

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/IGF2L1.pps Tue Feb 1 12:23:48 2022

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                                     :      :
Pavo_muticus      -----ATFAPLLLVLLCLPLGEG-----GAAPATLEEPFFQDLCS    35
Pavo_cristatus    -----ATFAPLLLVLLCLPLGEG-----GAAPATLEEPFFQDLCS    35
Gallus_gallus     -----MARAAFAPLLLVLLCLPLGDG-----VAAPVSPDEPFFQDLCS    38
Mus_musculus      -----MRAVQLG--PVPSGPRVALLPPLLLLLLLA-----AAGSAQAQAVDLDALCS    45
Rattus_norvegicus -----MRAVLPG--PVPSGPRVALLPPLLLLLLLA-----AAGSAQAQAVDLDALCS    45
Heterocephalus_glaber MGAAAGRGAGHLG--PAPAGGQPRSLVLLOLLLLAA-----APGTAQAQASEFTELCR    50
Homo_sapiens      MGAAAGRSPHLG--PAPARRPQRSLLLLLOLLLLVA-----APGSTQAQAAPFPELCS    50
Pan_troglodytes   MGAAAGRSPHLG--PAPARRPQRSLLLLLOLLLLVA-----APGSTQAQAAPFPELCS    50
Macaca_mulatta    MGAAAGRSSH LG--PAPAGRPQRSLLLLLOLLLLVA-----APGATQAQEA TPPELCS    50
Callithrix_jacchus MGAAAGRSSH LG--PAPSRPPQRSLLLLLO----LLLV-----APGATQSQTAPFPELCS    49
Canis_lupus_familiaris MGAAAGRSAHLGPGPAPAAPRLRSLVLLLOLLLLVG-----APGAARAQAGADFPPELCS    52
Felis_catus       MGAAAGRSAHLG--PAPAGCPLLSLLLLLOLLLLVLL-----APGAARAQAGAEFPPELCS    52
Equus_caballus    MGAAAGRSAHLG--PALAGRPRLALLLOLLLLLVW-----APGAARAQAGADFPPELCS    50
Bos_taurus        MEAAAGRSSH LG--PAPAGRPPRCPLLLLOLLLLLLLLPPGWVPGAAGTQGAEPPELCS    58
Rhinatrema_bivittatum -----MHPAPAAAVPVLVLGLLLLLLE-----AAQSPSFPPELCS    34
Xenopus_tropicalis -----MRAHGQGIAALVAFLLQVIK-----STGQGNVAPVPELCS    36
1.....10.....20.....30.....40.....50.....60

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:***:* * .. *:* * . * :*: * . .**
Pavo_muticus      YTWEAIDTDKRVLYKINLC--FGVEECE--RSSAVCAYDVKQVYTSVGS--TLREISK    89
Pavo_cristatus    YTWEAIDTDKRVLYKINLC--FGVEECE--RSSAVCAYDVKQVYTSVGS--TLREISK    89
Gallus_gallus     YTWEAIDTDKRVLYKINLC--FGVEECE--RSSAVCAYDVKRAYMSVGS--TLREISK    92
Mus_musculus      YTWEAVDSKNNNAVYKINVCNVISSCG--PTSAICMDLKTENCRSVGDS--LLRSSAR    101
Rattus_norvegicus YTWEAVDSKNNNAVYKINPCGHVDNPRCG--PTSAVCMCDLKS ENCRSVGDS--LLRSSAK    101
Heterocephalus_glaber YTWEAVDTKSNRLYKISVCGNVDVTHCG--PSSAVCMHDLKKNSEFQSVGDS--FFRSATR    106
Homo_sapiens      YTWEAVDTKNNVLYKINICGSVDIVQCG--PSSAVCMHDLKTRTYHSVGDS--VLR SATR    106
Pan_troglodytes   YTWEAVDTKNNVLYKINICGSVDIVQCG--PSSAVCMHDLKTRTYHSVGDS--VLR SATR    106
Macaca_mulatta    YTWEAVDTKNNVLYKINICGSMDIAQCG--SSSAVCMHDLKTDNFH SVGDY--PLRSATR    105
Canis_lupus_familiaris YTWEAVDTKNNMLYKINICGNMNIQCG--LSSAVCMYDVKTN SYSVGDF--SKTATR    108
Felis_catus       YTWEAVDTKNNMLYKISICGNLDIAQCG--QASAVCMYD SKTSSYHSVGDS--SLKTATR    108
Equus_caballus    YTWEAVDIKNNVLYKINF CGNMNIAQCG--SSSAVCMHDLKTN SYRSVGDS--LLKSATR    106
Bos_taurus        YTWEAVDTKNNMLYKINICGNMGVAQCG--PSSAVCMHDLKTD SFHVGDS--LLKTASR    114
Rhinatrema_bivittatum YTWD AIDTDKRVLYKINLC DKVPSTECGGL EASICA HDLS TD TYTSVGDA--SLKSSNV    92
Xenopus_tropicalis HTWDALD TDKNVLYRINVC GMPAAECGG--HEA AICAQDLTKNTLSPVGLSGNSYVQISK    95
.....70.....80.....90.....100.....110.....120

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Pavo_muticus      TLLVFNTTTGCSQQGSQH QIQSNINFLCGKTLGTPEFVTATECVHYFEWRTFVACKKNLF    149
Pavo_cristatus    TLLVFNTTTGCSQQGSQH QIQSNINFLCGKTLGTPEFVTATECVHYFEWRTFVACKKNLF    149
Gallus_gallus     TLLVFNTTTSKCSQQGSQHRIQSNINFLCGKTLGTPEFVTATECVHYFEWRTFVACKKNLF    152
Mus_musculus      SLLEFNTTMTGCPSDSQHRIQTSITFLCGKTLGTPEFVTATDCVHYFEWRTTAACKKDIF    161
Rattus_norvegicus SLLEFNTTMTGCPSE--HRIQTSITFLCGKTLGTPEFVTATDCVHYFEWRTTAACKKDIF    159
Heterocephalus_glaber SLLEFNTTNTCQQQNTTEHKIQSSITFLCGKTLGTPEFVTATECVHYFEWRTTAACKKDIF    166
Homo_sapiens      SLLEFNTTNTVSCDQQTGNHRVQSSIAFLCGKTLGTPEFVTATECVHYFEWRTTAACKKDIF    166
Pan_troglodytes   SLLEFNTTNTVSCDQQTGNHRVQSSIAFLCGKTLGTPEFVTATECVHYFEWRTTAACKKDIF    166
Macaca_mulatta    SLLEFNTTNTVSCDRPGTNHRVQSSIAFLCGKTLGTPEFVTATECVHYFEWRTTAACKKDIF    166
Callithrix_jacchus SLLEFNTTNTVSCDQQTGNHRVQSSIAFLCGKTLGTPEFVTATECVHYFEWRTTAACKKDIF    165
Canis_lupus_familiaris SLLEFNTTTHSCKQ--NPSHKIQSSITFLCGKTLGTPEFVTATDCVHYFEWRTTAACKKDIF    167
Felis_catus       SLLEFNTTETCKQ--NTNHKIQTSITFLCGKTLGTPEFVTATDCVHYFEWRTTAACKKDIF    167
Equus_caballus    SLLEFNTTSSCEQPGKNHKVQSSIAFLCGKTLGTPEFVTATECVHYFEWRTSAACKKDIF    166
Bos_taurus        SLLEFNTTVNCKQ--QNHKIQSSITFLCGKTLGTPEFVTATDCVHYFEWRTTAACKKNIF    172
Rhinatrema_bivittatum KLILFNTTQSCNEEDTPHKVQSSINLLCAKTLGTPEFVTATECVHYFEWRTSVACKKDAF    152
Xenopus_tropicalis NLILFNTTQPCSEY--EHRVQSSINLICGKTLGTPEFVTATDCVHYFEWRTFVACKKDIF    153
.....130.....140.....150.....160.....170.....180

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* . ***** . : **** . : * * * * * . ***** . :
Pavo_muticus      KPVKVPCYVFDEDLKKHDLNPLIRVPGHYLVDDSD--DDSLFINICRDIG---RSSGETI 205
Pavo_cristatus    KPVKVPCYVFDEDLKKHDLNPLIRVPGHYLVDDSD--DDSLFINICRDIG---RSSGETI 205
Gallus_gallus     KPVKVPCYVFDEDLKKHDLNPLIRVPGHYLVDDSD--DDSLFINICRDIG---RSSGETI 208
Mus_musculus      KADKEVPCYAFDDKLOKHDLNPLIKLNGGYLVDDSDPDTSLFINVCRDIDSLRDPSTOLR 221
Rattus_norvegicus KADKEVPCYVFDDKLOKHDLNPLIKLNGGYLVDDSDADASLFINVCRDIDSLRDPSTOLR 219
Heterocephalus_glaber KANKEVPCYVFDAELKKHDLNPLIKISGGYLVDDSDPDTSLFINVCRDIDSLRDLSPQLR 226
Homo_sapiens      KANKEVPCYVFDEELRKHDLNPLIKLSGAYLVDDSDPDTSLFINVCRDIDTLRDPGSOLR 226
Pan_troglodytes   KANKEVPCYVFDEELRKHDLNPLIKLSGAYLVDDSDPDTSLFINVCRDIDTLRDPGSOLR 226
Macaca_mulatta    KAKKEVPCYVFDEELRKHDLNPLIKLSGAYLVDDSDPDTSLFINVCRDIDTLRDPGSOLR 226
Callithrix_jacchus KANKEVPCYAFDTELKKHDLNPLIKLSGAYLVDDSDPDTSLFINVCRDIDTLRDPGSOLR 225
Canis_lupus_familiaris KAKKEVPCYAFDTELKKHDLNPLIKISGGYLVDDSDPDTSLFINVCRDIDSLRDSSQLR 227
Felis_catus       KANKEVPCYVFDEGFKKHDLNPLIKISGGYLVDDSDPDTSLFINVCRDIDSLRDSSQLR 227
Equus_caballus    KANKEVPCYAFDTELKKHDLNPLIKISGAYLVDDSDPNISLFINVCRDIGSLRDLNPLYR 226
Bos_taurus        KANKEVPCYAFDRELKKHDLNPLIKISGAYLVDDSDPDTSLFINVCRDIEVLRASSPQVR 232
Rhinatrema_bivittatum KATKEVPCYVFQDLKKHDLNPLIKWSGYPVDDSDSSALFINICRNIG---GKESGTS 209
Xenopus_tropicalis KPIKEVPCYVFNDQKKHDLNPLIKISGGYLVDDWDPDTDLFINVCRNIG---TSDKETIT 210
.....190.....200.....210.....220.....230.....240

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* . * : * * * : : : : * * : . : * * : * . * * * * : :
Pavo_muticus      NCPAGSAACLIHEGHAYDVGRPQGQQLKRHDKDRILLSYERTY-NDEKLNFC LGHNPVAVTI 264
Pavo_cristatus    NCPAGSAACLIHEGHAYDVGRPQGQQLKRHDKDRILLSYERTY-NDEKLNFC LGHNPVAVTI 264
Gallus_gallus     NCPAGSAACLIHEGHAYDVGRPQGQQLKRHDKDRILLSYERTY-NDEKLNFC LGHNPVAVTI 267
Mus_musculus      VCPAGTAACLLKGNQAFDVGPRKEGLKLLSKDRLVLT YVKE--EGEKPDFCNGHSPAVTV 279
Rattus_norvegicus VCPAGTAACLLKGNQAFDVGPRKEGLKLLSKDRLVLT YVKE--EGEKPDFCNGHSPAVTV 277
Heterocephalus_glaber ACPVGTAACLLQGNQAFDVGPRKEGLKLLSKDRLVLT YVKE--GAGKPDFCDGHSPAVTI 284
Homo_sapiens      ACPPGTAACLVRGHQAQFDVGPRDGLKLVKDRILVLSYVRE--EAGKLD FCDGHSPAVTI 284
Pan_troglodytes   ACSPGTAACLVRGHQAQFDVGPRDGLKLVKDRILVLSYVRE--EAGKLD FCDGHSPAVTI 284
Macaca_mulatta    ACPPGTAACLVRGDQAFNVGPRQEGKLKLVKDRILVLSYVRE--EAGELDFCDGHSPAVTI 284
Callithrix_jacchus ACPPGTAACLVRGDQAFNVGPRQEGKLKLVKDRILVLSYARE--EAGKLD FCDGHSPAVTI 283
Canis_lupus_familiaris GCPPGTAACLVRGQAQFDVGPRKGGKLLSTDRLVLSYVKE--GAGELDFCDGHSPAVTI 285
Felis_catus       GCPRGTAACLVRGDRAFDVGPRKEGLKLVSKDRLVLSYVKE--EAGELDFCDGHSPAVTI 285
Equus_caballus    ACPPGTAACLVRGQAQFDVGPRKEGLKLVSKDRLVLSYVKE--EAATPDFCDGHSPAVTI 284
Bos_taurus        VCPGTAACLVRGDRAFDVGPRQEGKLKLVSKDRLVLSYVKE--GAGQPDFCDGHSPAVTI 290
Rhinatrema_bivittatum ACPQGSAAACVVKQGQSFQFDVGPRKEGLKAMDKDRILVLYERQYNDARPSFCNGHDPTVSI 269
Xenopus_tropicalis GCPSGSAACLLKGGKGYNVGLPAAALNSTANERLVIRYETDT-KAVIPDFCNGHNPVAVSI 269
.....250.....260.....270.....280.....290.....300

