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                                                                     . .                 * *
Xenopus_tropicalis        MAGTQSTKRCPTSRREYSCFQLQHYSVTWCMLFVVLVTCFAGNAHA---------GDKSY    51
Rhinatrema_bivittatum     ----------------------MKRRTLRQVVLAFAVCTLLAEHVQA---------GGKSY    30
Pavo_muticus              -----------MNLSPLPGTRVFVCQGVGLLLVLLSVVLSVGRVDA---------GGKSY    40
Pavo_cristatus            -----------MNLSPLPGTRVFVCQGVGLLLVLLSVVLSVGRVDA---------GGKSY    40
Gallus_gallus             -----------MDLSPLPGARVSVCQDVGLLLVLLEVVLSAGRVDA---------GGKSY    40
Anas_platyrhynchos        -----------MDIAQLPSAGGLVRPDLGVALVLLEVVLSAVRVDAAMPPKRHPRGAKTY    49
Chelonia_mydas            -----MGDEAKMRSSRFLLSRRALWQAMQVVLLLVLTSLLTGRVKA---------GGKSY    46
Homo_sapiens              -----------MGRDQRAVAGPALRR--WLLLGTVTVGFLAQSVLA---------GVKKF    38
Pan_troglodytes           -----------MGRDQRAVAGPALRR--WLLG-TVTVGFLAQSVLA---------GVKKF    37
Macaca_mulatta            -----------MGRDQRAVAGPALRR--WLLLGTVTVGFLAQGVLA---------GVKKF    38
Callithrix_jacchus        -----------MGRNQRAAAGPALPR--WLLLGTVTVGFLSQSVLA---------GVKKS    38
Equus_caballus            -----------MDRHQCAASSPALRR--WLLLGFVTVGLLAHSVLG---------GVKKF    38
Pteropus_alecto           -----------MARDQGAASGPALRR--WLLLGAVAVGLLAQSVLA---------GVKKL    38
Bos_taurus                -----------MDRELRAAARPALRR--WLLLGAVTVGLLAQSVLA---------GVKKL    38
Mus_musculus              -----------MDRVRFKASGPPLRG--WLLLATVTVGLLAQSVLG---------GVKKL    38
Ornithorhynchus_anatinus  -----------MDGMCETLARRALQR--TLLLLLLTL-ALSQTAQA---------GVK-F    36
Latimeria_chalumnae       ---------MQSSMERLQAKVQQSNQLRNLLWLLLVASLIDVAQA---------GGKSD    42
                          1.......10........20........30........40........50........60

                            ******** **:* ****.*****  * **  **.*: * .*: * **. *: *  *
Xenopus_tropicalis        TGPCGGRDCSQGCQCLPEKGSRGQPGPLGGQGTSGPPGLIGIAGLQGRKGDKGERGFPGV   111
Rhinatrema_bivittatum     TGPCGGRDCSAGCQCFPEKGSRGQPGPLGPQGFPGPPGLTGIPGLPGRKGDKGERGHPGI    90
Pavo_muticus              TGPCGGRDCSGGCQCFPEKGARGQPGLLGSQGFPGPPGLMGIPGLQGPKGHKGERGHPGI   100
Pavo_cristatus            TGPCGGRDCSGGCQCFPEKGARGQPGLLGSQGFPGPPGLMGIPGLQGPKGHKGERGHPGI   100
Gallus_gallus             TGPCGGRDCSGGCQCFPEKGARGQPGILGSQGFPGPPGLMGIPGLQGPKGHKGERGHPGI   100
Anas_platyrhynchos        TGPCGGRDCSGGCQCFPEKGGRGQPGLLGSQGFPGPPGLMGIPGVQGPKGHKGERGHPGI   109
Chelonia_mydas            TGPCGGRDCSRGCECFPEKGGRGQPGLLGPQGFPGPPGLMGIPGLEGHKGHKGERGQPGV   106
Homo_sapiens              DVPCGGRDCSGGCQCYPEKGGRGQPGPVGPQGYNGPPGLQGFPGLQGRKGDKGERGAPGV    98
Pan_troglodytes           DVPCGGRDCSGGCQCYPEKGGRGQPGPVGPQGYNGPPGLQGFPGLQGRKGDKGERGAPGI    97
Macaca_mulatta            DVPCGGRDCSGGCQCYPEKGGRGQPGPVGPQGYNGPPGLQGFPGLQGRKGDKGERGAPGI    98
Callithrix_jacchus        DVPCGGRDCSGGCQCFPEKGGRGQPGPVGPQGYTGPPGLQGFPGLQGRKGDKGERGAPGI    98
Equus_caballus            DVPCGGRDCSGGCQCYPEKGGRGQPGPVGPQGYNGPPGLQGFPGLQGRKGDKGERGPPGI    98
Pteropus_alecto           DVPCGGRDCSGGCQCYPEKGGRGQPGPVGPQGYTGPPGLQGFPGLQGRKGDKGERGAPGI    98
Bos_taurus                DVPCGGRDCSGGCQCYPEKGGRGQPGPVGPQGYTGPPGLQGFPGLQGRKGDKGQRGAPGI    98
Mus_musculus              DVPCGGRDCSGGCQCYPEKGARGQPGAVGPQGYNGPPGLQGFPGLQGRKGDKGERGVPGP    98
Ornithorhynchus_anatinus  NVPCGGRDCSRGCKCFPEKGGRGQPGPVGLQGSPGPSGLHGIPGLQGRKGDKGERGPPGI    96
Latimeria_chalumnae       KGPCGGRDCSGGCQCFPEKGGRGQPGLTGPQGRTGPPGVIGPPGLPGQKGEIGDSGQRGV   102
                          .........70........80........90.......100.......110.......120

                          .** *: *  **.** ****:***.** *.** **:****** ** *  *  *  *  *
Xenopus_tropicalis        TGPSGDKGQSGVTGFPGADGVPGHTGQGGPRGKPGHDGCNGTQGDAGVGGSHGSRGPPGI   171
Rhinatrema_bivittatum     TGPKGDAGQRGVTGFKGADGVPGHPGQGGSRGKPGHDGCNGTKGDAGDQGIGGSSGSPGL   150
Pavo_muticus              SGPKGETGQRGVTGFSGADGVPGHPGQPGSRGKPGHDGCNGTAGDPGDPGTPGHSGFPGT   160
Pavo_cristatus            SGPKGETGQRGVTGFSGADGVPGHPGQPGSRGKPGHDGCNGTAGDPGDPGTPGHSGFPGT   160
Gallus_gallus             SGPKGETGQRGVTGFPGADGVPGHPGQPGSRGKPGHDGCNGTVGDPGDPGTPGHSGFPGT   160
Anas_platyrhynchos        SGPKGEMGLRGVTGFPGADGVPGHPGQPGSRGKPGHDGCNGTVGDPGDSGTPGFSGFPGT   169
Chelonia_mydas            TGPKGEVGLRGVTGFPGADGVPGHPGQPGSRGKPGHDGCNGTRGDAGEQGSQGPSGQPGF   166
Homo_sapiens              TGPKGDVGARGVSGFPGADGIPGHPGQGGPRGRPGYDGCNGTQGDSGPQGPPGSEGFTGP   158
Pan_troglodytes           TGPKGDVGARGVSGFPGADGIPGHPGQGGPRGRPGYDGCNGTQGDSGPQGPPGSEGFTGP   157
Macaca_mulatta            TGPKGDVGARGVSGFPGADGIPGHPGQGGPRGRPGYDGCNGTQGDSGPQGPPGSEGFTGP   158
Callithrix_jacchus        TGPKGDVGARGVSGFPGADGIPGHPGQGGPRGRPGYDGCNGTQGDSGPQGPPGSEGFTGP   158
Equus_caballus            TGPKGDVGARGVSGFPGADGIPGHPGQGGPRGPPGYDGCNGTRGDAGPQGPSGSGGFPGS   158
Pteropus_alecto           TGPKGDVGARGVSGFPGADGIPGHPGQGGPRGPPGYDGCNGTRGDVGQQGPSGPGGFPGS   158
Bos_taurus                TGPKGDVGPRGVSGFPGADGIPGHPGQGGPRGPPGYDGCNGTVGDSGYAGPPGPGGFLGP   158
Mus_musculus              TGPKGDVGARGVSGFPGADGIPGHPGQGGPRGRPGYDGCNGTRGDAGPQGPSGSGGFPGL   158
Ornithorhynchus_anatinus  SGPRGDPGQRGVPGFRGADGIPGHPGQGGPRGRPGYDGCNGTIGDPGQPGTPGIYGSLGF   156
Latimeria_chalumnae       PGPKGDVGSRGVPGFFGADGIPGHPGQPGPRGKPGHDGCNGTVGDLGSVGIPGNVGPTGL   162
                          .......130.......140.......150.......160.......170.......180
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                                 *  *.*******: :. :  .: **: *:.*. *  *  *  *  * :*  *  *  *
Xenopus_tropicalis               SGGFGAKGQKGEPFHVSIEVKNRLRGDPGEAGFNGIQGPRGSPGTAGFIGPQGYRGPRGP   231
Rhinatrema_bivittatum            SGYPGTKGQKGEPFLVTLELMNKLRGEPGDPGFIGFQGPQGAPGIKGFIGPVGVPGRPGP   210
Pavo_muticus                     IGVQGPKGQKGEPYVLPPDIASRHRGEPGDPGFMGFPGPPGTLGIQGPIGPRGLPGRPGP   220
Pavo_cristatus                   IGVQGPKGQKGEPYVLPPDIASRHRGEPGDPGFMGFPGPPGTLGIQGPIGPRGLPGRPGP   220
Gallus_gallus                    IGVQGPKGQKGEPYVLPPDIASRHRGDPGDPGFTGFPGAPGTLGIQGPIGPRGVPGRPGP   220
Anas_platyrhynchos               IGVQGPKGQKGEPYILPPDIASQYRGEPGDPGFSGFPGPPGILGIQGPIGPRGQRGRPGP   229
Chelonia_mydas                   FGIQGPKGQKGEPFVMTPELASKFRGEPGEPGLLGFPGPQGALGVVGLIGPTGNPGRPGP   226
Homo_sapiens                     PGPQGPKGQKGEPYALPKEERDRYRGEPGEPGLVGFQGPPGRPGHVGQMGPVGAPGRPGP   218
Pan_troglodytes                  PGPQGPKGQKGEPYALPKEERDRYRGEPGEPGLVGFQGPPGRPGHVGQMGPVGAPGRPGP   217
Macaca_mulatta                   PGPQGPKGQKGEPYALPREERDRYRGEPGEPGLVGFQGPPGRPGPVGQMGPVGAPGRPGP   218
Callithrix_jacchus               PGPQGPKGQKGEPYALPKEERDRYRGEPGEPGLVGFQGPPGRPGPVGQMGPVGAPGRPGP   218
Equus_caballus                   PGPQGPKGQKGEPYALSSEDRDKYRGEPGEPGLVGFQGPPGRPGPVGPMGPVGAPGRPGP   218
Pteropus_alecto                  PGPQGPKGQKGEPYALSSEDRDRYRGEPGDPGIGGFQGPPGRPGPMGPMGPVGIPGRPGP   218
Bos_taurus                       RGPQGPKGQKGEPYALSSEDRDKYRGEPGEPGLVGLQGPPGRPGPVGQMGPVGAPGRPGP   218
Mus_musculus                     PGPQGPKGQKGEPYALSKEDRDKYRGEPGEPGLVGYQGPPGRPGPIGQMGPMGAPGRPGP   218
Ornithorhynchus_anatinus         PGPQGPKGQKGEPFALPWEEQNKYRGEPGEPGLVGMPGSPGRPGVEGPIGPVGAPGQPGP   216
Latimeria_chalumnae              PGFQGPKGQKGEPFLVTIEV-ERYRGEIGEPGVPGYPGVQGPHGPPGAIGQVGFPGLQGF   221
                                 .......190.......200.......210.......220.......230.......240

