

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/EPGsa Date: Tue Feb 1 12:07:44 2022

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****.:
Xenopus_tropicalis MAEAVRPRK---AKSKGRHDKEKKKQQAIG--DLDKHPVPEREKAPSSKITDPNPPAQP 54
Rhinatrema_bivittatum MAEAVRSRP---AKTKPSRTKVQKKKKSSEESKQDVPHVAESDEGPLLNTARDQVITSSP 56
Pavo_muticus MAEAVRAPR---RGRPK-GKAKEKKKR-----SNEDSQIQEPDDVFLP---PVAEVSSQ 47
Pavo_cristatus MAEAVRAPR---RGRPK-GKAKEKKKR-----SNEDSQIQEPDDVFLP---PVAEVSSQ 47
Gallus_gallus MAEAVRTSR---KGRPK-AKAKEKKKR-----SNEDSQIQEPDDVFLP---PVAEVSSQ 47
Anas_platyrhynchos MAEAVRGPRR-ARARTR-TRDKEKKKK-----SSEESRTQESDDVFLP---PVAEVSSQ 49
Chelonia_mydas MAEAARPPRR-ERP KPGRGKAKEKKKK-----CTEEPQKQDLDEVFLPNKTRDQEVSSR 53
Rattus_norvegicus MAEAVKPRR---AKAKASRTKGKEKK-----KHEALQ--SDAALLSETCREQGILSP 48
Mus_musculus MAEAVKPRR---AKAKASRTKGKEKK-----KHEALQ--TCDAGLPETCREQESPCP 48
Homo_sapiens MAEAVKPQR---RAKAKASRTKTKEKK-----KYETPQREESSEVSLPKTSRQEIPSL 51
Pan_troglodytes MAEAVKPQRR-AKAKAKASRTKTKEKK-----KYETPQREESNEVSLPKTSRQEIPSL 53
Macaca_mulatta MAEAVKPQRR-AKAKAKASRTKTKEKK-----KYETLQREESDEVSLPKTSRQEIPSL 53
Callithrix_jacchus MAEAVRPQR---RAKAKASRTKTKEKK-----KYETPQREESDEVFLPKTSRQEIPSP 51
Equus_caballus MAEAVKPPR---RAKAKASRTKTKEKK-----KYEALREESDEVSLPKTSRQEIPSP 51
Canis_lupus_familiaris MAEAVRPPR---RAKAKASRTKTKEKK-----KSETLQREESDAVSLPKTSRQEIPSP 51
Bos_taurus MAEAVRPPR---RAKAKASRTKTKEKK-----KYETLQREESDEISLAQTSRQEIPSP 51
Latimeria_chalumnae MAEAVRTRKPRSKSSAKAQDKKKKPAEELRKQDRQNALPELRQQEVSAPFGLKPEGAQTL 60
1.....10.....20.....30.....40.....50.....60

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Xenopus_tropicalis H---IPEE--EIPDNFTEIQLNEEAGWFDV-GTANSLP-----LDPSLEGAGQGQESVGC 102
Rhinatrema_bivittatum Q---GSEGRLEYPADFTVEILNDEVLVRNV-NEICDISRTFLTATSTHPVGAESVTE 111
Pavo_muticus -----ATEVQVEQPGEFTEIKLSDEAEHGKAVTDCDVSLSNLTLASQGSLLTAAVEPSAD 102
Pavo_cristatus -----ATEVQVEQPGEFTEIKLSDEAEHGKAVTDCDVSLSNLTLASQGSLLTAAVEPSAD 102
Gallus_gallus -----ATKQVEQPGEFTEIQLSDETEHGKAVTDCDISLSNLTLSQGSLLTAAVEPSAD 102
Anas_platyrhynchos -----ASKVQVEQPGEFTEIQLSDDVEDGKPAIDARDVPHSNVTADQGSAAATLEPSTD 104
Chelonia_mydas -----ASKVQVEHPEVFTEIRLSDEVED-----MCDISLTSLLTADEGSRATLEPLTQ 102
Rattus_norvegicus -----ASELKGDLGNVSAASQFHSDDVCGWNE-SEMFDIPLTSLTVVDEGPPIQDTEDLKD 102
Mus_musculus -----ASELKGDDLKSSADPOLHSDVCGWNE-SEMFDIPLTSLTIGDEGPPVQDTEDLKE 102
Homo_sapiens -----ACEFKGDHLKVVTDSQLQDDASGQNE-SEMFDPVPLTSLTISNEESLTCNTEPPKE 105
Pan_troglodytes -----ACEFKGDHLKVVTDSQLQDDASGQNE-SEMFDPVPLTSLTISNEESLTCNTEPPKE 107
Macaca_mulatta -----ACEFKGDHLKVVTDSQLQDDASGQNE-SEMFDPVPLTSLTISNEESLTCNTEPPKE 107
Callithrix_jacchus -----ACEFKGDHLKVVTDSQLQDDASGQNE-SEMFDPVPLTSLTISNEESLTCNTEPPKE 105
Equus_caballus -----ACEFKGDNLKVLTDSQLPHDASGQNE-SEMFDPVPLTSLTISNEESLTCNTEPPKE 105
Canis_lupus_familiaris -----ACEFKGDCLKVLTECOLQNAASGQNE-SEMFDPVPLTSLTISNEESLTCNTEPPKE 105
Bos_taurus -----ACEFKGDSPELIDSQLQNDASGQNE-SEMFDPVPLTSLTISNEESLTCNTEPPKE 105
Latimeria_chalumnae DPLLLRPEEQKEDGDPFTEIQLADETGSSGV-KGCCDSPSALPLQALDSEPLASTEDEAR 119
.....70.....80.....90.....100.....110.....120

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..
Xenopus_tropicalis REGQDGSKEEEKQOE--KDTSTCRVNGEIS-----TEGSLELFPKD 141
Rhinatrema_bivittatum KEDLKNNQFEEIKQNECTDTPEACIGAKVDE-----HVDLLGVAVE 152
Pavo_muticus GEESKAGPSHEECEGDVERSE--KSKLDKP-----PSLVEVVASG 140
Pavo_cristatus GEESKAGPSHEECEGDVERSE--KSKLDKP-----PSLVEVVASG 140
Gallus_gallus GEESKAGPSHEECEGDVERSE--KSKLDKP-----PSLVEVVASG 140
Anas_platyrhynchos GEESKADASHKERGGDVEKSE--ENKLDKP-----PSPVEVAAGE 142
Chelonia_mydas GEEFRASLLHEKCREWSEEDG--RNKLDKP-----QSIMEALANQ 140
Rattus_norvegicus RGEVAARDGDDEIELKVDPGDNVRIEGDPGDP-----KNFPEVEERT 145
Mus_musculus RGEVTAAGDDDEIELKVDPGDNVRIAGGEP---C-----KNFPEVEDHT 142
Homo_sapiens GGEARPCVGD SAVTPKVHPGDNVGTKVETP-----KNFTEVEENM 145
Pan_troglodytes GGEARPCVGD SAVTPKVHPGDNVGTKVETP-----KNFTEVEENM 147
Macaca_mulatta GGEARPCVGD SAVTPKVHPGDNVGTKVETP-----KNFTEVEENT 147
Callithrix_jacchus GGEARPCVGD SAVPKIDPGSVGTKVETP-----KNFTEVEENK 145
Equus_caballus EEETRACVEDNAVILKVDPGDSVGTKVETP-----KNFTELEKNK 145
Canis_lupus_familiaris GEEVRACVGD DAMK--VDSGDNVGTKVETP-----KNFPEVEENE 143
Bos_taurus GGEIRACAGDDAVELKVDPEGSVRTTIVETP-----KNFTEMEKDT 145
Latimeria_chalumnae PEQLQTTSEESKLSFVKDGSRQCRQEEKTEALEGTCGTVPELALSSETAANLPQGRLLC 179
.....130.....140.....150.....160.....170.....180

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Xenopus_tropicalis      ISRCSQG-----TPGL-----SKGSISDVQ--DIRPAVLTPKELVSEKPOHLLLET 184
Rhinatrema_bivittatum LDNCEISNSTTESDASSSSHPGLCIVQSQTASVLE--DPKPSVLSLEELDLISLOHCAEA 210
Pavo_muticus           SGNSDVLGSCFHSSAAASQAVVGIARGKEAENVQD--AKSPLVRFSEKPPPLASSQPCEKS 198
Pavo_cristatus         SGNSDVLGSCFHSSAAASQAVVGIARGKEAENVQD--AKSPLVRFSEKPPPLASSQPCEKS 198
Gallus_gallus          SGKSDLLGSSFFHSSATASQAVVGIARGKDTENVQD--AKSPLVRFSEKPPPLASSQPCEKS 198
Anas_platyrhynchos     SGHSDVAGSTSHPSAACSQAVVGIARDRGAENAQD--VKNPLVRFSEKPLPLSTSQLRDKP 200
Chelonia_mydas         SENSGLAESTFKCSAACTQSLMGIVDRGTEKVQE--ATNPVLSLEAQFVLS--QLSNEA 196
Rattus_norvegicus      FMQCGSPENTLQSDFPCTQCEGASSQVRESPTRKE--DAKALGCS--TVLQDVSLHSPYET 202
Mus_musculus           LIQCGPPESTLQPDFPCTQQAEGSHAREHPTRKQ--DEAALGCS--KVFQNVSLHSSYEA 199
Homo_sapiens           SVQGGLESAPQSNFSYTOPAMENIQVRETQNSKE--DKQGLVCSSEVPQNVGLQSSCPA 203
Pan_troglodytes        SVQGGLESAPQSNFSYTOPAMENIQVRETQNSKE--DKQGLVCSSEVPQNVGLQSSCPA 205
Macaca_mulatta         SVQGGLESAPQSNFSYTOPAMENIQVRETQNSKE--DKQGLVCSSEVPQNVGLQSSCPA 205
Callithrix_jacchus     SVQCGLESIPQSN--SYTOPEMESVQVRETQNSKE--DKQFLVCSSEVPQNVGLQSSCPA 202
Equus_caballus         LVQCGSSESTLQSSFSYTOQEIENVQVIETQSRKE--GKQALSLSSSEVLQSVGLQSSCPA 203
Canis_lupus_familiaris LLQCGPSGGTSQSNFSYSQEMENLOVRETQKKKA--DKQALGLSSEVLHNVGLQSSCPA 201
Bos_taurus             LLQCRTSESIQSNVSYIQEVENLOVRETQNRKE--DKEALGLSSEVLQNVGLQSSCPA 203
Latimeria_chalumnae    SDNHAFSDRITARGALSRAVGLTHALTEDEQAEERLSKNPTLLSLEEGMTNATSSSVI 239
.....190.....200.....210.....220.....230.....240

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Xenopus_tropicalis      HEVLKL--PRVRYPELP-----VECFDQQRDVA 210
Rhinatrema_bivittatum KEVFNH--ERPLYPELQ-----TEQLEVKRTVS 235
Pavo_muticus           RTRVHRLGFKSVYPDL-----AELSYERPTIM 226
Pavo_cristatus         RTRVHRLGFKSVYPDL-----AELSYERPTIM 226
Gallus_gallus          RTRVHRLGFKSVYPDL-----AELSYERPTIM 226
Anas_platyrhynchos     KAPVQSRGLKSLYPDL-----AELSYERPTVM 228
Chelonia_mydas         KECAQPSGLKTLYPDL-----AELSQARLTTL 224
Rattus_norvegicus      KEVPQPPRVKKLYPELP-----AEIA--EVPVSLV 229
Mus_musculus           KEVSQPPRVKKLYPELP-----AEIA--EVPVSLV 226
Homo_sapiens           KHGFQTPRVKKLYPQLP-----AEIAGEAPALV 231
Pan_troglodytes        KHGFQTPRVKKLYPQLP-----AEIAGEAPALV 233
Macaca_mulatta         KHVFQTPRVKKLYPQLP-----AEIAGEAPALV 233
Callithrix_jacchus     KHVFQTPRVKKLYPQLP-----AEIAGEVPTLV 230
Equus_caballus         KDIFQPPRVKKLYPQLP-----AEIAGEVPALV 231
Canis_lupus_familiaris KDIFQPPRVKKLYPQLP-----AEIAGEVPALV 229
Bos_taurus             KDIFQPPRVKKLYPQLP-----AEIAGEVPALV 231
Latimeria_chalumnae    MESSTVSMVAGLMDNLQDTETKTQAFIKSPALLSLGDEEVTPNQLCGIMEDPPEQQSPPFA 299
.....250.....260.....270.....280.....290.....300

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Xenopus_tropicalis      TIKPLAQNER-----LYPEIPQQLRPLAFKDKLKFEPCSWLENVAAFTTE 257
Rhinatrema_bivittatum -VKPLLHRES-----LYPEIPSOLELVPFTKEQLKMFQPCSWLENVDAYLED 281
Pavo_muticus           AVKPLLHNER-----LYPELPTEPELVPFTKEQLKIFEPCSWLENVDSYTEE 273
Pavo_cristatus         AVKPLLHNER-----LYPELPTEPELVPFTKEQLKIFEPCSWLENVDSYTEE 273
Gallus_gallus          AVKPLLHNER-----LYPELPTEPELVPFTKEQLKIFEPCSWLENVDSYTEE 273
Anas_platyrhynchos     AVKPLLHNER-----LYPELPTEPELVPFTKEQLKIFEPCSWLENVDSYAE 275
Chelonia_mydas         AVKPLLHNER-----LYPEIPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 271
Rattus_norvegicus      AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 276
Mus_musculus           AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 273
Homo_sapiens           AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 278
Pan_troglodytes        AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 280
Macaca_mulatta         AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 280
Callithrix_jacchus     AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 277
Equus_caballus         AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 278
Canis_lupus_familiaris AAKPLFRNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 276
Bos_taurus             AVKPLLHNER-----LYPELPSEPELVPFTKEQLKIFEPCSWLENVDSYLEE 278
Latimeria_chalumnae    KLYPDLPRERPOEETPSAPCAPRLYPEIPSELQEVFPFTKGQLKLEPGSWLENVDSYSED 359
.....310.....320.....330.....340.....350.....360

