL-----KC 489
Pavo_cristatus     ILGL-----KC 489
Gallus_gallus      IKGP-----KV 4638
Xenopus_tropicalis TKDP-----EV 3606
.....5470.....5480.....5490.....5500.....5510.....5520

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Mus_musculus      DIDVPDVNIEGPDA--KLKGPKFKMPEMNIKAPKISMPDIDLNLKGPKVKGDVDVSLPKV 3552
Rattus_norvegicus DIDVPDVNIEGPDA--KLKGPKFKMPEMNIKAPKISMP--DLHLKGPKIKGDVDVSLPKV 3478
Homo_sapiens       DIDTPDINIEGSEG--KFKGPKFKIPEMHLKAPKISMPDIDLNLKGPKVKGDVDVSLPKM 3770
Pan_troglodytes    DIDTPDINIEGPEG--KFKGPKFKIPEMHLKAPKISMPDIDLNLKGPKVKGDVDVSLPKM 3771
Macaca_mulatta     DIDTPDINIEGPEG--KLKGPKFKVPEMHLKSPKISMPDIDLNLKGPKVKGDVDVSLPKV 3705
Callithrix_jacchus DIDTPDINIEGPEG--KLKGSKFKMPEMHLKAPKISMPDIDLNLKGPKVKGDVDVSLPKV 3828
Equus_caballus     DIDAPDINIEGPEG--KLKGPKFKMPEMHLKAPKISMPDIDLNLKGPKVKGDVDVSLPKI 3759
Canis_lupus_familiaris DIDTPDINIEGPEG--KLKGSKFKMPEMNIKAPKISMPDIDLNLKGPKVKGDVDVSLPKF 3892
Bos_taurus         DIDVPDVNIEGPDA--KLKGPKFKMPEMNIKAPKISMPDLDFNLKGPKLKGDVDVSLPKV 3694
Heterocephalus_glaber ----- 1605
Chelonia_mydas     DLDAPDVLHGPEG--KLKMPKFKMPKFGMPGFKGEAP-----DMDVSLPKG 3748
Rhinatrema_bivittatum DVNAPHIDIGGPEGTEKLKMPKFKMPGFGMSAPKFAGP-----DVDVKLPKG 3409
Latimeria_chalumnae ----- 2106
Pavo_muticus       PILRAQIPTLGPKE--SILG----- 507
Pavo_cristatus     PILRAQIPTLGPKE--SILG----- 507
Gallus_gallus      DVDLPDVNIEGPEG--KVKGPKFKMPEMHFKAPKISMPDFDLNLKGPKVKGDVDVSVPKI 4696
Xenopus_tropicalis KFPSSGVSVEVPDS--KIKGPKFKLPSWGFSGPSNSGTEIDMK--GPKIKGDVDVSVSKG 3662
.....5530.....5540.....5550.....5560.....5570.....5580

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.fab 1 13:55:52 2022

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Mus_musculus	EGEIKVPEVDIKDPKVDIDVPDVDVHGPDWHLKMPKIKMPKFSMPGFKGEGPEVDVNLPK	3612
Rattus_norvegicus	EGEIKVPEVDIKGPKVDINAPDVDVQGPDWHLKMPKMKMPKFSMPGFKAEVPEVDVSLPK	3538
Homo_sapiens	EGDLKGPEVDIKGPKVDINAPDVDVQGPDWHLKMPKVKMPKFSMPGFKGEGPDVDVNLPK	3830
Pan_troglodytes	EGDLKGPEVDIKGPKVDINAPDVDVQGPDWHLKMPKVKMPKFSMPGFKGEGPDVDVNLPK	3831
Macaca_mulatta	EGDLKGPEVDIKGPKVDINAPDVDVQGPDWHLKMPKVKMPKFSMPGFKGEGPDVDVNLPK	3765
Callithrix_jacchus	EGDLKGPEVDIKGPKVDINAPDVDVQGPDWHLKMPKMKMPKFSMPGFKGEGPDVDVNLPK	3888
Equus_caballus	EGDLKGPEVDLKGPKVDIDAPDVDVHGPDWHLKMPKIKMPKISMPGFKGEGPEVDVNLPK	3819
Canis_lupus_familiaris	EGDLKGPEVDLKGPKVDVDVPDVDVHGPDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPK	3952
Bos_taurus	EGDLKGPEVDIKGP-----	3708
Heterocephalus_glaber	-----	1605
Chelonia_mydas	EIDLSGPKVDIDAP-----	3762
Rhinatrema_bivittatum	DIDISGPSVDFKGP-----	3423
Latimeria_chalumnae	-----	2106
Pavo_muticus	-----	507
Pavo_cristatus	-----	507
Gallus_gallus	EGELKGPKVDIEAP-----	4710
Xenopus_tropicalis	S-SLKGSDLTVSGPNIDLEMPEGKVKKSFKFPPKFN-----	3697
	.....5590.....5600.....5610.....5620.....5630.....5640	

Mus_musculus	ADLDVSGPKVDIDVPDNIIEGPDALKGPKFKMPEMNIKAPKISMP--DLHLKGPKVKGD	3670
Rattus_norvegicus	ADLDVSGPKVDIDVPDNIIEGPDALKGPKFKMPEMNIKAPKISMPNIDNLKGPKVKGD	3598
Homo_sapiens	ADLDVSGPKVDIDVPDNIIEGPEGKLGPKFKMPEMNIKAPKISMPDIDNLKGPKVKGD	3890
Pan_troglodytes	ADLDVSGPKVDIDVPDNIIEGPEGKLGPKFKMPEMNIKAPKISMPDIDNLKGPKVKGD	3891
Macaca_mulatta	ADIDVSGPKVDIDVPDNIIEGPEGKLGPKFKMPEMNIKAPKISMPDIDLHLKGPKVKSD	3825
Callithrix_jacchus	ADIDVSGPKVDIDVPDNIIEGPDALKGPKFKMPEMNIKAPKISMPDFDLNLKSPKVKGD	3948
Equus_caballus	ADIDVSAPKVDIEGPDNIIEGPEGKVGPKFKMPEMNIKAPKISMPDFDLHLKGPKVKGD	3879
Canis_lupus_familiaris	ADIDVSGPKLDIEGPDVMIESPEGKLGPKFKMPEMNIKAPKISMPDFDLHLKGPKVKGD	4012
Bos_taurus	-----KVDVETPDINIEGSEGLKGPKFKMPEMHLKAPKISMPDIDNLKGPKVKGD	3760
Heterocephalus_glaber	-----	1605
Chelonia_mydas	-----DLEIEGPDGKWKGPFKMPEMHIKAPKISMPDIDLHLKGPKVKGD	3807
Rhinatrema_bivittatum	-----EVP-----KFKLP--AMPSLVHAPDISIPHFDMLVKGPKWKGN	3460
Latimeria_chalumnae	-----	2106
Pavo_muticus	-----	507
Pavo_cristatus	-----	507
Gallus_gallus	-----DVDIELPEGKLGPKFKMPEMHIKAPKISVPDIDFNLKGPKVKGD	4755
Xenopus_tropicalis	----FSSPKAQIPETDVKIANTDLEVSSPKFKMPSLVNLSKPKVSMPPVELNLKGPKIKGD	3753
	.....5650.....5660.....5670.....5680.....5690.....5700	

Mus_musculus	VDVSLPKVE-----	3679
Rattus_norvegicus	VDMSLPKVE-----	3607
Homo_sapiens	MDVSLPKVE-----	3899
Pan_troglodytes	MDVSLPKVE-----	3900
Macaca_mulatta	VDVSLPKVE-----	3834
Callithrix_jacchus	VDVSLPKVE-----	3957
Equus_caballus	VDVSLPKVE-----	3888
Canis_lupus_familiaris	VDVSLPNVE-----	4021
Bos_taurus	VDISLPKVE-----	3769
Heterocephalus_glaber	-----	1605
Chelonia_mydas	VDVSVPKIE-----	3816
Rhinatrema_bivittatum	VDVSGPNIE-----	3469
Latimeria_chalumnae	-----	2106
Pavo_muticus	-----	507
Pavo_cristatus	-----	507
Gallus_gallus	VDVSVPTLE-----	4764
Xenopus_tropicalis	MDVMVPKVEGDIKDLKADIHCPEVDLNAPEVNIDGKVGKHKFKMPSVHVPEVSMPDFGLN	3813
	.....5710.....5720.....5730.....5740.....5750.....5760	



# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	-----GDLKGP	DVDIKGPKMDINAPDMDVQ	GPDWHLKMPKMKMPKFS	MPGFKAE	GPEV	3732
Rattus_norvegicus	-----GEIKVPEVDIKGPKVDIDVPD	DVDVQ	GPDWHLKMPKVKMPKFS	MPGFKAE	GPEV	3660
Homo_sapiens	-----GDMQVPDL	DIKGPKVDINAPD	DVVRGPDWHLKMPKIKMPKIS	MPGFKGEG	GPEV	3952
Pan_troglodytes	-----GDMKVPD	DIKGPKVDINAPD	DVVRGPDWHLKMPKIKMPKIS	MPGFKGEG	GPEV	3953
Macaca_mulatta	-----GDVKVPD	DIKGPKVDINAPD	DVDVQ	GPDWHLKMPKIKMPKIS	MPGFKGEG	3887
Callithrix_jacchus	-----GDVKVPD	DIKGPKVDINAPD	DVDVQ	GPDWHLKMPKIKMPKIS	MPGFKGEG	4010
Equus_caballus	-----GDLKAPEVD	LKGPKVDIDAPD	DVHGP	DWHLKMPKIKMPKIS	MPGFKGEG	3941
Canis_lupus_familiaris	-----GDLKGPEVD	LKGPKVDVDPD	DVHGP	DWHLKMPKVKMPKFS	MPGFKGEG	4074
Bos_taurus	-----GDLKGPEVD	DIKGPKVDIDAPD	DVDVQ	GPDWHLKMPKMKMPKFS	MPGFKGEG	3822
Heterocephalus_glaber	-----					1605
Chelonia_mydas	-----GDLKGPEFD	IKGPKIDLDAPD	VDLHG	PEGKLMKPKFKMPKFGMS	GLKGEV	3869
Rhinatrema_bivittatum	-----GDVKIPKVD	IKCELDVNDP	DIDIEG	-KGGLKFKPKMKPKIGIKS	PKLEGP	3521
Latimeria_chalumnae	-----	ADMEGPKVDIEG	PVDV	TAV	PEGSFKLP	2152
Pavo_muticus	-----	LKCPIFSTKSP			FLGP	522
Pavo_cristatus	-----	LKCPIFSTKSP			FLGP	522
Gallus_gallus	-----GDLKGPEVD	IKGPKVDMDLP	DVDIEG	PEGKLGPKFKMP	EMHFKGPKIS	4817
Xenopus_tropicalis	VKGPKVE	GELGPKIDMKGPEVD	VAIPD	VELEG	PEGKLMKPKFKMPTFG	3873
	.....5770.....5780.....5790.....5800.....5810.....5820					

Mus_musculus	DVNLPKVDLDVSGPKVDIDVPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MPDIDLNLKG	3792
Rattus_norvegicus	DVSLPKADLDVSGPKVDIDVPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MP--DLHLKG	3718
Homo_sapiens	DVNLPKADLDVSGPKVDVDPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MPDFDLHLKG	4012
Pan_troglodytes	DVNLPKADLDVSGPKVDVDPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MPDFDLHLKG	4013
Macaca_mulatta	DVNLPKADLDVSGPKVDIDVPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MPDFDLHLKG	3947
Callithrix_jacchus	DVNLPKADLDVSGPKVDVDPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MPDFDLHLKG	4070
Equus_caballus	DVNLPKADIDLSAPKVDIDVPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MPDFDLHLKG	4001
Canis_lupus_familiaris	DVNLPKADIDVSGPKVDIDVPD	VNIEGPD	AKLGPKFKMP	EMNIKAPKIS	MPDFDLHLKG	4134
Bos_taurus	DVNLPKADIDVSGAPKVDIEG	PDSLEG	PEGKLGPKFKMP	EMNIKAPKIS	MPDFDLHLKG	3882
Heterocephalus_glaber	-----					1605
Chelonia_mydas	DVSLPKGEIDL	SGPKVDIDAPD	LDIEG	PEGKWKGP	FKKPEMFNV	3929
Rhinatrema_bivittatum	DASLPKGDIEIS	SGPKVDINAPD	VNIEG	PEGKLT	PKISMP--SIHVP	3579
Latimeria_chalumnae	D	-----				2153
Pavo_muticus	-----					522
Pavo_cristatus	-----					522
Gallus_gallus	D	-----			LSLKG	4823
Xenopus_tropicalis	DIALPEGEIDVSV	PKLDISAP	ELDIEC	PEGKVGPN	FKMP--SLHMP	3926
	.....5830.....5840.....5850.....5860.....5870.....5880					