                                 .* **  *  *  *  : * **: *  *  *                      ** :
Xenopus_tropicalis               PGPPGPQGPQGNRGLGYYGEKGEPGDPGPPGEQPRQGER---EQKHKIEILLL-QYKGAK   287
Rhinatrema_bivittatum            SGPPGPPGPPGTPG-GYIGEKGEKGEAGLPGPQGRPFTV---EVKTPVDVIILDQYKGER   266
Pavo_muticus                     PGLPGPQGPQGNRGLGFYGEKGEQGSPGPPGPPGLP-TRELIGVPT-------DKHKGER   272
Pavo_cristatus                   PGLPGPQGPQGNRGLGFYGEKGEQGSPGPPGPPGLP-TRELIGVPT-------DKHKGER   272
Gallus_gallus                    PGSPGPQGPQGNRGLGFYGEKGEQGSPGPPGPPGLP-TRELIGVPT-------DKHKGER   272
Anas_platyrhynchos               PGPPGPQGPQGNRGLGFYGEKGEQGPPGPPGPPGLP-TKELTGVPS-------DKHKGER   281
Chelonia_mydas                   PGPPGPPGPPGNRGLGFYGEKGEKGEIGPEGPPGLPSTGELVVSPDT---ILEEQYKGEK   283
Homo_sapiens                     PGPPGPKGQQGNRGLGFYGVKGEKGDVGQPGPNGIPSDTLHPIIAPTGVTFHPDQYKGEK   278
Pan_troglodytes                  PGPPGPKGQQGNRGLGFYGVKGEKGDVGQPGPNGIPSDLLHPIIAPTGVTFHPDQYKGEK   277
Macaca_mulatta                   PGPPGPKGQQGNRGLGFYGVKGEKGDVGQPGPNGIPSDTLHPIVAPTGVTFHPDQYKGEK   278
Callithrix_jacchus               PGPPGPKGQQGNRGLGFYGVKGEKGDVGQPGPNGIPPET-HPVIAPTRVTHHPEQDKGEK   277
Equus_caballus                   PGPPGPKGQQGNRGLGFYGKKGEKGDMGQPGPNGLPSDTHHAIIGPTKEVFHPDQYKGEK   278
Pteropus_alecto                  PGPPGPKGQQPGNRGLGFYGEKGEKGDMGLPGPDGIPSDGNHAIIGPRNETFHPDQYKGDK   278
Bos_taurus                       PGPPGPKGQQPGNRGLGFYGEKGEKGDMGLQGPGGIPPDNGYVEKPTPVYELLPEQYKGEK   278
Mus_musculus                     PGPPGPKGQQPGNRGLGFYGQKGEKGDIGQPGPNGIPSDI--TLVGPTTSTIHPDLYKGEK   276
Ornithorhynchus_anatinus         PGPPGPKGLQGNRGLGFYGQKGDKGEIGHPGPTGLPSEN---EHQSTIEIVNLEQYKGEK   273
Latimeria_chalumnae              PGPPGFPGPKGHMGIRFQGEKGERGDVGLPGPPGIL-------VLYDLKSPVLVKFKGSK   274
                                 .......250.......260.......270.......280.......290.......300

                                 *  *  *  *              * *: **.* ** .*  ..  *  *  *  *  *  *
Xenopus_tropicalis               GDQGEKGNPGDKGQPAVTGEKGEEGITGFPGQRGFPGNDGNSGASGEIGFPGANGVPGLP   347
Rhinatrema_bivittatum            GMKGEKGQPGVTGVPAFEAEKGEEGIMGFPGLRGLPGINGNQGIQGQKGFTGADGVPGVP   326
Pavo_muticus                     GEPGQKGEAGFPGVLLFTPEKGEEGVMGFPGQRGLPGNDGFPGFSGERGFPGFDGQPGQY   332
Pavo_cristatus                   GEPGQKGEAGFPGVLLFTPEKGEEGVMGFPGQRGLPGNDGFPGFSGERGFPGFDGQPGQY   332
Gallus_gallus                    GEPGQKGEAGFPGVLLFAPEKGEEGVMGFPGQRGLPGNDGFPGLSGERGFPGFDGQPGQY   332
Anas_platyrhynchos               GERGQKGEPGQPG-IQYAGERGEKGVTGFAGQRGLPGIDGSPGLIGERGFSGPDGLPGGY   340
Chelonia_mydas                   GKKGETGEPGTQGLPAYSAEGGEEGIIGFPGLRGLPGINGIPGAAGEKGFQGFDGMPGSS   343
Homo_sapiens                     GSEGEPGIRGISL-------KGEEGIMGFPGLRGYPGLSGEKGSPGQKGSRGLDGYQGPD   331
Pan_troglodytes                  GSEGEPGIRGISL-------KGEEGIMGFPGLRGYPGLSGEKGSPGQKGSRGLDGYQGPD   330
Macaca_mulatta                   GSEGEPGIRGISL-------KGEEGIMGFPGPRGPPGLSGEKGSPGQKGSRGLDGYQGPD   331
Callithrix_jacchus               GSEGEPGIKGISL-------KGEEGIMGFPGPRGYPGLSGEKGSPGQKGSRGLDGYQGSD   330
Equus_caballus                   GSEGEPGRQGISL-------KGEEGIMGFSGARGAPGFDGEKGSPGQKGSRGLDGYQGPD   331
Pteropus_alecto                  GSEGEPGRIGISL-------KGEEGIMGFSGPRGAPGFDGEKGLPGQKGSRGPDGYQGPD   331
Bos_taurus                       GSQGEPGRIGVSL-------KGEEGVVGFSGPRGAPGIDSEKGLPGQKGSRGLDGYQGPD   331
Mus_musculus                     GDEGEQGIPGVIS-------KGEEGIMGFPGIRGFPGLDGEKGVVGQKGSRGLDGFQGPS   329
Ornithorhynchus_anatinus         GREGFPGTPG----------RGEGGIMGFAGQRGVSGINGVPGAQGLTGFPGHSGPPGHD   323
Latimeria_chalumnae              GLSGQAGEKG----------EEGVMGFPGQRGEPGRDGDAGIPGKKGLLGIMGPLGAN   322
                                 .......310.......320.......330.......340.......350.......360
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                                 *  * **: *: *  *           **  *: *  *  *  *  *  *  *  *  *
Xenopus_tropicalis               GTKGKKGEVGDLGPQGPVTFVNGQQKRKGYEGEIGFPGLNGVYGDDGDPGDPGFPGQNGS   407
Rhinatrema_bivittatum            GVNGMKGDRGEKGIQGPVTYAERPTATKGSKGNTGFPGLVGFPGDVGERGDPGIHGPPGP   386
Pavo_muticus                     GPRGGKGEQGEMGPPGPPAYVPYRIPRKGVRGDPGFPGASGLQGEPGEQGDRGLPGIPGF   392
Pavo_cristatus                   GPRGGKGEQGEMGPPGPPAYVPYRIPRKGLRGDPGFPGASGLQGEPGEQGDRGLPGIPGF   392
Gallus_gallus                    GPRGGKGEQGEMGPPGPPAYVPYRIPRKGVRGDPGSPGASGLRGEQGEQGDRGLPGIPGF   392
Anas_platyrhynchos               GPRGAKGEQGEMGPPGQSVYIPYHIPRKGTRGEPGFPGASGLQGEPGEQGDRGLPGLPGF   400
Chelonia_mydas                   GPKGMKGEQGERGFQGPPVYTQYPIRRKGVRGDPGLPGVPGPAGDLGDQGDPGLPGLPGS   403
Homo_sapiens                     GPRGPKGEAGDPGPPGLPAYSPHPSLAKGARGDPGFPGAQGEPGSQGEPGDPGLPGPPGL   391
Pan_troglodytes                  GPRGPKGEAGDPGPPGLPAYSPHPSLAKGARGDPGFPGAQGEPGSQGEPGDPGLPGAPGL   390
Macaca_mulatta                   GPRGPKGEAGDLGPPGLPAYSPHPSLAKGARGDPGFPGAQGEPGSQGEPGDPGPRGPPGL   391
Callithrix_jacchus               GPRGPKGETGDPGPPGLPAYSPHPSLAKGARGDPGFPGARGEPGSQGEPGDPGPRGPPGI   390
Equus_caballus                   GRPGPKGEVGDRGLPGPPAYSPHPSLGKGARGDPGFPGAHGEPGTRGEPGDPGPPGLPGT   391
Pteropus_alecto                  GPRGPKGEVGDQGRPGPPAYSPHPSLAKGGKGDQGFPGTSGEQGPRGEPGDPGPPGPPGT   391
Bos_taurus                       GLPGPKGERGDPGPPGPPAYSPYPSVAKGVRGEPGSPGAPGEPGDRGVPGDPGLPGRPGT   391
Mus_musculus                     GPRGPKGERGEQGPPGPSVYSPHPSLAKGARGDPGFQGAHGEPGSRGEPGEPGTAGPPGP   389
Ornithorhynchus_anatinus         GNKGMKGEMGDPGLPGPLPPYPPPHFRKGAPGDPGFPGLKGPSGDPGDQGYPGPPGYPGS   383
Latimeria_chalumnae              GLPGVKGERGEAGPQGPPTIVIAAHAFKGMAGDKGFLGEMGPRGDTGIRGPPGLPGLDGL   382
                                 .......370.......380.......390.......400.......410.......420

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Xenopus_tropicalis               PSRFPGQTGDTGLKGQRGPKGYQGDTGLPAFQPGPPGIDGAPGKEGPPGQPGYPGGR---   464
Rhinatrema_bivittatum            PGIFPGRPGEPGLRGEMGPKGFKGEPGFPALQPGGPGFDGQPGYAGPPGPPGRPGTP---   443
Pavo_muticus                     SDGDAD---KPGLPGEIGPKGEKGEEGSPAYQAGPPGFPGKHGEPGPRGLPGPPGTPGSL   449
Pavo_cristatus                   SDGDAD---KPGLPGEIGPKGEKGEEGSPAYQAGPPGFPGKHGEPGPRGLPGPPGTPGSL   449
Gallus_gallus                    SDGDAD---KPGLPGEIGPKGEKGEEGSPAYQAGPPGFPGKHGEPGIRGPPGPPGTPGSL   449
Anas_platyrhynchos               SDGDGD---KPGLPGEMGPKGEKGELGSPAYQSGPPGLPGRHGEPGQRGPPGPAGTPGSL   457
Chelonia_mydas                   SDGFPDGSERRGLRGEMGPKGFSGEPGFLATKPGPPGSDGKPGLPGFPGPPGLPGTPGYP   463
Homo_sapiens                     SIGDGD--QRRGLPGEMGPKGFIGDPGIPALYGGPPGPDGKRGPPGPPGLPGPPGPDGFL   449
Pan_troglodytes                  SIGDGD--QRRGLPGEMGPKGFIGDPGIPALYGGPPGPDGKRGPPGPPGLPGPPGPDGFL   448
Macaca_mulatta                   SIGDED--QRRGLPGEMGPKGFIGDPGIPALYPGPPGPDGKPGPPGPPGLPGPPGPDGFL   449
Callithrix_jacchus               SITAED--LGRGLPGEMGPKGFIGDPGIPALYPGPPGLDGKPGLPGPPGLPGPPGPDGFL   448
Equus_caballus                   SIGDED--EKRGLPGEMGPKGFIGEPGLPALYPGPPGADGKPGLQGPPGPAGPPGPDGFL   449
Pteropus_alecto                  SIRDED--GKRGFPGEMGPKGFIGDPGLPALYPGPPGAHGKPGLQGPPGPTGPPGPDGFL   449
Bos_taurus                       TIGDED--EKRGLPGEMGPKGFTGEQGFPALYPGPPGTDGQPGLRGPPGLPGPPGPDGFL   449
Mus_musculus                     SVGDED--SMRGLPGEMGPKGFSGEPGSPARYLGPPGADGRPGPQGVPGPAGPPGPDGFL   447
Ornithorhynchus_anatinus         SDGYKD--NRTGWPGEMGLKGDPGEPGIPAAFPGPPGINGNIGLPGLPGPAGPRGVTDIF   441
Latimeria_chalumnae              PAIFPGERGLPGVLGELGPKGFQGEPGYPAAQPGPPGHAGQNGSPGLPGQPGLKGISGFT   442
                                 .......430.......440.......450.......460.......470.......480