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Xenopus_tropicalis FESIAHQDRHDFHELLMNYGRCRKQLVLAELHIMVSDWKNLKSQVWDFKEEHMTVOGL 317
Rhinatrema_bivittatum FECIAYQDRHELHELLMNYWRCRKQLLLADSELQSMISDCKNTKSRLWSFRDEHLTVQGV 341
Pavo_muticus FESVAHQDRHELLEYELLLNYMRCRKQLLLAEELQAMTTDCQNIKGRLWTFKEEQKTVOGV 333
Pavo_cristatus FESVAHQDRHELLEYELLLNYMRCRKQLLLAEELQAMTTDCQNIKGRLWTFKEEQKTVOGV 333
Gallus_gallus FESVAHQDRHEFYELLLNYMRCRKQLLLAEELQAMTTDCQNIKGRLWTFKEEQKTVOGV 333
Anas_platyrhynchos FESVAHQDRHEFYELLLNYMRCRKQLLLAEELQAMTTDCQNAKGRLWTFKEEQKTVOGV 335
Chelonia_mydas FDNIAHQDRHEFYELLLNYWRCRKQLLLAEELQAMTSDCQSAKGRWLWTFKEEQSVKGI 331
Rattus_norvegicus FDNIAHQDRHEFYELLLNYSRCRKQLLLAEELTLTMSDCQNAKSRLWQFKEEQMAVOGI 336
Mus_musculus FDNIAHQDRHEFYELLLNYSRCRKQLLLAEELTLTMSDCHSAKSRLWQFKEEQMAVOGI 333
Homo_sapiens FDSMAHQDRHEFYELLLNYSRCRKQLLLAEELTLTSDCQNAKSRLWQFKEEQMSVOGI 338
Pan_troglodytes FDSMAHQDRHEFYELLLNYSRCRKQLLLAEELTLTSDCQNAKSRLWQFKEEQMSVOGI 340
Macaca_mulatta FDSMAHQDRHEFYELLLNYSRCRKQLLLAEELTLTSDCQNAKSRLWQFKEEQMSVOGI 340
Callithrix_jacchus FDSMAHQDRHEFYELLLNYSRCRKQLLLAEELTLTMSDCQNAKSRLWQFKEEQMSVOGI 337
Equus_caballus FDSMAHQDRHEFYELLLNYSRCRKQLLLAEELTLTSDCQNAKSRLWQFKEEQMSVOGI 338
Canis_lupus_familiaris FDSMAHQDRHEFYELLLNYSRCRKQLLLAEELTLTSDCQNAKSRLWQFKEEQMSVOGI 336
Bos_taurus FDSMAHQDRHEFYELLLNYSRCRKQLLLAEELTLTSDCQNAKSRLWQFKEEQMSVOGI 338
Latimeria_chalumnae FEGLARQEKHAFYELLLMNYWRCRKQLLLAEELQSMTEDCRFIENKLWTFREEQLTVQVT 419
.....370.....380.....390.....400.....410.....420

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Xenopus_tropicalis CEDQAKVVGYYHYQRAEVDSSALADLKRFLKSDHLHQTALHSYTSVLSRLQVDSYIY 377
Rhinatrema_bivittatum CADQSKVTGFHHYQMVEMNETVLGELKKLFELKSEHLHQTALHLYTSMLSRLQVESCIY 401
Pavo_muticus CADQCKVTGHHRYQTVEMNGSVLGELKKLFEAKAEHVHQTALHLSYTSVLSRLQVESYVY 393
Pavo_cristatus CADQCKVTGHHRYQTVEMNGSVLGELKKLFEAKAEHVHQTALHLSYTSVLSRLQVESYVY 393
Gallus_gallus CADQCKVTGHHRYQTVEMNGSVLGELKKLFEAKAEHVHQTALHLSYTSVLSRLQVESYVY 393
Anas_platyrhynchos CADQCKVTGHHRYQTVELNEGVLGELKKLFEAKAEHVHQTALHLSYTSVLSRLQVESYVY 395
Chelonia_mydas CADQCQVSDYHRYQTVEMNASVLGELKRLFEAKAEHVHQTALHLSYTSVLSRLQVESYIY 391
Rattus_norvegicus CADQVKVYGHYHRYQTVEMNENALGELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIY 396
Mus_musculus CADQVKVYGHYHRYQTVEMNENALGELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIF 393
Homo_sapiens CADQVKVFSYHRYQTVEMNENALVELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIY 398
Pan_troglodytes CADQVKVFSYHRYQTVEMNENALVELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIY 400
Macaca_mulatta CADQVKVSSYHRYQTVEMNENALVELKKLFDKAEHLHQTALHLSYTSVLSRLQVESYIY 400
Callithrix_jacchus CADQVKVSSYHRYQTVEMNENALGELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIY 397
Equus_caballus CADQVKVSSYHRYQTVEMNENALGELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIY 398
Canis_lupus_familiaris CADQVKVSSYHRYQTVEMNENALGELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIY 396
Bos_taurus CADQVKVSSYHRYQTVEMNENALGELKKLFDKSEHLHQTALHLSYTSVLSRLQVESYIY 398
Latimeria_chalumnae TIYKVMHG-----PGIYPRKPLNFTFFFLNSMGGTGWFRPPCILLCFLAQDSFRC 469
.....430.....440.....450.....460.....470.....480

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Xenopus_tropicalis DLLNSSPFLRSVAVYPPDNGSSKLEGSHTDVLLKECISVLFSTFTRRVLEDAQFHDNDIQL 437
Rhinatrema_bivittatum ELLSGSALLRSVAAQOGTPAYKNLELLPSDLSQKECISVLFSTFTRRVIEDTQFHDDILL 461
Pavo_muticus RLLNSSSLLRSVALQQEQVSKQSENLSDDLHLKECISVLFSTFTRRVIEDPQFQSDLLM 453
Pavo_cristatus RLLNSSSLLRSVALQQEQVSKQSENLSDDLHLKECISVLFSTFTRRVIEDPQFQSDLLM 453
Gallus_gallus RLLNSSSLLRSVALQQEQVSKQSENLSDDLHLKECISVLFSTFTRRVIEDPQFQSDLLM 453
Anas_platyrhynchos RLLNSSSLLRSVALQQEQVSKQSENLSDDLHLKECISVLFSTFTRRVIEDPQFQSDLLM 455
Chelonia_mydas GLLNSSSLLRSVAVYQQEQVSKQSENLSDDLHLKECVSILFGFTRRVIEDPQFQSDLLR 451
Rattus_norvegicus TLLNSSAVLRSVAVYQADKVSKLTESIPSDVCOLKECISVLFMFTRRVSEDAQFHEDILL 456
Mus_musculus TLLNSSAALRSVAVYQADQVPKLTESIPSDVCOLKECISVLFMFTRRVSEDAQFHEDILL 453
Homo_sapiens ALLSSSAVLRSVAIHQQGRASKQTESIPSDLCOLKECISVLFMFTRRVNEDTQFHDDILL 458
Pan_troglodytes ALLSSSAVLRSVAIHQQGRASKQTESIPSDLCOLKECISVLFMFTRRVNEDTQFHDDILL 460
Macaca_mulatta ALLSSSAVLRSVAIHQQGRASKQTESIPSDLCOLKECISVLFMFTRRVNEDTQFHDDILL 460
Callithrix_jacchus ALLSSSAVLRSVAIHQQGRASKQTESIPSDLCOLKECISVLFMFTRRVNEDTQFHDDILL 457
Equus_caballus ALLSSSAVLRSVAIHQQGRASKQTESIPSDLCOLKECVSILFGFTRRVNEDTQFHDDILL 458
Canis_lupus_familiaris ALLNSSALLRSVAVYQADKVSKLTESIPSDVCOLKECISVLFMFTRRVNEDTQFHDDILL 454
Bos_taurus SLLNSSAVLRSVAIHQQGRASKQTESIPSDLCOLKECISVLFMFTRRVNEDTQFHDDILL 458
Latimeria_chalumnae FECTGS-----RDVECLHSLLILLKECIAVLFCTFTRRVLDAPFQSDVHH 514
.....490.....500.....510.....520.....530.....540

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**::***** .. **::*:***:*****: .***.**: * ....*:*** **::
Xenopus_tropicalis WLQKLVSVLLKVASLGDHLFLLNHVLRCPAGVSKWAAPFVQVRVQNPAGVFHFMOQLLAV 497
Rhinatrema_bivittatum WLQRLVSVLQIVGSPGDHLFLLNHVLRCPAGVSKWAVPFQIRVLESSSGIFHFMOALAL 521
Pavo_muticus WLQRLVSVLQIRIGCPGDHLFLLNHILRCPAGIGEWAVPFQIKVLDNPSGVFHFMOALAL 513
Pavo_cristatus WLQRLVSVLQIRIGCPGDHLFLLNHILRCPAGIGEWAVPFQIKVLDNPSGVFHFMOALAL 513
Gallus_gallus WLQRLVSVLQIRIGCPGDHLFLLNHILRCPAGIGEWAVPFQIKVLDNPSGVFHFMOALAL 513
Anas_platyrhynchos WLQRLVSVLQIRIGCPGDHLFLLNHILRCPAGIGEWAVPFQIKVLDNPSGVFHFMOALAL 515
Chelonia_mydas WLQRLVSVLQIRIGCPGDHLFLLNHILRCPAGVSRWAASFIQIKVLDNPSGVFHFMOALAL 511
Rattus_norvegicus WLQKLVSVLRIGCPGDHFFLLNHILRCPAGISEWAVPFQIKVLNNPSGVFHFMOALAL 516
Mus_musculus WLQKLVSVLRVGCPCGDHFFLLNHVLRCPAGIRKWAVPFQIKVLNNPSGVFHFMOALAL 513
Homo_sapiens WLQKLVSVLRVGCPCGDHFFLLNHILRCPAGVSKWAVPFQIKVLNNPSGVFHFMOALAL 518
Pan_troglodytes WLQKLVSVLRVGCPCGDHFFLLNHILRCPAGVSKWAVPFQIKVLNNPSGVFHFMOALAL 520
Macaca_mulatta WLQKLVSVLRVGCPCGDHFFLLNHILRCPAGVSKWAVPFQIKVLNNPSGVFHFMOALAL 520
Callithrix_jacchus WLQKLVSVLRVGCPCGDHFFLLNHILRCPAGVSKWAVPFQITVLNNPSGVFHFMOALAL 517
Equus_caballus WLQKLVSVLRVGCPCGDHFFLLNHILRCPAGVSKWAVPFQIKVLNNPSGVFHFMOALAL 518
Canis_lupus_familiaris WLQKLVSVLRVGCPCGDHFFLLNHILRCPAGVSKWAVPFQIKVLNNPSGVFHFMOALAL 514
Bos_taurus WLQKLVSVLRAGCPGDHFFLLNHILRCPAGVSKWAVPFQIKVLNNPSGVFHFMOALAL 518
Latimeria_chalumnae WLEKLVSVLRHIGSGGDHLYLLNHILRCPAGVRKWAVPFVQIKVLDNPSGVFHFMOALAL 574
.....550.....560.....570.....580.....590.....600

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** *.:***:***:.* * . . * **.****** *****:*** ** ****:
Xenopus_tropicalis LMYPRNRRAEFLCHINPSEKKGS-SSGKDSGSWTILVDEAGEEDEDPETSWILLTEDDLIA 556
Rhinatrema_bivittatum LMCQVKNRAEFMCHMKPNERKGS-SSEKESGNWTILVDEGGEDEDPETSWILLSEDDLIA 580
Pavo_muticus LMSPVKNRVDVDFMCHMKPNERKS-SSSSGKESGNWTILVDEGGEDEDPETSWILLLEDDLIV 573
Pavo_cristatus LMSPVKNRVDVDFMCHMKPNERKS-SSSSGKESGNWTILVDEGGEDEDPETSWILLLEDDLIV 573
Gallus_gallus LMSPVKNRVDVDFMCHMKPNERKS-SSSSGKESGNWTILVDEGGEDEDPETSWILLLEDDLIA 573
Anas_platyrhynchos LMSPVKNRVEFMCHMKPAERKS-SSSSGKESGNWTILVDEGGEDEDPETSWILLLEDDLIA 575
Chelonia_mydas LMSPVKNRADFMCHMTPSERKS-STSSGKESGNWTILVDEGGEDEDPETSWILLLEDDLIV 571
Rattus_norvegicus LMSPAKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVT 575
Mus_musculus LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEAGEEDEDPETSWILLNEDDLVT 572
Homo_sapiens LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVT 577
Pan_troglodytes LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVT 579
Macaca_mulatta LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVT 579
Callithrix_jacchus LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVT 576
Equus_caballus LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVT 577
Canis_lupus_familiaris LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVI 573
Bos_taurus LMSPVKNRAEFMCHMKPSEWKPS-SSGPASGNWTILVDEGGEDEDPETSWILLNEDDLVI 577
Latimeria_chalumnae LMSPVKNRAEFMCHMKPENRTGAVSDKESGNWTILVDEAGEEDEDPETSWILLSEDDLIF 634
.....610.....620.....630.....640.....650.....660