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Pavo_muticus      TFVCPSKRGEESAGPKLTAKTNCRYEVEWVTEYACHRDYLESKNVCVL TNEQHDVSI DLSP 324
Pavo_cristatus    TFVCPSKRGEESAGPKLTAKTNCRYEVEWVTEYACHRDYLESKNVCVL TNEQHDVSI DLSP 324
Gallus_gallus     TFVCPSKRGEESAGPKLTAKTNCRYEVEWVTEYACHRDYLESKNVCVL TNEQHDVSI DLSP 327
Mus_musculus      TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLOSESCSLSS EQHDITIDLSP 338
Rattus_norvegicus TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLSSE QHDIAIDLSP 336
Heterocephalus_glaber TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCALSSG QHDIAIDLSP 343
Homo_sapiens      TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLSG EQQDVSI DLTP 343
Pan_troglodytes   TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLSG EQQDVSI DLTP 343
Macaca_mulatta    TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLSG EQQDVSI DLTP 343
Callithrix_jacchus TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLSSE QQDVSI DLTP 342
Canis_lupus_familiaris TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLS SAQHDVITIDLSP 344
Felis_catus       TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLSSE QHEVTVDLQP 344
Equus_caballus    TFVCPSKR-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLSSE QHDIAIDLQP 343
Bos_taurus        TFVCPSER-REGTIPKLTAKSNCRYEVEWVTEYACHRDYLESSTCSLS SAQHDVAIDLQP 349
Rhinatrema_bivittatum TFVCPSER-TEGTDPKLTAKTNCRYEVEWVTEYACHREYLESSTCTLTSE QHDVSI DLTP 328
Xenopus_tropicalis TFICPSTR-TEGSSPKLTAKTNCRYEVEWVTEYACHRDYLESSTCSLT SKQHDISVDLSP 328
.....310.....320.....330.....340.....350.....360

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Pavo_muticus      LTLTADYVTPYLAADDKEEYYYYLNVCGRTGAGNCQDSTRFTSACQVK--SSNNQKKVTGR 383
Pavo_cristatus    LTLTADYVTPYLAADDKEEYYYYLNVCGRTGAGNCQDSTRFTSACQVK--SSNNQKKVTGR 383
Gallus_gallus     LTLSPDYVTPYLAADDKEEYYYYLNVCGRTGAGNCEGSMYTSACQVK--SSTNQKKVTGR 386
Mus_musculus      LAQYG-G--SPYVSDGRE-YTFFINVCGDTKVSICNN--KEAAVCQEKKADSTQVKIAGR 392
Rattus_norvegicus LAQHEEG--SPYVADGGE-YRFFMNVCGDTKVSICNN--KEAAVCQEKKVDSTQVKIAGR 390
Heterocephalus_glaber LTQPG---GSYASDGKE-YTFYLNVCGETEIQFCNK--KEAAVCQVKKIDSTQVKIAGR 396
Homo_sapiens      LAQSGGS---SYISDGKE-YLFYLNVCGETEIQFCNK--KQAAVCQVKKSDTSQVKAAGR 397
Pan_troglodytes   LAQSGGS---SYISDGKE-YLFYLNVCGETEIQFCNK--KQAAVCQVKKSDTSQVKAAGR 397
Macaca_mulatta    LAQSGGS---PYISDGKE-YLFYLNVCGETEIQFCNK--KQAAVCQVKRNNTSQVKAAGR 397
Callithrix_jacchus LAQSGGS---YYISDGTE-YLFYLNVCGETEIQFCNK--KQAAVCQVKKSDTSQVKAAGR 396
Canis_lupus_familiaris LRQDGASLSPYYTSDGKE-YMFYLNVCGETEIQFCNK--RDAAVCQVKKSDSSQVRVAGK 401
Felis_catus       LRQDRASSSSYYASDGKE-YMFYLNVCGETEIQFCNK--KEAAVCQVKKSESSQVKAAGR 401
Equus_caballus    LSQNGAS---YTSDGKE-YDFHLSICGEPESQFCNK--KGAAVCQVKKSDTSQVKAAGR 396
Bos_taurus        LSRVEASDSLFTYSEADE-YTYYSICGSGQAPICNK--KDAAVCQVKKADSTQVKAAGR 406
Rhinatrema_bivittatum LSQMGE-PSYSTSDEKKEYYYYLNVCGDLHIRGCEG--EKVSSCQVKQTESK-AKVTGR 384
Xenopus_tropicalis LKQSDGQ--SYHAVDTSGGYTYLNVCDVKGKGPCTG---NFSQCSK--QGAQIKGAGS 381
.....370.....380.....390.....400.....410.....420

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. *  *****  . *: *****:***:***:***:***:***  .*: *  :  *  *****
Pavo_muticus      FENQTLRYSDGDLTLIYPNGDACSSGFQRMVTINFECNETAGNDGRGTPAFTGEVDCTYF 443
Pavo_cristatus    FENQTLRYSDGDLTLIYPNGDACSSGFQRMVTINFECNETAGNDGRGTPAFTGEVDCTYF 443
Gallus_gallus     FENQTLRYSDGDLTLIYPNGDACSSGFQRMVTINFECNETAGNDGRGTPVFTGEVDCTYF 446
Mus_musculus      HQNQTLRYSDGDLTLIYSGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 452
Rattus_norvegicus HQNQTLRYSDGDLTLIYSGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 450
Heterocephalus_glaber PKNQTLRYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 456
Homo_sapiens      YHNQTLRYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 457
Pan_troglodytes   YHNQTLRYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 457
Macaca_mulatta    YQNQTLRYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 457
Callithrix_jacchus YRNQTLRYSDGDLTLIYSGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 456
Canis_lupus_familiaris YQNQTLRYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 461
Felis_catus       YQNQTLRYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 461
Equus_caballus    YQNQTLRYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 456
Bos_taurus        PQLNLTLYSDGDLTLIYFGGDECSGQFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 466
Rhinatrema_bivittatum SKNQILRYSDGDLTLTLPGGDCSSGFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 444
Xenopus_tropicalis YQNQILRYSDGDLTLTYPGGDKCSSGFQRMVINFECNETAGNDGRGTPVFTGEVDCTYF 441
.....430.....440.....450.....460.....470.....480

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* *  *:***:***:***  * *  .  :  .:***:***  * *  :      *****  ..
Pavo_muticus      FTWYTKYACVKEREDLLCRVADKKKHYSPLIRSSSAQ----NWEAVDSNLSSEGRKR 499
Pavo_cristatus    FTWYTKYACVKEREDLLCRVADKKKHYSPLIRSSSAQ----NWEAVDSNLSSEGRKR 499
Gallus_gallus     FTWYTKYACVKEREDLLCRVADKKKHYSPLIRSSSAQ----NWEAVDSNLSSEWRKR 502
Mus_musculus      FTWDTKYACIKEKEDLLCGAINGKKRYDLSVLARHSESEQ----NWEAVDGSQAESSEK-Y 507
Rattus_norvegicus FTWDTKYACVKEKEDLLCGAIDGKKRYDLSVLARHSESEQ----NWEAVDGSQAESSEKRN 506
Heterocephalus_glaber FTWDTKYACVKEKEDLLCGASDGKKRYDLSVLARHSESEQ----NWEAVDGSQTAAEKKH 512
Homo_sapiens      FTWDTKYACVKEKEDLLCGATDGKKRYDLSALVRHAEPEQ----NWEAVDGSQTETEKKH 513
Pan_troglodytes   FTWDTKYACVKEKEDLLCGATDGKKRYDLSALVRHAEPEQ----NWEAVDGSQTETEKKH 513
Macaca_mulatta    FTWDTKYACVKEKEDLLCGAVDGKKRYDLSALVRHAEPEQ----NWEAVDGSQTETEKKH 513
Callithrix_jacchus FTWDTKYACVKEKEDLLCGATDGKKRYDLSALVRHAEPEQ----NWEAVDGSQTETEKKH 512
Canis_lupus_familiaris FTWDTKYACVKEKEDLLCSVIDGKKRYDLSALVRHSESEQ----NWEAVDGSSEEEIGKKH 517
Felis_catus       FTWDTKYACIKEKEDLLCSVTEDKKRYDLSALVRHSELER----NWEAVDGSQRETDKKH 517
Equus_caballus    FTWDTKYACVKEKEDLLCSVSDGKKRYDLSALVRHSEPEQ----NWEAVDGSQRETDKKH 512
Bos_taurus        FTWDTKYACVHEKEALLCGVSDGKKRYDLSALVRHSELER----NWEAVDGSQREAEKKH 522
Rhinatrema_bivittatum FDWDTKYACVKEKEDLLCSVTDDKKHYDLSPLSRVAGSDRQSVNWEAVRSSAGGREVDVR 504
Xenopus_tropicalis FTWETKYACIKEKEELLCRVTDNRKRYDLSILTRIAESNTGIWNWEAVDANPTAADKSH 501
.....490.....500.....510.....520.....530.....540

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:::***::: * * . * : ***::: * . : * * * . : : *** * : . *
YYINVCHKVLKRGGASNCPDDAAICSVDKKEENSKNLGTFVSPPKKVGENIQLTYSNNGGSC
YYINVCHKVLKRGGASNCPDDAAICSVDKKEENSKNLGTFVSPPKKVGENIQLTYSNNGGSC
YYINVCHKVLKRGGASGCPDAAACSVDKKNSKNLGTFTVSPPKKVGENIQLTYSNNGGSC
FFINVCHRVLEGGKARNCPEDAAVCAVDK-NGSKNLGKFVSSPTKEKGHIQLSYDGDGDC
FFINVCHRVLQAGKAKNCPGAAVCAVDK-SGSKNLGKFVSSPTKEKGHIQLSYSDGDGDC
FFINVCHRVLREGKAISCPEDAAVCAVDK-TGSKSLGKFISSPTKEKGNIQLSYSDGDNC
FFINICHRVLEGGKARGCPEDAAVCAVDK-NGSKNLGKFISSPMKEKGNIQLSYSDGDGDC
FFINICHRVLEGGKARGCPEDAAVCAVDK-NGSKNLGKFISSPMKEKGNIQLSYSDGDGDC
FFINICHRVLEGGKARGCPEDAAVCAVDK-NGSKNLGKFISSPTKEKGNIQLSYSDGDGDC
FFINICHRVLEGGKARGCPEDAAVCAVDK-NGRKNLGKFISSPIKEKGNIQLSYSDGDGDC
YFINICHRVLEGGQAKGCPEDAAVCSVDK-NGFKNLGKFISPPPTKERGNLQLSYSDGSDC
FFINICHKVLEGGQARGCPEDAAVCSVDK-SGFKNLGKFITSSPTKEKGNIQLSYSDGDGDC
FFLNVCHRVLEGGKARGCPQDAAVCSVDK-NGSKNLGKFISSPTKEKGNIQLSYSDGDGDC
FFINICHRVLTGQARGCPEDAAVCAVDK-NGSKNLGRFISSTPREKGNIQLSYSDGDEC
FFINICHKVLQKGVAAGCPPEAAVCSVEG-KTMKNLGKFVSPPKKVGENIQLLYSNGDSC
FFINVCHKVLOQGEAVGCDAAICAVDSSKTKNFGKFMSPPKOVGDNIQLSYSEGSPC
.....550.....560.....570.....580.....590.....600