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Xenopus_tropicalis               ---IGMKGLPGFPGRDGQRGAPGSRGLRGIKGEQGEC-RCYEGDEAGRGPAGEPGPVGFP   520
Rhinatrema_bivittatum            ---VGQKGSKGFPGFDGTQGYPGIQGLKGFKGAFGDC-ACTLSDEARQGLVGVPGPAGLP   499
Pavo_muticus                     ---FGLKGQEGTPGRPGAQGFPGPRGQRGPKGEEGDCSKCLLSDELRRGSTGPRGPPGFP   506
Pavo_cristatus                   ---FGLKGQEGTPGRPGAQGFPGPRGQRGPKGEEGDCSKCLLSDELRRGSTGPRGPPGFP   506
Gallus_gallus                    ---FGLKGQEGTPGRPGVQGFPGPRGQRGPKGEEGDCSKCLLSDELRRGSTGPRGPPGFP   506
Anas_platyrhynchos               ---FGLKGREGTPGRPGTQGYPGPRGQKGPKGEEGDCSKCLLGEELRRGSTGPPGPPGFP   514
Chelonia_mydas                   ---FGLKGRQGDPGEAGSRGFPGFRGQKGFKGETGDC-KCIESEEARRGPAGPPGPPGFP   519
Homo_sapiens                     ---FGLKGAKGRAGFPGLPGSPGARGPKGWKGDAGEC-RCTEGDEAIKGLPGLPGPKGFA   505
Pan_troglodytes                  ---FGLKGAKGRAGFPGLPGSPGARGPKGWKGDAGEC-RCTEGDEAIKGLPGLPGPKGFA   504
Macaca_mulatta                   ---FGRKGAKGTPGFPGLSGSPGARGPKGWKGDAGDC-RCAEGDEAVRGLPGLPGPKGFA   505
Callithrix_jacchus               ---FGLKGAEGRGGFPGLSGSPGARGQKGRKGDAGDC-RCVEGDEAVRGLPGLPGPKGFP   504
Equus_caballus                   ---FGLKGTGGTAGYPGPSGFPGARGQKGWKGDAGDC-RCVEGDEFVTGLPGLPGPKGFP   505
Pteropus_alecto                  ---YGLKGREGEAGFPGTSGFPGARGQKGWKGDDGDC-KCAESDQFIRGLPGLPGPKGFP   505
Bos_taurus                       ---FGLKGEKGSGGFPGSSGFPGARGQKGWKGDAGDC-KCA--DQFIRGPPGLPGPKGFA   503
Mus_musculus                     ---FGLKGSEGRVGYPGPSGFPGTRGQKGWKGEAGDC-QCG---QVIGGLPGLPGPKGFP   500
Ornithorhynchus_anatinus         ---HGIKGSKGMPGPEGSQGVPGPGGQKGLKGEPGEC-KCLD--EDGEGLPGFQGPPGIP   495
Latimeria_chalumnae              RFGEMLKGSQGLPGFPGVNGFPGRPGVKGFKGSPGDC-VCICNEACGEAPAGPPGHVGLP   501
                                 .......490.......500.......510.......520.......530.......540
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Xenopus_tropicalis               GFQGHAGRKGEAGDRGVQGLPGAPGTVGLAGPAGFPGPAGEKGDKVFATEKGSKGAQGDS   580
Rhinatrema_bivittatum            GALGQPGRKGDVGELGDSGLQGLKGLQGSPGEEGLPGPKGQKGELVFPATKGAKGEQGGP   559
Pavo_muticus                     GTPGQPGRKGEPGDQGPHGIPGYAGAKGQSGQEGFPGPKGEKGDSIYITTKGTKGIRGDP   566
Pavo_cristatus                   GTPGQPGRKGEPGDQGPHGIPGYAGAKGQSGQEGFPGPKGEKGDSIYITTKGTKGIRGDP   566
Gallus_gallus                    GTPGQPGRKGEPGDQGPHGIPGYAGAKGQSGQEGLPGPKGEKGDSIYITTKGTKGIRGDP   566
Anas_platyrhynchos               GTPGQPGRKGEPGDQGQHGIPGYPGAKGSSGQDGFPGPKGQKGDSFYITTKGTKGIRGDP   574
Chelonia_mydas                   GPTGHPGRKGDNGDQGQHGLPGFSGAKGFPGAVGFPGPKGEKGDSRYVTTKGTKGDPGGP   579
Homo_sapiens                     GINGEPGRKGDRGDPGQHGLPGFPGLKGVPGNIGAPGPKGAKGDSRTITTKGERGQPGVP   565
Pan_troglodytes                  GINGEPGRKGDKGDPGQHGLPGFPGLKGVPGNVGAPGPKGAKGDSRTITTKGERGQPGVP   564
Macaca_mulatta                   GINGEPGRKGDKGDPGQHGLPGFPGLKGVPGNVGAPGPKGAKGDSRTITTKGERGQPGVP   565
Callithrix_jacchus               GINGEPGRKGDRGDPGQHGLPGFSGLKGVPGNLGAPGPKGAKGDSRTITTKGERGQPGVP   564
Equus_caballus                   GINGEPGRKGGQGDPGQHGIPGFPGFKGAPGDIGPPGPKGVKGDSRTVTTKGERGQPGVP   565
Pteropus_alecto                  GINGEPGKKGSQGDPGHHGIPGFPGFKGAPGDTGPPGPKGLKGDSRTTTTKGERGQPGVP   565
Bos_taurus                       GANGQPGSKGSQGDPGQHGVPGFAGFKGAPGNVGPPGPKGMKGDSRTITTKGERGQPGVP   563
Mus_musculus                     GVNGELGKKGDQGDPGLHGIPGFPGFKGAPGVAGAPGPKGIKGDSRTITTKGERGQPGIP   560
Ornithorhynchus_anatinus         GDQGEPGRKGDSGDPGQYGTPGQQGLKGSQGNEGEIGLKGEKGDLQTVTTKGAPGDQGIP   555
Latimeria_chalumnae              GLPGQPGIKGKTGDQGPSGPTGPSGPQGFPGSTGEQGPKGQTGELAIAVKKGARGNQGDS   561
                                 .......550.......560.......570.......580.......590.......600

                                    *  * **  *  *  *  *  *   .*  :*  *. *  *  *  *  *  * ** .
Xenopus_tropicalis               GFPGVPGRDGYPGRNGRDGSPGFPGPS-GDGIKGLPGSHGFPGLPGNAGARGETGFPGPG   639
Rhinatrema_bivittatum            GLTGAKGYDGSPGLDGLDGVLGFPGPV-GDSIKGLPGDAGFPGPSGQRGIQGEIGLPGPG   618
Pavo_muticus                     GLPGIRGEDGFPGRDGLDGLPGLPGLP-GDGIRGLPGDPGYPGELGPKGFPGETGLPGGG   625
Pavo_cristatus                   GLPGIRGEDGFPGRDGLDGLPGLPGLP-GDGIRGLPGDPGYPGELGPKGFPGETGLPGGG   625
Gallus_gallus                    GLPGIRGEDGFPGRDGLDGLPGLPGLP-GDGIRGLPGDPGYPGELGPKGFPGEIGLPGEG   625
Anas_platyrhynchos               GLPGIRGGDGFPGRDGLDGLPGQPGLP-GDTIRGDPGDPGYPGELGPKGFPGETGLPGEG   633
Chelonia_mydas                   GLSGIKGEDGFPGKDGIDGLPGLPGLP-GDGVRGSPGDPGYPGTQGEKGFLGEIGLPGAG   638
Homo_sapiens                     GVPGMKGDDGSPGRDGLDGFPGLPGPP-GDGIKGPPGDPGYPGIPGTKGTPGEMGPPGLG   624
Pan_troglodytes                  GVPGMKGDDGSPGRDGLDGFPGLPGPP-GDGIKGPPGDPGYPGIPGTKGTPGEMGPPGLG   623
Macaca_mulatta                   GVPGMKGDDGSPGRNGLDGFPGLPGPP-GDGIKGPPGDAGYPGIPGTKGTPGEMGPPGLG   624
Callithrix_jacchus               GVPGMKGDDGIPGREGLDGFPGLPGPP-GDGIKGPPGDPGYPGIPGTKGSPGEMGPPGLG   623
Equus_caballus                   GVPGMKGDDGIRGRDGLDGFPGLPGPP-GDGIKGPPGDTGHPGAPGTKGIPGERGPPGLG   624
Pteropus_alecto                  GVPGLKGDDGIQGRDGLDGFPGLPGAP-GDGIKGPPGDTGHQGAPGTKGIPGERGPPGLG   624
Bos_taurus                       GAPGLKGSDGIPGPPGLDGFHGLPGPP-GDGIKGPRGDTGQPGAPGTKGLPGERGPPGLG   622
Mus_musculus                     GVHGMKGDDGVPGRDGLDGFPGLPGPP-GDGIKGPPGDAGLPGVPGTKGFPGDIGPPGQG   619
Ornithorhynchus_anatinus         GNSGPRGADGPPGQDGREGVLGIPGPLGADGVKGLSGDTGLQGELGPKGFPGIVGPPGFG   615
Latimeria_chalumnae              -IQGVPGEDGLPGRDGIPGIPGDRGLP-GDGTKGFPGDKGLPGLPGVKGARGEIGLPGLS   619
                                 .......610.......620.......630.......640.......650.......660