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:::*****: * .***: * * * * : *:***:***:***:***:***:***:***:***
Xenopus_tropicalis FLSQFPFHDLFKNVLFSSRGEYSPEKSTPQEMMKIFAFANSLIDLLALGLETFNVRVRYR 616
Rhinatrema_bivittatum LLSQFPFHEAFQYLLGFSSKGDYFPENTMPOEMMKVFAFANSLVELLAMGLETFNRRARYR 640
Pavo_muticus LLSQFPFHELFQHFLGFKSAGTYFPEKTTSQEMMKIFAFANSLVELLSVGLTFNRRARYR 633
Pavo_cristatus LLSQFPFHELFQHFLGFKSAGTYFPEKTTSQEMMKIFAFANSLVELLSVGLTFNRRARYR 633
Gallus_gallus LLSQFPFHELFQHFLGFKSAGTYFPEKTTSQEMMKIFAFANSLVELLSVGLTFNRRARYR 633
Anas_platyrhynchos LLSQFPFHELFQQLGFKSAGTYFPEKTTPQEMMKIFAFANSLVELLSVGLTFNRRARYR 635
Chelonia_mydas LLSQFPFHELFQHFLGFNSKGVYFPEKTTPQEMMKIFSANSLVELLAVGLETFNRRARYR 631
Rattus_norvegicus LLSQFPFHELFQHLLGFKAKGDYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 635
Mus_musculus LLSQFPFHELFQHLLGFKAKGDYLPETTRPOEMMKIFAFANSLVELLAVGLDTFNRRARYR 632
Homo_sapiens ILAQFPFHELFQHLLGFKAKGDYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 637
Pan_troglodytes ILAQFPFHELFQHLLGFKAKGDYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 639
Macaca_mulatta LLAQFPFHELFQHLLGFKVKG DYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 639
Callithrix_jacchus LLAQFPFHELFQHLLGFQVKG DYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 636
Equus_caballus LLSQFPFHELFQYLLGFKAKGDYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 637
Canis_lupus_familiaris LLSQFPFHELFQHLLGFKAKGDYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 633
Bos_taurus LLSQFPFHELFQHLLGFKAKGDYLPETTRPOEMMKIFAFANSLVELLAVGLETFNRRARYR 637
Latimeria_chalumnae LFSQFPFDELFIHLLGMNSKQAYQPERISCQMMKIFAFATSLVELLAVGLETFNVRVRYR 694
.....670.....680.....690.....700.....710.....720

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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***** :*::*: :***** :: . :*::** *::*:*****
Xenopus_tropicalis QFVKRIGRIIRMTLCYVSDHWALYLNNMEADQSG--ALYSVEKLQAEYDELFLRAVLHV 674
Rhinatrema_bivittatum QFVKRIGRIIRMTLCYVSDHWAAQYVCYNSDCGMTM--QPFSLLEKLQVEYDELFLRAVLHV 698
Pavo_muticus QFVKRIGQLIKMTLCHVSDHWALYISGNKQYGSIG--HPYSVDKLQLEFDELFFRAVLHV 691
Pavo_cristatus QFVKRIGQLIKMTLCHVSDHWALYISGNKQYGSIG--HPYSVDKLQLEFDELFFRAVLHV 691
Gallus_gallus QFVKRIGQLIKMTLCHVSDHWAAQYISGNKQYGSIG--HPYSMDKLQLEFDELFFRAVLHV 691
Anas_platyrhynchos QFVKRIGQLIKMTLCHVSDHWAAQYVSGNKQYGSIA--HPYSVEKLQLEFDELFFRAVLHV 693
Chelonia_mydas QFVKRIGHLIRMTVCYVSDHWAAQYVNCNKEYGSIM--HPYSVEKLQVEFDELFLRAVLHV 689
Rattus_norvegicus QFVKRIGYLIRMTLGYVSDHWAAQYVSHNTDVRLLT--QPYSMEKLQIEFDELFLRAVLHV 693
Mus_musculus QFVKRIGYLIRMTLGYVSDHWAAQYVSHSTGAGLTP--QPYSMEKLQVEFDELFLRAVLHV 690
Homo_sapiens QFVKRIGYMIRMTLGYVSDHWAAQYVSHNQSGSLAQ--QPYSMEKLQVEFDELFLRAVLHV 695
Pan_troglodytes QFVKRIGYMIRMTLGYVSDHWAAQYVSHNQSGSLAQ--QPYSMEKLQVEFDELFLRAVLHV 697
Macaca_mulatta QFVKRIGYMIRMTVGYVSDHWAAQYMSHNQSGSLAQ--QPYSVEKLQVEFDELFLRAVLHV 697
Callithrix_jacchus QFVKRIGYMIRMTLGYVSDHWAAQYVNHNRSSSLAQ--QPYSVEKLQVEFDELFLRAVLHV 694
Equus_caballus QFVKRIGYMIRMTLGYVSDHWAAQYVSHNQGLGLAL--QPYSVEKLQVEFDELFLRAVLHV 695
Canis_lupus_familiaris QFVKRIGYMIRMTLGYVSDHWAAQFVSYNRLGLAQ--QPYSLEKLQVEFDELFLRAVLHV 691
Bos_taurus QFVKRIGYMIRMTLGYVSDHWAAQYVSHNQSGSLAL--QPYSMEKLQVEFDELFLRAVLHV 695
Latimeria_chalumnae QFVKRIGHMIRLTICYVSDHWAAQYVSVNKTGRGLTLOHQPYSLDKLQVEFDELFLRAVLHV 754
.....730.....740.....750.....760.....770.....780

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*::*: . : :*::*
Xenopus_tropicalis LKAKRLG-----IWLFMSEMP----- 690
Rhinatrema_bivittatum LKAKRLG-----IWLFMSEMP----- 714
Pavo_muticus LKAKRLG-----VWLFMSEMP----- 707
Pavo_cristatus LKAKRLG-----VWLFMSEMP----- 707
Gallus_gallus LKAKRLG-----VWLFMSEMP----- 707
Anas_platyrhynchos LKAKRLG-----VWLFMSEMP----- 709
Chelonia_mydas LKAKRLG-----VWLFMSEMP----- 705
Rattus_norvegicus LKAKRLG-----IWLFMSEMP----- 709
Mus_musculus LKAKRLG-----IWLFMSEMP----- 706
Homo_sapiens LKAKRLG-----IWLFMSEMP----- 711
Pan_troglodytes LKAKRLG-----IWLFMSEMP----- 713
Macaca_mulatta LKAKRLG-----IWLFMSEMP----- 713
Callithrix_jacchus LKAKRLG-----IWLFMSEMP----- 710
Equus_caballus LKAKRLG-----IWLFMSEMP----- 711
Canis_lupus_familiaris LKAKRLG-----IWLFMSEMP----- 707
Bos_taurus LKAKRLG-----IWLFMSEMP----- 711
Latimeria_chalumnae LRAKRYDPAGKRGEQTKDLMEEPSKSLQHETEMLSHLLRNKLREWLEKIPGSDKVDELER 814
.....790.....800.....810.....820.....830.....840

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* . ** :::: : : . : : : **
Xenopus_tropicalis --YGTLSNSMLWK-----LFYLMHYAENDNVEILYPSIDTADCRSRLTVSENDRDKFEY 742
Rhinatrema_bivittatum --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 766
Pavo_muticus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 759
Pavo_cristatus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 759
Gallus_gallus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 759
Anas_platyrhynchos --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 761
Chelonia_mydas --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 757
Rattus_norvegicus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 761
Mus_musculus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 758
Homo_sapiens --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 763
Pan_troglodytes --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 765
Macaca_mulatta --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 765
Callithrix_jacchus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 762
Equus_caballus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 763
Canis_lupus_familiaris --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 759
Bos_taurus --YGTLSSTNMLWK-----LFFIMHHAESHELEKLSSTMDPDECRHKLKDPEHRDRFEKY 763
Latimeria_chalumnae MVLGGPEATQYWKSPGFFFFFFFFFFSYFFHMRVLMFVYFNSVWFLIFTDPEHIKFEY 874
.....850.....860.....870.....880.....890.....900

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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* ::* ** *****:***:***::: .***.:**  ****.*.*: :**** *****
Xenopus_tropicalis      LSSMNNSEIGICLLTTFAQMAQTKQTDVDEDLVKSI ALEIYEVSYSVSMSTRETFSKVGREL 802
Rhinatrema_bivittatum  LLTMNSSEGICLLTTFAQMAQTKQRGVDEDFVKDIVLEIYQVAYISLSTRETFSKVGREL 826
Pavo_muticus           LQSMNCSEEEICLLTTFAQMAQTKRADVDEDFIKIIVLEIYEVSYSVSLSTRETFSKVGREL 819
Pavo_cristatus        LQSMNCSEEEICLLTTFAQMAQTKRADVDEDFIKIIVLEIYEVSYSVSLSTRETFSKVGREL 819
Gallus_gallus         LQSMNCSEEEICLLTTFAQMAQTKRADVDEDFIRIIVLEIYEVSYSVSLSTRETFSKVGREL 819
Anas_platyrhynchos    LQSMNCSEEEICLLTTFAQMAQAKRADVDEDFIKIIVLEIYEVSYSVSLSTRETFSKVGREL 821
Chelonia_mydas        LTSMNCSEEEICLLTTFAQMAQAKRADVDEDFIRVVLEIYEVSYSVISTRETFSKVGREL 817
Rattus_norvegicus     LSSMNSSEEEICLLTTFAQMARARRTNVDEGFIKIIVLEIYEVSYSVILSTRETFSKVGREL 821
Mus_musculus          LSSINSSEEEICLLTAFQAQMARARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 818
Homo_sapiens          LSSMNSSEEEICLLTTFAQMAQARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 823
Pan_troglodytes       LSSMNSSEEEICLLTTFAQMAQARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 825
Macaca_mulatta        LSSMNSSEEEICLLTTFAQMAQARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 825
Callithrix_jacchus    LSSMNSSEEEICLLTTFAQMAQARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 822
Equus_caballus        LSSMNSSEEEICLLTTFAQMAQARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 823
Canis_lupus_familiaris LSSMNSSEEEICLLTTFAQMAQARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 819
Bos_taurus            LSSMNSSEEEICLLTTFAQMAQARRTNVDEDFIKIIVLEIYEVSYSVTLSTRETFSKVGREL 823
Latimeria_chalumnae   LSAMNSSEIGICLLTTFAHMAQPKRADVDEDFVKITVLEIYKVSYSVSLSTREIFS KVGREL 934
.....910.....920.....930.....940.....950.....960

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*.:*: *. *.:*: *.:*: **
Xenopus_tropicalis      LASITMVHTSIISVLLERVDTIDKVGMSVLYLFKELPLHRWSPSSSEISLIRDWLLNHN 862
Rhinatrema_bivittatum  LATITSTHTTAISVLLDRVRETIKVGMSVLYLFKELPLHLWIPTPEMAVIRDWLLNYQ 886
Pavo_muticus           LGAIASVHTQIISVLLDRVRETIKVGMSVLYLFKELPLYLWKPSSEIALIREWLLNYS 879
Pavo_cristatus        LGAIASVHTQIISVLLDRVRETIKVGMSVLYLFKELPLYLWKPSSEIALIREWLLNYS 879
Gallus_gallus         LGAIASVHTQIISVLLDRVRETIKVGMSVLYLFKELPLYLWKPSSEIALIREWLLNYS 879
Anas_platyrhynchos    LGAIASVHTQIISVLLDRVRETIKVGMSVLYLFKELPLYLWKPSSEIALIREWLLNYS 881
Chelonia_mydas        LGAITGIHTGVISVLLDRVRETIKVGMSVLYLFKELPLYLWKPSSEIALIRGWLLNYS 877
Rattus_norvegicus     LGSIAAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLHLWRPSASEIAVIRDWLLSYN 881
Mus_musculus          LGAIAAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWRPSASEIAVIRDWLLNHN 878
Homo_sapiens          LGTITAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWQPSASEIAVIRDWLLNHN 883
Pan_troglodytes       LGTITAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWQPSASEIAVIRDWLLNHN 885
Macaca_mulatta        LGTITAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWQPSASEIAVIRDWLLNHN 885
Callithrix_jacchus    LGTITAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWRPSASEIAVIRDWLLNHN 882
Equus_caballus        LGAITAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWRPSASEIAVIRDWLLNHN 883
Canis_lupus_familiaris LGAITAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWRPSASEIAVIRDWLLNHN 879
Bos_taurus            LGAIAAVHPEIISVLLDRVQETIDQGMVSLYLFKELPLYLWRPSASEIAVIRDWLLNHN 883
Latimeria_chalumnae   LAAIATAHPQIISVILGSVRETMEAVGMN----- 963
.....970.....980.....990.....1000.....1010.....1020

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Xenopus_tropicalis      LSEVESKLACIILEGLNWGCNEKN-ALHLNPAIHVDVALMILEAYQKYISDKPYTGLISE 921
Rhinatrema_bivittatum  LTDVESKLACIILEGLNWGFSDON-TYHLELALHTEVALMVLEAYQKYITEKPYGGLISE 945
Pavo_muticus           LTTVENKLACIILEGLNWGLGEQKDALHLDPAIHSEVALMVLEAYLYKLSOKPYAGLLSE 939
Pavo_cristatus        LTTVENKLACIILEGLNWGLGEQKDALHLDPAIHSEVALMVLEAYLYKLSOKPYAGLLSE 939
Gallus_gallus         LTTVENKLACIILEGLNWGLGEQKDALHLDPAIHSEVALMVLEAYLYKLSOKPYAGLLSE 939
Anas_platyrhynchos    LTTVENKLACIILEGLNWGFGEQDTHLHLDPAVHSEVALMVLEAYLYKLSOKPYAGLLSE 941
Chelonia_mydas        LNMVENKLACIILEGLNWGFGEHDTTLHLDPAVHAEVALMVLEAYQKYLPQKPYGGLISE 937
Rattus_norvegicus     LAAVKNKLACVILEGLNWGFQKQG-NLHLDQALHTEVALLVLEAYQKYLAQKPYAGLISE 940
Mus_musculus          LTAIVKNKLACVILEGLNWGFTEQGG-TLHLDQALHTEVALLVLEAYQKYLAQKPYTGLISE 937
Homo_sapiens          LTVVKNKLACVILEGLNWGFQKQA-TLHLDQAVHAEVALMVLEAYQKYLAQKPYAGILSE 942
Pan_troglodytes       LTVVKNKLACVILEGLNWGFQKQA-TLHLDQAVHAEVALMVLEAYQKYLAQKPYAGILSE 944
Macaca_mulatta        LTVVKNKLACVILEGLNWGFQKQG-TLHLDQAVHAEVALMVLEAYQKYLAQKPYAGILSE 944
Callithrix_jacchus    LTVVKNKLACVILEGLNWGFQKQG-TLHLDQAVHAEVALMVLEAYQKYLAQKPYAGILSE 941
Equus_caballus        LTTVKNKLACVILEGLNWGFGEQGG-TLHLDQAVHAEVALMILEAYQKYLAQKPYAGLLSE 942
Canis_lupus_familiaris LTMVKNKLACVILEGLNWGFQDQG-TLHLDQAVHAEVALMILEAYQKYLAQKPYAGLLSE 938
Bos_taurus            LTVKNKLACVILEGLNWGFGEQV-SLHLDQAVHAEVALMILEAYQKYLAQKPYAGLLSE 942
Latimeria_chalumnae   ----- 963
.....1030.....1040.....1050.....1060.....1070.....1080