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      : * : : * : : : ***** : * : : * * ** ***** : ** : * * * *
GVNKKIKITVITILICRPGDLESAPILMSEG--ACSFTFDWYTAACVLSKTEGDNQVSDP
GVNKKIKITVITILICRPGDLESAPILMSEG--ACSFTFDWYTAACVLSKTEGDNQVSDP
GGNKKIKITVITILICRPGDLESAPILISEG--VCSFTFDWYTAACVLSKMEGDNQVSDP
GSDKKISTNITILVCKPGDLESAPVLRARSDCGYEFEFWHTAAACVLSKTEGENCTVLDA
GNDKKIITNITITVCKPGDLESAPVLRAGPDGCSYEFEFWHTAAACVLSQTEGENCTVLDA
GDDKKITITITILICKPGDLESAPMLRTSGDSGCGFYEFEFWHTAAACVLSKTEGDNCTVDFS
GHGKKIKITNITLVCKPGDLESAPVLRSTGEGGCGFYEFEFWHTAAACVLSKTEGENCTVDFS
GHGKKIKITNITLVCKPGDLESAPVLRSTGEGGCGFYEFEFWHTAAACVLSKTEGENCTVDFS
GHGKKIRITNITLVCKPGDLESAPVLRSTGEGGCGFYEFEFWHTAAACVLSKTEGENCTVDFS
GHGKKIRITNITLVCKPGDLESAPVLRSTGEGGCGFYEFEFWHTAAACVLSKTEGENCTVDFS
G-HKKITSNITLVCKPGDLESAPVLRSTGDSGCGFYEFEFWHTAAACVLSKTEGENCTVDFS
G-HKKITITNITLVCKPGDLESAPVLTTSGDGCGFYEFEFWHTAAACVLSKTEGENCTVDFS
GPDEKIKITNITLVCKPGDLESAPVLRSSAENGCLYEFEFWHTAAACVLSKTEGDNCTVDFS
GGGQKIIITNITILMCKPGDLESAPVLTTSRADGCGFYEFEFWRTAAACVLSRTEGDNCTVDFS
SSNKAIQITLVTLVCRQGDLESAPVLKSMGSDGCLYEFEFWHTAAACVLSKTEGDNCRVSDT
QGKKRIQITNITVCKPGDLESPPVLKSSDSTDGCLYEFEFWHTAGACVLSKAEGENCKVFDA
.....610.....620.....630.....640.....650.....660

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 QAGFSFDLSPLTKKNGHYTVNTEEYLFYINICGSVPDGLCHTQSAACQVTQGKDQYWSLG
 QAGFSFDLSPLTKKNGHYTVNTEEYLFYINICGSVPDGLCHTQSAACQVTQGKDQYWSLG
 QAGFSFDLSPLTKKNGHYTVNTEEYLFYINVCGSVPNELCHTQSAACQVTQRKDFWSLG
 QAGFSFDLSLLTKKNGAYKVETEKYDFYINVCGPSVMDPCQSNSGACQVAKSGK-SWNLG
 QAGFSFDLSLLTKKNGAYKVETEKYDFYINVCGPSVMDLQSNSGACQVAKSGK-SWNLG
 QAGFSFDLSPLTKKNGAYKVETEKYEFYINVCGSVSVHTCPLDSGACQISKSNKKYWNLG
 QAGFSFDLSPLTKKNGAYKVETKKYDFYINVCGPSVSPCQPDSGACQVAKSDEKTWNLG
 QAGFSFDLSPLTKKNGAYKVETKKYDFYINVCGPSVSPCQPDSGACQVAKSDEKTWNLG
 QAGFSFDLSPLTKKNGAYKVETKKYDFYINVCGPSVSPCQPDSGACQVAKSDEKTWNLG
 QAGFSFDLSPLTKKNGAYKVETKKYDFYINVCGPSVSPCQPDSGACQVAKSDEKTWNLG
 QAGFSFDLSPLTKKNGAYKVDTEKYDFYINVCGAVSVSFCQKDSGACQIAKSDGKPPWNLG
 QAGFSFDLSPLTKKNGAYKVETEKYDFYINVCGAVSVSFCQPDSGACQVSKSDNKAWNLG
 QAGFSFDLSPLTKKNGDYKVETEKYDFYINVCGAVSTASCOPTAGACQVAKSDKKSWNLG
 QAGFSFDLTIPLTKKD-AYKVETDKYEFHINVCGPSVSGACPPDSGACQVSRSDRKSWNLG
 QAGFSFDLSPLTIKNGSYHVNTSEYDFYINVCDSVAEKPCEENAGACQVSKNRDQHWNLG
 LAGYSYDLSPLTKKSDSYHYVSSDDYDFEINVCNVTGSQCQGDNAGQVTKSKSDHWNIG
670.....680.....690.....700.....710.....720

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	.. :*:~::~~::*** * ~.: :~::~~: ~: ~:~:*****::~::~~: ***** ~:~: :***	
Pavo_muticus	LPN SRLSY YDGLIQLTYKNGTAYNNEKKTORSLITLITFLCDHQAGIGQPEYQVEDNYITYNF	737
Pavo_cristatus	LPN SRLSY YDGLIQLTYKNGTAYNNEKKTORSLITLITFLCDHQAGIGQPEYQVEDNYITYNF	737
Gallus_gallus	LPN SRLSY YDGLIQLTYKNGTAYNNEKKTORSLITLITFLCDRQAGIGQPEYQVEDNYITYNF	740
Mus_musculus	LSSTKLTY YDGM IQLSYRNGTPYNNEKH TPRA TLITFLCDRDAGVGFP EYQEEDNSTYNF	745
Rattus_norvegicus	LSNTKLTYY DGM IQLSYRNGLTYNNEKH TP RS LITLITFLCDRDAGVGFP EYQEEDNSTYNF	744
Heterocephalus_glaber	LSNGKLSY YDGM IQLSYKDGT PYNNEKH TLRSTLITLITFLCDRDAGVGLPEYQEEDNSTYNF	751
Homo_sapiens	LSNAKLSY YDGM IQLNRYGGTPYNNERHTPRA TLITLITFLCDRDAGVGFP EYQEEDNSTYNF	752
Pan_troglodytes	LSNAKLSY YDGM IQLNRYGGTPYNNERHTPRA TLITLITFLCDRDAGVGFP EYQEEDNSTYNF	752
Macaca_mulatta	LSNAKLSY YDGM IQLNRYGGTPYNNERHTPRA TLITLITFLCDRDAGVGFP EYQEEDNSTYNF	752
Callithrix_jacchus	LSNAKLSY YDGM IQLNRYGGTPYNNERHTPRA TLITLITFLCDRDVGVP EYQEEDNSTYNF	751
Canis_lupus_familiaris	VSN AKLSY YDGM IQLNRYKDGT PYNNEKH TPRA TLITLITFLCDREAGVGHP EYQEEDNSTYNF	755
Felis_catus	LSNAKLSY YNGM IQLNRYDGT PYNNEKH TPRA TLITLITFLCDRDAGVGLPEYQEEDNSTYNF	755
Equus caballus	LSNAKLSY YDGM IQLNRYDGT PYNNEKH TPRA TLITLITFLCDRDAGIGVPEYQEEDNSTYNF	751
Bos_taurus	RSNAKLSY YDGM IQLTYRDGT PYNNEKR TPRA TLITLITFLCDRDAGVGFP EYQEEDNSTYNF	760
Rhinatrema_bivittatum	VSSARLSY YDGLIQLNRYKDGAAYNDEKH TRRSSLITLITFLCDRNAGIGQPEYQLEDKFAYNF	743
Xenopus_tropicalis	ISNSKLSY YDGIQLHYTNNGTPYQDEGKTPTS LITLITFLCDRDADIGQPEYQEKDKHITYNF	741
730.....740.....750.....760.....770.....780	

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Pavo_muticus	RWYTEYACPEMPLECVVTDPNIMDQYDLSSLAKSE-KRGENWYAMDNSGPN-ERKKYYIN	795
Pavo_cristatus	RWYTEYACPEMPLECVVTDPNIMDQYDLSSLAKSE-KRGENWYAMDNSGPN-ERKKYYIN	795
Gallus_gallus	RWYTEYACPEMPLECVVTDPNIMDQYDLSSLAKSE-KRGENWYAMDNSGPN-ERKKYYIN	798
Mus_musculus	RWYTSYACPEEPLECMVTDPSMMEQYDLSSLVKSKEGGSGGNWYAMENSREHVTIRKKYYLN	805
Rattus_norvegicus	RWYTSYACPEEPLECMVTDPSMMEQYDLSSLVKSKEGGSGGNWYAMENSREHVTIRKKYYLN	804
Heterocephalus_glaber	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNSGEHVTWKYYIN	811
Homo_sapiens	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNSGEHVTWKYYIN	812
Pan_troglodytes	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNSGEHVTWKYYIN	812
Macaca_mulatta	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNSGEHVTWKYYIN	812
Callithrix_jacchus	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNAGEHVAWRKYYIN	811
Canis_lupus_familiaris	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNAGEHSTWRKYYIN	815
Felis_catus	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNAGERSTWRKYYIN	815
Equus_caballus	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYAMDNAGERSTWRKYYIN	811
Bos_taurus	RWYTSYACPEEPLECVVTDPSSTLEQYDLSSLAKSEGGSGGNWYSLDNGGARSTWRKYYIN	820
Rhinatrema_bivittatum	KWYTKYACSERPLECVVMDPVTHEQYDLSSLKSEGGSGGNWYAMDTSDQ--RKKYYLN	801
Xenopus_tropicalis	KWYTKYACPAAPVECAVVDTRTSEQYDLSSLKSEGGSGGNWYAMDRATDT--RKKYYIN	799
790.....800.....810.....820.....830.....840	

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Pavo_muticus	VCRPLLAVPGCDRRASVCOMYEYRHDHDSYIEVTSISNLGVASKELVVERLGHILLTYANG	855
Pavo_cristatus	VCRPLLAVPGCDRRASVCOMYEYRHDHDSYIEVTSISNLGVASKELVVERLGHILLTYANG	855
Gallus_gallus	VCRPLLAVPGCDRRASVCOMYEYRHDHDSYIEVTSISNLGVASKELVVERLGHILLTYANG	858
Mus_musculus	VCRPLNPVPGCDRYASACOMKYENHEGSLAETVVISNLGVAKIGPVVEESGSLLEYVNG	865
Rattus_norvegicus	VCRPLNPVPGCDRYASACOMKYENNEGSLAETVAISNLGVAKTGPVVEESGSLLEYVNG	864
Heterocephalus_glaber	VCRPLNPMPGCDRYASACOMKYENDQGTFTETVAISSLGVAKTGPVVEESGSLLEYVNG	871
Homo_sapiens	VCRPLNPVPGCNRYASACOMKYEKDQGSFTEVVVISNLGMAKTGPVVEDSGSLLEYVNG	872
Pan_troglodytes	VCRPLNPVPGCNRYASACOMKYEKDQGSFTEVVVISNLGMAKTGPVVEDSGSLLEYVNG	872
Macaca_mulatta	VCRPLNPVPGCNRYASACOMKYEKDQGSFTEVVVISNLGMAKTGPTIEDSGSLLEYVNG	872
Callithrix_jacchus	VCRPLNPVPGCDRYASACOMKYEKDQGSFTEVVVISNLGMAKSGPVVEGRGSLLEYVNG	871
Canis_lupus_familiaris	VCRPLNPVPGCDRYASVCOMKYKNDQGSFSEVASISNLGVTKTGPTVEDSGSLLEYVNG	875
Felis_catus	VCRPLNPVPGCDRYASACOMKYKNDQGSFSETVVISNLGVAKTGPMVEDSGSLLEYVNG	875
Equus_caballus	VCRPLKPVPGCDRYASACOMRYDNROGMFSEAVSISNLGVAKTGPTVEDSGSLLEYVNG	871
Bos_taurus	VCRPLNPVPGCDRYASACOMKYQGEQGSYSETVVISNLGVAKTGPMVEDSGSLLEYVNG	880
Rhinatrema_bivittatum	VCRPLNPVPGCDRYSSACOMMYGKDEGVLHETVVISNLGVASKGPPVFEKGRLLEYTNG	861
Xenopus_tropicalis	VCRPLVPVPGCDRFASVCGTEYNTKFG--YEVATINNLGVASEPPVVIASGQLLEYING	857
850.....860.....870.....880.....890.....900	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus      SVCINADGKRTSYTTTTHFVCSRGTLNSSPRFISIQECVVTFWLWTEAACPIKETKDDSQ 915
Pavo_cristatus    SVCINADGKRTSYTTTTHFVCSRGTLNSSPRFISIQECVVTFWLWTEAACPIKETKDDSQ 915
Gallus_gallus     SVCINADGERTSYTTTTHFVCSRGTLNSSPRFISIQECVVTFWLWTEAACPIKETKDDSQ 918
Mus_musculus      SACTTSDGQLTTYSTRHLVCGRGFMNSHPIFTFNWECVVSFLWNTAAACPIQTITETDQ 925
Rattus_norvegicus SACTTSDGRLTTYSTRHLVCGRGTMNSHPIFTFNWECVVSFLWNTAAACPIQTITETDQ 924
Heterocephalus_glaber SACTTSDGRLTTYSTRHLVCSRGSMNTHPIFSLNWDCCVVSFLWNTAAACPIQTITETDQ 931
Homo_sapiens      SACTTSDGRQTTYTTRIHLVCSRGRLNSHPIFSLNWECVVSFLWNTAAACPIQTITETDQ 932
Pan_troglodytes   SACTTSDGRQTTYTTRIHLVCSRGRLNSHPIFSLNWECVVSFLWNTAAACPIQTITETDQ 932
Macaca_mulatta    STCTTSDGRQTTYTTRIHLVCSRGRLNSHPIFSLNWECVVSFLWNTAAACPIQTATDIDQ 932
Callithrix_jacchus SACTTSDGRRTTYTTRIHLVCSRGRLNSHPIFSLNWECVVSFLWNTAAACPIQTITETDQ 931
Canis_lupus_familiaris SECTTSDGKLTYYYTTRIHLVCSRGSMNTHPIFSLSWECVVSFLWNTAAACPIQIMTIDTQ 935
Felis_catus       SACTTSDGRLTTYTTRIHLVCSRGSLNTHPIFSLSWECVVSFLWNTAAACPIQIMTIDTQ 935
Equus_caballus    SVCTTSDGRRNTYYTTRIHLVCSRGSLNTHPIFSLNWECVVSFLWNTAAACPIRMTIDSDQ 931
Bos_taurus        SACTTSDQRRTTYTTRIHLVCSGTSLYTHPIFSLNWECVVSFLWNTAAACPIRITIDIDQ 940
Rhinatrema_bivittatum SECINAEGEKITYTTTKIHLICSEGLASSPKFIQNDQCVIFLWTEAACPVTK--ESQ 919
Xenopus_tropicalis SECINSSGSKIAYTTRIHLACKKGVLYSPVFLSSDCILTFWLTAAACPVTTTEK--GNE 916
.....910.....920.....930.....940.....950.....960