                                   * ** :*  *. *  *     *  *  *
Xenopus_tropicalis               FPGSKGLRGEPGNRGVSGFPGVPGLSGPQGDCYQ---ETDEENEIGKEGTGCRLIAP---   693
Rhinatrema_bivittatum            LTGPKGVRGFPGDPGLDGFPGIPGSPGPQGDC--------EENDIAGTGPACILRVG---   667
Pavo_muticus                     FPGPKGYRGPPGDHGTDGNPGSPGLPGPPGEPGQLDCGQVIEDFPRGDATDPIWSGGGCV   685
Pavo_cristatus                   FPGPKGYRGPPGDHGTDGNPGSPGLPGPPGEPGQLDCGQVIEDFPRGDATDPIWSGGGCV   685
Gallus_gallus                    YPGPKGYRGLPGDRGTDGHPGPPGLPGPPGEPGQLDCGQVIEDFSRGEATDPIWSGGGCV   685
Anas_platyrhynchos               FVGPKGYRGPPGDHGTDGSPGPPGLPGPPGEPGQLDCGQVIEDFSRGDGTEPIWSGGGCV   693
Chelonia_mydas                   LPGLKGYHGPPGDSGTYGNPGLQGPPGPRGTPAQLDCNQVTEDLSRGDGTKTVWSGAECV   698
Homo_sapiens                     LPGLKGQRGFPGDAGLPGPPGFLGPPGPAGTPGQIDCDTDVKRAVGGDRQEAIQPG--CI   682
Pan_troglodytes                  LPGLKGQRGFPGDAGLPGPPGFLGPPGPAGTPGQIDCDTDVKRAIGGDRQEAIQPG--CV   681
Macaca_mulatta                   LPGFKGQRGFPGDAGLPGPPGFPGPPGPAGTPGQIDCDTDVKRPIGGDRQEAVQPG--CI   682
Callithrix_jacchus               LPGFKGQRGFPGDAGLPGPRGFPGPPGPPGTPGQADCDPDVRRPIAGDRQEAVQPG--CA   681
Equus_caballus                   LPGPKGEHGFPGDAGFPGPPGLPGPPGPPGSPGLLDCDAGVKRPIGGDGQETVQPG--CV   682
Pteropus_alecto                  LPGPKGERGFPGDVGLPGPPGFPGPPGPPGTPGQIDCDTGVKRPIGGDGQDIIQPG--CV   682
Bos_taurus                       LPGPKGERGFPGDAGLPGPPGFPGPPGLPGSPGQIDCDSGVKRPIGADGQETIQPG--CV   680
Mus_musculus                     LPGPKGERGFPGDAGLPGPPGFPGPPGPPGTPGQRDCDTGVKRPIGGGQQVVVQPG--CI   677
Ornithorhynchus_anatinus         FPGPKGARGSPGHSGYWGSPGHPGPRGPPGLPGRTDCEDGVKKPIG-DGQEGIWPG--CV   672
Latimeria_chalumnae              FSGPKGVHGTQGDPGFDG---VLGYPGPKGQPGDCYCGENIDQHGVGKETDTAKTGEICI   676
                                 .......670.......680.......690.......700.......710.......720
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Xenopus_tropicalis               -PAPAGAPGPPGLPGYNGIRGQKGFPGPHGFDGVFGLKGIKGDRGTDSLPGPPGFSGQRG  752
Rhinatrema_bivittatum            -EAPRGSAGLPGVPGITGKKGEAGNFGEQGLDGFQGFKGSRGEPGADGLPGPAGFVGSRG  726
Pavo_muticus                     -RPPKGSQGKPGLPGATGTKGARGFPGDPGPVGFPGLNGTRGDPGREGYPGPPGFTGPRG  744
Pavo_cristatus                   -RPPKGSQGKPGLPGATGTKGARGFPGDPGPVGFPGLNGTRGDPGREGYPGPPGFTGPRG  744
Gallus_gallus                    -RPPKGSQGNPGLPGATGTKGARGFPGDPGPVGFPGLNGTRGDPGREGYPGPPGFIGPRG  744
Anas_platyrhynchos               -RPPKGSQGKPGLPGATGAKGARGFPGDPGPMGYPGLNGTRGDPGWEGLPGPPGFTGPRG  752
Chelonia_mydas                   -RAPKGAPGKPGLPGAIGAKGAKGIPGEPGLDGFQGLKGSQGDPGREGFPGPRGFTGSRG  757
Homo_sapiens                     -GGPKGLPGLPGPPGPTGAKGLRGIPGFAGADGGPGPRGLPGDAGREGFPGPPGFIGPRG  741
Pan_troglodytes                  -GGPKGLPGLPGPPGPTGAKGLRGIPGFSGADGGPGPKGLPGDAGREGFPGPPGFIGPRG  740
Macaca_mulatta                   -GGPKGLPGLPGPPGPSGAKGLRGIPGFSGADGGPGPKGLPGDPGREGFPGPPGFIGPRG  741
Callithrix_jacchus               -GGPKGLPGLPGPPGPTGAKGLRGTPGFSGADGGAGPKGLPGDPGREGFPGPPGFIGPRG  740
Equus_caballus                   -GGPKGSAGQPGPPGPTGAKGLRGIPGFSGADGPPGLKGLPGDPGREGYPGPPGFVGPRG  741
Pteropus_alecto                  -GGPKGLPGQPGRPGPRGAKGLRGTPGFPGADGTPGLKGLPGDPGREGFPGPPGFVGPRG  741
Bos_taurus                       -GGPKGSPGQPGLPGPPGAKGLRGIPGFSGADGAPGLKGLPGDPGREGFPGPPGFMGPRG  739
Mus_musculus                     -EGPTGSPGQPGPPGPTGAKGVRGMPGFPGASGEQGLKGFPGDPGREGFPGPPGFMGPRG  736
Ornithorhynchus_anatinus         -TPPKGPPGPPGPPGLQGSKGIKGHPGKTGADGYVGLKGLPGEPGREGIPGPPGFIGPRG  731
Latimeria_chalumnae              CFGSLGPPGLSGVPGALGAKGHQGSPGPQGRRGYDGVKGVPGDKG-LGFPGLPGFPGIRG  735
                                 .......730.......740.......750.......760.......770.......780

                                 . *  * .*  *  *  *  *  *  * :*  *: *    *  *. * .*  * **  *
Xenopus_tropicalis               DRGNAGLPGLPGVPGLSGKPGFKGVQGEKGSVGDRLGAPSGEQGNTGLPGLQGLKGTQGD  812
Rhinatrema_bivittatum            DQGSPGLSGLHGAPGDDGTPGLQGQLGAKGTSGDVLGAQEGLPGSVGYPGLPGPKGIQGA  786
Pavo_muticus                     DRGPNGLPGLQGHPGLMGKSGAPGLAGQKGAPGDVLGAAAGPRGDAGLPGFPGLKGAPGD  804
Pavo_cristatus                   DRGPNGLPGLQGHPGLMGKSGAPGLAGQKGAPGDVLGAAAGPRGDAGLPGFPGLKGAPGD  804
Gallus_gallus                    DRGPNGLPGLQGHPGLMGKSGAPGLAGQKGAPGDVLGAAAGPRGDDGLPGFPGLKGAPGD  804
Anas_platyrhynchos               DRGLNGLPGLQGHPGLTGKPGAPGLTGQKGVPGEVLRATAGSRGDAGLPGFPGLKGAPGD  812
Chelonia_mydas                   DGGPPGLPGLQGNPGSAGKQGAPGPAGPKGIAGEVLGAAPGTPGDFGPSGFPGLKGLQGD  817
Homo_sapiens                     SKGAVGLPGPDGSPGPIGLPGPDGPPGERGLPGEVLGAQPGPRGDAGVPGQPGLKGLPGD  801
Pan_troglodytes                  SKGAVGLPGPDGSPGPIGLPGPDGPPGERGLPGEVLGAQPGPRGDAGVPGQPGLKGLPGD  800
Macaca_mulatta                   SKGAVGLPGPDGPPGPIGLPGPDGPPGDRGLPGEVLGAQPGPRGDAGVPGQPGFKGLPGD  801
Callithrix_jacchus               SKGAAGLPGPDGLPGPVGLPGPVGPPGDKGLPGEVLGAQPGPRGDAGVPGHPGLKGLPGD  800
Equus_caballus                   SKGAVGLPGPDGQPGLTGLPGPVGPPGDRGLPGEALGAYPGPQGDAGLPGQPGLKGPPGE  801
Pteropus_alecto                  SKGAAGLPGPDGLPGPSGTPGPVGPPGDRGLPGEVLGAQPGPRGDAGLPGHPGLKGLPGD  801
Bos_taurus                       SKGAVGPPGLDGLPGASGLPGPVGPPGDRGLPGEVLGAQPGPRGDSGLPGRPGPKGPPGE  799
Mus_musculus                     SKGTTGLPGPDGPPGPIGLPGPAGPPGDRGIPGEVLGAQPGTRGDAGLPGQPGLKGLPGE  796
Ornithorhynchus_anatinus         QKGAPGFPGPKGSPGAKGSPGHPGLAGEKGRPGEVLSAQPGLPGDSGLPGIPGLKGQPGS  791
Latimeria_chalumnae              DKGLEGPPGLEGVVGAPGKLGVPGLKGKKGAPGDALGILKGFPGEPGPPGHKGLKGIQGD  795
                                 .......790.......800.......810.......820.......830.......840

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Xenopus_tropicalis               QGIPGLQGKVGTPGTPGNKGIKGSPGAPGVPGIPGPAALFGFPGMPGNPGTPGPQGSMGP  872
Rhinatrema_bivittatum            RGVPGFRGTDGVTGYSGIKGDKGAPGAPGATGLPGPAGAHGFPGLPGRQGSGGTPGSSGY  846
Pavo_muticus                     QGIPGIRGADGNPGLPGPKGDPGLQGLPGLMGLPGTPGTHGFPGPPGNPGPNGGPGSQGP  864
Pavo_cristatus                   QGIPGIRGADGNPGLPGPKGDPGLQGLPGLMGLPGTPGTHGFPGPPGNPGPNGGPGSQGP  864
Gallus_gallus                    QGIPGIRGADGNPGLPGPKGDPGLQGLPGLMGLPGTPGTHGFPGPPGNRGPDGGPGSQGP  864
Anas_platyrhynchos               QGVPGVRGADGSPGLPGAKGDPGLQGLPGLMGLPGSPGTHGFPGPPGNPGPDGGPGSQGP  872
Chelonia_mydas                   HGVPGIRGAGGTPGLTGSKGQQGPPGPLGLPGLPGRPGLHGFPGLPGQQGSPGRTGSPGF  877
Homo_sapiens                     RGPPGFRGSQGMPGMPGLKGQPGLPGPSGQPGLYGPPGLHGFPGAPGQEGPLGLPGIPGR  861
Pan_troglodytes                  RGPPGFRGSQGMPGMPGLKGQPGLPGPSGQPGLYGPPGLHGFPGAPGQEGPLGLPGIPGR  860
Macaca_mulatta                   RGPPGFRGSQGMPGMPGLKGQPGLPGPSGQPGLSGPPGQHGFPGAPGQEGPLGLPGIPGL  861
Callithrix_jacchus               RGTPGFRGSQGMPGMPGLKGQLGFPGPSGQPGLSGPPGQHGFPGAPGPEGPLGLPGTLGL  860
Equus_caballus                   RGPPGFRGSQGMPGMPGLKGQPGFPGPSGQAGLPGPPGQHGFPGAPGQQGPLGLPGAPGF  861
Pteropus_alecto                  RGPPGFRGKSPWQ-------ERGTKGP-----IPLHCGSLCFFILFCFYSPLSLT-----  844
Bos_taurus                       RGPPGFRGSQGMPGMPGQKGQPGSPGLSGQPGLPGPPGQHGFPGAPGREGPLGPPGAPGF  859
Mus_musculus                     TGAPGFRGSQGMPGMPGLKGQPGFPGPSGQPGQSGPPGQHGFPGTPGREGPLGQPGSPGL  856
Ornithorhynchus_anatinus         IGPPGFRGGQGMPGMPGLKGRLGFPGPSGQRGPPGLTGTHGFPGFPGHPGPPGLPGLLGF  851
Latimeria_chalumnae              QGLYGFKGIEGMPGIRGLKGERGPPGLTGIPGISGLRGSYGFPGAQGQLGPSGIAGFPGA  855
                                 .......850.......860.......870.......880.......890.......900
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Xenopus_tropicalis               PGPPGQRGDEGEKGPPGPAGMKGLPGELGVGGFIGVRGRHGNPGIPGLVGMHGLPGVKGI   932
Rhinatrema_bivittatum            VGLTGERGVAGDQGAPGPAGMKGLSGDPGDFGAPGNRGLSGNPGLRGLDGMHGLPGLKGV   906
Pavo_muticus                     FGPPGARGEDGEQGFPGPVGMKGLSGDKGETGFPGLQGIPGVAGPPGISGMDGFPGDKGS   924
Pavo_cristatus                   FGPPGARGEDGEQGFPGPVGMKGLSGDKGETGFPGLQGIPGVAGPPGISGMDGFPGDKGS   924
Gallus_gallus                    LGPPGARGEDGEQGFPGPVGMKGLSGDKGETGFPGLQGIPGVTGPPGISGMDGFPGDKGS   924
Anas_platyrhynchos               LGPPGARGEDGEQGFPGPVGLKGLSGDKGETGHPGLQGIPGVMGPPGISGMDGFPGDKGL   932
Chelonia_mydas                   VGSLGARGDQGDQGFPGPVGMKGLAGDKGELGNKGVQGTPGVPGLPGIDGMPGFPGLKGA   937
Homo_sapiens                     EGLPGDRGDPGDTGAPGPVGMKGLSGDRGDAGFTGEQGHPGSPGFKGIDGMPGTPGLKGD   921
Pan_troglodytes                  EGLPGDRGDPGDTGAPGPVGMKGLSGDRGDAGFTGERGHPGSPGFKGIDGMPGTPGLKGD   920
Macaca_mulatta                   EGLPGDRGDPGDIGAPGPVGMKGVSGDRGDAGLAGERGHPGSPGFKGIDGMPGTPGLKGE   921
Callithrix_jacchus               GGLPGDRGEPGDVGAPGPVGMKGVSGDTGDAGLAGERGRPGSPGFKGIDGMPGAPGLKGE   920
Equus_caballus                   GGLPGDRGDPGDTGVPGPVGMKGVPGDRGDPGLLGDRGHPGSPGFKGVAGMPGIPGPKGG   921
Pteropus_alecto                  -GLPGDRGEPGDTGVPGPVGMKGVSGDRGDPGLLGERGHPGNPGFKGMAGMPGIPGPKGF   903
Bos_taurus                       QGLPGDRGEPGDTGVPGPVGMKGGSGDRGDPGQQGERGHPGHPGFKGVSGMPGAPGLKGA   919
Mus_musculus                     GGLPGDRGEPGDPGVPGPVGMKGLSGDRGDAGMSGERGHPGSPGFKGMAGMPGIPGQKGD   916
Ornithorhynchus_anatinus         KGHPGDIGDRGDPGFPGPIGMKGLAGDPGENGFVGMRGAQGSPGFQGMDGMPGNPGSKGP   911
Latimeria_chalumnae              IGLPGDKGKSGDIGPPGPQGMKGHPGEVGDSGSVGGIGHKGAPGLPGLTGIPGRQGLKGL   915
                                 .......910.......920.......930.......940.......950.......960