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Xenopus_tropicalis	SIKQVSYLASIVRTGSPESFIQWAWDLILRLKMRNDQKE-----LCDKVPDLTE	974
Rhinatrema_bivittatum	SIKQVSYLASVVRLGQIPETSFNQWAWDLVLRLLKHKNDQCTONCWSIVSRSSPAPDMTD	1005
Pavo_muticus	SIKQVSYLASIVRYGETPESSFNQWAWGLILRLKLHRNDRGIQCGWPAVPVSDSVLDMTE	999
Pavo_cristatus	SIKQVSYLASIVRYGETPESSFNQWAWGLILRLKLHRNDRGIQCGWPAVPVSDSVLDMTE	999
Gallus_gallus	SIKQVSYLASIVRYGETPESSFNQWAWGLILRLKLHRNDRGIQCGWPAVPVSDSVLDMTE	999
Anas_platyrhynchos	SIKQVSYLASIVRYGETPETSFNQWAWGLILRLKLHRNDRGMQHGWPAVPVSDSMLDMTE	1001
Chelonia_mydas	SIKQVSYLASVVRYGETPETSFNQWAWGLILRLKLHRNDHGVQCCWSAVPAFSTMLDMTE	997
Rattus_norvegicus	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDFGRC-NFPVVPFCNTVPPDMTE	999
Mus_musculus	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDFGRC-NFPVVPFCSTVPPDMTE	996
Homo_sapiens	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDYGIQPCNPAPVPFSVTVPPDMTE	1002
Pan_troglodytes	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDYGIQPCNPAPVPFSVTVPPDMTE	1004
Macaca_mulatta	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDYGIQPCNPAPVPFSITVPPDMTE	1004
Callithrix_jacchus	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDYGIQPCNPAPVPFSSTVPPDMTE	1001
Equus_caballus	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDYGTQPCNPAPVPFSSTVPPDMTE	1002
Canis_lupus_familiaris	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDYGIQPCNPAPVPFSSTVPPDMTE	998
Bos_taurus	SMKQVSYLASIVRYGETPETSFNQWAWNLILRLKLHKNDYGIQPCNPAPVPFSSTVPPDMTE	1002
Latimeria_chalumnae	-----	963
1090.....1100.....1110.....1120.....1130.....1140	

Xenopus_tropicalis	ASVLHPVLKAVKAGVPIGCIYIGIAVSSVGHSVDKFCVEGVSLLGELVQARHLRAVVHILD	1034
Rhinatrema_bivittatum	SPTFHPLLKAVKAGVPIGCFALAITTVGHSIEKFCAEGIPLLGLLVQSRHLRAVVHILD	1065
Pavo_muticus	SITLHPLLKAVKAGIPIGCYLALAMTTLGHSIEKFCAEGIPLLGVLVQSRYLRTVVHVLD	1059
Pavo_cristatus	SITLHPLLKAVKAGIPIGCYLALAMTTLGHSIEKFCAEGIPLLGVLVQSRYLRTVVHVLD	1059
Gallus_gallus	SITLHPLLKAVKAGIPIGCYLALAMTTLGHSIEKFCAEGIPLLGVLVQSRYLRTVVHVLD	1059
Anas_platyrhynchos	SVTLHPLLKAVKAGIPIGCYLALAMTTLGHSIEKFCAEGIPLLGVLVQSRYLRTVVHVLD	1061
Chelonia_mydas	SVMLHPLLKAVKSGIPIGCYLALAMTTLGHSIEKFCAEGIPLLGILVQSRYLRTVVHVLD	1057
Rattus_norvegicus	SSMFHPLLKAVKSGLPIGCYLALAVTAVGHSIEKFCAEGIPLLGVLVQSRHLRAVVHILD	1059
Mus_musculus	SSMFHPLLKAVKSGLPIGCYLALAVTAVGHSIEKFCAEGIPLLGVLVQSRHLRAVVHALD	1056
Homo_sapiens	SPTFHPLLKAVKAGMPIGCYLALSMTAVGHSIEKFCAEGIPLLGILVQSRHLRTVVHVLD	1062
Pan_troglodytes	SPTFHPLLKAVKAGMPIGCYLALSMTAVGHSIEKFCAEGIPLLGILVQSRHLRTVVHVLD	1064
Macaca_mulatta	SPTFHPLLKAVKAGMPIGCYLALSMTAVGHSIEKFCAEGIPLLGVLVQSRHLRTVVHVLD	1064
Callithrix_jacchus	SPTFHPLLKAVKAGMPIGCYLALSMTAVGHSIEKFCAEGIPLLGILVQSRHLRTVVHVLD	1061
Equus_caballus	SPTFHPLLKAVKAGMPIGCYLALAMTVVGHSSVEKFCAEGIPLLGILVQSRHLRTVVHVLD	1062
Canis_lupus_familiaris	SPTFHPLLKAVKAGMPIGCYLALAMTAMGHSIEKFCAEGISLLGILVQSRHLRTVVHVLD	1058
Bos_taurus	SPTFHPLLKAVKAGMPIGCYLALAMTAVGHSIEKFCAEGIPLLGILVQSRHLRTVVHVLD	1062
Latimeria_chalumnae	-----	963
1150.....1160.....1170.....1180.....1190.....1200	

Xenopus_tropicalis	KVLPMFYPCQYYLLKNEQFLGHIHVFLQLDNGVPOGISLQMTCHKVTOHLSGGINYGENVKL	1094
Rhinatrema_bivittatum	KILPFFYSCQYYLLKNEQFLSHIHLFLHLNDGGPOGVTQQVTHKVAQHLTGANYGENIRL	1125
Pavo_muticus	KVLPIFYSCQYYLLKNEQFLSHVQLFLQLDNGVPOGVTQQVTHKVTQHLTGASYGENVKL	1119
Pavo_cristatus	KVLPIFYSCQYYLLKNEQFLSHVQLFLQLDNGVPOGVTQQVTHKVTQHLTGASYGENVKL	1119
Gallus_gallus	KVLPIFYSCQYYLLKNEQFLSHVQLFLQLDNGVPOGVTQQVTHKVTQHLTGASYGENVKL	1119
Anas_platyrhynchos	KILPVFYSCQYYLLKNEQFLSHVQLFLHLDSGVPQGMVTQQVTHKVTQHLTGVSYGENVKL	1121
Chelonia_mydas	KVLPLFYPCQYYLLKNEQFLSYIQLFLHLDSGVPQGMVTQQVTHKVAQHLTGASYGENVKL	1117
Rattus_norvegicus	KVLPVFYPCQYYLLKNEQFLSNLLFLHLDSGVPQGMVTQQVTHRVAAHLTGAIHGDNVKL	1119
Mus_musculus	KILPVFYPCQYYLLKNEQFLSNLLFLQLDNGVPOGVTQQVTHRVAAHLTGAVHGDNVKL	1116
Homo_sapiens	KILPLFYPCQYYLLKNEQFLSHLLFLHLDSGVPQGMVTQQVTHKVAQHLTGASHGDNVKL	1122
Pan_troglodytes	KILPLFYPCQYYLLKNEQFLSHLLFLHLDSGVPQGMVTQQVTHKVAQHLTGASHGDNVKL	1124
Macaca_mulatta	KILPLFYPCQYYLLKNEQFLSHLLFLHLDSGVPQGMVTQQVTHKVAQHLTGASHGDNVKL	1124
Callithrix_jacchus	KILPLFYPCQYYLLKNEQFLSHFLSFLHLDSGVPQGMVTQQVTHKVAQHLTGASHGDNVKL	1121
Equus_caballus	KILPLFYPCQYYLLKNEQFLSHLLFLHLDSGVPQGMVTQQVTHKVAQHLTGASHGDNVKL	1122
Canis_lupus_familiaris	KILPLFYPCQYYLLKNEQFLSHLLFLHLDSGVPQGMVTQQVTHKVAQHLTGATHGDNVKL	1118
Bos_taurus	KILPLFYPCQYYLLKNEQFLSHLLFLHLDSGVPQGMVTQQVTHKVAQHLTGASHGDNVKL	1122
Latimeria_chalumnae	-----	963
1210.....1220.....1230.....1240.....1250.....1260	

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Xenopus_tropicalis	LTNMIQAHIAASSSPNEVGPAAVLEFWTEVLISQQLWHRDKGTLLLLMDQMCKAAFRVYQ	1154
Rhinatrema_bivittatum	FNNMIQSHIFVSSQ-PNEVGPDVAVLEFWVQVFTSQQLWHRDKGTLLFLMDHVCKATFRYMK	1184
Pavo_muticus	LNSMIQTHIFRSQ-PNGVGPTAVLEFWVQALISQQLWHRDQATLYLLDHLCKAAFOYSQ	1178
Pavo_cristatus	LNSMIQTHIFRSQ-PNGVGPTAVLEFWVQALISQQLWHRDQATLYLLDHLCKAAFOYSQ	1178
Gallus_gallus	LNSMIQTHIFRSQ-PNGVGPTAVLEFWVQALISQQLWHRDQATLYLLDHLCKAAFOYSQ	1178
Anas_platyrhynchos	LSSMIQTHIFLSSQ-PNGVGPAAVLEFWVQVLTSSQQLWHRDRATLFLLDHLCKAAFOYSQ	1180
Chelonia_mydas	LNSMIQTHIFMSRQ-PDGVPVPAVLEFWVQVLSAQQLWHRERATVYLLDHLCKAAFOYSQ	1176
Rattus_norvegicus	LNSMIQAHICVSTQ-PDEVGPPAVLEFWVQALISQHLWYREQSTILFLMDHLCKTAFOLMQ	1178
Mus_musculus	LSSMIQAHICVSTQ-PDGVPVPAVLEFWVQALISQHLWYREQSTILFLMDHLCKTAFHLMQ	1175
Homo_sapiens	LNSMIQAHISVSTQ-PNEVGPPAVLEFWVQALISQHLWYREQSTILFLMDHLCKAAFOLMQ	1181
Pan_troglodytes	LNSMIQAHISVSTQ-PNEVGPPAVLEFWVQALISQHLWYREQSTILFLMDHLCKAAFOLMQ	1183
Macaca_mulatta	LNSMIQAHISVSTQ-PNEVGPPAVLEFWVQALISQHLWYREQSTILFLMDHLCKAAFOLMQ	1183
Callithrix_jacchus	LNSMIQAHISVSTQ-PNEVGPPAVLEFWVQALISQHLWYREQSTILFLMDHLCKAAFOLMQ	1180
Equus_caballus	LNSMIQAHISVSTQ-PNEVGPIAILEFWVQALISQHLWYREQSTILFLMDHLCKTAFOLMQ	1181
Canis_lupus_familiaris	LNSMIQAHISISTQ-PNEVGPPAVLEFWVQALISQHLWYREQSTILFLMDHLCKTAFOLMQ	1177
Bos_taurus	LNSMIQAHISVSTQ-PNEVGPPAVLEFWVQALISQHLWYREQSTILFLMDHLCKTAFOLMQ	1181
Latimeria_chalumnae	-----	963

.....1270.....1280.....1290.....1300.....1310.....1320

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Xenopus_tropicalis	EDSVQKLLYQQHKDALGFHCDRGLLSSFGWIVAGNVTPSFIDSSYNPSQIWFSSWAVLST	1214
Rhinatrema_bivittatum	EDCVQKLLYQQHKNALGYHCDRSLSSSLVTVIVAGNLTSPFIEGNANPSQVWFSWTVLNM	1244
Pavo_muticus	EDCIQKLLYQQHKNALGYHCDRGLLSSSLVSWIVAGNVTPSFVEGNANSSQVWFSWMVLNI	1238
Pavo_cristatus	EDCIQKLLYQQHKNALGYHCDRGLLSSSLVSWIVAGNVTPSFVEGNANSSQVWFSWMVLNI	1238
Gallus_gallus	EDCIQKLLYQQHKNALGYHCDRGLLSSSLVSWIVAGNVTPSFVEGNANSSQVWFSWMVLNI	1238
Anas_platyrhynchos	EDCVQKLLYQQHKNALGYHCDRGLLSSSLVSWIVAGNVTPSFVEGNANSSQVWFSWMVLNM	1240
Chelonia_mydas	EDCVQKLLYQQHKNALGYHCDRGLLSSSLVSWIVAGNVTPSFIEGNANSTQVWFSWMVLNM	1236
Rattus_norvegicus	EDCVQKLLYQQHKNALGYHCDRSLSSSLVNVIVAGNITPSFVEGLSTSTQVWFAWTVLNM	1238
Mus_musculus	EDCVQKLLYQQHKNALGYHCDRSLSSSLVNVIVAGNITPSFVEGLSTSTQVWFAWTVLNM	1235
Homo_sapiens	EDCIQKLLYQQHKNALGYHCDRSLSSSLVSWIVAGNITPSFVEGLATPTQVWFAWTVLNM	1241
Pan_troglodytes	EDCIQKLLYQQHKNALGYHCDRSLSSSLVSWIVAGNITPSFVEGLATPTQVWFAWTVLNM	1243
Macaca_mulatta	EDCIQKLLYQQHKNALGYHCDRSLSSSLVNVIVAGNITPSFVEGLATPTQVWFAWTVLNM	1243
Callithrix_jacchus	EDCIQKLLYQQHKNALGYHCDRSLSSSLVSWIVAGNITPSFVEGLATPTQVWFAWTVLNM	1240
Equus_caballus	EDCVQKLLYQQHKNALGYHCDRSLSSSLVSWIVAGNITPSFVEGLATPTQVWFAWTVLNM	1241
Canis_lupus_familiaris	EDCVQKLLYQQHKNALGYHCDRSLSSSLVSWIVAGNITPSFVEGLATPTQVWFAWTVLNM	1237
Bos_taurus	EDCVQKLLYQQHKNALGYHCDRSLSSSLVSWILAGNITPSFVEGLATPTQVWFAWTVLNM	1241
Latimeria_chalumnae	-----ALGYHCDRGLLSSSLVGWIVTGNVTPSFIEGNAESTEVWFSWVVLNM	1009