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Pavo_muticus      SCSVRDPNSGFLFNQLPLA-AEKGYTTTG-IGKTYLLNICEPMPDCGEINGKPAAGCEAD 973
Pavo_cristatus    SCSVRDPNSGFLFNQLPLA-AEKGYTTTG-IGKTYLLNICEPMPDCGEINGKPAAGCEAD 973
Gallus_gallus     SCSVRDPNSGFLFNQLPLA-AEKGYTTTG-IGKTYLLNICEAMPECGKINGKPAAGCEAD 976
Mus_musculus      ACSIRDPSGFGVFNLSPLNLSAQGHVVLG-IGKTFVFNICGAMPACGTVAGKPAYGCEAE 984
Rattus_norvegicus ACSIRDPSGFGVFNLSPLN-YSQGHMVLG-IGKTFVFNICGTMPCGTVAGKPALGCEAE 982
Heterocephalus_glaber ACSIRDPSGFGVFNLSPLN-SSQGYVVS-IGKTFVFNVCGTMPACGTVAGKPAAGCEAT 989
Homo_sapiens      ACSIRDPSGFGVFNLSPLN-SSQGYNVSG-IGKIFMFNVCGTMPVCGTILGKPAAGCEAE 990
Pan_troglodytes   ACSIRDPSGFGVFNLSPLN-SSQGYNVSG-IGKIFMFNVCGTMPVCGTILGKPAAGCEAE 990
Macaca_mulatta    ACSIRDPSGFGVFNLSPLN-SSQGYVVS-IGKTFVFNVCGTMPVCGTILGKPAAGCEAE 989
Callithrix_jacchus ACSIRDPSGFGVFNLSPLN-SSQGYVVS-IGKTFVFNVCGTMPVCGTILGKPAAGCEAE 989
Canis_lupus_familiaris ACSIRDPSGFGVFDLNLPLN-SSQGYVVS-IGKTFVFNVCGTMPVCGTILGKPAAGCEAE 993
Felis_catus       ACSIRDPSGFGVFDLNLPLN-NTQGYVLLG-IGKTFVFNVCGTMPACGTDFDGPAGGCEAK 993
Equus_caballus    ACSIRDPSGFGVFDLNLPLN-SSQGYILHSIGKTFMFNVCGTMSDCGTDFDGPAGGCEAE 990
Bos_taurus        VCSIKDPNSGFGVFDLNLPLN-NSRGYVVLG-IGKTFVFNVCGTMPVCGTILGKPAAGCEAE 998
Rhinatrema_bivittatum TCTVYDVNTGFVFNLFQPLA-TDSGYSVPG-NGKTFKLNICGAVKDCGSDGKPAAGCEFE 977
Xenopus_tropicalis TCSVKDPNSGFTFNQLSLT-NETGYIASG-NGKTFKVNICGSKVDCGSDVDDTEAGCEYD 974
.....970.....980.....990.....1000.....1010.....1020

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Pavo_muticus      -----NLTSVRMVELDKTLYLSSEGFLTLTYRGPLLVEGKSDTFTVTFICN-DSYPG 1025
Pavo_cristatus    -----NLTSVRMVELDKTLYLSSEGFLTLTYRGPLLVEGKSDTFTVTFICN-DSYPG 1025
Gallus_gallus     -----NLTSVRMVELDKTLYLSSEGFLTLTYRGPLLVEGKSDTFTVTFICN-DSYPG 1028
Mus_musculus      TQIEDIKDLRPPQRPVGMERSLQLSAEGFLTLTYKG--SSPSDRGTAFIIRFICNDIYPG 1042
Rattus_norvegicus TKIKDIKDLKPERPVGMEKSLQLSAEGFLTLTYKG--SSPSDRGTAFIIRFICNGDIYPG 1040
Heterocephalus_glaber SETQELKNLQLEKPVGFEKSLQSLSTEGFILLTYKG--FPPEDRGTAFAIIRFICNDVYPR 1047
Homo_sapiens      TQTEELKNWKPAPVVGIEKSLQSLSTEGFILLTYKG-PLSAKGTADAFIIRFVCNDVYSG 1049
Pan_troglodytes   TQTEELKNWKPAPVVGIEKSLQSLSTEGFILLTYKG-PLSAKGTADAFIIRFVCNDVYSG 1049
Macaca_mulatta    TQTEDLQNLKPERAVGIEKSLQSLSTEGFILLTYKG-PVSAKGSADAFIIRFVCNDGVYPA 1049
Callithrix_jacchus TQIEELKNLRLPERPVGVEKSLQSLSTEGFILLTYTG-PLSGKGTADAFIIRFVCNDVYPG 1048
Canis_lupus_familiaris FQTEDLKNLKPRLVGLKTLQSLSTEGFILLTYKGPLSPSTGNSYAFIIRFVCNDVYPG 1053
Felis_catus       TETKDLKNLKPRLVGLKTLQSLSTEGFILLTYKGPLSPSTGTADAFIIRFVCNDVYPG 1053
Equus_caballus    TQTEDFKNLKPRLVGLKTLQSLSTEGFILLTYKG--APSSGSVDAFIIRFICNDIYPG 1048
Bos_taurus        VQMDDMKTLKPGRLVGLKSLQSLSTEGFILLTYGLPSHPNGRADAFIIRFVCNDVYPG 1058
Rhinatrema_bivittatum GG-----TAMRPVGVGTLQSLSTEGFILLSYGPRDLTSGTQDTFEVQFVCNDIYPG 1030
Xenopus_tropicalis GG-----TAHSPVLVDKSLQSLSTEGYIILLTYRG--KPESGLQDAFIIRFVCNDIYPG 1025
.....1030.....1040.....1050.....1060.....1070.....1080

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Pavo_muticus	ELKFVHEEIN\$MLNIHDTFFEFHTALACAPAVDCQVIDAAGNEYDLS\$DLSKESEPWVAI	1085
Pavo_cristatus	ELKFVHEEIN\$MLNIHDTFFEFHTALACAPAVDCQVIDAAGNEYDLS\$DLSKESEPWVAI	1085
Gallus_gallus	ELKFLVREEIN\$MLNIHDTFFEFHTALACAPAVDCQITDAAGNEYDLS\$DLSKEGKPWVAI	1088
Mus_musculus	APKFLHQDIDS\$RGIRNTYFEFETALACTPSLVDQCVIDPAGNEYDLS\$SALSMVRKPTIAV	1102
Rattus_norvegicus	TPKFLHQDIDS\$ARGIRNTFFEFETALACIPSVVDCQVIDPAGNEYDLS\$SALSMVRKPTIAV	1100
Heterocephalus_glaber	TTKFLHQDIDS\$VRGIRNTYFEFETALACVPSPVDCQVIDPAGNEYDLS\$ALSTIREPWTAI	1107
Homo_sapiens	PLKFLHQDIDS\$GGGIRNTYFEFETALACVPSPVDCQVIDLAGNEYDLTGL\$STVRKPTIAV	1109
Pan_troglodytes	PLKFLHQDIDS\$GGGIRNTYFEFETALACVPSPVDCQVIDLAGNEYDLTGL\$STVRKPTIAV	1109
Macaca_mulatta	ISRFHLHQDIDS\$GGGIRNTYFEIETALACVPSPVDCQVIDLAGNEYDLS\$GLSIVRKPTIAV	1109
Callithrix_jacchus	NPKFLHQDIDS\$GGGIRNTYFEFETALACVPSPVDCQVIDLAGNEYDLS\$GLSSTVRKPTIAV	1108
Canis_lupus_familiaris	TIKFLHQDIDS\$GLGIWNTFFEFETALACVPSPVDCQVIDVAGNEYDLS\$GLSRVRKPTIAV	1113
Felis_catus	IPKFLHQDIDS\$GRGIRDITFFEFETALACVPSPVDCQVIDLAGNEYDLS\$GLSQVRKPWAIV	1113
Equus caballus	FPKFLHQDIDS\$GLRIRNTFFEFETALACVPSPVDCQVIDLAGNEYDLS\$GLSKVRKPTIAV	1108
Bos_taurus	TPKFLHQDIDS\$SLGIRDITFFEFETALACVPSPVDCQVIDPAGNEYDLS\$GLSKARKPTIAV	1118
Rhinatrema_bivittatum	ELIFVREEIS\$SETKVYNTFFOFETALACMPAVDCQVIDSAGNEYDLS\$NL\$KRDREPWIAV	1090
Xenopus_tropicalis	ELSFLREEINS\$ATKLHDITHFETALVCSPAIVDCQVIDATGNEYDLS\$GL\$SRDGEPWVAI	1085
1090.....1100.....1110.....1120.....1130.....1140	