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Xenopus_tropicalis               KGSPGMEGFQGMKGAKGRPAWRGLKGPSGNIGFPGVKGGNGTSGTKGDRGEQGPPGDPPK   992
Rhinatrema_bivittatum            KGSAGMEGFQGMIGVKGRPGWKGAKGTTGTPGFTGVKGVSGTLGRKGDRGEPGKSGDAPK   966
Pavo_muticus                     RGSPGIDGFKGMPGLKGRPGIKGIKGEFGLYGTRGDKGAQGARGFKGDRGEQGPPGEPPK   984
Pavo_cristatus                   RGSPGIDGFKGMPGLKGRPGIKGIKGEFGLYGTRGDKGAQGARGFKGDRGEQGPPGEPPK   984
Gallus_gallus                    RGSPGIDGFKGMPGLKGRPGIKGIKGEFGLLGTRGDKGAQGARGFKGDRGEQGPPGEPPK   984
Anas_platyrhynchos               KGSPGIDGFKGMPGLKGRPGIKGIKGEFGSFGARGDKGAQGARGFKGDRGEQGPPGEPPK   992
Chelonia_mydas                   KGSPGIGGFKGMLGQKGKPGLKGIKGEVGFFGNLGFKGLQGEPGHKGDRGDQGPAGKPPK   997
Homo_sapiens                     RGSPGMDGFQGMPGLKGRPGFPGSKGEAGFFGIPGLKGLAGEPGFKGSRGDPGPPGPPPV   981
Pan_troglodytes                  RGSPGMDGFQGMPGLKGRPGFPGSKGEAGFFGIPGLKGLAGEPGFKGSRGDPGPPGPPPV   980
Macaca_mulatta                   RGSPGMDGFQGMPGLKGRPGFPGSKGEAGFFGIPGLKGLAGEPGFKGSRGDPGPPGPPPI   981
Callithrix_jacchus               RGSPGMDGFQGMPGLKGRPGIPGSKGEAGFFGIPGLKGLAGEPGFKGSRGDPGPPGPPPI   980
Equus_caballus                   RGSPGMDGFQGLLGLKGRPGLPGSKGEAGFFGVPGLKGLAGEPGVKGSRGDPGPPGPPPI   981
Pteropus_alecto                  RGSPGMDGFQGMLGIKGRPGFPGNKGEAGFFGTPGLKGLAGEPGVKGNRGDPGPPGLPPE   963
Bos_taurus                       RGSPGMDGFEGMLGLKGRPGLPGIKGEAGFFGIPGLKGLAGEPGVKGSRGDPGPPGPPPL   979
Mus_musculus                     RGSPGMDGFQGMLGLKGRQGFPGTKGEAGFFGVPGLKGLPGEPGVKGNRGDRGPPGPPPL   976
Ornithorhynchus_anatinus         KGSPGMDGFKGMAGLKGRLGMPGYKGVTGNLGLPGLKGLAGDRGFKGSRGDPGPPGEPPK   971
Latimeria_chalumnae              KGSVGVPGFQGMTGPKGKPGVEGTKGKIGEPGYKGVKGTQGQQGSKGSQGERGLPG--KS   973
                                 .......970.......980.......990......1000......1010......1020

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Xenopus_tropicalis               -MPEMMLLTKGETGDQGVSGFKGISGLKGSKGMPGPPGQLGLPGLPGLRSFEFGDKGETG  1051
Rhinatrema_bivittatum            IMPEMLMEVKGEKGDHGYTGLPGDVGFQGSKGMPGYPGQAGFPGLPGQPSYRGGEKGETG  1026
Pavo_muticus                     LKPSMMMEVKGEKGDAGETGTKGFFGIKGSKGMPGIPGKTGIPGSPGHPSYVPGVKGDIG  1044
Pavo_cristatus                   LKPSMMMEVKGEKGDAGETGTKGFFGIKGSKGMPGIPGKTGIPGSPGHPSYVPGVKGDIG  1044
Gallus_gallus                    LKPSMMMEVKGEKGDAGETGTKGFFGIKGSKGMPGLPGKTGIPGSPGHPSYVPGVKGDIG  1044
Anas_platyrhynchos               LKPSMMMEVKGEKGDVGETGTKGFFGLKGSKGMPGLPGKTGTPGSPGHPSYVAGVKGDIG  1052
Chelonia_mydas                   IILSMLSEVKGEKGDIGETGLKGGLGFKGTKGMPGLPGKPGVPGLPGSTSHIEGEKGEAG  1057
Homo_sapiens                     ILP-GMKDIKGEKGDEGPMGLKGYLGAKGIQGMPGIPGLSGIPGLPGRPGHIKGVKGDIG  1040
Pan_troglodytes                  ILP-GMKDIKGEKGDEGPMGLKGYLGAKGIQGMPGIPGLSGIPGLPGRPGHIKGVKGDIG  1039
Macaca_mulatta                   ILP-GMKDIKGEKGDEGPMGLKGYLGAKGIQGMPGIPGLSGIPGLPGRPGHIKGVKGDIG  1040
Callithrix_jacchus               ILP-GMKDIKGEKGDEGPMGLKGYLGAKGTQGMPGIPGLSGIPGLPGRPGHIKGLKGDIG  1039
Equus_caballus                   ILP-GMKDIKGEKGDEGPMGLKGYLGLKGVPGMPGIPGLSGIPGLPGRPGHIKGVKGDIG  1040
Pteropus_alecto                  ILP-GMKNMKGEKGDEGPMGLKGYLGLK--------------------------------  990
Bos_taurus                       IEP-GMKDIKGEKGDEGPMGLKGYLGLKGLPGMPGIPGLSGIPGLPGRPGQIKGVKGDTG  1038
Mus_musculus                     ILP-GMKDIKGEKGDEGPMGLKGYLGLKGIQGMPGVPGVSGFPGLPGRPGFIKGVKGDIG  1035
Ornithorhynchus_anatinus         LIP-GMKHFKGEKGDEGPTGLKGFLGLKGGQGMPGVPGASGVPGLPGQPSQVKGDKGETG  1030
Latimeria_chalumnae              LHNGLLYMMKGTKGDIGLEGVKGFTGPRGGKGMPGIPGKPGQPGTAGNSSFEKGKIGEEG  1033
                                 ......1030......1040......1050......1060......1070......1080
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Xenopus_tropicalis                      TPGVIGNQGILGEVGPDGIIGFPGFTGPRGTPGISGFPGVPGERGKYGDIGERGDTIDLP 1111
Rhinatrema_bivittatum                   DPGGAGVQGYHGQVGPPGIRGFPGQTGRRGEKGTSGVTGLSGDGGSFGDTGDRGDTINLP 1086
Pavo_muticus                            AKGLTGLKGYPGPTGSPGIRGFPGSTGGRGDKGAPGISGHFGTPGSHGEIGEPGDTINLP 1104
Pavo_cristatus                          AKGLTGLKGYPGPTGSPGIRGFPGSTGGRGDKGAPGISGHFGTPGSHGEIGEPGDTINLP 1104
Gallus_gallus                           AKGLTGLKGYPGPTGSPGIRGFPGSTGGRGDKGAPGISGHFGTPGSHGEIGEPGDTINLP 1104
Anas_platyrhynchos                      AKGTTGVKGYPGPAGSPGIRGFPGSTGGRGDKGAPGISGHFGTPGSHGEIGEPGDTINLP 1112
Chelonia_mydas                          IKGVTGVQGYPGTIGPPGIRGFPGTTGIRGEKGIEGIRGDYGRPGFAGQTGDQGDTINLP 1117
Homo_sapiens                            VPGIPGLPGFPGVAGPPGITGFPGFIGSRGDKGAPGRAGLYGEIGATGDFGDIGDTINLP 1100
Pan_troglodytes                         APGIPGLPGFPGVAGPPGITGFPGFIGSRGDKGAPGRAGLYGEIGATGDFGDIGDTINLP 1099
Macaca_mulatta                          APGIPGLPGFPGVAGPPGITGFPGFIGSRGDKGAPGRAGLYGEIGPTGDFGDIGDTINLP 1100
Callithrix_jacchus                      APGIPGLPGFPGVAGPPGITGFPGFTGSRGDKGAPGRAGLYGEAGQTGDFGDIGDTINLP 1099
Equus_caballus                          VPGVPGVPGFPGVPGPPGIIGFPGFTGSRGDKGAPGRAGLYGESGPTGDFGDIGDTIDLP 1100
Pteropus_alecto                         ----------GEASPTGSV-FP-LSCQAGDKGAPGTAGLYGEIGPTGDFGDIGETIDLP 1037
Bos_taurus                              IPGVPGSPGFPGVPGSPGIMGFQGFTGSRGDKGVPGRAGLFGEVGPTGDFGDIGDTIDLP 1098
Mus_musculus                            VPGTPGLPGFPGVSGPPGITGFPGFTGSRGEKGTPGVAGVFGETGPTGDFGDIGDTVDLP 1095
Ornithorhynchus_anatinus                VRGHPGEQGYPGAAGIPGIRGFPGFPGIRGDKGNIGIKGFEGESGSVGDLGDKGDTINLP 1090
Latimeria_chalumnae                     VIGVTGIKGLPGPAGPPGISGFPGMPGNRGDKGLQGAKGLPGKTGSAGAVGTKGERVDLP 1093
                                        ......1090......1100......1110......1120......1130......1140