.....1330.....1340.....1350.....1360.....1370.....1380

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Xenopus_tropicalis	ESLFEEDSQLRRVVEWELVSNPSMSPDQALKKAQQLKLPVPSVQRLMIYRWAHQALAT	1274
Rhinatrema_bivittatum	EAIFEEDSQLRRVVERELVSNPSFSPDQALKKAQTHLKLPIVPSLQRLMIYRWAHQALVT	1304
Pavo_muticus	EAIFEEDSQLRRVVEGELIIN-DLSPDQALKKAQTLKLPVVPVSLQRLMIYRWAHQALAT	1297
Pavo_cristatus	EAIFEEDSQLRRVVEGELIIN-DLSPDQALKKAQTLKLPVVPVSLQRLMIYRWAHQALAT	1297
Gallus_gallus	ESIFEEDSQLRRVVEGELIIN-DLSPDQALKKAQQLKLPVVPVSLQRLMIYRWAHQALAT	1297
Anas_platyrhynchos	ESIFEEDSQLRRVVEGELVIN-DLTPDQALKKAQIQLKLPVPSLQRLMIYRWAHQALAT	1299
Chelonia_mydas	ESIFEEDSQLRRVVEGELIIN-ALTPDQALKKAQQLKLPVPSLQRLMIYRWAHQALVT	1295
Rattus_norvegicus	ESIFEEDSQLRRVVERELVIN-AFSPDQALKKAQVQLKLPVPSLQRLMIYRWAHQALVT	1297
Mus_musculus	ESIFEEDSQLRRVVERELVIN-AFSPDQALKKAQVQLKLPVPSLQRLMIYRWAHQALVT	1294
Homo_sapiens	ESIFEEDSQLRRVIEGELVINSFTPDQALKKAQTLKLPVPSLQRLMIYRWAHQALVT	1301
Pan_troglodytes	ESIFEEDSQLRRVIEGELVINSFTPDQALKKAQTLKLPVPSLQRLMIYRWAHQALVT	1303
Macaca_mulatta	ESIFEEDSQLRRVIEGELVINSFTPDQALKKAQTLKLPVPSLQRLMIYRWAHQALVT	1303
Callithrix_jacchus	ESIFEEDSQLRRVIEGELVINSFTPDQALKKAQTLKLPVPSLQRLMIYRWAHQALVT	1300
Equus_caballus	ESIFEEDSQLRRVVEGELVINSFTPDQALKKAQQLKLPVPSLQRLMIYRWAHQALVT	1301
Canis_lupus_familiaris	ESIFEEDSQLRRVVEGELVINSFTPDQALKKAQQLKLPVPSLQRLMIYRWAHQALVT	1297
Bos_taurus	ESIFEEDSQLRRVVEGELVINSFTPDQALKKAQQLKLPVPSLQRLMIYRWAHQALVT	1301
Latimeria_chalumnae	EAIFEEDSQLRCVEQELVSNPSLTPEQALKKAQSRLLKLPVVPVSLQRLMIYRWAHQALAT	1069

.....1390.....1400.....1410.....1420.....1430.....1440

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Xenopus_tropicalis	PADHPLLPPFWQKFFLLYLNRPGPOYG-----	LPVNGCIGKRFFSSHSHTHMLKQM	1325
Rhinatrema_bivittatum	PADHPLLPLIWQKFFLLYLHRPGPOFG-----	LPIDGCGIGRRFFHSPILVNFLKEM	1355
Pavo_muticus	PADHPLMPLIWQKFFLLYLHRPGPOYG-----	LPVDGCGIGRRFFQSAAHVNLNDM	1348
Pavo_cristatus	PADHPLMPLIWQKFFLLYLHRPGPOYG-----	LPVDGCGIGRRFFQSAAHVNLNDM	1348
Gallus_gallus	PADHPLMPLIWQKFFLLYLHRPGPOYG-----	LPVDGCGIGRRFFQSAALVNLNEM	1348
Anas_platyrhynchos	PADHPLMPLIWQKFFLLYLHRPGPOYG-----	LPVDGCGIGRRFFQSAAHINLNEM	1350
Chelonia_mydas	PADHPLLPLIWQKFFLLYLHRPGPOYG-----	LPVDGCGIGRRFFQSPAHVNLISAM	1346
Rattus_norvegicus	PADHPLLPLIWQKFFLLYLHRPGPOYG-----	LPVDGCGIGRRFFQSPSHVNLKDM	1348
Mus_musculus	PSDHPLLPLIWQKFFLLYLHRPGPOYG-----	LPVDGCGIGRRFFQSPSHVNLKDM	1345
Homo_sapiens	PSDHPLLPLIWQKFFLLYLHRPGPOYG-----	LPIDGCGIGRRFFQSPAHINLLKEM	1352
Pan_troglodytes	PSDHPLLPLIWQKFFLLYLHRPGPOYG-----	LPIDGCGIGRRFFQSPAHINLLKEM	1354
Macaca_mulatta	PSDHPLLPLIWQKFFLLYLHRPGPOYGYGAQYCRFL	LPIDGCGIGRRFFQSPAHISLLKEM	1363
Callithrix_jacchus	PSDHPLLPLIWQKFFLLYLHRPGPOYG-----	LPIDGCGIGRRFFQSPITYISLLKEM	1351
Equus_caballus	PSDHPLLPLIWQKFFLLYLHRPGPOYG-----	LPIDGCGIGRRFFQSPAHINLLKEM	1352
Canis_lupus_familiaris	PSDHPLLPLIWQKFFLLYLHRPGPOYG-----	LPIDGCGIGRRFFQSPAHISLLKEM	1348
Bos_taurus	PSDHPLLPLIWQKFFLLYLHRPGPOYG-----	LPIDGCGIGRRFFQSPAHISLLKEM	1352
Latimeria_chalumnae	PADHPLLPLVWQKFFLLYLHRPGPEFG-----	LPVSSCIGKRFFHSTAHSVLLKEL	1120
1450.....1460.....1470.....1480.....1490.....1500		

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Xenopus_tropicalis	KRRLIEVADFHHASAKALRALVPLDGSVPFFPDSLGGSQECMAIPEVHKELVRLFNVFVW	1385
Rhinatrema_bivittatum	KKRLIDLADFHHAAASKALRMQTPADGSAGPHEKGTSTFDHLTSPKLNKELVRLFNVFIVW	1415
Pavo_muticus	KQRLTEVADFHHAAASKALKVESPVKSSDRSPEKASCLPDYLTSPELHKELVRLCNVFILW	1408
Pavo_cristatus	KQRLTEVADFHHAAASKALKVESPVKSSDRSPEKASCLPDYLTSPELHKELVRLCNVFILW	1408
Gallus_gallus	KQRLTEVADFHHAAASKALKVESPVKSSDRSPEKASCLPDYLTSPELHKELVRLCNVFILW	1408
Anas_platyrhynchos	KQRLIEVADFHHAAASKALKVESPAEGSERSLEKASCSSDYLTSPELHKELVRLCNVFWLW	1410
Chelonia_mydas	KQRLTEVADFHHAAASKALRVESAADGSEGLSQRGNCSPDYLTSPELHKELVRLFNVFVLW	1406
Rattus_norvegicus	KRRLTEVADFHYAASKALRVP--AEGSEGTPERQAGTPGFLTSPELHRELVRFLFNVIILW	1406
Mus_musculus	KRRLTEVADFHYAASKALRVP--AEGSEGTPERQAGTPGFLTSPELHRELVRFLFNVIILW	1403
Homo_sapiens	KRRLTEVADFHHAAASKALRVP--AEGSEGLPESHSGTPGYLTSPELHKELVRLFNVIILW	1410
Pan_troglodytes	KRRLTEVADFHHAAASKALRVP--AEGSEGLPESHSGTPGYLTSPELHKELVRLFNVIILW	1412
Macaca_mulatta	KRRLTEVADFHHAAASKALRVP--AEGSEGLPES---TPGYLTSPELHKELVRLFNVIILW	1418
Callithrix_jacchus	KRRLTEVADFHHAAASKALRVP--AEGSEGLPESQAGTPGYLTSPELHTELVRFLFNVIILW	1409
Equus_caballus	KRRLTEVADFHHAAASKALRIP--AEGSEGLPASQAGTPGYLTSPELHTELVRFLFNVIILW	1410
Canis_lupus_familiaris	KRRLTAVADFHHAAASKALRVP--AEGSEGPPGSQAGTPGYLTSPELHTELVRFLFNVIILW	1406
Bos_taurus	KRRLTEVADFHHAAASKALRVP--AEGSEGPPESRAGALAYLTSPELHTELVRFLFNVIILW	1410
Latimeria_chalumnae	KRRLTEVADFHHAAASKALKVERSAVGVTGADERNQTPDYMTSPELHRELVRFLFNVFAIW	1180
1510.....1520.....1530.....1540.....1550.....1560	

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Xenopus_tropicalis	LEDENFQKGDVYLPSPKQYDAHRLAKIMRNEQELWMEFINMERITYEIOESINAWNQIK	1445
Rhinatrema_bivittatum	LEDESFKGPDVYIPSPKQYDAHRLAKVMLNEQDLWMEYVNTQEIHHFEQEAIDFWNRIRK	1475
Pavo_muticus	LEESFQKGDITYIPSPKQYDAHRLAKIMONQODLWMEYVNTTELIIHFEQEAINLWMRAQ	1468
Pavo_cristatus	LEESFQKGDITYIPSPKQYDAHRLAKIMONQODLWMEYVNTTELIIHFEQEAINLWMRAQ	1468
Gallus_gallus	LEESFQKGDITYIPSPKQYDAHRLAKIMONQODLWMEYVNTTELIIHFEQEAINLWTRAQ	1468
Anas_platyrhynchos	LEESFQKGNITYIPSPKQYDAHRLAKIMONQODLWMEYVNTVELIIHFEQEAINLWMRSQ	1470
Chelonia_mydas	LEESFQKGDAYIPSPKQYDVYRLAKIMONQODLWMEYVNRIEQHEQEAHLHLWLQVK	1466
Rattus_norvegicus	LEDENFQKGDITYIPSPKHYDVYRLAKVMONQODLWMEYANMERIQHEQETVALWTOAQ	1466
Mus_musculus	LEDENFQKGDITYIPSPKHYDVHRLAKVMONQODLWMEYVNMERIQHEQETVALWTOAQ	1463
Homo_sapiens	LEDENFQKGDITYIPSPKHYDIHRLAKVMONQODLWMEYLNMERIYHEQETVGLWTOAQ	1470
Pan_troglodytes	LEDENFQKGDITYIPSPKHYDIHRLAKVMONQODLWMEYLNMERIYHEQETVGLWTOAQ	1472
Macaca_mulatta	LEDENFQKGDITYIPSPKHYDIHRLAKVMONQODLWMEYLNMERIYHEQETVGLWTOAQ	1478
Callithrix_jacchus	LEDENFQKGDITYIPSPKHYDIHRLAKVMONQODLWMEYLNMERIYHEQETVGLWTOAQ	1469
Equus_caballus	LEDENFQKGDITYIPSPKHYDIHRLAKVMONQODLWMEYLNMERIHYEQETVGLWTOAQ	1470
Canis_lupus_familiaris	LEDENFQKGDITYIPSPKHYDIHRLAKVMONQODLWMEYLNMERIRYEQETVGLWTOAT	1466
Bos_taurus	LEDENFQKGDITYIPSPKHYDIHRLAKVMONQODLWMEYLNMERVHYEQETVGLWTOAQ	1470
Latimeria_chalumnae	LEDDAFQKPDVYLPSPKQYDTHRLAKIMONQODPWMEYIDMERMQHEQEVSLWVKDT	1240
1570.....1580.....1590.....1600.....1610.....1620	