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Pavo_muticus	D	T	S	K	D	A	K	R	T	F	F	L	N	V	C	K	P	L	P	F	V	H	G	C	P	G	G	A	I	G	S	C	V	K	Y	A	D	-	K	S	K	N	L	G	V	I	Q	I	N	P	Q	A	A	T	D	G	S	L	S		1144
Pavo_cristatus	D	T	S	K	D	A	K	R	T	F	F	L	N	V	C	K	P	L	P	F	V	H	G	C	P	G	G	A	I	G	S	C	V	K	Y	A	D	-	K	S	K	N	L	G	V	I	Q	I	N	P	Q	A	A	T	D	G	S	L	S		1144
Gallus_gallus	D	T	S	K	D	A	K	R	T	F	F	L	N	V	C	K	P	L	P	F	V	P	G	C	P	G	G	A	I	G	S	C	V	K	Y	A	D	-	K	S	K	N	L	G	V	I	Q	I	N	P	Q	A	A	T	D	G	S	L	S		1147
Mus_musculus	D	T	S	A	G	K	R	R	H	F	Y	L	S	V	C	N	P	L	P	I	P	G	C	H	I	A	L	G	S	C	M	V	S	E	D	-	K	S	F	N	L	G	V	V	Q	I	S	P	O	A	T	G	N	G	S	L	S		1161		
Rattus_norvegicus	D	T	S	V	H	G	K	R	R	F	Y	L	S	V	C	T	P	L	P	I	P	G	C	D	G	I	A	M	G	S	C	M	V	S	E	D	-	K	S	Q	N	L	G	V	V	Q	I	S	P	O	A	T	G	N	G	S	L	S		1159	
Heterocephalus_glaber	D	T	T	A	D	G	K	R	T	F	Y	L	S	V	C	N	P	L	P	I	P	G	C	H	S	A	V	G	S	C	L	V	S	E	D	-	N	S	W	N	L	G	V	V	Q	I	S	P	O	A	A	A	N	G	S	L	S		1166		
Homo_sapiens	D	T	S	V	D	G	R	K	R	T	F	Y	L	S	V	C	N	P	L	P	I	P	G	C	Q	S	A	V	G	S	C	L	V	S	E	G	-	N	S	W	N	L	G	V	V	Q	M	S	P	O	A	A	A	N	G	S	L	S		1168	
Pan_troglodytes	D	T	S	V	D	G	R	K	R	T	F	Y	L	S	V	C	N	P	L	P	I	P	G	C	H	S	A	V	G	S	C	L	V	S	E	G	-	N	N	W	N	L	G	V	V	Q	M	S	P	O	A	A	A	N	G	S	L	S		1168	
Macaca_mulatta	D	T	S	V	D	G	R	K	R	T	F	Y	L	S	V	C	S	P	L	P	I	P	G	C	H	S	A	M	G	S	C	L	V	S	E	V	-	N	N	W	N	L	G	V	V	Q	M	S	P	O	A	A	A	N	G	S	L	S		1168	
Callithrix_jacchus	D	T	S	V	D	G	R	K	R	T	F	Y	L	S	V	C	N	P	L	P	I	P	G	C	H	S	S	L	G	S	C	L	V	S	E	D	-	N	S	W	N	L	G	V	V	Q	M	S	P	O	V	A	A	A	N	G	S	L	S		1167
Canis_lupus_familiaris	D	T	S	V	D	G	R	K	R	T	F	Y	L	S	V	C	N	P	L	P	I	P	G	C	H	S	A	V	G	S	C	L	V	T	E	D	-	N	G	W	N	L	G	V	V	Q	I	S	P	O	A	A	E	N	G	S	L	S		1172	
Felis_catus	D	T	S	A	D	G	R	K	R	T	F	Y	L	S	V	C	T	P	L	P	I	P	E	C	H	S	A	V	G	S	C	L	V	S	E	D	-	N	S	Q	N	L	G	V	V	Q	I	S	P	O	A	A	A	N	G	S	L	S		1172	
Equus_caballus	D	T	S	A	D	G	K	R	T	F	Y	L	S	V	C																																														

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Pavo_muticus	IIYVLNGDMCKDKORYSTRIIFQCDOTMGSPVLEQEEDDCEVFVWVRTLAACPVHKAEGEDC	1204
Pavo_cristatus	IIYVLNGDMCKDKORYSTRIIFQCDOTMGSPVLEQEEDDCEVFVWVRTLAACPVHKAEGEDC	1204
Gallus_gallus	IIYVLNGDMCKDKRRYSTRIIFQCDOTMGSPVLEQEEDNCEVFVWVRTLAACPVHKAEGEDC	1207
Mus_musculus	ILYVNGDRCGD-QRFSTRITFECAQTSGSPMFQVNNCEYFVFWRTVEACPVIREEGDC	1220
Rattus_norvegicus	ILYVNGDRCGD-QRYSTRIVFECAQTSGSPMFOQLNNCEYFVFWRTVEACPVVREEGDNC	1218
Heterocephalus_glaber	IVYVNGDKCGN-QRFSTRITFECAQTSGSPTFOLLDDCEYFVFWRTVEACPVVRAEGDNC	1225
Homo_sapiens	IMYVNGDKCGN-QRFSTRITFECAQISGSPAFLQDGCYVFIWRTVEACPVVREVDNC	1227
Pan_troglodytes	IMYVNGDKCGN-QRFSTRITFECAQISGSPAFLQDGCYVFIWRTVEACPVVREVDNC	1227
Macaca_mulatta	IMYVNGDKCGN-QRFSTRITFECAQISGSPTFOLQDGCYVFIWRTVEACPIVRVEGDNC	1227
Callithrix_jacchus	IVYVNGDKCGS-QRYSTRITFECAQISGSPAFLQDVCEYFVIWRTVEACPVIIVEGDNC	1226
Canis_lupus_familiaris	LVIYVNGDKCGN-QRFSTRITLECAQTSGSPTFQLRDDCEYFVFWRTVEACPVIIVEGDNC	1231
Felis_catus	IVYVNGDRCGN-QRFSTRIMFECAQTSGSPTFOLLDDCEYFVFWRTVEACPVVREVDNC	1231
Equus caballus	IVYVNGDQCGN-QRFSTRITLECAQISGSPTFQLDDCEYFVFWRTVEACPVVRAEGDNC	1226
Bos taurus	LVIYVNGDKCKN-QRFSTRINLECAHTIGSPTFQLNDCEYFVLWRTVEACPVVRAEGDYC	1236
Rhinatrema_bivittatum	IVYLNGAKCTEKOHYSTRIIFHCDRIRGSPVFOEQNGCEVFVWVRTREACPIRRAGETNC	1210
Xenopus_tropicalis	VVMHGDIIDHKERFSTRIIFQCDHNIGSPVFOQDGCCEVFVWLRTPEACPVVRAOQDNC	1205
1210.....1220.....1230.....1240.....1250.....1260	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/IGF2Bps Tue Feb 1 12:23:48 2022

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*****  :*: .*. * : . * * :***. ::          :**** :
Pavo_muticus      QVKDPRYGHVYNLKPLSNKDIKVDSTDGVDYFFRVCGEITEHCKPG-----AHSVSSCQVK 1259
Pavo_cristatus    QVKDPRYGHVYNLKPLSNKDIKVDSTDGVDYFFRVCGEITEHCKPG-----AHSVSSCQVK 1259
Gallus_gallus     QVKDPRYGHVYNLKPLSSKDIKVDSTDEYDYFFRVCGEITEHCRPG-----AHSVSSCQVK 1262
Mus_musculus      QVKDPRHGNLYDLKPLGLNDTIVSVGEYTYTYLRVCGKLSDDVCSAHDG--SKAVSSCQEK 1278
Rattus_norvegicus QVKDPRHGNLYDLKPLALNDTIIISAGEYTYTYFRVCGKLSLDVCSAHDG--SKAVSSCQEK 1276
Heterocephalus_glaber QVKDPRHGTLYDLRPLALSDTIVSVNEYTYTYFRVCGQLSSDVCLTQDQ--SKIVSSCQKK 1283
Homo_sapiens      EVKDPRHGNLYDLKPLGLNDTIVSAGEYTYTYFRVCGKLSDDVCPTSDK--SKVVSSCQEK 1285
Pan_troglodytes   EVKDPRHGNLYDLKPLGLNDTIVSAGEYTYTYFRVCGKLSDDVCPTSDK--SKVVSSCQEK 1285
Macaca_mulatta    EVKDPRHGNLYDLKPLGLNDTIVSAGEYTYTYFRVCGKLSDDVCPTSDK--SRVVSSCQEK 1285
Callithrix_jacchus EVKDPRHGSYLDLKPLGLNDTIVPAGEYTYTYFRVCGKLSDDVCLTSDK--TKVVSSCQEK 1284
Canis_lupus_familiaris EVKDPRHGNLYDLKPLAVNDTIVSAGEYTYTYFRVCGKLSDDVCPTDDK--SKVISSCQEK 1289
Felis_catus       EVKDPRHGNLYDLKPLAVNDTVVSAGEYTYTYFRVCGKLSDDVCSTDDK--SKVISSCQEK 1289
Equus_caballus    EVKDPRHGHFLFDLKPLALNDTIVSAGEYTYTYFRVCGRLSSDVCSITGDR--SKVISSCQEK 1284
Bos_taurus        EVRDPRHGNLYNLPLGLNDTVVRAGEYTYTYFRVCGELTSGVCPTSDK--SKVISSCQEK 1294
Rhinatrema_bivittatum QVQDPRYGYSYNLTALGGQDITVTTDKYEYHFRVCGGISDSSCQPKAKPSDVVSSCQVQ 1270
Xenopus_tropicalis QVRDPKYGYLYNLKPLGEKDTVIKDNDYVYTFRVCDKISSPVCSSAQN-----VSSCQVK 1260
.....1270.....1280.....1290.....1300.....1310.....1320

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:**** . :: :*** : :*::*: **::*:***.: * **
Pavo_muticus      KMDNTFRKVAGLLTEKLTFKNGLIMINYTSGEKCHKIYERSTAILFYCD----- 1308
Pavo_cristatus    KMDNTFRKVAGLLTEKLTFKNGLIMINYTSGEKCHKIYERSTAILFYCD----- 1308
Gallus_gallus     KTDSTFRKVAGLLTEKLTFKNGLIMINYTSGEKCHKIYERSTAILFYCD----- 1311
Mus_musculus      KGPQGFQKVAGLLSQKLTFENGLLKMNYTGGDTCHKVYQRSTTIIFYCD----- 1327
Rattus_norvegicus KGPQGFQKVAGLLNOKLTFENGLLKMNYSGGDTCHKVYQRSTTIIFYCD----- 1325
Heterocephalus_glaber LGPPKFEKVAGLLTQKLTYENGLLKMNYTGGDTCHQVYQRSTTIIFYCD----- 1332
Homo_sapiens      REPQGFHKVAGLLTQKLTYENGLLKMNYTGGDTCHKVYQRSTAIFFYCD----- 1334
Pan_troglodytes   REPQGFHKVAGLLTQKLTYENGLLKMNYTGGDTCHKVYQRSTTIIFYCD----- 1334
Macaca_mulatta    REPQGFHKVAGLLTQKLTYENGLLKMNYTGGDTCHKVYQRSTAIFFYCD----- 1334
Callithrix_jacchus RDPLGFHKVAGLLTQKLTYENGLLKMNYTGGDTCHKVYQRSTAIFFYCD----- 1333
Canis_lupus_familiaris RGPLGFHKVAGLLTQKLTYENGLLKMNYTGGDTCHKVYQRSTTIIFYCD----- 1338
Felis_catus       RGALGFHKVAGLLTQKLTYENGLLKMNYTGGDTCHKVYQRSTTIIFYCD----- 1338
Equus_caballus    RGPQGFQKVAGLLTQKVTYENGLLKMNYTGGDTCHKVYQRSTTIIFYSCD----- 1333
Bos_taurus        RGPQGFQKVAGLFNQKLYENGLLKMNYTGGDTCHKVYQRSTTIIFYCD----- 1343
Rhinatrema_bivittatum IADRTVTRIAGLYTTNITFENGQIMINYTGGETCHKIYQRSTAVILFYCDPSAKAEDVLYS 1330
Xenopus_tropicalis G---TTSKVAGLANOKLIFENGLIMINYTDGERCHNIYERSTVILFYCD----- 1306
.....1330.....1340.....1350.....1360.....1370.....1380

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:      * * .** :*:*. * * **.* . :** :: * : :*.*: :
Pavo_muticus      -----KTTSEPVFLKETPDCTYMFEWHTQYACPPVKSTECSYKDEGNFYDFSSSLTRH 1361
Pavo_cristatus    -----KTTSEPVFLKETPDCTYMFEWHTQYACPPVKSTECSYKDEGNFYDFSSSLTRH 1361
Gallus_gallus     -----KTTSEPVFLKETPDCTYMFEWHTQYACPPVKSTECSYRDEGNFYDFSSSLTRH 1364
Mus_musculus      -----RTTQKPVFLKETSDCSYMFEWRTQYACPPFNVTESVQDAAGNSIDLSSLSRY 1380
Rattus_norvegicus -----RTTQKPVFLKETLDCSYLFEWRTQYACPPFNVTESIQDEAGNSIDLSSLSRY 1378
Heterocephalus_glaber -----RSTQKPVFLRETSDCSYLFEWRTQYACPPFNVTESVQDAAGNSIDLSSLSRY 1385
Homo_sapiens      -----RGTQRPVFLKETSDCSYLFEWRTQYACPPFDLTECSFKDGAGNSFDLSSLSRY 1387
Pan_troglodytes   -----RGTQRPVFLKETSDCSYLFEWRTQYACPPFDLTECSFKDGAGNSFDLSSLSRY 1387
Macaca_mulatta    -----RSTQKPVFLKETSDCSYLFEWRTQYACPPFDVTECSFKDGTGNSFDLSSLSRY 1387
Callithrix_jacchus -----RSTQKPVFLKETSDCSYLFEWRTQYACPPFDLTECSFKDGAGNSFDLSSLSRY 1386
Canis_lupus_familiaris -----RSTQRPVFLRETSDCSYLFEWRTQYACAPFDLTECSFKDEAGNTFDLSSLSRY 1391
Felis_catus       -----RSTQRPVFLRETSDCSYVFEWRTQYACAPFDVTECSFKDGAGNTFDLSSLSRY 1391
Equus_caballus    -----RSTQNPVFLKETSDCSYLFEWRTQYACPPFDLTECSFKDEAGNTIDLSSLSRY 1386
Bos_taurus        -----RSTQAPVFLQETSDCSYLFEWRTQYACPPYDLTECSFKNEAGETFDLSSLSRY 1396
Rhinatrema_bivittatum ANLASVNRTLMOVPVFREETADCTYLFEWHTPYACPPFKSVQCSLKDSDGNSYDLSPLSQY 1390
Xenopus_tropicalis -----RSEQQPYFLRETAECSSYMFWRWPTPLACPPFKLIDCSYKDTNGNSYDLSPLSLH 1359
.....1390.....1400.....1410.....1420.....1430.....1440