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Xenopus_tropicalis                      GERGTKGQGGTPGLPGQRGIHGEKGTTGDEGFRGIEGVIGEHGQTGEKGFPGQQGLVGFP 1171
Rhinatrema_bivittatum                   GEPGFRGDPGDAGPSGEKGIFGVKGALGEVGFAGIEGIKGSHGDPGAIGQTGIPGLGGTP 1146
Pavo_muticus                            GMPGLKGEIGVPGLTGLRGGPGQKGEGGDPGLPGIEGLKGIQGVPGSLGQQGLPGLVGPP 1164
Pavo_cristatus                          GMPGLKGEIGVPGLTGLRGGPGQKGEGGDPGLPGIEGLKGIQGVPGSLGQQGLPGLVGPP 1164
Gallus_gallus                           GMPGLKGEVGVPGLTGLRGGPGQKGEGGDPGLPGIEGLKGIQGVPGSLGQKGLPGLVGPP 1164
Anas_platyrhynchos                      GMPGLKGEVGVPGLTGLRGGPGQKGEGGDPGIPGIEGIKGIQGVPGSLGQEGLPGLVGPP 1172
Chelonia_mydas                          GSAGLKGEAGVTGSLGVKGTRGDKGEGGNPGFIGIEGLKGTQGFPGLKGQKGFPGLVGPP 1177
Homo_sapiens                            GRPGLKGERGTTGIPGLKGFFGEKGTEGDIGFPGITGVTGVQGPPGLKGQTGFPGLTGPP 1160
Pan_troglodytes                         GRPGLKGERGTTGIPGLKGFFGEKGTEGDIGFPGITGVTGVQGPPGLKGQTGFPGLTGPP 1159
Macaca_mulatta                          GRPGLKGEQGTAGIPGLKGFFGEKGTEGDIGFPGITGVTGVQGPPGLKGQTGFPGLTGPP 1160
Callithrix_jacchus                      GRPGLKGERGTAGIPGLKGFFGEKGTEGDIGFPGITGVTGVQGPPGLKGQAGFPGLTGPP 1159
Equus_caballus                          GSPGLKGERGLTGTPGLKGFFGEKGTEGEVGFPGITGAVGVQGPPGLKGQTGFPGLTGLH 1160
Pteropus_alecto                         GTPGLKGEQGVIGIPGLKGFFGEKGTAGDIGFPGITGITGVQGPPGFKGQTGFPGLTGLQ 1097
Bos_taurus                              GSPGLKGERGTTGIPGQKGFFGERGTEGDIGFPGITGLAGVQGPPGFKGQKGFPGLTGLQ 1158
Mus_musculus                            GSPGLKGERGITGIPGLKGFFGEKGAAGDIGFPGITGMAGAQGSPGLKGQTGFPGLTGLQ 1155
Ornithorhynchus_anatinus                GSRGVKGAPGLAGVSGVKGYVGQKGHEGDSGLQGISGMKGTQGPPGIRGQSGSPGMAGSP 1150
Latimeria_chalumnae                     GVPGNRGKAGIPGQPGAKGVKGETGGKGDSGFSGIEGMKGLRGEPGITGHTGFPGLLGSA 1153
                                        ......1150......1160......1170......1180......1190......1200

                                        *  *  *  *  *  *  *  *  .*  *. * :*  **.*:**:**  *.** *  *  *
Xenopus_tropicalis                      GSQGFPGLPGVPGEKGSSGFPGLPGQHGFPGIRGIAGLDGLPGTKGINGQPGADIIGLKG 1231
Rhinatrema_bivittatum                   GLQGQPGTPGRSGEKGSAGQRGGPGQPGFPGFRGTDGLDGVPGTKGYPGSPGADAFGARG 1206
Pavo_muticus                            GQQGSPGTPGFQGEKGVPGWPGLPGQAGLPGLRGIGGLHGLPGTKGLPGSPGPDGYGSAG 1224
Pavo_cristatus                          GQQGSPGTPGFQGEKGVPGWPGLPGQAGLPGLRGIGGLHGLPGTKGLPGSPGPDGYGSAG 1224
Gallus_gallus                           GQQGSPGTPGFQGEKGAPGWPGLPGQAGLPGLRGISGLHGLPGTKGLPGSPGPDGYGSAG 1224
Anas_platyrhynchos                      GQQGSPGTPGFQGEKGTPGWPGLPGQAGLPGLRGISGLHGLPGTKGLPGSPGPDGYGSAG 1232
Chelonia_mydas                          GSQGDPGIPGFQGEKGSHGWPGVAGKAGLPGFRGISGLDGLPGSKGLPGSPGPDAYGAEG 1237
Homo_sapiens                            GSQGELGRIGLPGGKGDDGWPGAPGLPGFPGLRGIRGLHGLPGTKGFPGSPGSDIHGDPG 1220
Pan_troglodytes                         GSQGEPGRIGLPGGKGDDGWPGAPGLPGFPGLRGIRGLHGLPGTKGFPGSPGSDIHGDPG 1219
Macaca_mulatta                          GSQGEPGRIGLPGGKGDDGWPGIAGLPGFPGLRGIRGLHGLPGTKGFPGSPGADIHGDPG 1220
Callithrix_jacchus                      GPQGEPGRIGLPGGKGDDGWPGAPGLPGFPGPRGISGLHGLPGTKGFPGSPGADIHGDPG 1219
Equus_caballus                          GPQGEPGRVGRPGDKGDSGWPGVPGLPGFPGIRGISGLHGLPGTKGSPGSPGADIHGDPG 1220
Pteropus_alecto                         GPQGEPGRVGVPGDKGDYGRPGVPGLPGFPGIRGIGGLHGLPGTKGFSGSPGTDIHGDPG 1157
Bos_taurus                              GPQGDPGRAGAPGIKGDSGWPGNPGLPGLPGLRGISGLHGLPGSKGFPGSPGADVHGDPG 1218
Mus_musculus                            GPQGEPGRIGIPGDKGDFGWPGVPGLPGFPGIRGISGLHGLPGTKGFPGSPGVDAHGDPG 1215
Ornithorhynchus_anatinus                GHHGDPGRNGFQGEKGDTGRPGLPGFSGVSGLRGISGLDGLPGTKGFPGSPGGDDFGDPG 1210
Latimeria_chalumnae                     GLPGLSGESGPPGQAGSSGQPGLPGRPGFLGIKGIDGLDGLPGSKGSKGSPGADNWGPKG 1213
                                        ......1210......1220......1230......1240......1250......1260
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                                 : *  * :*: *.     *  *  * :*  *  *  *  *  *  *  *       .*
Xenopus_tropicalis               FKGLSGGKGQPGEASTIVGMPGPAGSKGAEGDQGLPGLIGLPGTVGVRGLPGFSNKTGLL  1291
Rhinatrema_bivittatum            FHGTPGRKGDVGEHSTVSGFPGAPGPKGYKGDPGKPGIVGDTGLDGIPGSPGFSNRSGFS  1266
Pavo_muticus                     FPGPVGDKGEAGEPSRVEGSQGPPGQKGDRGVPGVQGPFGIPGQDGFPGPPGISNISGYP  1284
Pavo_cristatus                   FPGPVGDKGEAGEPSRVEGSQGPPGQKGDRGVPGVQGPFGIPGQDGFPGPPGISNISGYP  1284
Gallus_gallus                    FPGPVGDKGEAGEPSRVEGSQGPPGQKGDRGVPGVQGPFGIPGQDGLPGPPGISNISGYP  1284
Anas_platyrhynchos               FPGTVGDKGEAGEPSRVEGSRGPPGQKGDRGVPGIQGTFGIPGQDGFPGPPGISNISGYP  1292
Chelonia_mydas                   FPGIYGDKGEAGNPSTIEGARGAPGQKGERGNPGERGPVGNLGSDGIPGFPGVSNISGIP  1297
Homo_sapiens                     FPGPPGERGDPGEANTLPGPVGVPGQKGDQGAPGERGPPGSPGLQGFPGITPPSNISGAP  1280
Pan_troglodytes                  FPGPPGERGDPGEANTLPGPVGVPGQKGDQGAPGERGPPGSPGLQGFPGITPPSNISGAP  1279
Macaca_mulatta                   FPGPPGDRGDPGDANTLPGPVGVPGQKGEQGAPGERGPPGSPGLQGFPGITPPSNISGAP  1280
Callithrix_jacchus               YSGPPGERGDPGEANTLPGPVGVPGQKGEQGAPGQRGPPGSPGLQGFPGITPPSNISGAP  1279
Equus_caballus                   FPGPAGDRGDPGEANTLPGPAGAPGQKGERGAPGERGPVGSPGLRGFPGITPPSNISGSP  1280
Pteropus_alecto                  FPGPAGERGDPGEANTLPGPTGAPGQKGERGAPGERGPVGSPGLQGFPGITPPSNISGFP  1217
Bos_taurus                       FPGPAGDKGDPGEPNTLPGPTGAPGQKGERGAPGERGPIGSPGLQGFPGITPLSNISGSP  1278
Mus_musculus                     FPGPTGDRGDRGEANTLPGPVGVPGQKGERGTPGERGPAGSPGLQGFPGISPPSNISGSP  1275
Ornithorhynchus_anatinus         FLGPSGDKGEPGDHNPKPGPSGAVGPKGERGLTGIRGPMGSRGLPGIPGPFSVTNISGFP  1270
Latimeria_chalumnae              FPGNPGQKGEPGKAAAEMGPPGVPGGRGIPGDYGEPGPMGIPGPPGPPGLPADYVIPGII  1273
                                 ......1270......1280......1290......1300......1310......1320

                                 *: * .*  *  *  *  *  *  :  * **  *  *  *  * **  ** *  *  *
Xenopus_tropicalis               GDVGPPGPPGLPGFPGPIGRPGLPSKPGVKGVIGDLGLQGNYGAKGIPGDEGKVGVPGLA  1351
Rhinatrema_bivittatum            GEMGFPGPQGNPGQPGPPGRPGFPALSGIKGDVGLFGVVGESGPKGIRGDTGSPGSAGIF  1326
Pavo_muticus                     GDIGSPGLDGVPGYPGLHGQPGIPAPPGSKGESGRAGVSGQAGPKGTRGDPGLPGRPGTP  1344
Pavo_cristatus                   GDIGSPGLDGVPGYPGLHGQPGIPAPPGSKGESGRAGVSGQAGPKGTRGDPGLPGRPGTP  1344
Gallus_gallus                    GDTGSPGLDGVPGYPGLHGQPGIPAPPGSKGESGRAGVSGQAGPKGTRGDPGLPGRPGIP  1344
Anas_platyrhynchos               GDKGSPGLDGVPGYPGLQGQPGVPAPPGSKGESGQAGVSGQPGQKGDRGDPGLAGRPGIP  1352
Chelonia_mydas                   GDVGSPGLDGVPGYPGPRGRPGILAPGGSKGEDGQIGVLGEDGQKGPRGDPGPPGRTGIS  1357
Homo_sapiens                     GDKGAPGIFGLKGYRGPPGPPGSAALPGSKGDTGNPGAPGTPGTKGWAGDSGPQGRPGVF  1340
Pan_troglodytes                  GDKGAPGIFGLKGYRGPPGPPGSAALPGSKGDTGNPGAPGTPGTKGWAGDSGPQGRPGVF  1339
Macaca_mulatta                   GDKGAPGIFGLKGYRGPPGPPGSAALPGSKGDAGNPGAPGTPGTKGWAGDSGPQGRPGVF  1340
Callithrix_jacchus               GDKGAPGIFGLKGYRGPPGPPGSAALPGSKGDTGNPGAPGTPGTKGWVGDPGPQGRPGVL  1339
Equus_caballus                   GDKGAPGIFGLEGYRGPPGPPGPAALPGSKGEEGNPGVTGNPGTKGWGGDPGPQGRPGVF  1340
Pteropus_alecto                  GDKGAPGIFGLEGYRGPPGPPGPAALPGSKGDEGNPGAPGNPGTKGWGGDPGPQGQPGVF  1277
Bos_taurus                       GDVGAPGIFGLEGYRGPPGPPGPAALPGSKGDEGSPGTPGSPGTKGWIGDPGPQGRPGVF  1338
Mus_musculus                     GDVGAPGIFGLQGYQGPPGPPGPNALPGIKGDEGSSGAAGFPGQKGWVGDPGPQGQPGVL  1335
Ornithorhynchus_anatinus         GDRGDPGIFGTKGYPGQRGPPGVPASPGPKGEDGNPGLFGESGPKGWGGDPGPQGKPGVY  1330
Latimeria_chalumnae              GDPGPTGLDGVPGFPGPQGQHGNASSPGEKGNAGDPGRTGAIGEKGSTGDLGPLGLLGIP  1333
                                 ......1330......1340......1350......1360......1370......1380