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<i>Xenopus_tropicalis</i>	VEMDTCLLNPAVSMEPASSHS	SAKDRILCNLRKHGAPCPATT	LHLMKPPVPVPIPPSCYINT 1505
<i>Rhinatrema_bivittatum</i>	FGSHAASSNLVSSDFTNPLA	AKDRILSNLKKHDAPSSCIPT	KPMKVPVPVVISSSSSFQNR 1535
<i>Pavo_muticus</i>	LESHTPAAISAGQDFTDPLS	AKERIMNLLKKFDLPKPPLS	LQPMKAPVPVVISSASLINO 1528
<i>Pavo_cristatus</i>	LESHTPAAISAGQDFTDPLS	AKERIMNLLKKFDLPKPPLS	LQPMKAPVPVVISSASLINO 1528
<i>Gallus_gallus</i>	LESHSAAISAGQDFTNPLS	AKERIMNLLKKFDLPKPPLS	LQPMKAPVPVVISSASLINO 1528
<i>Anas_platyrhynchos</i>	LESHTTASISAGQDNLNPLS	AKERIMNLLKKFDTPKPPLP	LQOLMKAPVPVVISSASLISQ 1530
<i>Chelonia_mydas</i>	LESHATPSTSSVQDFTNPLS	AKERIMSNLKKYDAPKPPLP	LQPVKPPVPVVISSASLVSQ 1526
<i>Rattus_norvegicus</i>	LESHSVPCSSSTQLDFTDPL	LAKERVLSNLQRHEAPHPP	LVLHPMRPPVPLISSAVLLAQ 1526
<i>Mus_musculus</i>	LESHAAPCSSSAQLDFTDPL	LAKARVLSNLEKHEAPHPP	LLLHPVRPPVPLIPSAALLTQ 1523
<i>Homo_sapiens</i>	LESHSTPCSLSVQLDFTDPL	LAKERVLSNLRKHHEAPQP	PLALHPTLKPPVPVVISSAVLLSQ 1530
<i>Pan_troglodytes</i>	LESHSTPCSLSVQLDFTDPL	LAKERVLSNLRKHHEAPQP	PLVLHPMKPPVPVVISPAVLLSQ 1532
<i>Macaca_mulatta</i>	LESHSTPCSSSVQLDFTDPL	LAKERVLSNLRKHHEAPQP	PLVLHPVKPPVPVVISSAVLLSQ 1538
<i>Callithrix_jacchus</i>	LESHSTPCNLVQLDFTDPL	LAKERVLSNLQKHEAPQP	PLVLHPMKPPVPVVISSAALLSQ 1529
<i>Equus_caballus</i>	LESHSTPCNLVQLDFTDPL	LAKERVLSNLQKHETPQ	PALVLHPLRPPVPVVISSASLLSQ 1530
<i>Canis_lupus_familiaris</i>	LESHSPPCSSSVQLDVTDP	SLAKERVLSNLRKHHEAPQP	PLDLHPVRPPVPVVISSAVLLSQ 1526
<i>Bos_taurus</i>	LESHSAPCSSVQLDFTDPL	LAKERVLSNLRKHEDRP	PLVLHLMKPPVPVVISSAMLLSQ 1530
<i>Latimeria_chalumnae</i>	FEPSAAFSVSVFIDFTNPS	AAKERILTRLKKHDAPSL	PLLQAMKAPVPDVAMASLTSE 1300
1630.....1640.....1650.....1660.....1670.....1680		

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Xenopus_tropicalis	QESMKLVHKDLTILQOYAKTASMRSEQVALDGEMLETPKLYVNREEQIEMKMECRGNL	1565
Rhinatrema_bivittatum	KEAVHFLQKDLIILQOQAKMATLRESQVALDGEILDFLSKLYVNREEQINMELECRGTS	1595
Pavo_muticus	KEAVQLTHTDLKVLQGHAKTAALWESQHVALLNSEILDTIPKLYVNREEQITLHLECRGAS	1588
Pavo_cristatus	KEAVQLTHTDLKVLQGHAKTAALWESQHVALLNSEILDTIPKLYVNREEQITLHLECRGAS	1588
Gallus_gallus	KEAIQLTHADLVKVLQGHAKTAALWESQHVALLNSEILDTIPKLYVNREEQITLHLECRGAS	1588
Anas_platyrhynchos	KEAIQLTRTDNLVLRQGHAKTAALWESQHVALLNSEILDTIPKLYVNREEQITLHLECRGTS	1590
Chelonia_mydas	KEATQLVRMDLNLNLQOQAKTAARRETOQVALDSEILDTIPKLYINREEQITLLELKCPGTS	1586
Rattus_norvegicus	KDATQLMCADLNLQQQARTATLRESQVALDGELLEAMPKQYVNREEQATLHLECRGSS	1586
Mus_musculus	KDSTQLMCTDLNLQQQARSATLRESQVALDGELLETMPKQYVNREDQATLHLECRGSS	1583
Homo_sapiens	KDATQLVCTDLNLQQQARTAAALRESQVALDGELLDTMPKQYVNREEQTTLHLECRGSS	1590
Pan_troglodytes	KDATQLVCTDLNLQQQARTAAALRESQVALDGELLDTMPKQYVNREEQTTLHLECRGSS	1592
Macaca_mulatta	KDATQLVCTDLNLQHQARNAALRESQVALDGELLDTMPKQYVNREEQTTLHLECRGSS	1598
Callithrix_jacchus	KDATQLVCTDLNLQQQARTAAALRESQVALDGELLDIMPROYVNREEQATLHLECRGSS	1589
Equus_caballus	KDAIQLVRTDLNLQQQARTAAALRESQVALDSELLDTMPKQYINREEQTTLHLECRGSS	1590
Canis_lupus_familiaris	KDATQLVHTDLNLQQQARTAAALRESQVALDSELLDTMPKQYVNREEQTTLHLECRGSS	1586
Bos_taurus	KDATELVRDLNLQQQARTAAALRESQVALDSELLDTMPKQYVNREEQTTLHLECRGSS	1590
Latimeria_chalumnae	KAAVQLIQGDLRLSQGHAKLSALRESQVALDSELLDTIPKLYCNREEQVMELECRGRS	1360
1690.....1700.....1710.....1720.....1730.....1740	

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Xenopus_tropicalis	NKSCAGPAVVTVKFEQMEEAVSQQHLMRREMQLQAEATKPTQLSITTEAAVHLENFI	1625
Rhinatrema_bivittatum	NRSCAGAAALVTVOFECMHMSEAVSQQHLVLRKEVKQLQTEATKAPPLNITEAAVHVENFI	1655
Pavo_muticus	SKGCCGAALVTIOFEGKHKNEAVSQQHALRKEVRQLQAEATKPPSLGVVEAAVHVENFI	1648
Pavo_cristatus	SKGCCGAALVTIOFEGKHKNEAVSQQHALRKEVRQLQAEATKPPSLGVVEAAVHVENFI	1648
Gallus_gallus	NKGCQGAALVTIOFEGKHKNEAVSQQHALRKEVRQLQAEAMKPPSLGVVEAAVHVENFI	1648
Anas_platyrhynchos	NKGCQGAALLTIOFEGKHKNEAVSQQHALRKEVRQLQAEATKPPSLGVVEAAVHVENFI	1650
Chelonia_mydas	NKSCQGAALVTVOFAGKHKNEAISQQHALRKEVKLLQAEATKPPFLSIVEAAVHVENFI	1646
Rattus_norvegicus	GKKCCGAAVVTVVOFEGMCKNEAISQQVHVLQKEVWQFAEAAQPPALNVVEAAVHAENLI	1646
Mus_musculus	GKKCCGAAVVTVVOFEGMKNKNEAVSQIHVLQKEVRQLQAEAAQPPALNVVEAAVHAENLI	1643
Homo_sapiens	GKKCCGAAVVTVVOFEGMHKNEAISQQHLVLRKEVKQLQAEAAKPPSLNIVEAAVHAENLI	1650
Pan_troglodytes	GKKCCGAAVVTVVOFEGMHKNEAISQQHLVLRKEVKQLQAEAAKPPSLNIVEAAVHAENLI	1652
Macaca_mulatta	GKKCCGAAVVTVVOFEGMHKNEAISQQHLVLRKEVKQLQAEAAKPPSLNIVEAAVHAENLI	1658
Callithrix_jacchus	GKKCCGAAVVTVVOFEGMHKNEAVTQQLHLVLRKEVKQLQAEAAKPPSLNIVEAAVHAENLI	1649
Equus_caballus	GKKCCGAAVVTVVOFEGMHKNEAVSQQHLVLRKEVKQLQAEAAKPPSLNIVEAAVHAENLI	1650
Canis_lupus_familiaris	GKKCCGPAAVTVVOFEGMHKNEAISQQHLVLRKEVKQLQAEAAKPPSLNVVEAAVHAENLI	1646
Bos_taurus	GKKCCGAAVVTVVOFEGMHKNEAISQQHLVLRKEVKQLQAEAAKPPSLNIVEAAVHAENLI	1650
Latimeria_chalumnae	GCPCORPAAVTIKFESLHLSIESIQQLGALHKEIKQLHAEATKPSQONIVEAAVHVENII	1420
1750.....1760.....1770.....1780.....1790.....1800	

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TALVNAYKVQSPLEIPKIGIGTFFAVVEYVCDETQRHPPSRQFFTS CIEILGQVFI SGTK
TALVNAYRLQPLPGIQKVGIGSFYAVVDFVCDETQRYPPTRQFFTS CIEILGQVFI SGTK
TTLINIYKVQPMIPAICKVGISLFFIIVVEYVCDETQRNPPTRQFFTS CIEILGQVFI SGTK
TTLINIYKVQPMIPAICKVGISLFFIIVVEYVCDETQRNPPTRQFFTS CIEILGQVFI SGTK
TTLINIYKVQPMIPAICKVGISLFFIILVEYVCDETQRNPPTRQFFTS CIEILGQVFI SGTK
TALINIYKVQPMIPAICKVGISLFFIIVVEYVCDETQRNPPTRQFFTS CIEILGQVFI SGTK
TALINIYKVQPTSTIQKVGISLFFAVIDFVCDETQRHPPTRQFFTS CIEILGQVFI SGTK
TALVNTYKLOPTPGVQKVGISLFFTIVVDYVSEETQRHPPTRQFFTS CIEILGQVFI SGTK
TALVNTYKLOPTPGVQKLGISLFFTIVVDHVSDETQRHPPTRQFFTS CIEILGQVFI SGTK
TALVNAYKLOPTPGIQKVGISLFFTIVDYVSDETQRHPPTRQFFTS CIEILGQVFI SGIK
TALVNAYKLOPTPGIQKVGISLFFTIVDYVSDETQRHPPTRQFFTS CIEILGQVFI SGIK
TALVNAYKLOPTPGIQKVGISLFFTIVDYVSDETQRHPPTRQFFTS CIEILGQVFI SGTK
TALVNAYKLOPTPGIQKVGISLFFTIVDYVSDETQRHPPTRQFFTS CIEILGQVFI SGTK
TALVNAYKLOPTPGVQKVGISLFFTIVVDYVSDETQRHPPTRQFFTS CIEILGQVFI SGTK
TALVNAYKLOPTPGVQKVGITLFFTIVVDYVSDETQRHPPTRQFFTS CIEILGQVFI SGTK
TALVNAYQSOPTPGVQKVGISLFFTIVDYVSDETQRHPPTRQFFTS CIEILGQVFI SGTK
TVLVNAYKLQSPVGITKEIGIALFYVVVNLCDETQRHPPTRQFFTS CIEVLGQIFIMDSK
.....1810.....1820.....1830.....1840.....1850.....1860

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 TECRPVLQITILQNRRLCSLLSPYFTTPAASPGEFVQLYEKVVEAVNDDNSDVIFMLLTKFD
 SECKPLLHRIQLQNRRLCNLLAPYFTTPVASPDEFVSLYEKVVTQTFDVDNSDVIFMLLTKFD
 SECKRLLQITILHNRRRLCTLLSPYFTTPVASPDEFVALYEKVVAFLSEDNSDVVFMLLTKFD
 SECKRLLQITILHNRRRLCTLLSPYFTTPVASPDEFVALYEKVVAFLSEDNSDVVFMLLTKFD
 SECKRLLQITILHNRRRLCTLLSPYFTTPVASPDEFVALYEKVVTFLSEDNSDVVFMLLTKFD
 SECKHLLQITILQNRRLCTLLSPYFTTPVASPNEFVTLYEKVVAFLSEDNSDVVFMLLTKFD
 SECKLVLQITILQNRRLCNLLSPFFTPVASPEEFVNLYEKVVKFLSDDNNDVVFLLTKFD
 SECKKLLQITILKNRRRLCSLLSPFFTPNAAPAEFIPLYEKVAKCLSEDNSDLVFMLLTKFD
 SECKRLLQITILKNRRRLCSLLAPFFTPNAAPAEFIQLYERVVTCREDNSDVIFMLLTKFD
 SECKRVLETILKNRRLCSLLSPFFTPNAAPAEFIQLYEQVVKFLSEDNSDMIFMLLTKFD
 SECKRVLETILKNRRLCSLLSPFFTPNAAPAEFIQLYEQVVKFLSEDNSDMIFMLLTKFD
 SECKRVLETILKNRRLCSLLSPFFTPNAAPAEFIQLYEKVVKFLSEDNSDMIFMLLTKFD
 SECKKVLATILKNRRLCSLLSPFFTPNAAPAEFIQLYEKVVKFLSEDNSDMIFMLLTKFD
 SECKKVLQITILKNRRRLCSLLSPFFTPNAAPAEFIQLYEKVVKFLSEDNSDVVFMLLTKFD
 SECKRVLETILKNRRLCSLLSPFFTPNAAPAEFIQLYEKVVKFLSEDNSDMIFMLLTKFD
 SECKRVLETILKNRRLCSLLSPFFTPSAAPAEFIQLYEKVVKFLREDNSDMIFMLLTKFD
 SECKPLLKQITILQNRRLCNLLSPYFIPNACPEEFVHLYEKVVKALRVGNGDVIFMLLTKFD
1870.....1880.....1890.....1900.....1910.....1920

[illegible]

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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.* ***:***:*****:***: *::** .
Xenopus_tropicalis SDCLRLLMQSSAEQLLSPDCWKASLKALGCGSPVAEQGSFKKSDCTESPVLRDAGEIILLS 1865
Rhinatrema_bivittatum NDFLRLLMQSSAEQLLSPDCWKASLKALGCGSPVAEQGSFKKSDCTESPVLRDAGEIILLS 1895
Pavo_muticus SDFLRFLVQSSAEQLLSPDCWKAALKALGCGSPVAEQGSFKKSDCTESPVLRDAGEIILLS 1888
Pavo_cristatus SDFLRFLVQSSAEQLLSPDCWKAALKALGCGSPVAEQGSFKKSDCTESPVLRDAGEIILLS 1888
Gallus_gallus SDFLRFLVQSSAEQLLSPDCWKAALKALGCGSPVAEQGSFKKSDCTESPVLRDAGEIILLS 1888
Anas_platyrhynchos SDFLRFLVQSSAEQLLSPDCWKAALKALGCGSLVTEQGSFKKNDCTESSVLRESVEILLS 1890
Chelonia_mydas SDFLRLLMQSSAEQLLSPDCWKALLKTLGCTSETERR--SKGDSAKSPVLRSSAKILLS 1884
Rattus_norvegicus SDVLRLLVQSSAEQLLSPDCWKATLALGCGYAPSIQQG----EASVSSVLHSAASVILLS 1882
Mus_musculus SDVLRLLVQSSAEQLLSPDCWKATLALGCGYAPSSQQG----AASVSSGLHSAASRVILLS 1879
Homo_sapiens SDILRLLMQSSAEQLLSPDCWKATLALGCCAPSCQQG----AASVSSGLHSAASRVILLS 1886
Pan_troglodytes SDILRLLMQSSAEQLLSPDCWKATLALGCCAPSCQQG----AASVSSGLHSAASRVILLS 1888
Macaca_mulatta SDILRLLMQSSAEQLLSPDCWKATLALGCCAPSCQQG----AASVSSGLHSAASRVILLS 1894
Callithrix_jacchus SDILRLLMQSSAEQLLSPDCWKATLALGCCAPSCQQG----AASVSSGLHSAASRVILLS 1885
Equus_caballus SDILRLLMQSSAEQLLSPDCWKATLALGCCAPSCQQG----AASVSSGLHSAASRVILLS 1886
Canis_lupus_familiaris SDILRLLMQSSAEQLLSPDCWKATLALGCCAPSCQQG----AASVSSGLHSAASRVILLS 1882
Bos_taurus SDILRLLMQSSAEQLLSPDCWKATLALGCCAPSCQQG----AASVSSGLHSAASRVILLS 1886
Latimeria_chalumnae SDCLRLLMQSSAEQLLSPDCWKASLKTLGCLPPKKRQKP-GRGGSTGAAAPPDSASVHLS 1659
.....1990.....2000.....2010.....2020.....2030.....2040