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	*****	: : :***:.*	.	*	*..*	* :***	..*:	
Pavo_muticus	RENWEAIDISTSTKKYYINVCKPLVPYGAAHSCPPDAAASLVEGIKCISLGEVAEGPRWE	1421						
Pavo_cristatus	RENWEAIDISTSTKKYYINVCKPLVPYGAAHSCPPDAAASLVEGIKCISLGEVAEGPRWE	1421						
Gallus_gallus	RENWEAIDISTSTKKYYINVCKPLVPYGAAHSCPPDAAASLVEGIKCVSLGEVAEGPRWE	1424						
Mus_musculus	SDNWEAVTRTGATEHYLINVCKSLSPHAGTEPCPEAAVCLLNGSKPVLGKVRDGPQWT	1440						
Rattus_norvegicus	SDNWEAVTRTGATEHYLINVCKSLSPQAGTDCPPPEAAVCLLDGSKPVLGKVRDGPQWT	1438						
Heterocephalus_glaber	SDNWEAVTRTGATEHYLINVCKSLAPQAGSEVCPPEASAVCLLDGSKPMLGRVGDGPHRI	1445						
Homo_sapiens	SDNWEAITGTGDPEHYLINVCKSLAPQAGTEPCPEAAACLGGSKPVLGKVRDGPQWR	1447						
Pan_troglodytes	SDNWEAITGTGDPEHYLINVCKSLAPQAGTEPCPEAAACLGGSKPVLGKVRDGPQWR	1447						
Macaca_mulatta	SENWEAITATGDPEHYLINVCKSLAPHGGTEPCPEAAACLGGSKPVLGKVRDGPQWR	1447						
Callithrix_jacchus	SDNWEAITGTGAPEHYLINVCKSLSPQAGTEPCPEAAACLGGSKPLNLGKVRDGPQWR	1446						
Canis_lupus_familiaris	SDNWEAVTSTGATEHYLINVCKSLSPQAGSEPCPEAAACLGGSKPVLGKVRDGPQWR	1451						
Felis_catus	SDNWEAVTRTGATEHYLINVCKSLSPQAGSEPCPEAAVCLLGGSKPVLGKVRDGPQWK	1451						
Equus_caballus	SDNWEAVTRTGATEHYLINVCKSLSPQAGSEPCPEAAVCLLDGSKPVLGKVRDGPQWK	1446						
Bos_taurus	SDNWEAVTGTGSTTEHYLINVCKSLSPQAGSDPCPEAAVCLLDGPKPVLGKVRDGPQWS	1456						
Rhinatrema_bivittatum	KENWEAVTRSGSVQKFYINVCKSLVPEGTGLASCPSGAAACLMDGSKPVLGEPSSGPWE	1450						
Xenopus_tropicalis	SENWEAVTP-GTTQKYQLNVCKSLVHEKGPASCQEGVAACLREGTKAINLGQLASSPRWE	1418						
1450.....1460.....1470.....1480.....1490.....1500							

	. * * : * : *** : . : * : * : . . : . : * : * : : . : * : * : * * : ** .	
Pavo_muticus	NGISTLKYINGELCPDKMRRTTILRLKDESRIESKPELKMAIEDCEYSFLWFTAAACP	1481
Pavo_cristatus	NGISTLKYINGELCPDKMRRTTILRLKDESRIESKPELKMAIEDCEYSFLWFTAAACP	1481
Gallus_gallus	NGISTLKYINGELCPDKIRRKTTILRLKDESKIESKPELIMAIEDCEYSFLWFTAAACP	1484
Mus_musculus	DGVTVLQYVDGDLCPDKIRRRSTIIRFTCSDNQVNSRPLFISAVQDCEYTFSWPTSAACP	1500
Rattus_norvegicus	AGVTVLKYVDGDLCPDKIRRRSTIIRFTCSDSQVNSRPLFISAVQDCEYTFSWPTPAACP	1498
Heterocephalus_glaber	DGVTVLTVVDGDLCPDKVRRKSTTIRFSCSESQVNSRPLFISAVEDCEYTFSWPTAAACP	1505
Homo_sapiens	DGIIIVLKYVDGDLCPDGIRKKSTTIRFTCSSESQVNSRPMFISAVEDCEYTFAWPTATAACP	1507
Pan_troglodytes	DGIIIVLNKYVDGDLCPDGIRKKSTTIRFTCSSESQVNSRPMFISAVEDCEYTFAWPTATAACP	1507
Macaca_mulatta	DGVIVLKYVDGDLCPDGIRKKSTTIRFTCNENQVNSRPMFISAVEDCEYTFAWPTATAACP	1507
Callithrix_jacchus	DGIIIVLKYVDGDLCPDGIRKKSTTIRLTCSEAQVNSRPMFISAVEDCEYTFAWPTATAACP	1506
Canis_lupus_familiaris	EGTIIVLKYVDGDLCPDQIRKKSTTIRFTCSSESQVNSRPMFISAVEDCEYTFSWPTAAACP	1511
Felis_catus	DGSTILKYVDGDLCPDQIRKKSTTIRFTCSSESQVNSRPMFISAVEDCEYTFSWPTAAACP	1511
Equus_caballus	EGATVLKYVDGDMCPDQIRRKSTTIRFTCSSENQVNSRPMFISAVEECEYTFAWPTVAACP	1506
Bos_taurus	QGLTILKYVDGDLCPDQIRKKSTTIRFTCSSEHVNSRPMFISAVEDCEYTFSWPTAAACA	1516
Rhinatrema_bivittatum	NDLSVLKYTINGDPCPDNIRRKMTIIRFKCDENRVDSPKELANVIEDCEYTFVWFSAACP	1510
Xenopus_tropicalis	NGISILEYKNGDTCPDGIRNKTTIREFKDKTQIHSRPFISALQDCDYQFIWRITATAACP	1478
1510.....1520.....1530.....1540.....1550.....1560	

	:	*	*	:	*	*****	:	*	.	:	..	:	*	*	..																																											
Pavo_muticus	L	K	S	N	M	Q	N	D	C	R	V	T	N	P	A	T	G	H	L	F	D	L	T	S	L	K	R	E	S	G	Y	T	I	T	D	S	H	-	N	R	K	I	E	L	N	V	C	A	E	A	K	S	S	C	A	N	G	A	A	V
Pavo_cristatus	L	K	S	N	M	Q	N	D	C	R	V	T	N	P	A	T	G	H	L	F	D	L	T	S	L	K	R	E	S	G	Y	T	I	T	D	S	H	-	N	R	K	I	E	L	N	V	C	A	E	A	K	S	S	C	A	N	G	A	A	V
Gallus_gallus	L	K	S	N	V	Q	N	D	C	R	V	M	N	P	A	T	G	H	L	F	D	L	T	S	L	K	R	E	S	G	Y	T	I	T	D	S	H	-	N	R	K	I	E	L	N	V	C	A	E	A	K	S	S	C	A	N	G	A	A	V
Mus_musculus	V	K	S	N	I	H	D	D	C	Q	V	T	N	P	S	T	G	H	L	F	D	L	S	S	L	S	G	R	A	G	I	N	A	S	Y	S	E	-	K	G	L	V	F	M	S	I	C	E	E	N	-	C	P	G	V	G	A			
Rattus_norvegicus	V	K	S	N	I	H	D	D	C	Q	V	T	N	P	S	T	G	H	L	F	D	L	S	S	L	S	G	K	A	G	I	T	A	S	Y	S	E	-	K	G	M	V	F	M	S	I	C	E	E	N	-	C	S	P	G	V	G	A		
Heterocephalus_glaber	V	Q	R	G	V	H	D	D	C	Q	V	T	N	P	S	T	G	H	L	F	D	L	S	S	L	S	G	R	A	G	F	T	A	A	Y	S	E	-	N	G	L	V	Y	M	S	I	C	G	E	N	-	C	A	P	G	M	G	A		
Homo_sapiens	M	K	S	N	E	H	D	D	C	Q	V	T	N	P	S	T	G	H	L	F	D	L	S	S	L	S	G	R	A	G	F	T	A	A	Y	S	E	-	K	G	L	V	Y	M	S	I	C	G	E	N	-	C	P	P	G	V	G	A		
Pan_troglodytes	M	K	S	N	E	H	D	D	C	Q	V	T	N	P	S	T	G	H	L	F	D	L	S	S	L	S	G	R	A	G	F	T	A	A	Y	S	E	-	K	G	L	V	Y	M	S	I	C	G	E	N	-	C	P	P	G	V	G	A		
Macaca_mulatta	V	Q	N	E	H	D	D	C	Q	V	T	N	P	S	T	G	H	L	F	D	L	S	S	L	S	G	R	A	G	F	T	A	A	Y	S	E	-	K	G	L	V	Y	M	S	I	C	G	E	N	-	C	P	P	G	V	G	A			
Callithrix_jacchus	V	K	S	N	I	H	D	D	C	Q	V	T	N	P	S	T	G	H	L	F	D	L	S	S	L	S	G	R	A	G	F	T	A	A	Y	S	E	-	K	G	L	V	Y	M	S	I	C	G	E	N	-	C	P	P	G	V	G	A		
Canis_lupus_familiaris	V	R	S	N	V	H	D	N	C	Q	V	T	N	P	A	T	G	H	L	F	D	L	S	S	L	S	G	R	A	G	H	T	A	A	Y	S	E	-	K	G	L	V	Y	I	S	I	C	E	D	N	-	C	S	P	G	V	G	A		
Felis_catus	V	R	S	N	V	H	D	N	C	Q	V	T	N	P	A	T	G	H	L	F	D	L	S	S	L	S	G	K	S	G	Y	T	A	A	Y	S	E	-	K	G	L	V	Y	I	S	V	C	G	E	N	-	C	S	P	G	V	G	A		
Equus_caballus	V	R	E	N	V	H	D	N	C	Q	V	T	N	P	A	T	G	H	L	F	D	L	T	S	L	S	G	R	A	G	F	T	A	A	Y	S	E	-	K																					