                                 * .* ** :*  *. *  *  *  ** ** * :*: *  *  *  * **    *  :
Xenopus_tropicalis               GIPGAKGLKGSAGFQGFVGVSGYRGDQGPKGLRGDIGEYGLKGPPGQPGPMSEPPLITAE  1411
Rhinatrema_bivittatum            GFPGVKGLKGEQGLMGFIGRAGLLGDRGPVGPKGDRGSSGFQGPPGSPGLPPEPQAVRVE  1386
Pavo_muticus                     GYPGPKGRKGEQGVIGFIGTVGFPGDLGPIGPKGDRGLTGFQGPPGSPGLPPIPPRLVAE  1404
Pavo_cristatus                   GYPGPKGRKGEQGVIGFIGTVGFPGDLGPIGPKGDRGLTGFQGPPGSPGLPPIPPRLVAE  1404
Gallus_gallus                    GYPGPKGRKGEQGVIGFIGTVGFPGDLGPIGPKGDRGLTGFQGPPGSPGLPPIPPRLVAE  1404
Anas_platyrhynchos               GYPGPKGRKGEQGVIGFMGTVGFPGDLGPIGPKGDRGLTGFQGPPGSPGLPPVPPRLIAE  1412
Chelonia_mydas                   GYPGPKGHKGAQGLMGTLGLVGAFGDTGPTGPKGDRGPTGFQGPPGSPGLPAVPPKLVTH  1417
Homo_sapiens                     GLPGEKGPRGEQGFMGNTGPTGAVGDRGPKGPKGDPGFPGAPGTVGAPGIAGIPQKIAVQ  1400
Pan_troglodytes                  GLPGEKGPRGEQGFMGNTGPTGAVGDRGPKGPKGDPGFPGAPGTVGAPGIAGIPQKIAVQ  1399
Macaca_mulatta                   GLPGEKGPRGEQGFMGNTGPAGAVGDRGPKGPKGDPGFPGAPGIVGAPGIAGIPQKIAIP  1400
Callithrix_jacchus               GLPGEKGPRGEQGFMGNPGLPGPVGDRGPKGPKGDPGFPGAPGIVGAPGIAGIPQKIATQ  1399
Equus_caballus                   GLPGEKGPRGEQGFMGNTGPTGSVGDRGPKGPKGDRGLPGTPGAVGSPGIAGIPQKIAIQ  1400
Pteropus_alecto                  GLPGEKGPRGEQGFMGNTGTTGTVGDRGPKGPKGDRGLPGSPGPSGSPGIVGIPQRITVQ  1337
Bos_taurus                       GLPGEKGPKGEPGFMGNIGPTGSPGDRGPKGPKGDRGLPGAPGAVGTPGITGIPQRIAIE  1398
Mus_musculus                     GLPGEKGPKGEQGFMGNTGPSGAVGDRGPKGPKGDQGFPGAPGSMGSPGIPGIPQKIAVQ  1395
Ornithorhynchus_anatinus         GIPGTKGPKGEQGLMGFKGMFGNIGDQGPVGPKGDRGYPGTLGPLGSPGIPGIPQEVVLD  1390
Latimeria_chalumnae              GFSGQKGQQGEPGLMGFPGTDGLPGDRGPFGPKGNSGLPGLKGPPGSPGPLPTPLPVVKP  1393
                                 ......1390......1400......1410......1420......1430......1440
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                                 *  *  *  *  *  *  **:*  *  *  *  *. *  *  *  .. .* **::*. *
Xenopus_tropicalis               QGYPGAHGIIGHQGVQGDMGPKGLVGTPGAPGQTGKEGLPGVPGWPAPPGSRGEQGPMGR 1471
Rhinatrema_bivittatum            RGTQGPRGIIGPRGVQGEMGPHGLPGSPGLRGAAGKEGLQGIGGKPGPSGARGDQGSSGF 1446
Pavo_muticus                     QGSPGPRGNAGPRGSPGDTGPQGPPGEPGFRGLPGEPGLQGRGGIPAPPGSRGEQGAMGF 1464
Pavo_cristatus                   QGSPGPRGNAGPRGSPGDTGPQGPPGEPGFRGLPGEPGLQGRGGIPAPPGSRGEQGAMGF 1464
Gallus_gallus                    QGSPGPRGNAGPRGSPGDAGPQGPPGEPGLRGLPGEPGLQGRGGIPAPPGSRGEQGAMGF 1464
Anas_platyrhynchos               QGSPGPRGNAGPPGSPGDMGPQGPPGDPGFRGSPGDPGLQGRGGIPAPPGSRGEQGAMGF 1472
Chelonia_mydas                   QGTAGPRGNIGPQGISGEMGPHGPPGDPGFRGPPGKPGFQGRGGMSALPGFRGDQGPSGF 1477
Homo_sapiens                     PGTVGPQGRRGPPGAPGEMGPQGPPGEPGFRGAPGKAGPQGRGGVSAVPGFRGDEGPIGH 1460
Pan_troglodytes                  PGTVGPQGRRGPPGAPGEMGPQGPPGEPGFRGAPGKAGPQGRGGVSAVPGFRGDEGPIGH 1459
Macaca_mulatta                   PGTVGPQGRRGPPGAPGEMGPQGPPGEPGFRGAPGKAGPQGRGGVSAVPGFRGDEGPVGH 1460
Callithrix_jacchus               PGTVGPQGRRGPPGAPGEMGPQGPPGEPGFRGAPGKAGPQGRGGVSAVPGFRGDEGPTGH 1459
Equus_caballus                   RGPVGPQGRRGPPGAQGEMGPQGPPGEPGLRGAPGKAGPQGRGGVSAVPGFRGDQGPMGH 1460
Pteropus_alecto                  PGPVGPQGRRGPPGAQGEMGPQGPPGEPGFRGAPGKAGPQGRGGVSAVPGFRGDQGPIGH 1397
Bos_taurus                       RGPVGPQGRRGPPGAQGEMGPQGPPGEPGFRGAQGKAGPQGRGGVSAIPGFRGDQGPVGL 1458
Mus_musculus                     PGTLGPQGRRGLPGALGEIGPQGPPGDPGFRGAPGKAGPQGRGGVSAVPGFRGDQGPMGH 1455
Ornithorhynchus_anatinus         RGIPGPFGKQGPPGIQGEMGPQGPPGHPGFRGSPGNPGPQGRGGVSAVPGFRGDQGPVGH 1450
Latimeria_chalumnae              VGSRGQQGIQGPSGATGASGPKGPSGDKGFMGPPGKQGLPGISGRSANPGYRGDQGSEGQ 1453
                                 ......1450......1460......1470......1480......1490......1500

                                 *  * :* .
Xenopus_tropicalis               TGPNGFKGAS---------------------------------------------------- 1481
Rhinatrema_bivittatum            RGPVGDEGSA---------------------------------------------------- 1456
Pavo_muticus                     QGPVGFEGQP---------------------------------------------------- 1474
Pavo_cristatus                   QGPVGFEGQP---------------------------------------------------- 1474
Gallus_gallus                    QGPVGFEGQP---------------------------------------------------- 1474
Anas_platyrhynchos               QGPVGFEGQP---------------------------------------------------- 1482
Chelonia_mydas                   PGLAGFEGEP---------------------------------------------------- 1487
Homo_sapiens                     QGPIGQEGAP---------------------------------------------------- 1470
Pan_troglodytes                  QGPIGQEGAPGRLLSLFLGLQVHQAVHSLSLSGCRCTRLSTFSLSQAAGAPGRPLSLSRA 1519
Macaca_mulatta                   QGPIGQEGAP---------------------------------------------------- 1470
Callithrix_jacchus               QGPIGQEGVP---------------------------------------------------- 1469
Equus_caballus                   QGPIGQEGEP---------------------------------------------------- 1470
Pteropus_alecto                  QGPIGQEGEP---------------------------------------------------- 1407
Bos_taurus                       QGPVGFEGEP---------------------------------------------------- 1468
Mus_musculus                     QGPVGQEGEP---------------------------------------------------- 1465
Ornithorhynchus_anatinus         QGATGQEGNP---------------------------------------------------- 1460
Latimeria_chalumnae              RGPTGFEGLA---------------------------------------------------- 1463
                                 ......1510......1520......1530......1540......1550......1560

Xenopus_tropicalis               ---------------------------------------------------------- 1481
Rhinatrema_bivittatum            ---------------------------------------------------------- 1456
Pavo_muticus                     ---------------------------------------------------------- 1474
Pavo_cristatus                   ---------------------------------------------------------- 1474
Gallus_gallus                    ---------------------------------------------------------- 1474
Anas_platyrhynchos               ---------------------------------------------------------- 1482
Chelonia_mydas                   ---------------------------------------------------------- 1487
Homo_sapiens                     ---------------------------------------------------------- 1470
Pan_troglodytes                  VGAPGHPLSLFLGLQVHQAVHFLSLSGCRCTRPSTHSLSRAAGTPGCPLCLSLSRAAGAP 1579
Macaca_mulatta                   ---------------------------------------------------------- 1470
Callithrix_jacchus               ---------------------------------------------------------- 1469
Equus_caballus                   ---------------------------------------------------------- 1470
Pteropus_alecto                  ---------------------------------------------------------- 1407
Bos_taurus                       ---------------------------------------------------------- 1468
Mus_musculus                     ---------------------------------------------------------- 1465
Ornithorhynchus_anatinus         ---------------------------------------------------------- 1460
Latimeria_chalumnae              ---------------------------------------------------------- 1463
                                 ......1570......1580......1590......1600......1610......1620
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Xenopus_tropicalis       ------------------------------------------------------------  1481
Rhinatrema_bivittatum    ------------------------------------------------------------  1456
Pavo_muticus             ------------------------------------------------------------  1474
Pavo_cristatus           ------------------------------------------------------------  1474
Gallus_gallus            ------------------------------------------------------------  1474
Anas_platyrhynchos       ------------------------------------------------------------  1482
Chelonia_mydas           ------------------------------------------------------------  1487
Homo_sapiens             ------------------------------------------------------------  1470
Pan_troglodytes          GRPLSLFLGLQVHQAVHSLSFSGCRCTRPSTHSLSRAAGTPGCPLCLSLSRAAGAPGRPL  1639
Macaca_mulatta           ------------------------------------------------------------  1470
Callithrix_jacchus       ------------------------------------------------------------  1469
Equus_caballus           ------------------------------------------------------------  1470
Pteropus_alecto          ------------------------------------------------------------  1407
Bos_taurus               ------------------------------------------------------------  1468
Mus_musculus             ------------------------------------------------------------  1465
Ornithorhynchus_anatinus ------------------------------------------------------------  1460
Latimeria_chalumnae      ------------------------------------------------------------  1463
                         ......1630......1640......1650......1660......1670......1680