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Xenopus_tropicalis AEQVLETIKWLSDFFFYKLRFKSKSDFQSFGLLSKWSPYMAEVKTFEYLVKSLIDYELAGL 1925
Rhinatrema_bivittatum SEQVMEITIEWLSDFFHKLRLAKSGFRSFGLLSKWSPYMTIEVKDFFQYLAESLIDSEVANL 1955
Pavo_muticus AEQVREITIEWLSTSFCKLRLASVDFRTFGLFSKWSPYVPEVNTFLEYLIKRLIETEVVSL 1948
Pavo_cristatus AEQVREITIEWLSTSFCKLRLASVDFRTFGLFSKWSPYVPEVNTFLEYLIKRLIETEVVSL 1948
Gallus_gallus AEQVREITIEWLSTSFCKLRLASVDFRTFGLFSKWSPYVPAVNTFLEYLIKRLIETEVVSL 1948
Anas_platyrhynchos EEQVREITIEWLSSSFCKLRLASVDFRTFGLFSKWSTVVAEMNTFLEYLVKRLIETEVVNL 1950
Chelonia_mydas VEQVTETIEWLCKSFHKLRLVASLNFRTFGLFSKWSPYMTIEVKTLMEYLVKWLIDSEVVNL 1944
Rattus_norvegicus DKQVTETVQWLSDFFFYKLRLSKLDFKSFGLFSKWSPYMAADVKTFLGYLVKRLTDLEIASL 1942
Mus_musculus DKQVMEITVQWLSDFFFYKLRLSKLDFKSFGLFSKWSPYMAADVKTFLGYLVKRLTDLEIASL 1939
Homo_sapiens DKQVMEITVQWLSDFFFYKLRLSKLDFKSFGLFSKWSPYMAADVKTFLGYLVKRLTDLEIASL 1946
Pan_troglodytes DKQVMEITVQWLSDFFFYKLRLSKLDFKSFGLFSKWSPYMAADVKTFLGYLVKRLTDLEIASL 1948
Macaca_mulatta DKQVMEITVQWLSDFFFYKLRLSKLDFKSFGLFSKWSPYMAADVKTFLGYLVKRLTDLEIASL 1954
Callithrix_jacchus DKQVMEITVQWLSDFFFYKLRLSKLDFKSFGLFSKWSPYMAADVKTFLGYLVKRLTDLEIASL 1945
Equus_caballus DKQVMEITVQWLSNFFYKLRLSTLDFKSFGLFSKWSPYMAADMKTFLGYLVKRLTDLEIASL 1946
Canis_lupus_familiaris DKQVMEITVQWLSNFFYKLRLSTLDFKSFGLFSKWSPYMAADMKTLLGYLVKRLTDLEIASL 1942
Bos_taurus DKQVMEITVQWLSNFFYKLRLSTLDFKSFGLFSKWSPYMAADMKTFLGYLVKRLTDLEIASL 1946
Latimeria_chalumnae PDQVEETLEWLSEFFCKLRFKSKSDFRSFGLFSKWSPYMAEVEAFFLFLVRSLLINNGAAAL 1719
.....2050.....2060.....2070.....2080.....2090.....2100

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Xenopus_tropicalis SQETMGSHRIQAGLKSLSHAITELFKPWIMVLDKEDNSQRCYPWLESSTPAASSMVRLF 1985
Rhinatrema_bivittatum VQEPGLGSSRILSALKSLHAVITELFKPWILVLDQDDASIHRCYPWLESSTPIATGIVOLF 2015
Pavo_muticus AQEPVGSNRVLAALQSLYSVIAGLFPKWILVLDKEDASNQCYPWLESSTPAASSMVRLF 2008
Pavo_cristatus AQEPVGSNRVLAALQSLYSVIAGLFPKWILVLDKEDASNQCYPWLESSTPAASSMVRLF 2008
Gallus_gallus AQEPVGSNRVLAALQSLYSVIAGLFPKWILVLDKEDASNQCYPWLESSTPAASSMVRLF 2008
Anas_platyrhynchos AHEHVGSSKVLAALQSLYSVIAGLFPKWILVLDKEDASNQCYPWLESSTPAASSMVRLF 2010
Chelonia_mydas AQEPVGSNRVLAALQSLYSVIAGLFPKWILVLDKEDASNQCYPWLESSTPAASSMVRLF 2004
Rattus_norvegicus AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 2000
Mus_musculus SQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 1997
Homo_sapiens AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 2004
Pan_troglodytes AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 2006
Macaca_mulatta AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 2012
Callithrix_jacchus AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 2003
Equus_caballus AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 2003
Canis_lupus_familiaris AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 1999
Bos_taurus AQDPTASS--KEVLRSLHSQIIQLFKPWILVLEDNESSQQRHYPWLESSTPAASSMVRLF 2003
Latimeria_chalumnae AQEPAGSSKTLQVLSLHSAITELFKPWILVLDKEDNSQRCYPWLESSTPAATKIVRLF 1779
.....2110.....2120.....2130.....2140.....2150.....2160

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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<i>Xenopus tropicalis</i>	SDCILILHQSQRDLLPGQRGALWLHLMHYCETCTAPKLPEYILYSYHTEYSKLPWKMDY	2045
<i>Rhinatrema bivittatum</i>	CKCVYILHLISFKDKLLPSHRGTWLWLHLMHYCDFCTAAKMPEFILYTYHTEYSKLPWKEMH	2075
<i>Pavo muticus</i>	TDCIKLLHESFKGKLLPSHHGALWLHLMHYCGCCTAPKMPEFILYTFHTEFRRLPWKEMH	2068
<i>Pavo cristatus</i>	TDCIKLLHESFKDKLLPSHHGALWLHLMHYCGCCTAPKMPEFILYTFHTEFRRLPWKEMH	2068
<i>Gallus gallus</i>	TDCIKLLHESFKDKLLPSHHGALWLHLMHYCGCCTAPKMPEFILYTFHTEFRRLPWKEMH	2068
<i>Anas platyrhynchos</i>	TDCIKLLHESFKDKLLPSHHGALWLHLMYCECCTAPKMPEFILYTFHTEFKKLPWKEMH	2070
<i>Chelonia mydas</i>	TDCILVLHQSFKDKLLPGYHGALWLHLMHYCNSCTGPKMPEFILYTFHAEFSRLPWREM	2064
<i>Rattus norvegicus</i>	TDCVSLHASFQDKLLPGDEGALRLHLLHYTESCTAPRMPEFILYAFHSAVQKLEWKDLH	2060
<i>Mus musculus</i>	SDCVGSLHTSFKDRLLPGDEGALRLHLLHYCETCTAPKMPEFILYAFHSAVQRLWKDLH	2057
<i>Homo sapiens</i>	TDCIDSLHESFKDKLLPGDAGALWLHLMHYCEACTAPKMPEFILYAFHSTYRKLPWKDLH	2064
<i>Pan troglodytes</i>	TDCIDSLHESFKDKLLPGDAGALWLHLMHYCEACTAPKMPEFILYAFHSTYRKLPWKDLH	2066
<i>Macaca mulatta</i>	TDCIDSLHESFKDKLLPGDEGALWLHLMHYCEACTAPKMPEFILYTFHSAYRKLPWKDLH	2072
<i>Callithrix jacchus</i>	TDSIDSLHESFKDKLLPGDEGALWLHLMHYCEACTAPKMPEFILCTFHSAYQKLPWKDLH	2063
<i>Equus caballus</i>	ADCIDSLHKGFKDKLLPGDEGALRLHLMHYSEACTAPKMPEFILYAFHSAYRKLPWRDLH	2063
<i>Canis lupus familiaris</i>	TNCIDSLHESFKDKLLPGDEGALRLHLMHYCEACTAPRMPEFILYAFHNAYRKLPWRDLY	2059
<i>Bos taurus</i>	TDCIDSLHGCDFDKLLPGDEGALRLHLMHYCEACTAPKMPEFILYAFHSAVQKLPWRDLH	2063
<i>Latimeria chalumnae</i>	TESMEFLHRSFKDKLLPGQRCALWFWFIHYCESCASPKMPEYILYTYHSEYARLPWAELL	1839
2170.....2180.....2190.....2200.....2210.....2220	

	<p> ** : ** *** :***** :*** . ** :**** :* :. . . * :* : * * ** : : </p>	
Xenopus_tropicalis	PDQTVMEEFFKVERGSPKSCFLFLGSLCEVNWVSIILSDVWGPAPRPETHRMLVCLLFML	2105
Rhinatrema_bivittatum	PDQALMEEFFKIERGSPKSCFLFLGTIVLCEVNWVSVLSDAWNPKPYLETIRNMTVCLLFMM	2135
Pavo_muticus	PDQMLMEEFFKVERGSPKSCFLFLGYVLCEINWVSVLSDAWNPNPNPQTHNMIVCLLYMM	2128
Pavo_cristatus	PDQMLMEEFFKVERGSPKSCFLFLGYVLCEINWVSVLSDAWNPNPNPQTHNMIVCLLYMM	2128
Gallus_gallus	PDQMLMEEFFKVERGSPKSCFLFLGYVLCEINWVSVLSDAWNPNPNPQTHNMIVCLLYMM	2128
Anas_platyrhynchos	PDQILMEEFFKVERGSPKSCFLFLGYVLCEINWVSVLSDAWSPNPNPQTHNMIVCLLYMM	2130
Chelonia_mydas	PDQMLMEEFFKVERGSPKSCFIFLGSVLCVNWVSVLSDAWNPKPHPETHHMIIVCLLYMV	2124
Rattus_norvegicus	PDQRLMEAFFKVERGSPKSCFLFLGSVLCRVNWVSVLSDAWSPSPLPETQSMVVCLLFMM	2120
Mus_musculus	PDQRLMEAFFKVERGSPKSCFLFLGSVLCRVNWVSVLSDAWNPSPLPETQSMAVCLLFMM	2117
Homo_sapiens	PDQMLMEAFFKVERGSPKSCFLFLGSVLCVNWVSVLSDAWNSSPHPETRSMIVCLLFMM	2124
Pan_troglodytes	PDQMLMEAFFKVERGSPKSCFLFLGSVLCVNWVSVLSDAWNSSPHPETRSMIVCLLFMM	2126
Macaca_mulatta	PDQMLMEAFFKVERGSPKSCFLFLGSVLCVNWVSVLSDAWNPSPHPETRSMIVCLLFMM	2132
Callithrix_jacchus	PDQMLMEAFFKVERGSPKSCFLFLGSVLCVNWVSVLSDAWNPSPHPETRSMIVCLLFMM	2123
Equus_caballus	PDQKLMEAFFKVERGSPKSCFLFLGSVLCVNWVSVLSDAWSPSPHPETRSMIVCLLFMM	2123
Canis_lupus_familiaris	PDQMLMEAFFKVERGSPKSCFLFLGSVLCVNWVSVLSDAWSPSPRPETRNMIVCLLFMM	2119
Bos_taurus	PDQMLMEAFFKVERGSPKSCFLFLGSVLCVNWVSVLSDAWSPSPRPETRGMMVCLLFMM	2123
Latimeria_chalumnae	PDHILMEAFFKVERGSPKSCFLFLGSALCEVNWVSVLCEAWNQPQLETQAMVYLLFTM	1899
2230.....2240.....2250.....2260.....2270.....2280	