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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* . . : . . : * * * * : : * * . : : * : * * *
Pavo_muticus      CITDGP KTLNAGKLSKTLTYEDQVLKLVYENGDP CPTDLKTKHKSYFSFVCKSDAGDDSQ 1600
Pavo_cristatus    CITDGP KTLNAGKLSKTLTYEDQVLKLVYENGDP CPTDLKTKHKSYFSFVCKSDAGDDSQ 1600
Gallus_gallus     CITDGP KTLNAGKLSKTLTYEDQVLKLVYENGDP CPTDLKTKHKSYFSFVCKSDAGDDSQ 1603
Mus_musculus      CFG--QTRISVGKASKRLSYKDQVLQLVYENGSPCPSKSLDLRYKSVISFVCRPEAGPTNR 1616
Rattus_norvegicus CFG--QTRISVGKASKRLSYKDQVLQLVYENGSPCPSKSLDLRYKSVISFVCRPEAGPTNR 1614
Heterocephalus_glaber CFG--QTRISVGKASKRLSYVDQVLQLVYEDGFPCPSKSLDLRYKSVISFVCRPEAGPTNR 1621
Homo_sapiens      CFG--QTRISVGKANKRLRYVDQVLQLVYKDGSPCPSKSLDLRYKSVISFVCRPEARPTNR 1623
Pan_troglodytes   CFG--QTRISVGKANKRLRYVDQVLQLVYKDGSPCPSKSLDLRYKSVISFVCRPEARPTNR 1623
Macaca_mulatta    CFG--QTRISVGKASKRLRYVDQVLQLVYKDGSPCPSKSLDLRYKSVISFVCRPEARPTNR 1623
Callithrix_jacchus CFG--QTRISVGKASKRLSYVDQVLQLVYKDGSPCPSKSLDLRYKSVISFVCRPEARPTNR 1622
Canis_lupus_familiaris CFG--QTRISVGKANKRLTYVDQVLQLVYEDGSPCPSKSLTYKSVISFVCRPEARPTNR 1627
Felis_catus       CFG--QTRISVGKANKRLTYVDQVLQLVYEDGSPCPSKSLTYKSVISFVCRPEARPTNR 1627
Equus_caballus    CFG--QTRISVGKANKRLTYVDQVLQLVYEDGSPCPSKSLTYKSVISFVCRPEARPTNR 1622
Bos_taurus        CFG--QTRISVGKASKRLTYVDQVLQLVYEGGSPCPSKSLTYKSVISFVCRPEARPTNR 1632
Rhinatrema_bivittatum CVTEGOKHINAGKFQKQITYTDQVLKLIYEEGDPCEAGSPPEYKSFVCSHAGAGSR 1630
Xenopus_tropicalis CISEGGKIFSAAGRAQTQLTYMDQVRLVYEDGDPCTIN-GRKHSVFSFVCGMGSDTASN 1595
.....1630.....1640.....1650.....1660.....1670.....1680

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* : * * * . : : * : * : . * * * : : * : * : * : * : *
Pavo_muticus      PVFLSFDEQTCTSYFSWHTSLACEEEVSCSVLNGSSVIDLSPLIHRTGYEAFVDG--DP 1658
Pavo_cristatus    PVFLSFDEQTCTSYFSWHTSLACEEEVSCSVLNGSSVIDLSPLIHRTGYEAFVDG--DP 1658
Gallus_gallus     PVFLSFDEQTCTSYFSWHTSLACEEEVSCSVLNGSSVIDLSPLIHRTGYEAFVDG--DQ 1661
Mus_musculus      PMLISLDKQCTTLFFSWHTPLACEQATECTVRNGSSIIDLSPLIHRTGGYEAYDESEDDT 1676
Rattus_norvegicus PMLISLDKQCTTLFFSWHTPLACEQATECTVRNGSSIIDLSPLIHRTGGYEAYDESEDDT 1674
Heterocephalus_glaber PVLISLDKQCTTLFFSWHTPLACEQATECTVRNGSSIIDLSPLIHRTGGYEAYDESEVDT 1681
Homo_sapiens      PMLISLDKQCTTLFFSWHTPLACEQATECSVRNGSSIIDLSPLIHRTGGYEAYDESEDDA 1683
Pan_troglodytes   PMLISLDKQCTTLFFSWHTPLACEQATECSVRNGSSIIDLSPLIHRTGGYEAYDESEDDA 1683
Macaca_mulatta    PMLISLDKQCTTLFFSWHTPLACEQATECSVRNGSSIIDLSPLIHRTGGYEAYDESEDDA 1683
Callithrix_jacchus PVLISLDKQCTTLFFSWHTPLACEQATECSVRNGSSIIDLSPLIHRTGGYEAYDESEDDA 1682
Canis_lupus_familiaris PMLISLDKQCTTLFFSWHTPLACEQVTECSVRNGSSIIDLSPLIHRTGGYEAYDESEDDT 1687
Felis_catus       PMLISLDKQCTTLFFSWHTPLACEQVTECSVRNGSSIIDLSPLIHRTGGYEAYDESEDDT 1687
Equus_caballus    PMLISLDKQCTTLFFSWHTPLACEQVTECSVRNGSSIIDLSPLIHRTGGYEAYDESEDDT 1682
Bos_taurus        PMLISLDKRTCTTLFFSWHTPLACEQTECSVRNGSSIDLSPLIHRTGGYEAYDESEDDG 1692
Rhinatrema_bivittatum PVLTSFDEKMCVFYFSWHTPLVCEQVQKCSVONGSSVIDLNPLIQRTGYEADDDDD--VD 1688
Xenopus_tropicalis PTLVSYDGPCTCTWDFAWHTPVICEEKPKCFVNGTSLIDLTPLIKNTGNYKAVDGT---T 1652
.....1690.....1700.....1710.....1720.....1730.....1740

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.. *****:**** .: **. ::* * . . * : * : * : *
Pavo_muticus      SDVSPDFYINICEPLNPIKDVNCPGAAVCMVPVNESPIDIGRVTEPPKLNPAVNEIYIT 1718
Pavo_cristatus    SDVSPDFYINICEPLNPIKDVNCPGAAVCMVPVNESPIDIGRVTEPPKLNPAVNEIYIT 1718
Gallus_gallus     SDVSPDFYINICEPLNPIKDVNCPGAAVCMVPVNESPIDIGRVTEPPKLNPAVNEIYIT 1721
Mus_musculus      SDTTPDFYINICQPLNPMHGVPCPAGASVCKVPVDGPPIDIGRVTEPPKLNPAVNEIYIT 1736
Rattus_norvegicus SDTTPDFYINICQPLNPMHGVPCPAGASVCKVPVDGPPIDIGRVTEPPKLNPAVNEIYIT 1734
Heterocephalus_glaber SDTNPDFYINICQPLNPMHGVPCPAGAAVCKVPVNGPPIDIGRVTEPPKLNPAVNEIYIT 1741
Homo_sapiens      SDTNPDFYINICQPLNPMHGVPCPAGAAVCKVPIDGPPIDIGRVAGPPILNPIANEIYIT 1743
Pan_troglodytes   SDTNPDFYINICQPLNPMHGVPCPAGAAVCKVPIDGPPIDIGRVAGPPILNPIANEIYIT 1743
Macaca_mulatta    SDTNPDFYINICQPLNPMHGVPCPAGAAVCKVPIDGPPIDIGRVAGPPILNPIANEIYIT 1743
Callithrix_jacchus SDTNPDFYINICQPLNPMHGVPCPAGAAVCKVPIDGPPIDIGRVAGPPILNPIANEIYIT 1742
Canis_lupus_familiaris SDTGPDFYINICQPLNPMHGVPCPAGAAVCKVPVDGPPIDIGRVTEPPKLNPAVNEIYIT 1747
Felis_catus       SDTGPDFYINICQPLNPMHGVPCPAGAAVCKVPVDGAPIDIGRVTEPPKLNPAVNEIYIT 1747
Equus_caballus    SDTNPDFYINICQPLNPMHGVACPAGAAVCKVPVDGSPIDIGRVTEPPKLNPAVNEIYIT 1742
Bos_taurus        SDTSPDFYINICQPLNPMHGLACPAGTAVCKVPVDGPPIDIGRVAGPPILNPIANEIYIT 1752
Rhinatrema_bivittatum DDDTLDFYINICQPLNPIPDVPCPPRAAVCMIPDNGPPVDIGHVSQPPQINPSIQEVYIT 1748
Xenopus_tropicalis SGNIVDFYINICEPLNPEVDVKCPGAAVCLDPLHGSPPFDIGRARSPPQINPAIDKVMIM 1712
.....1750.....1760.....1770.....1780.....1790.....1800

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Pavo_muticus	YNSTTPCQINNKLNYTSLIVFHCSQGTSLGKPKMIRKLDCSFVFWEWETPVVCPDRVKITLG	1778
Pavo_cristatus	YNSTTPCQINNKLNYTSLIVFHCSQGTSLGKPKMIRKLDCSFVFWEWETPVVCPDRVKITLG	1778
Gallus_gallus	YNSTTPCQINNKLNYTSLIVFHCSQGTSLGKPKMIQKLDCSFVFWEWETPVVCPDRVKITLG	1781
Mus_musculus	FESSTHCLADRYMNYTSLITFHCKRGVSMGTPKLLIRINDCDFVFEWETPIVCPDEVKTIQG	1796
Rattus_norvegicus	FESSTPCLADKYMNYTSLIAFHCKRGISMGTPKLLIRNDCDFVFEWETPIVCPDEVKTIQG	1794
Heterocephalus_glaber	LESSTPCLADSHFNYTSLITFHCKRGVSMGTPKLLIRTSECDVFVFEWQTPVVCPDEVKMEG	1801
Homo_sapiens	FESSTPCLADKHFNNTSLIAFHCKRGVSMGTPKLLIRTSECDVFVFEWETPVVCPDEVVRMDG	1803
Pan_troglodytes	FESSTPCLADKHFNNTSLIAFHCKRGVSMGTPKLLIRTSECDVFVFEWETPVVCPDEVVRMDG	1803
Macaca_mulatta	FESSTPCLADKHFNNTSLIAFHCKRGVSMGTPKLLIRTSECDVFVFEWETPVVCPDEVVRTEG	1803
Callithrix_jacchus	FESSTPCLADKHFNNTSLIAFHCKRGVSMGTPKLLIRTSECDVFVFEWETPIVCPDEVVRTEG	1802
Canis_lupus_familiaris	FESSTPCLADKHFNNTSLIAFHCKRGVSMGAPMLLRTSDCDFVFGWETPLVCPDEVKMDG	1807
Felis_catus	FESSTPCLADKHFNNTSLIAFHCKRGVSMGVPMLLRTSDCDFVFGWETPLVCPDEVVRVDG	1807
Equus_caballus	FESSTPCLADKHFNNTSLIAFHCKRGVSMGTPKLLRTSDCDFVFEWETPLVCPDEVKTEG	1802
Bos_taurus	FESSTPCLADRHFNNTSLITFHCKRGVSMGTPKLLRTSVCDVFVFEWETPLVCPDEVKTDG	1812
Rhinatrema_bivittatum	FDSTTPCPTDKNLNYSSLIIVFHCKNGTDLGKPKMLRKSECSFVFEWNTPVVCPDEVVTISG	1808
Xenopus_tropicalis	MESPTQCATDKQQNYSSVLIIFHCARGTDLGTPQLVEVILCKYIFEWGITSVVCPDDEETAD	1772
1810.....1820.....1830.....1840.....1850.....1860	

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Pavo_muticus	CSVTDEQLHYTFNLTSLSGRSFEVLSSGSRYHVSVCSKAAADVSGKCKDGAVCMTSESG	1838
Pavo_cristatus	CSVTDEQLHYTFNLTSLSGRSFEVLSSGSRYHVSVCSKAAADVSGKCKDGAVCMTSESG	1838
Gallus_gallus	CSVTDEQLHYTFNLTSLSGRSFEVLSSGSRYHVSVCSKAAADVSGKCKDGAVCMTSESG	1841
Mus_musculus	CAVTDEQLLYSFNLTSLSTSTFKVTRDARTYSIGVCT--AAAGLQEGCKDGGVCLLSGNK	1855
Rattus_norvegicus	CAVTDEQLLYSFNLTSLSTSTFKVTRDAHTYSIGVCT--TAADLDQEGCKDGGVCLLSGSK	1853
Heterocephalus_glaber	CALTDDQLLYSFNLTSLSKSTFKVTRDSHTYSVGVCT--AAAGLDQGGCKDGGVCLLSGSK	1860
Homo_sapiens	CTLTDEQLLYSFNLSLSTSTSTFKVTRDSRTYSVGVCT--FAVGPEQGGCKDGGVCLLSGTK	1862
Pan_troglodytes	CTLTDEQLLYSFNLSLSTSTSTFKVTRDSRTYSVGVCT--FAVGPEQGGCKDGGVCLLSGTK	1862
Macaca_mulatta	CALTDEQLLYSFNLSLSTSTSTFKVTRDSRTYSVGVCT--AAAGPEQGGCKDGGVCLLSGTK	1862
Callithrix_jacchus	CALTDEQLLYSFNLSLSTSTSTFKVTDRTYSIGVCT--TAAGPDQGGCKDGGVCLLSGTK	1861
Canis_lupus_familiaris	CSLTDEQLHYSFNLTSLSKSTFKVTRDSRTYSIGVCT--AAAGLDEGGCKDGGVCLLSGSK	1866
Felis_catus	CSLTDEQLHYSFNLSLSKVPFKVTRDSRTYSVGVCT--AAAGPEQGGCKDGGVCLLSGTK	1866
Equus_caballus	CSLTDEQLYYSFNLSLSTSTSTFKVTRDSRTYSVGVCT--AAAGLDEGGCKDGGVCLLSGSK	1861
Bos_taurus	CSLTDEQLYYSFNLSLSTSTSTFKVTRGPHTYSVGVCT--AAAGLDEGGCKDGGVCLLSGSK	1871
Rhinatrema_bivittatum	CSLTDDQLHYTFNLSLSTSGAAYKVS--GPPTYHVGVC--AASNVPOGKCKDGAVCLVSGSS	1866
Xenopus_tropicalis	CTLTDTQLQYTFNLSLSTSGSFKTP--DPKTYVGVCA--AANVPSGKCN--GAVCLVSGSS	1828
1870.....1880.....1890.....1900.....1910.....1920	