Mus_musculus	PKVKGDV	-----DMSLPK	VEGEIKVPEVDIKGPKVDIDVPD	DVHGP	DW--HLKMPKVKM	3845
Rattus_norvegicus	PKIKGDV	-----DVSLPK	VEGEIKVPEVDIKGPKVDINAPD	DVDVQ	GPDW--HLKMPKMKM	3771
Homo_sapiens	PKVKGDV	-----DVSLPK	MEGDLKAPEVDIKGPKVDIDAPD	DVHGP	DW--HLKMPKVKM	4065
Pan_troglodytes	PKVKGDV	-----DVSLPK	MEGDLKAPEVDIKGPKVDIDAPD	DVHGP	DW--HLKMPKVKM	4066
Macaca_mulatta	PKVKGDV	-----DVSLPK	MEGDLKAPEVDIKGPKVDIDAPD	DVHGP	DW--HLKMPKVKM	4000
Callithrix_jacchus	PKVKGDV	-----DVSLPK	MEGDLKAPEVDIKGPKVDIDAPD	DVHGP	DW--HLKMPKVKM	4123
Equus_caballus	PKVKGDV	-----DVSLPK	VEGDLKAPEVDIKGPKVDIDVPD	DVHGP	DW--HLKMPKVKM	4054
Canis_lupus_familiaris	PKVKGDV	-----DVSLPK	VEGDLKGPEVDIKGPKVDIDVPD	VNVHGP	DW--HLKMPKVKM	4187
Bos_taurus	PKVKGDV	-----DVSLPK	VEGDLKAPEVDIKGPKVDIDAPD	VNVHGP	DW--HLKMPKIKM	3935
Heterocephalus_glaber	-----					1605
Chelonia_mydas	PKLKG	GDV-----DVSLPK	VGGDLKAPKVEVKGPDIDLD	APKLDIEG	-----KTTKSRFKL	3979
Rhinatrema_bivittatum	PKWKGDV	-----DISGPK	FEHGKIP	EV	DIKGPELDVNAPHIDIEG	3634
Latimeria_chalumnae	-----					2153
Pavo_muticus	-----					522
Pavo_cristatus	-----					522
Gallus_gallus	PKVKGDV	-----DVSVPK	VEGELKGPEVDIKGPKVDIDVPD	DVHGP	EG--KFKLPKFKM	4876
Xenopus_tropicalis	PKVEGDL	KGPKVDISAPD	VVIDGKVGSKFKMP	SLHMP	DIDFNLKGPKVEGDLKGPKVDI	3986
	.....5890.....5900.....5910.....5920.....5930.....5940					

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File: /media/morpheus/disk1/fst/pep\_msa/LOC101750665.Fab 1 13:55:52 2022

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Mus_musculus	PKFSMPGFKGEGPEVDVNLPKADLDVSGPKVDIDVPDNIIEGP--DAKLKGPKFKMPPEMN	3903
Rattus_norvegicus	PKFSMPGFKGEGPEVDVSLPKADLDVSGPKVDIDVPDNIIEGP--DAKLKGPKFKMPPEMN	3829
Homo_sapiens	PKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDTPDIDIHGP--EGKLKGPKFKMPDLH	4123
Pan_troglodytes	PKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDTPDIDIHGP--EGKLKGPKFKMPDLH	4124
Macaca_mulatta	PKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDTPDIDIHGP--EGKLKGPKFKMPDLH	4058
Callithrix_jacchus	PKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDTPDIDIHGP--EGKLKGPKFKMPDLH	4181
Equus_caballus	PKFSMPGFKGEGPEVDVSLPKADIDVSGPKVDVTPDIDIHGP--EGKLKGPKFKMPDLH	4112
Canis_lupus_familiaris	PKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVPDNIIEGP--DAKLKGPKFKMPPEMN	4245
Bos_taurus	PKISMPGFKGEGPEVDVNLPKADIDISGPKVDIDTPDIDIHGP--EGKLKGPKFKMPDLH	3993
Heterocephalus_glaber	-----	1605
Chelonia_mydas	PKFSFSGPKVQTPEVDVKLKKSDIDISGPKVDVSAPDVIQG--KAKGSKFKMPFLSIS	4036
Rhinatrema_bivittatum	PGFGISAPKPEGPDIDASLPKGDIEISGPKVDINAPGVNIEGP--EGKLKTPKISMPSIH	3692
Latimeria_chalumnae	-----LDVSIPTADVDSGPK-----	2169
Pavo_muticus	----NPQFWASG-----	530
Pavo_cristatus	----NPQFWASG-----	530
Gallus_gallus	PKFSMPGFRAEGPEVDVELPKGDVDVSVPKVDIGGPEVDIEGP--EGKLKGPKFKMPPEMH	4934
Xenopus_tropicalis	N---APEVKLEGPDVDIDGKVGSKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDISAPD	4043
	.....5950.....5960.....5970.....5980.....5990.....6000	

Mus_musculus	IKAPKISMPP--DLHLKGPKVKGDVDVSLPKVEGDLKGPEVDIKGPKMDISAPDVDVHGPD	3961
Rattus_norvegicus	IKAPKISMPPNIDLNLKGPKVKGDVMSLPKVEGEIKVPEVDIKGPKVDINAPDVDVQGP	3889
Homo_sapiens	LKAPKISMPEVDNLNLKGPKMKGDVDVSLPKVEGDLKGPEVDIKGPKVDIDVPDVDVQGP	4183
Pan_troglodytes	LKAPKISMAEVDNLNLKGPKMKGNVDVSLPKVEGDLKGPEVDIKGPKVDIDVPDVDVQGP	4184
Macaca_mulatta	LKAPKISMPEVDNLNLKGPKVKGDVDVSLPKVEGDLKGPEVDIKGPKVDVDVPDVDVQGP	4118
Callithrix_jacchus	LKAPKISMPEVDNLNLKGPK--KGDVDVSLPKVEGDLKGPEVDIKGPKVDIDVPDVDVQGP	4239
Equus_caballus	LKAPKISMPEVDNLNLKGPKVKGDVDVSLPKVEGDLKGPEVDIKGPKVDIDVPDVDVHGPD	4172
Canis_lupus_familiaris	IKAPKISMPPDIDLNLKGPKVKGDVDVSLPKVEGDLKGPEVDIKGPKVDVDVPDVDVHGPD	4305
Bos_taurus	LKAPKISMPEVDNLNLKGPKVKGDVDVSLPKVEGDLKGPDVDIKGPKVDIDVPDVDVHGPD	4053
Heterocephalus_glaber	-----	1605
Chelonia_mydas	--SPKVSMPDVELNLKGPKLKGDLVSGPKLEGDLKGPEVDIKSPQIDINVPDVIDHGPE	4094
Rhinatrema_bivittatum	--VPKVSMPDIDLNLKGPKWKGDVDISGPKLEGDLKAPKLDIQSPELDVNAPHIDIEGPE	3750
Latimeria_chalumnae	-----IEGDVRVPGVN-----	2180
Pavo_muticus	-----	530
Pavo_cristatus	-----	530
Gallus_gallus	IKTPKISMPPDIDLNLKGPKVKGDVDVSVPKLEGDLKGPEMEIKGPKVDVDLPDVIDIEGPE	4994
Xenopus_tropicalis	VDIDGKVGKSKFKMPSLHMPDIDFNLKGPKVEGDLKGPKVDISAPVNLLEAPDVDIDGKV	4103
	.....6010.....6020.....6030.....6040.....6050.....6060	

Mus_musculus	W--HLKMPKVMPKPKFSMPGFKGEGPEVDVNLPKA-----DLDVSG	3999
Rattus_norvegicus	W--HLKMPKVMPKPKFSMPGFKGEGPEVDVSLPKA-----DLDVSG	3927
Homo_sapiens	W--HLKMPKVMPKPKFSMPGFKGEGPDVDVNLPKA-----DLDVSG	4221
Pan_troglodytes	W--HLKMPKVMPKPKFSMPGFKGEGPDVDVNLPKA-----DLDVSG	4222
Macaca_mulatta	W--HLKMPKVMPKPKFSMPGFKGEGPEVDVNLPKA-----DFDVSG	4156
Callithrix_jacchus	W--HLKMPKVMPKPKFSMPGFKGEGPDVDVNLPKA-----DLDISA	4277
Equus_caballus	W--HLKMPKVMPKPKFSMPGFKGEGPEVDVNLPKA-----DIDVSG	4210
Canis_lupus_familiaris	W--HLKMPKVMPKPKFSMPGFKGEGPEVDVNLST-----DIDVSG	4343
Bos_taurus	W--HLKMPKVMPKPKFSMPGFKGEGPEVDVNLPKA-----DIDISG	4091
Heterocephalus_glaber	-----	1605
Chelonia_mydas	G--KLKMPKLKMPKFGTTPGLKGEAPDVDVKLPKG-----EVDVSG	4132
Rhinatrema_bivittatum	ARKKFKMPKPKMPGFGISAPKLEGPDIDASLPKG-----DIEISG	3790
Latimeria_chalumnae	-----	2180
Pavo_muticus	-----	530
Pavo_cristatus	-----	530
Gallus_gallus	G--KLKGPVKFKMPPEMHIAKPKISMPPDIDLSLKGPKVKGDVDVSMPLKLEGDLKGPEVDIKG	5052
Xenopus_tropicalis	KGSKFKMPSLHMPDLDFN---LKGPKVEGDLKGPK-----KVDISA	4140
	.....6070.....6080.....6090.....6100.....6110.....6120	

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Mus_musculus	PKVDIE-----GPNVNIEGPEGKLGPKFK-----MPDLHLKAPKISMPEIDLNLKG	4046
Rattus_norvegicus	PKVDID-----VPDVNIEGPDAKLKGPKFK-----MPEMNIKAPKISMPEIDLNLKG	3972
Homo_sapiens	PKVDID-----VPDVNIEGPDAKLKGPKFK-----MPEMNIKAPKISMPEIDLNLKG	4268
Pan_troglodytes	PKMDID-----VPDVNIEGPDAKLKGPKFK-----MPEMNIKAPKISMPEIDLNLKG	4269
Macaca_mulatta	PKVDID-----VPDVNIEGPDAKLKGPKFK-----MPEMNIKAPKISMPEIDLNLKG	4203
Callithrix_jacchus	PKVDVD-----VPDVNIEGPDAKLKGPKFK-----MPEMNIKAPKISMPEIDLNLKG	4324
Equus_caballus	PKVDID-----VPDVNIEGPDAKLKGPKFK-----MPEMNIKAPKISMPEIDLNLKG	4257
Canis_lupus_familiaris	PKVDID-----TPDVDIHGPEGKLGPKFK-----MPDLHFKAPKISMPEVDMNLKG	4390
Bos_taurus	PKVDID-----VPDVNIEGPDAKLKGPKFK-----MPEMNIKAPKISMPEIDLNLKG	4138
Heterocephalus_glaber	-----	1605
Chelonia_mydas	PKIDID-----APDLEIEGPDGKLGPKFK-----MPEMHFTVPKISMPEIDLNLKG	4179
Rhinatrema_bivittatum	PKVDIN-----APRVNIEGPEGKLGPKFK-----MPSIH--VPKVSMPDIDLNLKG	3835
Latimeria_chalumnae	-----VDLEGSAGKVGKPNFK-----MAGANISGPQISTPDLGIDFSG	2218
Pavo_muticus	-----	530
Pavo_cristatus	-----	530
Gallus_gallus	PKVDVD-----LPDVELHGS DGKVGKPKFK-----MPEMHKAPKISMPEVDVFNLKG	5099
Xenopus_tropicalis	PDVDIDGKVKGSKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDISAPEVNLEAPDVIDG	4200
	.....6130.....6140.....6150.....6160.....6170.....6180	

Mus_musculus	PKLKG-----DVDVSLPKVEGDLKGPEVDIKGPKVDISAPDMDVHGPDW----	4090
Rattus_norvegicus	PKIKG-----DVDVSLPKVEGEIKVPEVDIKGPKVDIDVPDVDVQGPDW----	4016
Homo_sapiens	PKVKG-----DVDVSLPKVEGDLKGPEVDIKGPKVDIDAPDVDVHGPDW----	4312
Pan_troglodytes	PKVKG-----DVDVSLPKVEGDLKGPEVDIKGPKVDINAPDVDVHGPDW----	4313
Macaca_mulatta	PKVKG-----DVDVSLPKVEGDLKGPEVDIKVPKVDIDAPDVDVQGPDW----	4247
Callithrix_jacchus	PKVKG-----DVDVSLPKMEGDLKGPE-----KMDIDAPDVDVHGPDW----	4361
Equus_caballus	PKVKG-----DVDVSLPMVEGDLKGPEVDIKGPKVDIDVPDVDVHGPDW----	4301
Canis_lupus_familiaris	PKVKG-----DVDVSLPKVEGDLKGPEVDIKGPKVDVDVPDVDVHGPDW----	4434
Bos_taurus	PKVKG-----DVDISLPKVEGDLKGPEVDIKGPKVDIDVPDVDVHGPDW----	4182
Heterocephalus_glaber	-----	1605
Chelonia_mydas	PKLKG-----DVDVSVPKLEGDLKGPEFDIKGPKVDIDAPDVEIEGPEGKWKKG	4227
Rhinatrema_bivittatum	PKWKG-----DVDISGPKLEGDLKAPKLDIQSPELDVNAPHIDIGGLEG----	3879
Latimeria_chalumnae	PKLKE-----GVNAS-----	2228
Pavo_muticus	-----DVDVSLPKVEGELKGPEIDIKGP-----	553
Pavo_cristatus	-----DVDVSLPKVEGELKGPEIDIKGP-----	553
Gallus_gallus	PKVKG-----DVDVSIKVEGELKGPEVDIKGPKVDIDVPDVDVHGPEG----	5143
Xenopus_tropicalis	KVKGSKFKMPSLHMPDIDFNLKGPKVEGDLKGPKVDISAPEVNLEAPDVIDG----	4253
	.....6190.....6200.....6210.....6220.....6230.....6240	