                                                 *  *  .* ***.***:.:*********: : ****:
Xenopus_tropicalis       ----------------------GVPGRAGLPGMPGRSVNIGYLLVKHSQTDEEPMCPV  1517
Rhinatrema_bivittatum    ----------------------GRQGRPGAPGMPGRSVNIGYLLVKHSQSDQEPMCPV  1492
Pavo_muticus             ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQSDQEPMCPI  1510
Pavo_cristatus           ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQSDQEPMCPI  1510
Gallus_gallus            ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQSDQEPMCPI  1510
Anas_platyrhynchos       ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQSDQEPMCPI  1518
Chelonia_mydas           ----------------------GRPGNPGLPGMPGRSVNIGYLLVKHSQSEQEPMCPV  1523
Homo_sapiens             ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQTDQEPMCPV  1506
Pan_troglodytes          SLSLSGCRCTRPSTLSLSRAAGAPGRPGSPGLPGMPGRSVSIGYLLVKHSQTDQEPMCPV  1699
Macaca_mulatta           ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQTEQEPMCPV  1506
Callithrix_jacchus       ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQTDQEPMCPV  1505
Equus_caballus           ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQTDQEPMCPV  1506
Pteropus_alecto          ----------------------GRPGTPGLPGMPGRSVSIGYLLVKHSQTDQEPMCPL  1443
Bos_taurus               ----------------------GRPGSPGLPGMPGRSISIGYLLVKHSQTDKEPMCPV  1504
Mus_musculus             ----------------------GRPGSPGLPGMPGRSVSIGYLLVKHSQTDQEPMCPV  1501
Ornithorhynchus_anatinus ----------------------GRPGNPGMPGMPGRSVSIGYLLVKHSQTEQEPMCPL  1496
Latimeria_chalumnae      ----------------------GRTGPPGLPGMAGRSINVGYLLVKHSQSYNVPMCPV  1499
                         ......1690......1700......1710......1720......1730......1740

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Xenopus_tropicalis       GMARLWTGYSLLYFEGQEKAHNQDLG----------------------LAGSCLQ----  1550
Rhinatrema_bivittatum    GMAKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLP----  1525
Pavo_muticus             GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1543
Pavo_cristatus           GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1543
Gallus_gallus            GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1543
Anas_platyrhynchos       GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1551
Chelonia_mydas           GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1556
Homo_sapiens             GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1539
Pan_troglodytes          GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1732
Macaca_mulatta           GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1539
Callithrix_jacchus       GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1538
Equus_caballus           GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1539
Pteropus_alecto          GMNKLWSGYSLLYFEGQEKAHNQDLGRYCPPSPRGQLRWRWSGSSGHSEVRGSCKADEPL  1503
Bos_taurus               GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1537
Mus_musculus             GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1534
Ornithorhynchus_anatinus GMNKLWSGYSLLYFEGQEKAHNQDLG----------------------LAGSCLA----  1529
Latimeria_chalumnae      GMTKLWDGYSLFYFEGQEKAHNQDLG----------------------LAGSCLP----  1532
                         ......1750......1760......1770......1780......1790......1800
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                                                          : .  *********:****.************
Xenopus_tropicalis              ----------------------------RFSTMPFLYCNPGDVCYYANRNDKSYWLSTTA 1582
Rhinatrema_bivittatum           ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1557
Pavo_muticus                    ----------------------------RFSTMPFLYCNPGDICYYANRNDKSYWLSTTA 1575
Pavo_cristatus                  ----------------------------RFSTMPFLYCNPGDICYYANRNDKSYWLSTTA 1575
Gallus_gallus                   ----------------------------RFSTMPFLYCNPGDICYYANRNDKSYWLSTTA 1575
Anas_platyrhynchos              ----------------------------RFSTMPFLYCNPGDICYYASRNDKSYWLSTTA 1583
Chelonia_mydas                  ----------------------------RFSTMPFLYCNPGDVCYYANRNDKSYWLSTTA 1588
Homo_sapiens                    ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1571
Pan_troglodytes                 ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1764
Macaca_mulatta                  ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1571
Callithrix_jacchus              ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1570
Equus_caballus                  ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1571
Pteropus_alecto                 LIETLDPSHFWGFQKRLAWPSMRLNLRSRPQRPPFLYCNPGDVCYYASRNDKSYWLSTTA 1563
Bos_taurus                      ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1569
Mus_musculus                    ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1566
Ornithorhynchus_anatinus        ----------------------------RFSTMPFLYCNPGDVCYYASRNDKSYWLSTTA 1561
Latimeria_chalumnae             ----------------------------KFSTMPFLYCNPGDICYYASRNDKSYWLSTTA 1564
                                ......1810......1820......1830......1840......1850......1860

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Xenopus_tropicalis              PLPMMPVVEEEIRPYISRCSVCEAPAVAIAVHSQDVSIPHCPDGWRSLWIGYSFLMHTAA 1642
Rhinatrema_bivittatum           PLPMMPVVEEEIQPYISRCSVCEAPTIAIAVHSQDVSIPHCPEGWRSLWIGYSFLMHTAA 1617
Pavo_muticus                    PLPMMPVAEEEIRPYISRCSVCEAPAVAIAVHSQEASIPRCPEGWRSLWIGYSFLMHTAA 1635
Pavo_cristatus                  PLPMMPVAEEEIRPYISRCSVCEAPAVAIAVHSQEASIPRCPEGWRSLWIGYSFLMHTAA 1635
Gallus_gallus                   PLPMMPVAEEEIRPYISRCSVCEAPAVAIAVHSQEASIPRCPEGWRSLWIGYSFLMHTAA 1635
Anas_platyrhynchos              PLPMMPVAEEEIKPYISRCSVCEAPAVAIAVHSQEASIPRCPDGWRSLWIGYSFLMHTAA 1643
Chelonia_mydas                  PLPMMPVAEEEIRPYISRCSVCEAPAVAIAVHSQDVSIPHCPEGWRSLWIGYSFLMHTGA 1648
Homo_sapiens                    PLPMMPVAEDEIKPYISRCSVCEAPAIAIAVHSQDVSIPHCPAGWRSLWIGYSFLMHTAA 1631
Pan_troglodytes                 PLPMMPVAEDEIKPYISRCSVCEAPAVAIAVHSQDVSIPHCPAGWRSLWIGYSFLMHTAA 1824
Macaca_mulatta                  PLPMMPVAEDEIKPYISRCSVCEAPAVAIAVHSQDVSIPHCPAGWRSLWIGYSFLMHTAA 1631
Callithrix_jacchus              PLPMMPVAEDEIKPYISRCSVCEAPAVAIAVHSQDVSIPHCPAGWRSLWIGYSFLMHTAA 1630
Equus_caballus                  PLPMMPVAEEDIRPYISRCSVCEAPAVAIAVHSQDVSIPHCPAGWRSLWIGYSFLMHTAA 1631
Pteropus_alecto                 PLPMMPVAEDEIKPYISRCSVCEAPAVAIAVHSQDVSIPHCPVGWRSLWIGYSFLMHTAA 1623
Bos_taurus                      PLPMMPVAEEDIRPYISRCSVCEAPAVAIAVHSQDVSIPHCPAGWRSLWIGYSFLMHTAA 1629
Mus_musculus                    PLPMMPVAEEEIKPYISRCSVCEAPAVAIAVHSQDTSIPHCPAGWRSLWIGYSFLMHTAA 1626
Ornithorhynchus_anatinus        PLPMMPVAEDEIKPYISRCSVCEAPAVAIAVHSQDVTIPHCPNGWRSLWIGYSFLMHTAA 1621
Latimeria_chalumnae             SIPMMPVVEEEIKPYISRCSICEAPSLAIAVHSQDITIPQCPAGWRSLWIGYSFLMHTGA 1624
                                ......1870......1880......1890......1900......1910......1920

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Xenopus_tropicalis              GDEGGGQSLSSPGSCLEDFRATPFIECNGGRGTCHYFANKYSFWLTTIDEP-FQSSPPAD 1701
Rhinatrema_bivittatum           GAEGGGQSLVSPGSCLEDFRATPFIECNGARGTCHYFANKYSFWLTTISQS-FQSSPSAD 1676
Pavo_muticus                    GDEGGGQSLVSPGSCLEDFRATPFIECNGARGTCHYFANKYSFWLTTIDQP-FQSKPSAD 1694
Pavo_cristatus                  GDEGGGQSLVSPGSCLEDFRATPFIECNGARGTCHYFANKYSFWLTTIDQP-FQSKPSAD 1694
Gallus_gallus                   GDEGGGQSLVSPGSCLEDFRATPFIECNGARGTCHYFANKYSFWLTTIDQP-FQSKPSAD 1694
Anas_platyrhynchos              GDEGGGQSLVSPGSCLEDFRATPFIECNGARGTCHYFANKYSFWLTTIDQP-FQSKPSAD 1702
Chelonia_mydas                  GDEGGGQSLVSPGSCLEDFRATPFIECNGARGTCHYYANKYSFWLTTINQQ-FQSLPSAD 1707
Homo_sapiens                    GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGTCHYYANKYSFWLTTIPEQSFQGSPSAD 1691
Pan_troglodytes                 GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGTCHYYANKYSFWLTTIPEQSFQGSPSAD 1884
Macaca_mulatta                  GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGTCHYYANKYSFWLTTIPEQSFQGSPSAD 1691
Callithrix_jacchus              GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGTCHYYANKYSFWLTTIPEQSFQGSPSAD 1690
Equus_caballus                  GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGTCHYYANKYSFWLTTIPEQSFQGAPSAD 1691
Pteropus_alecto                 GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGTCHYFANKYSFWLTTIPEQSFQGSPSAD 1683
Bos_taurus                      GDEGGGQSLVSPGSCLEDFRATPFIECNGARGTCHYYANKYSFWLTTIPEQSFQGTPSAD 1689
Mus_musculus                    GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGTCHYFANKYSFWLTTIPEQNFQSTPSAD 1686
Ornithorhynchus_anatinus        GDEGGGQSLVSPGSCLEDFRATPFIECNGGRGNCHYFANKYSFWLTTIPEPNFQSSPSPD 1681
Latimeria_chalumnae             GDEGGGQSLVSPGSCLEDFRATPFIECDGARGSCHYFANKYSFWLSAIDQS-FQSSPLPD 1683
                                ......1930......1940......1950......1960......1970......1980
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Xenopus_tropicalis        TLKAGLIRTHISRCQVCMKNL  1722
Rhinatrema_bivittatum     TLKAGLIRTHISRCQVCMKNV  1697
Pavo_muticus              TLKAGLIRSHISRCQVCMKNL  1715
Pavo_cristatus            TLKAGLIRSHISRCQVCMKNL  1715
Gallus_gallus             TLKAGLIRSHISRCQVCMKNL  1715
Anas_platyrhynchos        TLKAGLIRSHISRCQVCMKNL  1723
Chelonia_mydas            TLKAGLIRTHISRCQVCMKNL  1728
Homo_sapiens              TLKAGLIRTHISRCQVCMKNL  1712
Pan_troglodytes           TLKAGLIRTHISRCQVCMKNL  1905
Macaca_mulatta            TLKAGLIRTHISRCQVCMKNL  1712
Callithrix_jacchus        TLKAGLIRTHISRCQVCMKNL  1711
Equus_caballus            TLKAGLIRTHISRCQVCMKNL  1712
Pteropus_alecto           TLKAGLIRTHISRCQVCMKNL  1704
Bos_taurus                TLKAGLIRTHISRCQVCMKNL  1710
Mus_musculus              TLKAGLIRTHISRCQVCMKNL  1707
Ornithorhynchus_anatinus  TLKAGLIRTHISRCQVCMKNL  1702
Latimeria_chalumnae       TLKAGQLRTHISRCQVCMKNL  1704
                          ......1990......2000.
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