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<i>Xenopus_tropicalis</i>	VFVAKKEKLVNPPGSPLLSLLGQASTLSWHLVDVAVSYQNMGYFSSHYPPCVILSKHLTD	2165
<i>Rhinatrema_bivittatum</i>	VFLAKEEELISKPGSPLLNLLGQSSSLTWQLVDIVSYQNIYGYFSNHYPSPVILAKDSSS	2195
<i>Pavo_muticus</i>	VLLAKEEQLVGKEESPLINLLGQTSSLPWQLVGISSYQSIIISYCNSHYPPSVILAKDAAS	2188
<i>Pavo_cristatus</i>	VLLAKEEQLVGKEESPLINLLGQTSSLPWQLVGISSYQSIIISYCNSHYPPSVILAKDAAS	2188
<i>Gallus_gallus</i>	VLLAKEEQLVGKEESPLINLLGQTSSLPWQLVGISSYQSIIISYCNHYPPSVVLAKDAAS	2188
<i>Anas_platyrhynchos</i>	VLLAKEEQLVGKEESPLINLLGQTSSLPWQLVGISSYQSIIISYCNHYPPSVVILAKDAAA	2190
<i>Chelonia_mydas</i>	VLLAKEEQLVISKEESPLINLLGQTSSLPWQLVRIASYQSVISYFSSHYPPSIILAKDSAA	2184
<i>Rattus_norvegicus</i>	VLLAKEAQLVDETDSPLLSLLGQTSSLSWHLVDFVSYQSVLGYFSSHYPPSVILAQDCSA	2180
<i>Mus_musculus</i>	VLLAKEAQLVDEPDSPLLSLLGQTSSLSWHLVDLVSYQSVLGYFSSHYPPSVVLANDCSS	2177
<i>Homo_sapiens</i>	ILLAKEVQLVDQTDSPLLSLLGQTSSLSWHLVDIVSYQSVLSYFSSHYPPSIILAKESYA	2184
<i>Pan_troglodytes</i>	ILLAKEVQLVDQTDSPLLSLLGQTSSLSWHLVDIVSYQSVLSYFSSHYPPSIILAKESYA	2186
<i>Macaca_mulatta</i>	ILLAKEVQLVDQTDSPLLSLLGQTSSLSWHLVDIVSYQSVLGYFSSHYPPSIILAKESYA	2192
<i>Callithrix_jacchus</i>	ILLAKEVQLVDQTDSPLLNLLGQTSSLSWHLVDIVSYQSVLGYFSSHYPPSIILTKEFSA	2183
<i>Equus_caballus</i>	ILLAKEDQLVDQTDSPLLSLLGQTSSLSWHLVDIVSYQSVLGYFSSHYQPSIILAKEPSA	2183
<i>Canis_lupus_familiaris</i>	ILLAKEDQLVDQADSPLLNLLGQTSSLSWHLVDIVSYQSVLSYFSSHYQPATILAKESSA	2179
<i>Bos_taurus</i>	ILLGKEDQLVDQTDSPLLTLLGQTSSLSWHLVDIVSYQSVLGYFSSHYQPSVILAKESSA	2183
<i>Latimeria_chalumnae</i>	VFLSKEDELLISKP-----	1912
2290.....2300.....2310.....2320.....2330.....2340	

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Xenopus_tropicalis	LLDDIVIFNPPDLDVQKRHMALSSLFMELLVMNNAGVTTAESLRGALLSWIDTNVQGLL	2285
Rhinatrema_bivittatum	LLDDIAIFNPPDVIDILKRHLALCSLYKEVLMNNNASVTTAESLRGSLQTWIDSKVHGGL	2315
Pavo_muticus	LLDDVVIFNPPDMDLQTRHLALSSLFETETLMLLNSSVTTAESLRGSLRKWIDSKVHGGL	2308
Pavo_cristatus	LLDDVVIFNPPDMDLQTRHLALSSLFETETLMLLNSSVTTAESLRGSLRKWIDSKVHGGL	2308
Gallus_gallus	LLDDVVIFNPPDMDLQTRHLALSSLFETETLMLLNSSVTTAESLRGSLRKWIDSKVHGGL	2308
Anas_platyrhynchos	LLDDIVIFNPPDMDLQTRHMALSSLFETETLMMNNSSVATAESLRGSLRKWIDSKVHGGL	2310
Chelonia_mydas	LLDDIVIFNPPDMDMQTRHMALSSLFSEALMMNNASITTAESLRGILQNWIIYTKVHGGL	2304
Rattus_norvegicus	LLDDIIIFNPPDMSQTRHMALSSLFMEVLMNNNSAAVPTAEYLGVSIRTWIGQKVHGLV	2300
Mus_musculus	LLDDIIIFNPPDMSQTRHMALSSFFVEVLMNNNSAAVPTAEFLAVSIRTWIGQKVHGLI	2297
Homo_sapiens	LLDDIIIVFNPPDMSQTRHMALSSLFMEVLMNNNATIPTAEFLRGSIRTWIGQKMHGLV	2304
Pan_troglodytes	LLDDIIIVFNPPDMSQTRHMALSSLFMEVLMNNNATIPTAEFLRGSIRTWIGQKMHGLV	2306
Macaca_mulatta	LLDDIIIFNPPDMESQTRHMALSSLFMEVLMNNNATIPTAEFLRGSIRTWIGQKMHGLV	2312
Callithrix_jacchus	LLDDIIIVFNPPDMSQTRHMALSSLFMEVLMNNNATIPTAEFLRGSIRTWIGQKMHGLV	2303
Equus_caballus	LLDDIIIVFDPPDMSQTRHMALSSLFMEVLMNNNATIPTAEFLRGSIRTWIGQKVHGLV	2303
Canis_lupus_familiaris	LLDDIIIVFNPPDMSQTRHMALSSLFMEVLMNNNATIPTAEFLRGSVRTWIGQKVHGLV	2299
Bos_taurus	LLDDIIIVFNPPDLDSQTRHMALSSLFMEVLMNNNSATVPTAEFLRGSIRTWIGQKVHGLV	2303
Latimeria_chalumnae	LLDDIAIFNPPVDTRLRLALSSLFVEVLMMLNSASISTAESLRSLKKNWIEEKARCPL	2009
2410.....2420.....2430.....2440.....2450.....2460	

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Xenopus_tropicalis	VMPLLTAACQSLASIRHMAEATEACIIAYFRDENLHVONPGWGPILASLOVPELTTEDFL		2345
Rhinatrema_bivittatum	VMPLLTAACQSLASVOHMAETVEACIIAYFKDESLLSENSGWGPILLASLOVPELTMEEFLL		2375
Pavo_muticus	AMPLLTAACQSLASVRHMAETTEACITSYFNKDLPHHODLGWGPVLASLOVPELTMEEFLL		2368
Pavo_cristatus	AMPLLTAACQSLASVRHMAETTEACITSYFNKDLPHHODLGWGPVLASLOVPELTMEEFLL		2368
Gallus_gallus	AMPLLTAACQSLASVRHMAETTEACITSYFNKDLPHHODLGWGPVLASLOVPELTMEEFLL		2368
Anas_platyrhynchos	AMPLLTAACQSLASVRHMAETTEACITSYFSGDFFPHODLGWGPILASLOVPELTMEEFLL		2370
Chelonia_mydas	VMPLLTAACQSMASVRHMAETTEACITAYFNEEFFPLNODLGWGPILASLOVPELTMEEFLL		2364
Rattus_norvegicus	VLPPLLTAACQSLASVRHMAETTEACITAYFYK-ESSLDONLGWGPILVLSOVPELTMOEFL		2359
Mus_musculus	VLPPLLTAACQSLASVRHMAETTEACIMAYFYK-ESSLDONLGWGPVLVLSOVPOLTARDFL		2356
Homo_sapiens	VLPPLLTAACQSLASVRHMAETTEACITAYFYK-ESPLNONSGWGPILVLSOVPELTMEEFLL		2363
Pan_troglodytes	VLPPLLTAACQSLASVRHMAETTEACITAYFYK-ESPLNONSGWGPILVLSOVPELTMEEFLL		2365
Macaca_mulatta	VLPPLLTAACQSLASVRHMAETTEACITAYFYK-ESPLNONSGWGPILVLSOVPELTMEEFLL		2371
Callithrix_jacchus	VLPPLLTAACQSLASVRHMAETTEACITAYFN-ESSLKONSGWGPILVLSOVPELTMEEFLL		2362
Equus caballus	VLPPLLTAACQSLASVRHMAETTEACITAYFYK-EGSLNONVGWGPILVLSOVPELTIEEFL		2362
Canis_lupus_familiaris	VLPPLLTAACQSLASVRHMAETTEACIAAYFYK-EGSLNONLGWGPILVLSOVPELTIEEFL		2358
Bos_taurus	VLPPLLTAACQSLASVRHMAETTEACITAYFYK-EGSLNONLGWGPILVLSOVPELTIEEFL		2362
Latimeria_chalumnae	VLPPLLTAACKCLASVRHMAETTEACITAFFRDGCLPDQYSGWGPILASLOVPELTAEFEFL		2069
2470.....2480.....2490.....2500.....2510.....2520		

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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ILQLSLIQVEQSDSVVTENVLRILLISVQGLTLLGEERMSSGILGAIGLGRKSPLSSRFR
ALQLSLIQMEQSDSIITEVVLRTLLSVQSRQSHLGEERLTSGILGAIGLGKKSPLSSRFR
AMQLSLIQMEQDDAIVMESVIRILLISIQGRSQLAEEERLTSGILGAIGLGRRSPLSPRFR
AMQLSLIQMEQDDAIVMESVIRILLISIQGRSQLAEEERLTSGILGAIGLGRRSPLSPRFR
AMQLSLIQMEQDDAIVMESVIRILLISIQGRSQLAEEERLTSGILGAIGLGRRSPLSPRFR
AMQLSLIQMEQDDAILIESVIRILLISIQGRSQLAEEERLTSGILGAIGLGRRSPLSPRFR
ALQLSLLQTEQNDTVLIESVIRILLISIQGRQNQLAEEERLMSSGILGVIGLGKKSPLSPRFR
ALQLSLVQLEQDDSVLTESVIRILLMLQGRQSLMAEERLSSGILGAIGLGRKSPLSNRFR
ILQLSLIQLEQNDSVLTESVIRILLMLQSRQSLMAEERLSSGILGAIGLGRRSPLSNRFR
VLQLSLIQTEQNDSVLTESVIRILLVQSRQNLVAEERLSSGILGAIGFRKKSPLSNRFR
VLQLSLIQTEQNDSVLTESVIRILLVQSRQNLVAEERLSSGILGAIGFRKKSPLSNRFR
VLQLSLIQTEQNDSVLTESVIRILLMVQSRQNLVAEERLSSGILGAIGLGRKSPLSNRFR
VLQLSLIQTEQNDSVLTESVIRILLMLQSRQSLVAEERLSSGILGAIGLGRKSPLSNRFR
ALQLSLTQTEQGDSVLTESVVRILLMLQSRQNLLEAERLSSGILGAIGLGRKSPLSNRFR
VLQLSLIQTEQSDSVLIESVIRVLLMLQSRLLLEAERLSSGILLGAIGLGRKSPLSNRFR
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I I A R S L A A F I A A Q I P A E N Q V R L K A G S G L H L S P K A Q Q A L T A V E S M T S S K Q Y A E F Q E I S Q A
V V A R S M S A F L L V Q I P G E N Q V R L K A G S E L H F S Q K A Q Q A L S G L E S M T M S K Q Y V E Y Q E Q I S Q A
L V A R S L S A F L L V Q I P A E G Q V R L K A G S E P K L T Q K A Q Q A L S A L E S M A S N K Q Y M D F Q E Q I S Q A
L V A R S L S A F L L V Q I P A E G Q V R L K A G S E P K L T Q K A Q Q A L S A L E S M A S N K Q Y M D F Q E Q I S Q A
L V A R S L S A F L L V Q I P A E D Q V R L K A G S E P K L T Q K A Q Q A L G V L E S M A S N K Q Y M D F Q D Q I A Q A
V V A R S L S A F L L V Q I P A E S Q V R L K A G S E P K L S Q K A Q Q A L T A L E S M A S N K Q Y M D Y Q E Q L S Q A
V V A R S M S A F L S V Q I P Q E N Q I R L K P G S E L Q L S Q K A Q Q A L N T L E S M A S N K Q Y M E Y Q E Q L S Q A
V V A R S M A A F L S V Q V P A E D Q I R L K P S S E L H L T P K A Q Q V L A A L E S M T L S K Q Y V E Y Q D Q I L H A
V A A R S M A A F L L V Q V P A E D Q I R L K P S S E L H L A P K A Q Q V L T A L E S M T L S K Q Y V E Y Q D Q I L H A
V V A R S M A A F L S V Q V P M E D Q I R L R P G S E L H L T P K A Q Q A L N A L E S M A S S K Q Y V E Y Q D Q I L Q A
V V A R S M A A F L S V Q V P M E D Q I R L R P G S E L H L T P K A Q Q A L N A L E S M A S S K Q Y V E Y Q D Q I L Q A
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V V A R S M A A F L S I Q V P M E D Q I R L K P G S E L H L T P K A Q Q A L N A L E S M A T S K Q Y I E Y Q D Q I L Q A
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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      *:::* **: :.: :***::* ***::***: **
Xenopus_tropicalis  TQFIRYPGHCLQDGNITLLALLINSLYPEVHYLNIIR 2561
Rhinatrema_bivittatum CQFIKYPGHCLHDGNTLLALLINTLYPDLHYLNIIR 2591
Pavo_muticus        SVFIKHPEHCLRDGNNLLALLVNTLYPEVHYLDCIR 2584
Pavo_cristatus      SVFIKHPEHCLRDGNNLLALLVNTLYPEVHYLDCIR 2584
Gallus_gallus       SLFIKHPEHCLRDGNNLLALLVNTLYPEVHYLDCIR 2584
Anas_platyrhynchos  SVFIKHPEHCLQDGNNTLLALLVNTLYPEVHYLDCIR 2586
Chelonia_mydas      SQFIKHDPDHCLHDGNNLLALLVNTLYPEVHYLDMIR 2580
Rattus_norvegicus   VQFIRHPGHCLQNGKSFLAFFVNRLYPEVHYLDNIR 2575
Mus_musculus        LQFIRHPGHCLQNGKSFLALLVNRLYPEVHYLDNIR 2572
Homo_sapiens        TQFIRHPGHCLQDGKSFLALLVNCLYPEVHYLDHIR 2579
Pan_troglodytes     TQFIRHPGHCLQDGKSFLALLVNCLYPEVHYLDHIR 2581
Macaca_mulatta      TQFIRHPGHCLQDGKSFLALLVNCLYPEVHYLDHIR 2587
Callithrix_jacchus  TQFVRHPGHCLQDGKSFLALLVNCLYPEVHYLDHIR 2578
Equus_caballus      AQFIKHPPGHCFQDGKSFLALLVNCLYPEVHYLDNIR 2578
Canis_lupus_familiaris AQFIKHPPGHCLQDGKSFLALLVNCLYPEVHYLDNIR 2574
Bos_taurus          AQFIKHPPGHCLQDGKSFLALLVNCLYPEVHYLDNIR 2578
Latimeria_chalumnae VQFIRYPGHCLLDANQLLALLINSLYPEVHYLDIIR 2285
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