Mus_musculus	-----	4090
Rattus_norvegicus	-----	4016
Homo_sapiens	-----	4312
Pan_troglodytes	-----	4313
Macaca_mulatta	-----	4247
Callithrix_jacchus	-----	4361
Equus_caballus	-----	4301
Canis_lupus_familiaris	-----	4434
Bos_taurus	-----	4182
Heterocephalus_glaber	-----	1605
Chelonia_mydas	PKFKMPEMNIKAPKVSMPDIDFNLKSPKLKGDIDVSGPKLEGDLKGPEIDIRSPKVDIGA	4287
Rhinatrema_bivittatum	-----	3879
Latimeria_chalumnae	-----	2228
Pavo_muticus	-----	553
Pavo_cristatus	-----	553
Gallus_gallus	-----	5143
Xenopus_tropicalis	-----	4253
	.....6250.....6260.....6270.....6280.....6290.....6300	

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Mus_musculus          -----HLKMPKMKMPKFSMPGFKAEGPVDVNLPKADIDVSGPKVDIDVDPVNI 4140
Rattus_norvegicus     -----HLKMPKMKMPKFSMPGFKAEGPVDVSLPKADLDVTGPKVDIDVDPVNVG 4066
Homo_sapiens          -----HLKMPKVKMPKFSMPGFKGEGPDVDVTLPKADIEISGPKVDIDAPDVSIE 4362
Pan_troglodytes       -----HLKMPKVKMPKFSMPGFKGEGPDVDVTLPKADIEISGPKVDIDAPDVSIE 4363
Macaca_mulatta        -----HLKMPKVKMPKFSMPGFKGEGPDVDVNLPKADIDISAPKVDIDAPDVSIE 4297
Callithrix_jacchus    -----HLKMPKVKMPKFSMPGFKGEGPDLDVTLPKADIDVSGPKVDIDAPDVSIE 4411
Equus_caballus        -----HLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVDPVNI 4351
Canis_lupus_familiaris -----HLKMPKVKMPKFSMPGFKGEGSEVDVNLPKADIDVSGPKVDIDVDPVNI 4484
Bos_taurus            -----HLKMPKMKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVDPVNI 4232
Heterocephalus_glaber -----                               1605
Chelonia_mydas        PNAIDHGPGEGLKMPKFRMPKFGMPGFKGEGPDVDVSLPKGEIDISGPKIDIDAPDVEIE 4347
Rhinatrema_bivittatum -----TEKLKMPKFKMPGFGMSAPKFAFPDVKLPKGDIDISGPSVDFKGPEVP-- 3929
Latimeria_chalumnae   -----                               2228
Pavo_muticus          -----                               553
Pavo_cristatus        -----                               553
Gallus_gallus         -----KFKLPKFKMPKFSMPGFKGDGVVDVNLPKGDVDISGPRVEVEAPDLSVD 5193
Xenopus_tropicalis    -----KVKGSKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDINAEVNL 4298
.....6310.....6320.....6330.....6340.....6350.....6360

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Mus_musculus          GP--DAKLKGPKFKMPEMNIKAPKISMPDFDLHLKGPKVKGDVDASLPKMEGELKGPGID 4198
Rattus_norvegicus     GP--DVKVKGPKFKMPEMNIKAPKISMPDFDLHLKGPKVKGDVDASLPKME----- 4115
Homo_sapiens          GP--DAKLKGPKFKMPEMNIKAPKISMPDIDFNLKGPKVKGDVDVSLPKVEGDLKGPEID 4420
Pan_troglodytes       GP--DAKLKGPKFKMPEMNIKAPKISMPDIDFNLKGPKVKGDVDVSLPKVEGDLKGPEID 4421
Macaca_mulatta        GP--DAKLKGPKFKMPEMNIKAPKISMPDLDFNLKGPKVKGDVGVSIPKVEGDLKGPEID 4355
Callithrix_jacchus    GP--DAKLKGPKFKMPEMNIKAPKISMPDIDFNLKGPKVKGDVDVSLPKVEGDLKGPEID 4469
Equus_caballus        GP--DAKLKGPKFKMPEMNIKAPKISMPDLDFSLKGPKMKSDVDVSLPKVEGDLKGPEVD 4409
Canis_lupus_familiaris GP--DAKLKGPKFKMPEINIKAPKISMSDLDFSLKGPKMKGDVDVSLPKVEGDLKGPEID 4542
Bos_taurus            GP--DAKLKGPKFKMPEMNIKAPKISMPDLDFNLKGPKMKGDVDISLPKVEGDLKAPVD 4290
Heterocephalus_glaber -----                               1605
Chelonia_mydas        GP--EGKWKGPKFKMPEMNIKAPKISMPDVLNLKGPKLKGVDVSVPKLEGDLKGPEVD 4405
Rhinatrema_bivittatum -----KFKLP--AMPSLNVHAPDISIPHFDNMVKGPKWKGDVDVSGPNIEGDVKXPKVD 3981
Latimeria_chalumnae   -----ADV KCP----- 2234
Pavo_muticus          -----                               553
Pavo_cristatus        -----                               553
Gallus_gallus         G-----KLKGPKFSMPPEMHIKAPKISMPDIDLNLKGPKVKGDVDVSVPKVEGDIKGPDID 5248
Xenopus_tropicalis    APDVDGKVKGPKFKMP-----SMPKVSMPDLGLNVKGPK-----VEGELKGPKID 4343
.....6370.....6380.....6390.....6400.....6410.....6420

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Mus_musculus          IKCPTVDIDITPDVNIIEVPEGKLGPKFKMPDMHIKAPKISMPDFDLNLKGPKVKGDVDLA 4258
Rattus_norvegicus     --GPGVDIDISPDVNIIEGPEGKLGPKFKMPDMHIKAPKISMPDFDLNLKGSVKVDVLS 4173
Homo_sapiens          IKGPSLDIDITPDVNIIEGPEGKLGPKFKMPEMNIKAPKISMPDFDLHLKGPKVKGDVDVS 4480
Pan_troglodytes       IKGPSLDIDITPDVNIIEGPEGKLGPKFKMPEMNIKAPKISMPDFDLHLKGPKVKGDVDVS 4481
Macaca_mulatta        IKGPSLDMDITPDVNIIEGPEGKLGPKFKMPEMNIKAPKISMPDFDLHLKGPKAKGDVDVS 4415
Callithrix_jacchus    IKGPSLDIDITPDVNIIEGPEGKLGPKFKMPEMNIKAPKISMPDFDLHLKGPKVKGDANVS 4529
Equus_caballus        IKGPKLDIDITPDVNIIEGPEGKLGPKFKMPEMNIKAPKISMPDFDLNLKGPKVKGDVDLS 4469
Canis_lupus_familiaris IKGPKVDIDITPDVNIIEGPEGKLGPKFKMPEMNIKAPKISMPDFDLNLKGPKVKEDADLS 4602
Bos_taurus            IKGPKLDIDAPDISIEGPEGKLGPKFKMPEMNIKAPKISMPDFDLNLKGPNVKGVDLS 4350
Heterocephalus_glaber -----                               1605
Chelonia_mydas        IKGPKLDIDAPDVEIEGPEGKWKGPFKMPDMHFKAPKISMPDFDLNLRGPKVKGDVDVS 4465
Rhinatrema_bivittatum IKCPDLVDNDPIDIDIEG-KGGLKFPKMKMPKIGIKSPKLEGP-----DVDAS 4027
Latimeria_chalumnae   -----                               2234
Pavo_muticus          -----                               553
Pavo_cristatus        -----                               553
Gallus_gallus         IKGPKVDVDLPDVELEGPEGKVKGPFKMPEMHIKAPKISMPDFDLNLKGPKVKGDVDVS 5308
Xenopus_tropicalis    MKGPEVDVEIPDVELEGPEGKLMKPKFKMPTFGFSGPKVKGDIDIALP-----EGEIDVS 4399
.....6430.....6440.....6450.....6460.....6470.....6480

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	LP-----NVEGDLKGPEIDIEGPEGKLGPKFKVPDVQFKTPQISMSDIDL	4304
Rattus_norvegicus	LP-----KVEGDLKGPEIDIECPEGKLGPKFKMPDVHFKTPQISMSDIDL	4219
Homo_sapiens	LP-----KVESDLKGPEVDIEGPEGKLGPKFKMPDVHFKSPQISMSDIDL	4526
Pan_troglodytes	LP-----KVEGDLKGPEVDIEGPEGKLGPKFKMPDVHFKTPQISMSDIDL	4527
Macaca_mulatta	LP-----KLEGDLKGPEVDIEGPEGKLGPKFKMPDVHFKTPQISMSDIDL	4461
Callithrix_jacchus	LP-----KVEGDLKGPEVDIEGPEGKLGPKFKMPDVHFKTPQISMSDIDL	4575
Equus_caballus	LP-----KVOGDLKGPEVDIEGPEGKLGPKFKMPDVHFKTPQISMSDIDL	4515
Canis_lupus_familiaris	LP-----KMEGDLKGPEVDIECPEGKLGPKFKMPDVHFKTPQISMSDIDL	4648
Bos_taurus	LP-----KVEGDLKGPEVDIEGPEGKLGPKFKMPDVHFKTPQISMSDIDL	4396
Heterocephalus_glaber	-----	1605
Chelonia_mydas	VPDFEGDMKGPEVDIKGPKLDIDAPDLIDGPEGKLGPKFKMPDMHFKAPKISMPDIDL	4525
Rhinatrema_bivittatum	LP-----KG-DIEISGPKVDINAPGVNIEGPEGKLGPKFKMPDMHFKAPKISMPDIDL	4078
Latimeria_chalumnae	-----EVDLEGTGIGVEGQKLPQFKLPFTFGSGSRSGETDIDI	2276
Pavo_muticus	-----KVDVDLPEVDIEGPEGKLGPKFKMPDMHFKAPKISMPDVDF	595
Pavo_cristatus	-----KVDVDLPEVDIEGPEGKLGPKFKMPDMHFKAPKISMPDVDF	595
Gallus_gallus	VP-----KIEGDLKGPKVDVLDLDPVDIEGPEGKLGPKFKMPDMHFKAPKISMPDVDF	5361
Xenopus_tropicalis	GP-----KLDISAPELDIECPEGKLGPKFKMPSLH-----MPDIDF	4436
	.....6490.....6500.....6510.....6520.....6530.....6540	

Mus_musculus	NVKGPKIKGDLDISIPKPEGDLKGPKVDIKGPKLDIDTPDIDIHGPEG--KLKGPKFKMP	4362
Rattus_norvegicus	NMKGPKVKGDMDISVPKLEGDLKGTKVDVKGPKMDIDTPDIDIHGPEG--KLKGPKFKMP	4277
Homo_sapiens	NLKGPKIKGDMDISVPKLEGDLKGPKVDVKGPKVGIDTPDIDIHGPEG--KLKGPKFKMP	4584
Pan_troglodytes	NLKGPKIKGDMDISVPKLEGDLKGPKVDVKGPKVDIDTPDIDIHGPEG--KLKGPKFKMP	4585
Macaca_mulatta	NLKGPKIKGDMDISVPKLEGDLKGPKVDVKGPKVDIDTPDIDIHGPEG--KLKGPKFKMP	4519
Callithrix_jacchus	NLKGPKIKGDMDISVPKLEGDLKGPKVDVKGPNLDIDTPDIDIHGPEG--KLKGPKFKMP	4633
Equus_caballus	NLKGPKIKGDLDSIPKLEGDMKGPKVDVKGPKLDIDTPDIDIHGPEG--KLKGPKFKMP	4573
Canis_lupus_familiaris	NLKGPKIKGDLDFSIPLNLEGDLKGPKVDVKGPNLMDTPDIDIHGPEG--KLKGPKFKMP	4706
Bos_taurus	NLKGPKIKGDLDTISIPKLEGDLKGPKVDVKGPALDIDTPDIDIHGPEG--KLKGPKFKMP	4454
Heterocephalus_glaber	-----	1605
Chelonia_mydas	NLKGPKLKGDVDVSVPKLEGDLKGPEFDIKGPKMDIDAPDVEIEGPD--EKWKGPFKMP	4583
Rhinatrema_bivittatum	NLKGPKWKGDVDISGPKLEGDLKAPKLDISPEFDVNAPHIDIGGPEGTEKLKMPFKMP	4138
Latimeria_chalumnae	DGSGQKVKG-----	2285
Pavo_muticus	NLKGPKVKGDVDVTLPKLEGDLQCPDVLKGPRLDLHAP-----DVKVP	639
Pavo_cristatus	NLKGPKVKGDVDVTLPKLEGDLQCPDVLKGPRLDLHAP-----DVKVP	639
Gallus_gallus	NLKGPKVKGDVDVTLPKLEGDFQCPDVLKGPKLDLHAP-----DVKVP	5405
Xenopus_tropicalis	NLKGPKVEG-----DLKGPKADIRAEVNLEAPDVIDG-----KVK	4473
	.....6550.....6560.....6570.....6580.....6590.....6600	

Mus_musculus	DLHLKAPKISMPEVDNLKGPKVKGDVDVSLP-----	4394
Rattus_norvegicus	DLHLKAPKISMPEVDNLKGPKVKGDVDISLP-----	4309
Homo_sapiens	DLHLKAPKISMPEVDNLKGPKVKGDMDISLP-----	4616
Pan_troglodytes	DLHLKAPKISMPEVDNLKGPKVKGDMDISLP-----	4617
Macaca_mulatta	DLHLKAPKISMPEVDNLKGPKVKGDVDISLP-----	4551
Callithrix_jacchus	DLHLKAPKISMPEVDNLKGPKVKGDVDVSLP-----	4665
Equus_caballus	DLHLKAPKISMPEVDNLKGPKVKGDVDVSLP-----	4605
Canis_lupus_familiaris	DLHLKAPKISMPEVDMNLKGPKVKGDVDVSLPNVEGDLKGPKVDVDPDVHGPDWHLK	4766
Bos_taurus	DLHLKAPKISMPEVDNLKGPKVKGDVDVSLP-----	4486
Heterocephalus_glaber	-----	1605
Chelonia_mydas	DMHFKAPKISMPEVDNLKGPKVKGDVDVSV-----	4615
Rhinatrema_bivittatum	GFGMSAPKFAGPDVDVKLP-----KGDIDIS-----	4164
Latimeria_chalumnae	-----	2285
Pavo_muticus	EMHLKMPHVSVPDIDNLKGPKVEG-----	664
Pavo_cristatus	EMHLKMPHVSVPDIDNLKGPKVEG-----	664
Gallus_gallus	EMHLKMPHVSVPDIDNLKGPKVEG-----	5430
Xenopus_tropicalis	GSKFKMPSLHMPDLDFNLKGPKVEG-----	4498
	.....6610.....6620.....6630.....6640.....6650.....6660	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	-----	4394
Rattus_norvegicus	-----	4309
Homo_sapiens	-----	4616
Pan_troglodytes	-----	4617
Macaca_mulatta	-----	4551
Callithrix_jacchus	-----	4665
Equus_caballus	-----	4605
Canis_lupus_familiaris	MPKVKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVPDVIIEGPDALKGPKFKM	4826
Bos_taurus	-----	4486
Heterocephalus_glaber	-----	1605
Chelonia_mydas	-----	4615
Rhinatrema_bivittatum	-----	4164
Latimeria_chalumnae	-----	2285
Pavo_muticus	-----	664
Pavo_cristatus	-----	664
Gallus_gallus	-----	5430
Xenopus_tropicalis	-----	4498
	.....6670.....6680.....6690.....6700.....6710.....6720	

Mus_musculus	-----KVEGDLKGPEVDIKGPKVDISAPDQDV	4421
Rattus_norvegicus	-----KVEGDLKGPEVDIKGPKVDINAPDQDV	4336
Homo_sapiens	-----KVEGDLKGPEVDIRDPKVDIDVPDQDV	4643
Pan_troglodytes	-----KVEGDLKGPEVDIRGPKVDIDVPDQDV	4644
Macaca_mulatta	-----KVEGDLKGPEVDIRGPKVDVDVPDQDV	4578
Callithrix_jacchus	-----KVEGDLKGPEVDIKGPKVDIDVPDQDV	4692
Equus_caballus	-----KVEGDLKGPEVDLKGPKVDIDAPDQDV	4632
Canis_lupus_familiaris	PEMNIKAPKISMPDIDLNLKGPKVKGDVDVSLPKVEGDLKGPEIDIKGPKVDVDVPDQDV	4886
Bos_taurus	-----KVEGDLKGPDVDIKGPKVDIDVPDQDV	4513
Heterocephalus_glaber	-----	1605
Chelonia_mydas	-----OLEGDLKGPEVDIRGPKLD-----	4634
Rhinatrema_bivittatum	-----GPSVDFKGP-----	4173
Latimeria_chalumnae	-----	2285
Pavo_muticus	-----	664
Pavo_cristatus	-----	664
Gallus_gallus	-----	5430
Xenopus_tropicalis	-----DLKGPKVDIRAPEVNLEAPDQDI	4521
	.....6730.....6740.....6750.....6760.....6770.....6780	

Mus_musculus	HGPDWHLKMPKVKMPKFSMPGFKGEGPEVDVSLPKANIDVSGPKVDIDVPDVIIEGPDAA	4481
Rattus_norvegicus	QGPDWHLKMPKVKMPKFSMPGFKAEQPEVDVSLPKADLDVSGPKVDIDVPDVIIEGPDAA	4396
Homo_sapiens	QGPDWHLKMPKVKMPKFSMPGFKGEGPDVDVNLPKADIDVSGPKVDVDVPDVIIEGPDAA	4703
Pan_troglodytes	QGPDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVPDVIIEGPDAA	4704
Macaca_mulatta	QGPDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADFDVSGPKVDIDVPDVIIEGPDAA	4638
Callithrix_jacchus	QGPDWHLKMPKVKMPKFSMPGFKGEGPDVDVNLPKADLDVSGPKVDIDVPDVIIEGPDAA	4752
Equus_caballus	HGPDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVPDVIIEGPDAA	4692
Canis_lupus_familiaris	HGPDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVPDVIIEGPDAA	4946
Bos_taurus	HGPDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADIDISGPKVDIDVPDVIIEGPDAA	4573
Heterocephalus_glaber	-----	1605
Chelonia_mydas	-----IDAPDVEIEGPDGK-----	4648
Rhinatrema_bivittatum	-----EVPKFKLP-----	4181
Latimeria_chalumnae	-----	2285
Pavo_muticus	-----	664
Pavo_cristatus	-----	664
Gallus_gallus	-----	5430
Xenopus_tropicalis	DG-----KVKGSKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDIRAPEVNLEAPDQD	4573
	.....6790.....6800.....6810.....6820.....6830.....6840	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	LKGPKFKMPEMNIKAPKISMPDIDLNLKGP	4511
Rattus_norvegicus	LKGPKFKMPEMNIKAPKISMPDIDLNLKGPVKGDVMSLPKVEGEIKVPEVDIKGPKMD	4456
Homo_sapiens	LKGPKFKMPEMSIKAPKISMPDIDLNLKGP	4733
Pan_troglodytes	LKGPKFKMPEMNIKAPKISMPDIDLNLKGP	4734
Macaca_mulatta	LKGPKFKMPEMNIKAPKISMPDFDLNLKGP	4668
Callithrix_jacchus	LKGPKFRMPEMNIKAPKMSMPDIDLNLKGP	4782
Equus_caballus	LKGPKFKMPEMNIKAPKISMPDFDLNLKGP	4722
Canis_lupus_familiaris	LKGPKFKMPEMNIKAPKISMPDIDLNLKGP	4976
Bos_taurus	LKGPKFKMPEMNIKAPKISMPDIDLNLKGP	4603
Heterocephalus_glaber		1605
Chelonia_mydas	WKGPKFKMPDMHFKAPKISMPDIDFNLKGP	4678
Rhinatrema_bivittatum	-----AMPSLVHAPDISIPHFDNMVKG	4205
Latimeria_chalumnae	-----HIKAPADIIHLGTP	2299
Pavo_muticus	-----GLKGPSVDLKGPSVDLKG	683
Pavo_cristatus	-----GLKGPSVDLKGPSVDLKG	683
Gallus_gallus	-----GLKGPGVDLKGPGVDLKG	5449
Xenopus_tropicalis	IDG--KVKGSKFKMPSLHMPDIDFNLKGP	4600
.....6850.....6860.....6870.....6880.....6890.....6900		

Mus_musculus	-----KVKGDVDVSLPKVEGEIK	4529
Rattus_norvegicus	IDVPDVNIEGPDALKGPKFKMPEMNIKAPKISMPDLHLKGPVKGDVDVSLPKVEGEIK	4516
Homo_sapiens	-----KVKGDVDVTLPKVEGDLK	4751
Pan_troglodytes	-----KVKGDVDVTLPKVEGDLK	4752
Macaca_mulatta	-----KVKGDVDVSLPKVEGDLK	4686
Callithrix_jacchus	-----KVKGDVDVSLPKVEGDLK	4800
Equus_caballus	-----KVKGDVDVSLPKVEGDLK	4740
Canis_lupus_familiaris	-----KVKGDVDVSLPKVEGDLK	4994
Bos_taurus	-----KVKGDVDISLPKVEGDLK	4621
Heterocephalus_glaber		1605
Chelonia_mydas	-----KVKGDVDVSPKLEGD	4696
Rhinatrema_bivittatum	-----KWKGDVDVSGPNIEGDVK	4223
Latimeria_chalumnae		2299
Pavo_muticus		683
Pavo_cristatus		683
Gallus_gallus		5449
Xenopus_tropicalis	-----KVEGDLK	4607
.....6910.....6920.....6930.....6940.....6950.....6960		

Mus_musculus	VPEVDIKGPKVDIDV	4551
Rattus_norvegicus	VPEVDIKGPKVDVDV	4538
Homo_sapiens	GPEADIKGPKVDINT	4773
Pan_troglodytes	GPEADIKGPKVDINT	4774
Macaca_mulatta	GPEVDIKGPKVDIDA	4708
Callithrix_jacchus	GP-----KVDIDA	4815
Equus_caballus	GPEVDLKGPKVDIDV	4762
Canis_lupus_familiaris	GPEIDIKGPKVDVDV	5016
Bos_taurus	GPEVDIKGPKVDIDV	4643
Heterocephalus_glaber		1605
Chelonia_mydas	GPEVDIRGPKLDVDFNLKGNLKGDLDSGPKLEGD	4756
Rhinatrema_bivittatum	IPKVDIKCPELDVND	4245
Latimeria_chalumnae		2299
Pavo_muticus	--SVDLKGPKVDIEC	703
Pavo_cristatus	--SVDLKGPKVDIEC	703
Gallus_gallus	--SVDLKGPKVDIEC	5469
Xenopus_tropicalis	GPKVDIRAPEVNLEA	4629
.....6970.....6980.....6990.....7000.....7010.....7020		

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus      PDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADLDVSGPKVDIDVPDVNVEGPDMDKVK 4611
Rattus_norvegicus PDWHLKMPKVKMPKFSMPGFKAEGPEVDVSLPKADLDVSGPKVDIDVPDVNVDPMDKVK 4598
Homo_sapiens      PDWHLKMPKVKMPKFSMPGFKGEGPDVDVSLPKADIDVSGPKVDVDIPDVNIEGPDADKLK 4833
Pan_troglodytes   PDWHLKMPKVKMPKFSMPGFKGEGPDVDMSLPKADIDVSGPKVDVDVPDVNIEGPDADKLK 4834
Macaca_mulatta    PDWHLKMPKVKMPKFSMPGFKGEGPDVDVNLPKADIDVSGPKVDIDVPDVNIEGPDADKLK 4768
Callithrix_jacchus PDWHLKMPKVKMPKFSMPGFKGEGPDVDVNLPKADIDVSGPKVDVDVPDVNIEGPDADKLK 4875
Equus_caballus    PDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADIDVSGPKVDIDVPDVNIEGPDADKLK 4822
Canis_lupus_familiaris PDWHLKMPKVKMPKFSMPGFKGEGPDVDVTLPKADLDISGPKMDISAPDVNIEGPDADKLK 5076
Bos_taurus        PDWHLKMPKVKMPKFSMPGFKGEGPEVDVNLPKADIDISGPKVDIDVPDVNIEGPDADKLK 4703
Heterocephalus_glaber ----- 1605
Chelonia_mydas    PEGKLMKPQMKFPKFSMPGFKGEGPDVDVNLPEGGVDISGPKIDIDAPNLDIEGPEGKLM 4816
Rhinatrema_bivittatum -KGGLKFPKMKMPKIGIKSPKLEGPVDVASLPKGDIEISGPKVDINAPDVNIEGPEGKLM 4304
Latimeria_chalumnae -----DISMGESDIKLM 2311
Pavo_muticus      PEGKLMKLPKMKLPKFG---LKGDAPVDVLEPKGEVELSGPRVDIAVPDVSVEGPEGKLM 760
Pavo_cristatus    PEGKLMKLPKMKLPKFG---LKGDAPVDVLEPKGEVELSGPRVDIAVPDVSVEGPEGKLM 760
Gallus_gallus     PEGKLMKLPKMKLPKFG---LKGDAPVDVLEPKGGEVELSGPKADIAVPDVSLEGPDAKLM 5526
Xenopus_tropicalis -----KVKGSKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDIRAPEVNLEAPDVID 4681
.....7030.....7040.....7050.....7060.....7070.....7080

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Mus_musculus      GPKFRMPEINIKAPKISMPDVLDELKGPKVKGAFFDGS----- 4648
Rattus_norvegicus GPKFKMPEINIKAPKISMPDVLDELKGPKVKGAFFDGS----- 4635
Homo_sapiens      GPKFKMPEINIKAPKISIPDVLDLKGPKVKGDFDVS----- 4870
Pan_troglodytes   GPKFKMPEINIKAPKISIPDVLDLKGPKVKGDFDVS----- 4871
Macaca_mulatta    GPKFKMPEINIKAPKISIPDVLDLKGPKVKGEYDVS----- 4805
Callithrix_jacchus GPKFKMPEINIKAPKISMPDVLDLKGPKVKGDFDVS----- 4912
Equus_caballus    GPKFKMPEINIKAPKISKPDVLDLKGPKIKGDFDVS----- 4859
Canis_lupus_familiaris GPKFKMPEINIKAPKISMPDVLDLKGPKIKGDFDVS----- 5113
Bos_taurus        GPKFKMPEINIKAPKISMPDVLDLKGS LGKGFDFDVS----- 4740
Heterocephalus_glaber -----DFNVS----- 1610
Chelonia_mydas    GPKFKMPEMHIAKPKISMPDIDLNLKGPKIKGDFDVS----- 4853
Rhinatrema_bivittatum TPKISMPSIHV--PKISMPPDVLNLKGPKWKGDVDIS----- 4339
Latimeria_chalumnae GSQFKVTSLNASGPHISSPFDIDLKGSKLKGFDFDVS----- 2348
Pavo_muticus      GPKVKVPEMHASVQISMPDIDLNLKGHRAGKGFDFLA----- 797
Pavo_cristatus    GPKVKVPEMHASVQISMPDIDLNLKGHRAGKGFDFLA----- 797
Gallus_gallus     GPKVKVPEMHASVQISMPDIDLNLKGHRAGKGFDFLA----- 5563
Xenopus_tropicalis G---KVKGSKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDIRAPEINLEAPDVIDGKVK 4738
.....7090.....7100.....7110.....7120.....7130.....7140

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Mus_musculus      -----VPKIEGTLKGPEIDMKGP-----GLDFEGPD----- 4674
Rattus_norvegicus -----VPKIEGTLKGPEIDMKGP-----GLDFEGPD----- 4661
Homo_sapiens      -----VPKVEGTLKGPEVDLKGPE-----RLDFEGPD----- 4896
Pan_troglodytes   -----VPKVEGTLKGPEVDLKGPE-----RLDFEGPD----- 4897
Macaca_mulatta    -----IPKVEGTLKGPEVDLKGPE-----NLDFEGPN----- 4831
Callithrix_jacchus -----VPKVEGTLKGPDVDLKGPE-----SLDFEGPD----- 4938
Equus_caballus    -----VPKIEGTFKGPEVDLKGPE-----GLDFEGPD----- 4885
Canis_lupus_familiaris -----VPKTDGAFKGPEVDLKGPE-----GLDFEGSD----- 5139
Bos_taurus        -----VPKIEGTFKGPEVDLKGPE-----SLDVEGPD----- 4766
Heterocephalus_glaber -----VPKIEGTFKGPEVDLKGPE-----ALDFEGPD----- 1636
Chelonia_mydas    -----VPKIEGDLKGPEIDIKSPKMSVDVPHLDIEGPEGKLMKGNF----- 4894
Rhinatrema_bivittatum -----GPKFEGHGKIPEVDIKGPELDVNAPHIDIEGPE----- 4372
Latimeria_chalumnae -----ARDVEAPG--VNLNVGTP-----GITIGGTG----- 2372
Pavo_muticus      -----APKIEGSLKGPDVTLKGPE-----EFGVKSP----- 823
Pavo_cristatus    -----APKIEGSLKGPDVTLKGPE-----EFGVKSP----- 823
Gallus_gallus     -----APKLEGGSLKGPDVTVKGP-----EFGVKSP----- 5589
Xenopus_tropicalis GSKFKMPSLHMPDLDFNLKGPKVEGDLKGPKVDFKAP-----EVNLEAPDVIDG--- 4788
.....7150.....7160.....7170.....7180.....7190.....7200

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus          ----- 4674
Rattus_norvegicus     ----- 4661
Homo_sapiens          ----- 4896
Pan_troglodytes       ----- 4897
Macaca_mulatta        ----- 4831
Callithrix_jacchus    ----- 4938
Equus_caballus        ----- 4885
Canis_lupus_familiaris ----- 5139
Bos_taurus            ----- 4766
Heterocephalus_glaber ----- 1636
Chelonia_mydas        KMPEMHIAKPKISMPDIDLNLKAPKLKGDLDLSPKIEGDLKGPEFDIKGPKVDIDAPDI 4954
Rhinatrema_bivittatum ----- 4372
Latimeria_chalumnae   ----- 2372
Pavo_muticus          ----- 823
Pavo_cristatus        ----- 823
Gallus_gallus         ----- 5589
Xenopus_tropicalis    ----- 4788
.....7210.....7220.....7230.....7240.....7250.....7260

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               . . * : .
Mus_musculus    ----- AKLSGPNLKMP SLEVSVPKITGPDANVHLKTPKVGISAPKLGGGEVDLKGPKVD 4728
Rattus_norvegicus ----- AKLSGPNLKMP SLEVVPVKISGPDANVHLKTPNVGISGPKLGGGEVDLRGPKVD 4715
Homo_sapiens    ----- AKLSGPNLKMP SLEISAPKVTAPDIDLHLKAPKIGFSGPKLEGGEVDLKGPKVD 4948
Pan_troglodytes ----- AKLSGPNLKMP SLEISAPKVTAPDIDLHLKAPKIGFSGPKLEGGEVDLKGPKVD 4949
Macaca_mulatta  ----- AKLSGPNLKMP SLEISAPKVTAPDIDLHLKAPKIGFSGPKLEGGEVDLKGPKVD 4883
Callithrix_jacchus ----- AKLSGPNLKMP SLEISAPKVSAPDIDFHLKTPKIGFSGPKLEGGEVDLKGPKVD 4990
Equus_caballus  ----- AKLSGPNLKMP SLDISAPKVTAPDIDLHLKAPKIGVSGPKLEGGEVDLKGPKVD 4939
Canis_lupus_familiaris ----- AKLSGPNLKMP SLDISAPKVTAPDIDLHLKAPKIGVSGPKLEGGEVDLKGPKVD 5193
Bos_taurus      ----- AKLSGPNLKMP SLDISAPKVTAPDIDLHLKTPKIGISGPKLEGGEVDLKGPKVD 4820
Heterocephalus_glaber ----- AKLRGPNLKMP SLDISAPKVTAPDIDLHLKMPQIGVSDPKLEGGEVDLRGPKVD 1690
Chelonia_mydas  DIHGPEGKLLPKMKLPKFSTPEFQGEPPDIDVSLPKGEIDISGP-----KIDIGAPDLD 5009
Rhinatrema_bivittatum ----- ARKKFKMPKFKMPGFGISAPKPEGPDIDASLPKGDIEISGP-----KVDINAPGVN 4423
Latimeria_chalumnae ----- MEFKGSQFSSPTLEMGGPK----- 2391
Pavo_muticus    ----- LEVECPELSVEGPE----- 837
Pavo_cristatus  ----- LEVECPELSVEGPE----- 837
Gallus_gallus   ----- IDVECPELSVEGPE----- 5603
Xenopus_tropicalis ----- KVKGSKFKMPSLHMPDLDLNLKGPKEG-----DLKGPKVDIKAPEVN 4831
.....7270.....7280.....7290.....7300.....7310.....7320

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               * . . * . . . . : . .
Mus_musculus    LETPSLDVHMESPDINIEGPDVKVPKFKKPKFGFGAKSPKADIKTPTVDVTVPEAELNVD 4788
Rattus_norvegicus LETPSLDVHMESPDINIEGPDVKVPKFKKPKFGFGAKSPKADIKTPTVDVTVPEAELSVE 4775
Homo_sapiens    VEAPSLDVHMDSPDINIEGPDVKIPKFKKPKFGFGAKSPKADIKSPSLDVTVPEAELNLE 5008
Pan_troglodytes VEAPSLDVHMDSPDINIEGPDVKIPKFKKPKFGFGAKSPKADIKSPSLDVTVPEAELNLE 5009
Macaca_mulatta  VEAPSLDVHMDSPDINIEGPDVKIPKFKKPKFGFGAKSPKADIKSPSLDVTVPEAELNLE 4943
Callithrix_jacchus VEAPSLDVHMDSPDINIEGPDVKIPKFKKPKFGFGAKSPKADIKSPSLDVTVPEAELNLE 5050
Equus_caballus  LEAPSLGVHMESPDINIEGPDVKIPKFKKPKFGFGAKSPKADFKSPSLDVTVPEAELNVE 4999
Canis_lupus_familiaris LEAPSLDVHMESPDINIESPDIKIPKFKKPKFGFGAKSPKADLKSPSLDVTMPEAELNVE 5253
Bos_taurus      LEAPSLDVHVESPDVNIIEGPDVKIPKFKKPKFGFGAKSPKADFKSPILDVTVPEAELNVE 4880
Heterocephalus_glaber LEAPNLDVDMQGGPGISTEWDDVKNPKFKKPKFGFGAKGPTADIKPSSLDVSMPEAELNVE 1750
Chelonia_mydas  IEGP--EGKLKGPKFKMPMHFKTPKISMPDIDLNLKGHKMKG---DFDVSVPKIEGNLK 5064
Rhinatrema_bivittatum IEGP--EGKLKNPKISKPSIH--VPKVSMPDIDLNLKGPKWKG---DVDISGPKLEGDLK 4476
Latimeria_chalumnae -----LYLKDPLGKVGSLPKLKLPSFATP-----GPKLEGREVGVDVNPETSVSVS 2437
Pavo_muticus    -----ANVKAPKFKKPKFGFGMKSPKGDAG--GPEVEFPEAELSAD 876
Pavo_cristatus  -----ANVKAPKFKKPKFGFGMKSPKGDAG--GPEVEFPEAELSAD 876
Gallus_gallus   -----GNVKAPKFKKPKFGFGMKSPKGDAG--APEVEFPEVELSAE 5642
Xenopus_tropicalis LEAP--DVDVDGKVGKPKFQMPSPMPKVSMPDLGLNLKPKMEGEFPGPKIDMKGPQVDVA 4889
.....7330.....7340.....7350.....7360.....7370.....7380

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Mus_musculus	SP <del>IN</del> IGGKSKK-----	4800
Rattus_norvegicus	TPEINIGGKGKK-----	4787
Homo_sapiens	TPEISVGGKGKK-----	5020
Pan_troglodytes	TPEISVGGKGKK-----	5021
Macaca_mulatta	TPEISVGGKGKK-----	4955
Callithrix_jacchus	TPEISVGGKGKK-----	5062
Equus_caballus	TPEISVGGKGKK-----	5011
Canis_lupus_familiaris	TPEISVGGKGKK-----	5265
Bos_taurus	APDISVGGKGKK-----	4892
Heterocephalus_glaber	IPEVGTGGKSKK-----	1762
Chelonia_mydas	GPEVDIKGPEFGIRSP <del>ELDVECPDVTTEGLEGNV</del> KLPKFKKPKFGFGIKSPKAEIKSPEV	5124
Rhinatrema_bivittatum	APKLDIQSLNWM-----	4488
Latimeria_chalumnae	GGKFGG-----	2443
Pavo_muticus	LPELSLAAKGKK-----	888
Pavo_cristatus	LPELSLAAKGKK-----	888
Gallus_gallus	LPDLSVAAKGKK-----	5654
Xenopus_tropicalis	IPDVELEGPEGK-----	4901
.....7390.....7400.....7410.....7420.....7430.....7440		

Mus_musculus	-----SKFKMPKIHMSGPKVKAKKQGFDLNIPGGEIDTSLK	4836
Rattus_norvegicus	-----SKFKMPKIHMSGPKVKTKKQGFDLNPVGGEIDASLK	4823
Homo_sapiens	-----SKFKMPKIHMSGPKIKAKKQGFDLNPVGGEIDASLK	5056
Pan_troglodytes	-----SKFKMPKIHMSGPKIKAKKQGFDLNPVGGEIDASLK	5057
Macaca_mulatta	-----SKFKMPKIHMSGPKIKAKKQGFDLNPVGGEIDASLK	4991
Callithrix_jacchus	-----SKFKMPKIHMSGPKIKAKKQGFDLNPVGGEIDASLK	5098
Equus_caballus	-----SKFKMPKIHMSGPKIKAKKQGFDLNPVGGEVDASLK	5047
Canis_lupus_familiaris	-----SKFKMPKIHMSGPKMKAKKQGFDLNPVGGEIDATLK	5301
Bos_taurus	-----SKFKMPKIHMSGPKMKAKKQGFDLNPVGGEIDASLK	4928
Heterocephalus_glaber	-----SKFKMPKLHMSGPKVKAKKQGFDLNPVGGEIDASLK	1798
Chelonia_mydas	DI <del>AVPEGELN</del> VESPDIGISGKGKKSKFKMPKLHMSGPKIKGKKGGFDMNLPSEGEIDANLK	5184
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----DINVPG-----	2449
Pavo_muticus	-----SKFKMPKLHMSGPKVKGKKGAFDVSAAGAEVEVGVK	924
Pavo_cristatus	-----SKFKMPKLHMSGPKVKGKKGAFDVSAAGAEVEVGVK	924
Gallus_gallus	-----SKFKMPKLHMSGPKVKGKKGAFDVSVAGAEVDVGLK	5690
Xenopus_tropicalis	-----LKMPKFKMPKFGFGSGSKVDGKD--VDIKLPEGEIDVSGP	4938
.....7450.....7460.....7470.....7480.....7490.....7500		

Mus_musculus	APDVDVSVAGPDAALK--AEVKS <del>PKVKK</del> TMFGKMYFPDVEFDIKSPKFKA <del>EAPLP</del> SPKLE	4894
Rattus_norvegicus	VPDVDVSVAGPDAALK--AEVKS <del>PKVKK</del> TMFGKMYFPDVEFDIKSPKFKA <del>EAPLP</del> SPKLE	4881
Homo_sapiens	APDVDVNIAGPDAALK--VDVKSPKTKKTMFGKMYFPDVEFDIKSPKFKA <del>EAPLP</del> SPKLE	5114
Pan_troglodytes	APDVDVNIAGPDAALK--VDVKSPKTKKTMFGKMYFPDVEFDIKSPKFKA <del>EAPLP</del> SPKLE	5115
Macaca_mulatta	APDVDVNIAGPDASLK--VDVKSPKTKKTMFGKMYFPDVEFDIKSPKFKA <del>EAPLP</del> SPKLE	5049
Callithrix_jacchus	APDVDVNIAGPDAALK--VDVKSPKTKKPMFGKMYFPDVEFDIKSPKFKA <del>EASLP</del> SPKLE	5156
Equus_caballus	TPDVDVNVAGPDATLK--VDVKSPKTKKPMFGKMYFPDVEFDIKSSKFKA <del>EASLP</del> SPKME	5105
Canis_lupus_familiaris	GPGMDVNVGPDAMLK--VDVKSPKTKKPMFGKMYFPDVEFDIKSSKFKA <del>EAPLP</del> SPKME	5359
Bos_taurus	SPDIDVNVAGPDASLK--VDVKSPKTKKPMFGKMYFPDVEFDIKSSKFKA <del>EASLP</del> SPKIG	4986
Heterocephalus_glaber	APDVDISIAGPDAALK--VDVKSPRSKKT <del>TMFGKMYFPDVEFDIKSPKFKA</del> EASLPSPKME	1856
Chelonia_mydas	SPDL <del>DLNVTG</del> PEATIKGDINVKSPKGKKPMFGKISFPDVEFDIKSPKFKA <del>DASVTAP</del> KME	5244
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----IDVKMPRV	2458
Pavo_muticus	SPEVDVSAASPDVAIK-----SPKGKKAMFGKISFPDVEFDLKS <del>HR</del> SRGDA <del>AAAL</del> PKVE	978
Pavo_cristatus	SPEVDVSAASPDVAIK-----SPKGKKAMFGKISFPDVEFDLKS <del>HR</del> SRGDA <del>AAAL</del> PKVE	978
Gallus_gallus	SPDVEVSAAGPDVAVK-----SPKGKKAMFGKISFPDVEFDLKS <del>HR</del> SRGDA <del>AVVLP</del> PKTE	5744
Xenopus_tropicalis	KVDISAPELDIECEP-----KLKGS <del>SKFKMP</del> SLHMPDIDLNLKSPKLEGLDKDEPKVDIK	4992
.....7510.....7520.....7530.....7540.....7550.....7560		

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Mus_musculus	G--EIKVPDVIDISSP-----GINVEAPDIHMKAPKFKVPG-	4927
Rattus_norvegicus	G--EIKVPDVIDISSP-----GVNVEAPDIHVKAPKFKVPG-	4914
Homo_sapiens	G--ELQAPDLELSLP-----AIHVEGLDIKAKAPKVKMPD-	5147
Pan_troglodytes	G--ELQAPDLELSLP-----AIHVEGLDIKAKAPKVKMPD-	5148
Macaca_mulatta	G--ELQAPDLELSLP-----GIHVEGPDIAKAPKVKMPG-	5082
Callithrix_jacchus	G--ELQAPDLELSLP-----GVHLEGPDMAKAPKVKVPG-	5189
Equus_caballus	G--EIHAPDVIDISSP-----GINVEGPDIRLKSPPKVKVPG-	5138
Canis_lupus_familiaris	G--EIQAPDLDISSP-----GIHVEGPDIKLKAPKVKMPG-	5392
Bos_taurus	G--EIQAPDLDISSP-----GINVEGPDIKLKAPKIKAPG-	5019
Heterocephalus_glaber	G--SVQAPDLNLSLP-----GINVEGPDIKVKAPKFTMPG-	1889
Chelonia_mydas	G--EFKAPDLEVSTPGIKGDIKSPGLNVTAPSIANLDPVNIRGPDINLKKPKVKLPFG	5301
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	G--EVSVS-----	2464
Pavo_muticus	G--ELKEMEAKGPSV-----QVEVGAADWGAKKARVAVPG-	1011
Pavo_cristatus	G--ELKEMEAKGPSV-----QVEVGAADWGAKKARVAVPG-	1011
Gallus_gallus	G--ELKGLEVKGPSA-----DVEVGAADWSAKKAKAAVPG-	5777
Xenopus_tropicalis	APEINLEAPDVIDMDGK-----VKGPKFKMPSVPKVSMPDL	5027
	.....7570.....7580.....7590.....7600.....7610.....7620	

Mus_musculus	-VEASGPKIEGNLKGPKVQANLDTPDINIEGPEA-----KIKAPSFVSAPQVSI	4976
Rattus_norvegicus	-VEAAGPKIEGNLKGPKVQANLDTPDINIEGPEA-----KIKTPSFVSAPQVSI	4963
Homo_sapiens	-VDISVPKIEGDLKGPKVQANLGAPDINIEGLDA-----KVKTPSFGISAPQVSI	5196
Pan_troglodytes	-VDISVPKIEGDLKGPKVQANLGAPDINIEGLDA-----KVKTPSFGISAPQVSI	5197
Macaca_mulatta	-VDISVPKIEGDLKGPKVQANLDPDINIEGPDA-----KVKTPSFGVSAPQVSI	5131
Callithrix_jacchus	-VDISVPKIEGDLKGPKVEVNLDAPDINIEGPDA-----KVKTPSFGISAPQVSI	5238
Equus_caballus	-MDVSGPKVEGDLKGPRVQANLDPDINIEGPDA-----KVK--AFGISAPQVSI	5185
Canis_lupus_familiaris	-MDVSGAKIEGDLKGPRVQTNLDAPDINIEGLDS-----KVKAPSFGISATQASI	5441
Bos_taurus	-VDVSGPKIEGDLKGPRVQANLDPDINIEGPDA-----KVKAPSFGISAPQVSI	5068
Heterocephalus_glaber	-VDVSLGKTEGDLKGPKVQANLEAPGVITIEGPDS-----KVKAPSFVSSTPQVSM	1938
Chelonia_mydas	NIDIAGPKMEGDLRIPGIDANINAPDMKLKGP-----TVNLPSSVDVSAPSFSA	5349
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----VKLEGELKGPSVG-----	1024
Pavo_cristatus	-----VKLEGELKGPSVG-----	1024
Gallus_gallus	-----LKVEGDLKGPSVD-----	5790
Xenopus_tropicalis	GLNVKGPKEGELKGPKIDMKGPEDVAIPDVELEGPEGLKMPKFKMPKFGFSKVDG	5087
	.....7630.....7640.....7650.....7660.....7670.....7680	

Mus_musculus	PDVNVNLKGPKIKGDVPSVGLEGPNIDLOGPEGKIKFPKFSLPKISAPGVKMEG----	5031
Rattus_norvegicus	PDVNVKLKGPNIKGDVPSVGLEGPDVDLOGPEGKIKFPKFSLPKISAPGVKMGG----	5018
Homo_sapiens	PDVNVNLKGPKIKGDVPSVGLEGPDVDLOGPEAKIKFPKFSMPKIGIPGVKMEG----	5251
Pan_troglodytes	PDVNVNLKGPKIKGDVPSVGLEGPDVDLOGPEAKIKFPKFSMPKIGIPGVKMEG----	5252
Macaca_mulatta	PDVNVNLKGPKIKGDVPSMGLEGPDIDLOGPEAKIKFPKFSMPKIGIPGVKMEG----	5186
Callithrix_jacchus	PNVNVNLKGPKIKSDVPSVGLEGPDVDLOGPEAKIKFPKFSMPKIGVPGVKMEG----	5293
Equus_caballus	PDVNVSLKGPKIKGDVPAVGLEGPDVDLOGPESKIKFPKFSMPKIGVPGVKMEG----	5240
Canis_lupus_familiaris	PDVNVSLKGPKIKGEVPRVGLEGPDIDLOGPEPKIKFPKFSMPKIGVPGMKMEGR----	5497
Bos_taurus	PDVNVSLKGPKIKGDVPSVGLEGPDVDLOGPESKIKFPKFSMPKIGIPGVKVDG----	5123
Heterocephalus_glaber	PDVNVNLKGPKIQADVPSVGLEGPDVDLOGPEAKIKFPKFSVPRIGVPAVTMEA----	1993
Chelonia_mydas	SDLIDINLKGPKVKGDVSLP-----TAELEGPEGLKFPKFSLPKIGKPGNLLEGADVQLP	5404
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----VAVPSVAAPPELELKG-----	1039
Pavo_cristatus	-----VAVPSVAAPPELELKG-----	1039
Gallus_gallus	-----VAVPSVAAPPELELKG-----	5805
Xenopus_tropicalis	KDVDIELPEADLSASGPKVDISAPKFNIGLEGKVKGPKEMPVSNLATHDVHLN---LK	5144
	.....7690.....7700.....7710.....7720.....7730.....7740	

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Mus_musculus	STEIGAQMPSLEGGLSSTSMKLEGPPLSLKGPVGLPSVDLSMPKVS	5091
Rattus_norvegicus	STEIHAQMPSLEAGLSTSDIKFEGPGVSLKGPVGLPSVDLSMPKVS	5078
Homo_sapiens	GAEVHAQLPSLEGDLRGPDKLEGPVSLKGPVGLPSVNLSPKVS	5311
Pan_troglodytes	GAEVHAQLPSLEGDLRGPDKLEGPVSLKGPVGLPSVNLSPKVS	5312
Macaca_mulatta	GADVHAQLPSLEGDLRGPDKLEGPVSLKGPVGLPSVNLSPKVS	5246
Callithrix_jacchus	GAEVRGQLPSLEGDLRGPDKLEGPVSLKGPVGLPSVNLSPKVS	5353
Equus_caballus	GAEVHAHLPSLEGGLSASDVKLEGPVSLKGPVGLPSVNLSPKVS	5300
Canis_lupus_familiaris	GAEVHAQLPSLEGGLSAPDVRLEGADVSLKEPKVDLPVNLSPKVS	5557
Bos_taurus	GAEV--QLPSLEGGLSNAPDVKLEGPVSLKGPVGLPSVNLSTPKIS	5181
Heterocephalus_glaber	GTEAGVQLPSLKGAPSAFNIRLQPGVTLVGPVGLPSMNL--EVS	2051
Chelonia_mydas	SASVDVSVPSIEGGVSV--AAEGLDAKLKGPKVTMPVNLSPQVS	5462
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----PKGKAEAGVPEGKLDVG--LKGPDFDGNLKGPKV	1071
Pavo_cristatus	-----PKGKAEAGVPEGKLDVG--LKGPDFDGNLKGPKV	1071
Gallus_gallus	-----PKGKVAAGVPEGKLVGDVGLKGAFFDGRLOGPKL	5840
Xenopus_tropicalis	GPKLEGQGIDPKGPEGNIDIAIPKTGLDIKAPDVSLPSTGLDIEGPEGNFKMPKVKKPKF	5204
	.....7750.....7760.....7770.....7780.....7790.....7800	

Mus_musculus	KGDLGAS-----SPSMKLHAPGLDLKGVGGKVHIG-----	5121
Rattus_norvegicus	KGDVAAS-----SPSMKLHAPGLDMKVAGKVQIG-----	5108
Homo_sapiens	KGDLGAS-----VPSMKVHAPGLNLSGVGGKMVG-----	5341
Pan_troglodytes	KGDLGAS-----VPSMKVHAPGLNLSGVGGKMVG-----	5342
Macaca_mulatta	KGDLGAS-----VPSMKVHAPGLDLKGVGGKVQVG-----	5276
Callithrix_jacchus	KGDLGAS-----VPSVKVQAPGLDLKGVGGKVQVG-----	5383
Equus_caballus	KGDLGAS-----VPSVKVHAPGLDLKGVGGKVME-----	5330
Canis_lupus_familiaris	KGDLGAS-----VPSVKVHTPGLDLRSQGGKVRME-----	5587
Bos_taurus	KGDMGAS-----VPSMRVHAPGFDLRGAGGKVKE-----	5211
Heterocephalus_glaber	KGELGAS-----VPSVRVHSPGLALGGGAGKVQMG-----	2081
Chelonia_mydas	KGDLGAS-----GPKVDIHAPDVDMKGFGGKLMKPKFKSPGLEGPADLNMGDTGFSAP	5521
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	KGDAELGG-FA-GQLPRLTAEGPELSIGGSVPSLG-----	1104
Pavo_cristatus	KGDAELGG-FA-GQLPRLTAEGPELSIGGSVPSLG-----	1104
Gallus_gallus	KGDAELGG-LG-G---RPRAEGPELSIGGSVPSLG-----	5870
Xenopus_tropicalis	GFGMKSPKADINVPADVIGTPDVEVNAEMPEIGVAG-----	5240
	.....7810.....7820.....7830.....7840.....7850.....7860	

Mus_musculus	-----ADGVKMSGIDATTALSVGAPDVTILKGPSLQGD LAVSGDIKC	5162
Rattus_norvegicus	-----ADGVKMSGIDATTALSVGAPDVTILKGPSLQGD LAVSGDIKC	5149
Homo_sapiens	-----GDGVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	5382
Pan_troglodytes	-----GDGVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	5383
Macaca_mulatta	-----GDGVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	5317
Callithrix_jacchus	-----GDGVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	5424
Equus_caballus	-----GDGVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	5371
Canis_lupus_familiaris	-----GDGVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	5628
Bos_taurus	-----GDGVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	5252
Heterocephalus_glaber	-----GDAVKVPIDATTTLNVGAPDVTILKGPSLQGD LAVSGDIKC	2116
Chelonia_mydas	QIDGGMKVPGMDVHLGAPDLDIKEPTVKMPSVGISAPDFDVLNKGPNLKGDLDSGGIKY	5581
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----CPGGRLHPP-----GPSLAVSAPDLNARAELGGS SAKS	1136
Pavo_cristatus	-----CPGGRLHPP-----GPSLAVSAPDLNARAELGGS SAKS	1136
Gallus_gallus	-----CPGVHLRPPGAELRGPSVAVSAPDLNVKAEELGGS VGS	5907
Xenopus_tropicalis	-----KGKKGKLMKPKIHMSGPKIKGKKGGFDVNTPELDSEVSMKTPN	5283
	.....7870.....7880.....7890.....7900.....7910.....7920	



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Mus_musculus	PKVSVATPDVSLEASEGAVKLPHMKLPQFGISTP---GSDLINIKGPQVCGELKGSMD	5219
Rattus_norvegicus	PKVSVGTPEVSVEALEGGVKLPQMKLPQFGISTP---GSDLINIKGPQVCGELQSGTD	5206
Homo_sapiens	PKVSVGAPDLSLEASEGSIKLPKMKLPQFGISTP---GSDLHVNAGKPQVSGELKGPVVD	5439
Pan_troglodytes	PKVSVGAPDLSLEASEGSIKLPKMKLPQFGISTP---GSDSHVSAKGPQVSGELKGPVVD	5440
Macaca_mulatta	PKVSVGAPDLSLEASEGSIKLPKMKLPQFGVSAP---GSDLHVNAGKPQVSGELKGPVVD	5374
Callithrix_jacchus	PKVSVGAPDLSLEASEGGIKLPKMKLPQFGISTP---GSDLHV--KGQVSGELKGP---	5476
Equus_caballus	PKVSVGAPDLSLEAPEGSIKLPKMKLPQFGISAP---GSDLINVKGPQVTGELKGPMD	5428
Canis_lupus_familiaris	PKVSVGAPDLSLEAPEGSIKLPKMKLPQFGISTP---GSDLDMNVKGPQVTGELPGPGMD	5685
Bos_taurus	PSVSVGAPDLSLEAPEGGIKLPKMKLPQFGISAP---GSDVDINVKGPQVTGELKGPMD	5309
Heterocephalus_glaber	PRICTGAPELSVEAPEIGMKLPQMKLPQFGICTP---GSDTDVGIKGPQVAGGLKKGKVD	2173
Chelonia_mydas	PKVAVDAPDVNLEGGPGAIAKLPKSLKLPQFGISTPHVEGSDMGVNIIEGPQIKGDLTGSGID	5641
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	PVLSVDAAGVGVEGLGGTIKLPQLPQFGLS-----	1168
Pavo_cristatus	PVLSVDAAGVGVEGLGGTIKLPQLPQFGLS-----	1168
Gallus_gallus	PVASLDAAEVGVEGLGGTIKLPQLPQFGLSAP-----	5941
Xenopus_tropicalis	ADISISGGDATIKSDIGIKGTTRKPLFGKIHF-----DVEFDIKSPKLGKDALSPSPK	5338
	.....7930.....7940.....7950.....7960.....7970.....7980	

Mus_musculus	VNLK-----GPOISAPSMDFNLEGPVKVKSGLAAGELKGPAGGALPGISIQG	5267
Rattus_norvegicus	VNLK-----GPOISAPGMDFNLEGPVKVKSGLGATGELKGPSIGGGLPGISIQG	5254
Homo_sapiens	VNL-----KGPRISAPNVDFNLEGPVKVKSGLGATGEIKGPTVGGGLPGIGVOG	5487
Pan_troglodytes	VNL-----KGPOISAPNVDFNLEGPVKVKSGLGATGEIKGPTVGGGLPGISVOG	5488
Macaca_mulatta	VNL-----KGPOISAPNVDFNLEGPVKVKSGLGATGEIKGPTVGGVPGISVOG	5422
Callithrix_jacchus	-----QISAPNVDFNLEGPVKVKSGLGATGEMKGPITVGGGLP-----G	5513
Equus_caballus	VNLGG--LNLKGPOISGPQISAPDVDLNLLEGPVKVKSGLGATGEMKGPITIGGSLSGIVOG	5486
Canis_lupus_familiaris	VNLGA--LNLKGPOISGPQVSAPDMDLKEGPKIKGSLGAAGEMTGPITVGGGLPGISVQC	5743
Bos_taurus	VNLGG--LNLKGPOISGPQISVDPVDLSLEGPVKVKSGLGAGGEMKGPITVG--LPGISVOG	5365
Heterocephalus_glaber	MSLK-----GPQLSAPDVFDFNIQGPVKTGSLGAPGEVKG-----ALQGVSIQG	2216
Chelonia_mydas	GELKGPTFKMQPLKVSAPKISAPDIDFNLKGPNLKGDNVNIAGDVKGPKVGEAPDISIKS	5701
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----	1168
Pavo_cristatus	-----	1168
Gallus_gallus	-----	5941
Xenopus_tropicalis	ADIKTS-----DLHIGGEINTQEVESSTGLDIGELDVKSKKSKIKLPAFMSGAKV	5390
	.....7990.....8000.....8010.....8020.....8030.....8040	

Mus_musculus	PEGNLQMPGIKASGCDVKLS-----SGQISGPEIKGDLKSGSLGLHGAVPDIGVKGPS	5320
Rattus_norvegicus	PEGNLQMPGIKASGCDVKVS-----SGQISGPEIKGDLKSGSIGLHGAVPDLVVKGPS	5307
Homo_sapiens	LEGNLQMPGIKSSGCDVNLPGVNVKLPQTGQISGPEIKGGLKSGEVGFHGAAPDISVKGPA	5547
Pan_troglodytes	LEGNLQVPGIKSSGCDVNLPGVNVKLPQTGQISGPEIKGGLKSGEVGFHGAAPDISVKGPS	5548
Macaca_mulatta	LEGNLQMPGIKSSGCDVNLPGVNVKLPAGQISGPEIKGGLKSGEVGFHGAAPDISVKGPS	5482
Callithrix_jacchus	LEGNLQMPGIKSSGCDVNLPGVNVKLPQTGKISGPEIKGDLKSGEVGFHGAAPDISVRGPS	5573
Equus_caballus	LEGNLQMPGIKSSGCDVELPGVNVKLPQTGQISGPEIKGDLKG----FHGAAPDISVKGPS	5542
Canis_lupus_familiaris	LEGNLQMPGIKPSGCDVELLGVNVKLPAGQISGPEVKGDLKSGIGFQGAAPDISIKGPS	5803
Bos_taurus	LEGSLOVPGMKSSGCDVALPGVNVKLPQTGQISGPEIKGDLKSGIGFQGAAPDIDVKGPS	5425
Heterocephalus_glaber	LEGNLQAPALPTARGGVLDLPGVTVMPLPAGQIASPDIRGGLKASGLGLHGAAPDEVSVKGPS	2276
Chelonia_mydas	SSGNMQIPSVKLP-----KCDISGSQGMKVSQGVGIAADAPDVSLTGPA	5744
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----	1168
Pavo_cristatus	-----	1168
Gallus_gallus	-----	5941
Xenopus_tropicalis	EYGHDTSLPKDSINVSGLKLEGDIKASGTDASLRKLDALSSSFGGDLISLEGPKIQMPS	5450
	.....8050.....8060.....8070.....8080.....8090.....8100	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	FNVASP---ESDFGVSLKGPVKKGVDVSGGVSPDINLGEHMSVKGSSEVWKGPQVSS	5377
Rattus_norvegicus	FNMASP---ESDFGVSLKGPVKKGVDVSGGVSPDINLGEHMSVKGSSEVWKGPQVSS	5364
Homo_sapiens	FNMASP---ESDFGINLKGPVKKGADVSGGVSPDISLGEHLSVKGSSEVWKGPQVSS	5604
Pan_troglodytes	FNMASP---ESDFGINLKGPVKKGADVSGGVSPDISLGEHLSVKGSSEVWKGPQVSS	5605
Macaca_mulatta	FNMTSP---ESDFAINLKGPVKKGVDVSGGVSPDISLGEHLSVKGSSEVWKGPQVSS	5539
Callithrix_jacchus	FNMASP---ESDFGISLKGPVKKGVDVAGGVSPDISLGEHLSVKGSSEVWKGPQVSS	5630
Equus_caballus	FNVASP---ESDFGVSLKGPVKKGVDVSGGVSPDISLGEHMSVKGSSEVWKGPQVSS	5599
Canis_lupus_familiaris	LSTASP---ESDFGVSLKGLKIKGGMDVSGGVSPAVSLGEHLSIKG-----PQATS	5853
Bos_taurus	LNVASP---ESDFGVSLKGPVKKGMDVSGGVSPDISLGEHMSVKGSSEVWKGPQVSS	5482
Heterocephalus_glaber	LCVASP---ESDVGVSLLKGPVKKGMDVSGGVSPDISLGEHLSVKGSSEVWKGPQVSS	2333
Chelonia_mydas	FSVSAPKVS---SDFDVLNKEPKIKGGFGISGDMKAPDVNVGAPHLGIQHSGGEFKGPQLSS	5804
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----VDGAEEVGVGVAAADVSPKASARGPAAAGGGG-----	1201
Pavo_cristatus	-----VDGAEEVGVGVAAADVSPKASARGPAAAGGGG-----	1201
Gallus_gallus	-----GVNGADVGGGGGSAEMAASKASVRGRAASGDGG-----	5975
Xenopus_tropicalis	VSILDPNVSFPDSLDLNVTPGKICGLRVASDFINSDASGSLHGDAAGLKFNMGKPDINL	5510
	.....8110.....8120.....8130.....8140.....8150.....8160	

Mus_musculus	SLN---LDTSKLAGNLHFSGPKIEGDVKGQIGL-QGPGLSVSGPQGHLESSESGKVTFFPK	5433
Rattus_norvegicus	SVN---LDTTKLVGNLHFSGPKIEGDVKGQIGL-QGPGLSVSGPQGHLESSESGKVTFFPK	5420
Homo_sapiens	ALN---LDTSKFAGGLHFSGPKVEGGVKGQIGL-QAPGLSVSGPQGHLESSESGKVTFFPK	5660
Pan_troglodytes	ALN---LDTSKFAGGLHFSGPKVEGGVKGQIGL-QAPGLSVSGPQGHLESSESGKVTFFPK	5661
Macaca_mulatta	ALN---LDTSKFAGGLHFSGPKVEGGVKGQIGL-QAPGLSVSGPQGHLESSESGKVTFFPK	5595
Callithrix_jacchus	ALN---LDTSKFAGGLHFSGPKVEGGVKGQIGL-QAPGLSVSGPQGHLESSESGKVTFFPK	5686
Equus_caballus	ALN---LDAPKLAGGLHFSGPKVEGSAKGQIGL-QGPGLSVSGPQGHLESSESGKVTFFPK	5655
Canis_lupus_familiaris	ALS---LDAPKLAGGLHFSGPKVEGSAKGQIGL-QGPGLSVSGPQGHLESSESGKVTFFPK	5909
Bos_taurus	ALN---LDAPAFAGGLHFSGPKVEGGVKGQIGL-QGPGLSVSGPQGHLESSESGKVTFFPK	5538
Heterocephalus_glaber	AL-----SSGLHFSGPKSEGGMNGGELG-----LSVSGPQGPMSGSGRVTFPPK	2377
Chelonia_mydas	SGFDVEMNVPNVAGGLHVS GPKIEGSLKGPVKGI-KGPRDMNFPQSNLESASGKVTFFPR	5863
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----	2464
Pavo_muticus	-----PKDGGGAELCAGRVTFFPK	1219
Pavo_cristatus	-----PKDGGGAELCAGRVTFFPK	1219
Gallus_gallus	-----PKDGG-AEFSAGRVSFFPK	5992
Xenopus_tropicalis	KGQDLSLKGNLEGQFKGPQSIDVAGAKVGGLVQGGVDGHFGASGISADTESAVKISFFPR	5570
	.....8170.....8180.....8190.....8200.....8210.....8220	

Mus_musculus	MKIPKFTFSGRELIGREVGVDVNFPPKVEAN-VQAGAGEGKWEESSEVKKLKKSIKMPKHF	5492
Rattus_norvegicus	MKIPKFTFSGRELIGREVGVDVNFPPKVEAN-VQAGAGEGELEESAVKLLKKSIIKMPKFTF	5479
Homo_sapiens	MKIPKFTFSGRELVGREMGVDVHFPKAEAS-IQAGAGDGEWEESEVKKLKKSIKMPKFN	5719
Pan_troglodytes	MKIPKFTFSGRELVGREVGVDVHFPKAEAS-IQAGAGDGEWEESEVKKLKKSIKMPKFN	5720
Macaca_mulatta	MKIPKFTFSGRELVGREVGVDVHFPKAEAS-VQAGAGDGEWEESEVKKLKKSIKMPKFN	5654
Callithrix_jacchus	MRMPKFTFSGRELVGREVGVDIHFPPKAEAT-VQPGAGQGEWEESEVKKLKKSIKMPKFN	5745
Equus_caballus	MKIPKFTFSGRELVGREVGVDISFPKAEAS-VQSGAGEGEWEDSDIKLKKSIKMPKFN	5714
Canis_lupus_familiaris	MKIPKFTFSGRELVGREVGVDINFPRAEATGHQAGAGDGEWEECDIKLKKSIKMPKFN	5969
Bos_taurus	MKIPKFTFSGRELVGREVGVDINFPKVEAS-IQSGAGEGEWEESEVKKLKKSIKMPKFTF	5597
Heterocephalus_glaber	MKIPKFTS-GRELVGREVGVDVAFPTVEAS-AQAGATGGEWGEAEVKKLKKSIKMPKFTF	2435
Chelonia_mydas	MKLPKFVSSGHEVTGREVGVDVNFPPQDAS-IHAGAVEAEFEEDVKKLKKSIKMPKFN	5922
Rhinatrema_bivittatum	-----	4488
Latimeria_chalumnae	-----EAELEGANVQVKKSIKMPKLFNF	2487
Pavo_muticus	LRVPKFHFSEPEVKGREVGVDVEFPGTEAG-----GPAEPEAEADAKGKSKLKMPKFAF	1273
Pavo_cristatus	LRVPKFHFSEPEVKGREVGVDVEFPGTEAG-----GPAEPEAEADAKGKSKLKMPKFAF	1273
Gallus_gallus	LRVPKFHFSEPEAKGREVAVDVEFPG-----TEPEAEADAKGKSKLKMPKFAF	6040
Xenopus_tropicalis	LLMPKFTI--GPEHLGREMGVDVDFPKVETI--NLSQADHELEEGDIKKSIKMPKFN	5626
	.....8230.....8240.....8250.....8260.....8270.....8280	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus      SKSKGKGGV-TGSPE--ASISGSKGDLKSSKASLGSLEG-----EVEAEASS 5536
Rattus_norvegicus SKPKGKGGV-TGSPE--ASVSGSKGDLKSSKASLGSLEG-----EAEAEASS 5523
Homo_sapiens      SKPKGKGGV-TGSPE--ASISGSKGDLKSSKASLGSLEG-----EAEAEASS 5763
Pan_troglodytes   SKPKGKGGV-TGSPE--ASISGSKGDLKSSKASLGSLEG-----EAEAEASS 5764
Macaca_mulatta    SKPKGKGGV-TGSPE--ASISGSKGDLKSSKASLGSLEG-----EAEAEASS 5698
Callithrix_jacchus SKPKGKGGV-TGSPE--ASISGSKGDLKSSKASLGSLEG-----EAEAEASS 5789
Equus_caballus    SKPKGKGGV-TGSPE--ASISGSKGDLKSSKASLGSLEG-----EAEAEASS 5758
Canis_lupus_familiaris SKPKGKGGV-AGSPE--ASISGSKGDLKSSKASLGSLEGD-----TDDVETSS 6014
Bos_taurus        SKPKGKAGV-AGSPE--ASVSGSKGDLKSSKASLGSLEG-----EAEVDTSS 5641
Heterocephalus_glaber SKPKGKGS--SGSPE--ASVSESRGDLKSSKASLGSLEG-----EAEPEVLS 2479
Chelonia_mydas    SKPKGKGAS-VGSPEASVSISSGSKGDLKSSKASLGSMEGEL-----GGGEAAAAA 5971
Rhinatrema_bivittatum ----- 4488
Latimeria_chalumnae SRSKVKGDVRIKSPKGSVSASGSKVDLKGSKASLGSADLEA-----EGISPKAKS 2537
Pavo_muticus      SKGKGKGGGAAPGSPPELPGSPGGSRGDLKSSKGSLSAEG-----ELDEGTAS 1320
Pavo_cristatus    SKGKGKGGGAAPGSPPELPGSPGGSRGDLKSSKGSLSAEG-----ELDEGTAS 1320
Gallus_gallus     SKGKAKGGGAAPGSPPEPPGSPGGSRGDLKSSKGSLSAEG-----ELDEGTSS 6087
Xenopus_tropicalis SKAKGKGEY--NLPD--VSVSGSKGDLKSSKASLGSAGAVGSAGMEVVSEERVITSSREKS 5682
.....8290.....8300.....8310.....8320.....8330.....8340

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Mus_musculus      PKGKFSLFKSKKPRHRSNSFSDEREFSA PSTPTGTLEFAGGDA-----KGKHGKLF 5589
Rattus_norvegicus PKGKFSLFKSKKPRNRNSFSDEREFSA PSTPTGTLEFAGGEG-----KGKHGKLF 5576
Homo_sapiens      PKGKFSLFKSKKPRHRSNSFSDEREFSGPSTPTGTLEFEGGEVSLGGKVKGKHGKLF 5823
Pan_troglodytes   PKGKFSLFKSKKPRHRSNSFSDEREFSGPSTPTGTLEFEGGEVSLGGKVKGKHGKLF 5824
Macaca_mulatta    PKGKFSLFKSKKPRHRSNSFSDEREFSGPSTPTGTLEFEGGEVSLGGKVKGKHGKLF 5758
Callithrix_jacchus PKGKFSLFKSKKPRHRSNSFSDEREFSA PSTPTGTLEFEGGEVSLGGKVKGKQKLF 5849
Equus_caballus    SKGKFSLFKSKKPRHRSNSFSDERELSA PSTPPGTLEFEGGEVSLGGKVKGKQKLF 5818
Canis_lupus_familiaris PKGKFSLFKSKKPRHRSNSFSDERELSA PSTPTGTLEFEGGDVSLGGKVKGKHGKLF 6074
Bos_taurus        PKGKFSLFKSKKPSHRSNSFSDEREHSA PTPTGTLEFEGGEVSLGGKVKGKHGKLF 5701
Heterocephalus_glaber PRGKFSLFKSKKPRPRSGSFSDEREPSA PSTPTGTLEFEGGELSLEGGKAKKHGKLF 2539
Chelonia_mydas    PKGKFSLFKSKKPRHRSNSFSD--EHSQSPTPTGTLEFECSSG-----AEKEKQAKMKG 6024
Rhinatrema_bivittatum ----- 4488
Latimeria_chalumnae STFDLSLFKSKKPRHRSNSLSE--ELSPSPHGTLEFEGGALSLEGGKSKGKHSRLKLF 2595
Pavo_muticus      SKGKFSIFKSRKTRLRNSFSSEPPEPE-----GAQKAKFG 1357
Pavo_cristatus    SKGKFSIFKSRKTRLRNSFSSEPPEPE-----GAQKAKFG 1357
Gallus_gallus     -RGVFSIFKSRKTRLRNSFSSEPPEPE-----GAQKAKFG 6123
Xenopus_tropicalis PKYEFSLFTSKKPRHRSNSMSEIEGAMQSSPSGTLELDSGMSLEGGKKGKHSKIKFG 5742
.....8350.....8360.....8370.....8380.....8390.....8400

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Mus_musculus      TFGGLGSKSKGHYEVTGSDDEAGKLQSGVSLASKKSRLSSSSSNDSGTKVGIQLPEVEL 5649
Rattus_norvegicus TFGGLGSKSKGHYEVTGSDDEAGKLQSGVSLASKKSRLSSSSSNDSGTKLGIQLPEVEI 5636
Homo_sapiens      TFGGLGSKSKGHYEVTGSDDETGLQSGVSLASKKSRLSSSSSNDSGNKVGIQLPEVEL 5883
Pan_troglodytes   TFGGLGSKSKGHYEVTGSDDETGLQSGVSLASKKSRLSSSSSNDSGNKVGIQLPEVEL 5884
Macaca_mulatta    TFGGLGSKSKGHYEVTGSDDETGLQSGVSLASKKSRLSSSSSNDSGNKVGIQLPEVEL 5818
Callithrix_jacchus TFGGLGSKSKGHYEVTGSDDETGLQSGVSLASKKSRLSSSSSNDSGPKVGIQLPEVEL 5909
Equus_caballus    TFGGLGSKSKGHYEVTGSDDEAGKLQSGVSLASKKSRLSSSSSNDSGTKIGVQLPEVEL 5878
Canis_lupus_familiaris TFGGLGSKSKGHYEVTGSDDEAGKLQSGVSLASKKSRLSSSSSNDSGTKVGIQLPEVEL 6128
Bos_taurus        TFGGLGSKSKGHYEVTGSDDEAGKLQSGVSSSKKSRLSSSSSNDSGTKVGIQLPEVEL 5761
Heterocephalus_glaber TFGGLGSKSRGHEVTGSDDEAGKLQSGASLASK-SRLSSSSSNDSGTKVGIQLPDVEL 2598
Chelonia_mydas    TFGGIGSKNKGSYEVTGSDDEAGKIPGSGVSLTSKKSRLSSSSSNDSGTKGGFOVPVEL 6084
Rhinatrema_bivittatum ----- 4488
Latimeria_chalumnae TFGGLGSKSKGSYEVTGSDKEAGKVQSGVSLASRKSRLSSSSSNDSGTKGGFOFPKLEL 2655
Pavo_muticus      TFGGVGSRSKGCIYEVT-----GGEEQPSAAHQPPSSAPHQPSGSAARGALRLPSLEL 1411
Pavo_cristatus    TFGGVGSRSKGCIYEVT-----GGEEQPSAAHQPPSSAPHQPSGSAARGALRLPSLEL 1411
Gallus_gallus     TFGGVGSRSKGCIYEVSEF-----GGEEQPSAP--QPSSTP-----GSDAARGALRLPSLEL 6172
Xenopus_tropicalis TFGGLGSKSKGSYEVTLSDE--NVQGSGLSLSRKSRVSSSSSNDSGTKAGVKLPKVEL 5800
.....8410.....8420.....8430.....8440.....8450.....8460

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus      SVSTKKE----- 5656
Rattus_norvegicus SVSTKKE----- 5643
Homo_sapiens      SVSTKKE----- 5890
Pan_troglodytes   SVSTKKE----- 5891
Macaca_mulatta    SVSTKKE----- 5825
Callithrix_jacchus SVSTKKE----- 5916
Equus_caballus    AVSTKKE----- 5885
Canis_lupus_familiaris VVSKKE----- 6134
Bos_taurus        TVSTKKE----- 5768
Heterocephalus_glaber AVSARKE----- 2605
Chelonia_mydas    TVAKKKE----- 6091
Rhinatrema_bivittatum ----- 4488
Latimeria_chalumnae AVSKTKD----- 2662
Pavo_muticus      TVAKRREQEGGCT 1424
Pavo_cristatus    TVAKRREQEGGCT 1424
Gallus_gallus     TVAERREREGGCT 6185
Xenopus_tropicalis TVAKKKQ----- 5807
.....8470...
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