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Pavo_muticus	VSSFGSIKEMKLDYSHODETVILQYTGGDRCP	PVTEKGELCVFPFKYKGKS	SYDKCITEEK	1898		
Pavo_cristatus	VSSFGSIKEMKLDYSHODETVILQYTGGDRCP	PVTEKGELCVFPFKYKGKS	SYDKCITEEK	1898		
Gallus_gallus	VSSFGSIKEMKMYSRODETVILQYTGGDRCP	PVTEKGELCVFPFKYKGKS	SYDKCITEEK	1901		
Mus_musculus	GASFGRLASMOLDYRHODEAVILSYVNGDPCPP	ETDDGEP	CVFFFIYKGKS	SYDEC	VLEGR	1915
Rattus_norvegicus	GASFGRLASMOLDYRHODEAVILSYVNGDPCPP	ETDEGEPCVF	PFPIYKGETYDEC	VLEGR	1913	
Heterocephalus_glaber	GVSFGRGLASMOLDYRHODEAVILSYVNGDICP	SETEEGDTCVF	PFILNRKS	SYDDC	VLDGR	1920
Homo_sapiens	GASFGRLQSMKLDYRHODEAVLSYVNGDRCPPE	TDDGVPCVF	PFIFNKG	SYEECI	IESR	1922
Pan_troglodytes	GASFGRLQSMKLDYRHODEAVILSYVNGDRCPPE	TDDGVPCVF	PFIFNKG	SYEECI	IESR	1922
Macaca_mulatta	GASFGRLQSMKLDYRHODEAVLSYVNGDRCPPE	TDEGIPC	VFPFIFNKG	SYEECV	IESR	1922
Callithrix_jacchus	GASFGRLASMKLDYRHODEAVILSYVNGDSCPP	ETDEGVPCVF	PFIFNKG	SYEECI	IESR	1921
Canis_lupus_familiaris	GASFGRLASMRLDYRHODEAVILSYANGDNCPPE	TEAGDPCVF	PFIFNKG	SYEECV	VEGR	1926
Felis_catus	GASFGRLASMRLDYRHODEAVILSYANGDNCPPE	TEEGDPCVF	PFIFNKG	SYDEC	VLEGR	1926
Equus_caballus	GASFGRLASMRLDYRHODEAVILSYANGDNCPPE	TEDGPCVF	PFIFNKG	SYEECV	VESR	1921
Bos_taurus	GASFGRLASMKLDYRHODEAVILSYANGDTCPP	ETEDGEPCVF	PFVFNKG	SYEECV	VESR	1931
Rhinatrema_bivittatum	AFSFGNVKAMKMDYLHODEALILQYGGDPCPP	VTENGQLCV	FPFYNGKYNECT	NDGR	1926	
Xenopus_tropicalis	VVSFGSAKEMKNYLHQEETLVQYGGDLCP-----				1860	
1930.....1940.....1950.....1960.....1970.....1980					

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Pavo_muticus	NRPWCATTVDYQGDGKWGFCVNATARRASTIIFVCDENAGSGSPHLLSDMLGCAVTFEWR	1958					
Pavo_cristatus	NRPWCATTVDYQGDGKWGFCVNATARRASTIIFVCDENAGSGSPHLLSDMLGCAVTFEWR	1958					
Gallus_gallus	NRPWCATTVDYQGDGKWGFCVNATARRASTIIFVCDENAGSGSPRLLSMDMLGCAVTFEWR	1961					
Mus_musculus	AKLWCSTKIANYDRDHEWGFCRQINSYRMSAIIFTCDESEDIGRPQVFSIEDRGCEVTFEWK	1975					
Rattus_norvegicus	AKLWCSTKIANYDRDHEWGFCRPSNSHRMSAIIFTCDESEDIGRPQVFSIEDRGCEVTFEWK	1973					
Heterocephalus_glaber	AKLWCSTKIANYDRDHEWGFCRQNSHRTSTIITFKCDEDEDIGRPQVFSIEVRGCEVAFEWR	1980					
Homo_sapiens	AKLWCSTTADYDRDHEWGFCRHNSYRTSSIIFKCEDEDIGRPQVFSIEVRGCDVTFEWK	1982					
Pan_troglodytes	AKLWCSTTADYDRDHEWGFCRHNSYRTSSIIFKCEDEDIGRPQVFSIEVRGCDVTFEWK	1982					
Macaca_mulatta	AKLWCSTTADYDRDHEWGFCRHNSHRTSSIIFKCEDEDIGRPQVFSIEVRGCDVTFEWK	1982					
Callithrix_jacchus	TKLWCSTTADYDRDHEWGFCRHNSHRMSTIIFKCEDEDIGRPQVFSIEVRGCEVTFEWK	1981					
Canis_lupus_familiaris	ARLWCSTTANYDRDHEWGFCRHNSHRMSSIIFKCEDEDADIGRPQVFSIEVRGCEVTFEWK	1986					
Felis_catus	ARLWCSTTADYDRDHEWGFCRHNSHRTSAIIIFKCEDEDADIGRPQVFSIEVRGCEVTFEWK	1986					
Equus_caballus	AKLWCSTTANYDRDHEWGFCRHNSHRTSTIIFKCEDEDAGIRPQVFTIEVRGCEVTFEWK	1981					
Bos_taurus	ARLWCATTANYDRDHEWGFCCKHSTSHRTSVIIFKCEDEDADVGRPQVFSIEVRGCEVTFEWK	1991					
Rhinatrema_bivittatum	NOPWCATTGNITGDRNWGVCCKSGKRESTIIFKCEDESAGNGKPKLLSETLGCATFEWN	1986					
Xenopus_tropicalis	-----DKSQGESTILFKCDEQAGINPVLFSETRGCSATFEWK	1898					
1990.....2000.....2010.....2020.....2030.....2040						

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Pavo_muticus	TQAVCPPKKMECKFVQKHRTYDLRMLSSLTGSWVFYHSGNSYYLNLQORVYEGPTGCPER	2018
Pavo_cristatus	TQAVCPPKKMECKFVQKHRTYDLRMLSSLTGSWVFYHSGNSYYLNLQORVYEGPTGCPER	2018
Gallus_gallus	TQAVCPPKKMECKFVQKHRTYDLRILSSLTGSWVFYHNGNSYYLNLQORVYEGPTGCPER	2021
Mus_musculus	TKVVCPPKKMECKFVQKHKTYDLRLLSSLTGSWDFVHEGNSYFINLQORVYKGPLDCSER	2035
Rattus_norvegicus	TKVVCPPKKMECKFVQKHKTYDLRLLSSLTGSWDFVHEGNSYFINLQORVYKGPLDCSER	2033
Heterocephalus_glaber	TKVVCPPKKMECKFIQNHKTYDLRLLSSLTGSWSFVHEGASYFINLQRIYKGPLDCSER	2040
Homo_sapiens	TKVVCPPKKLECKFVQKHKTYDLRLLSSLTGSWSLVHNGVSYIINLCQKIYKGPLGCSE	2042
Pan_troglodytes	TKVVCPPKKLECKFVQKHKTYDLRLLSSLTGSWSLVHDGVSYYIINLCQKIYKGPLGCSE	2042
Macaca_mulatta	TKVVCPPKKMECKFIQKHKTYDLRLLSSLTGSWSLVHDGVSYYIINLCQRIYKGPLGCSE	2042
Callithrix_jacchus	TKVVCPPKKMECKFIQKHKTYDLRLLSSLTGSWSLVHDGVSYYIINLCQKIYKGPLGCSE	2041
Canis_lupus_familiaris	TKVVCPPKKMECKFIQKHKTYDLRLLSSLTGSWFFVHEGVSYIINLCQKIYKGPLDCSDR	2046
Felis_catus	TKVVCPPKKMECKFIQKHKTYDLRLLSSLTGSWFFVHEGVSYIINLCQKIYKGPLDCSDR	2046
Equus_caballus	TKVVCPPKKMECKFIQKHKTYDLRLLSSLTGSWLFVHEGASYIINLCQKIYKGPLDCSDR	2041
Bos_taurus	TKVVCPPKKMECKFVQKHRTYDLRLLSSLTGSWSFVHNGASYIINLCQKIYKGPQDCSER	2051
Rhinatrema_bivittatum	TDVICPPKMMACKFTQNHKTYDLRPLSSLTASWKLVHDDSLYYLNLQGVFEGPTGCPKS	2046
Xenopus_tropicalis	TKLVCLPRKLDKLVYHKTYDLRMLSSMTGSWNFVHEGSSYYIINLCQSVHQPPPGCSDS	1958
2050.....2060.....2070.....2080.....2090.....2100	

	ASICKRKSNNGDVEVLGLVHTQKLNVTGDRVYISYSGGQECRKNKKIMTIIELRCAKTVGM	2078
Pavo_muticus	ASICKRKSNNGDVEVLGLVHTQKLNVTGDRVYISYSGGQECRKNKKIMTIIELRCAKTVGM	2078
Pavo_cristatus	ASICKRKSNNGDVEVLGLVHTQKLNVTGDRVYISYSGGQECRKNKKIMTIIELRCAKTVGM	2081
Gallus_gallus	ASICKKSATGQVQVLGLVHTQKLEVIDETVLVITYSKGYPCGGNKTAASSVIELTCAKTVGR	2095
Mus_musculus	ASICKKSATGQVQVLGLVHTQKLEVIDETVLVITYSKGYPCGGNKTAASSVIELTCAKTVGR	2093
Rattus_norvegicus	ASICKKSASGQVQVLGLVHTQKLDVLDLDRVIVTYSKGYPCGENKTAASSVIELTCAKTVGR	2100
Heterocephalus_glaber	ASICRRITIGDVQVLGLVHTQKLGVIQDKVVVTYSKGYPCGGNKTAASSVIELTCTTKTVGR	2102
Homo_sapiens	ASICRRITAGDVQVLGLVHTQKLGVTGDKVVVTYSKGYPCGGNKTAASSVIELTCTTKTVGR	2102
Pan_troglodytes	ASICRRSTIGDVQVLGLVHTQKLDVIGDKVVVTYSRGYPCGGNKTAASSVIELTCTTKTVGR	2102
Macaca_mulatta	ASICRRSTIGDVQVLGLVHTQKLRVTGDKVVVTYSKGYPCGGNKTAASSVIELTCTTKTVGR	2101
Callithrix_jacchus	ASICKKSASGVVQALGLVHTQKLDVLDLKVIVTYSKGYQCGENKTASAVIELTCAKTVGR	2106
Canis_lupus_familiaris	ASICKKSASGVVQVLGLVHTQKLDVIGDKVIVTYSKGYQCGENKTASAVIELTCAKTVGR	2106
Felis_catus	ASVCKKSASGEVQVLGLVHTQRLDVIDDRVIVTYSKGHRCGENKTASAVIELTCAKTVGR	2101
Equus_caballus	ASVCKKSTSGEVQVLGLVHTQKLDVDDRIVIVTYSKGHYCGDNKTASAVIELTCAKTVGR	2111
Bos_taurus	ASICRKTKSGNVQVLGLVHTQKMLTGDITIVNYSNGELCGKNGKASTVIELQCAKTVFGK	2106
Rhinatrema_bivittatum	TSVCIKSKSGNVQVLGLVHTQKMLTGDITIVNYSNGELCGKNGKASTVIELQCAKTVFGK	2106
Xenopus_tropicalis	TSVCIKSKSGNVQVLGLVHTQKMLTGDITIVNYSNGELCGKNGKASTVIELQCAKTVFGK	2106

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PMLQRIDEENCAYYVIWDTRAACAVKPOEVEVVNGTVINPATGKNFSLGDVYNKLYMASG
PMLQRIDEENCAYYVIWDTRAACAVKPOEVEVVNGTVINPATGKNFSLGDVYNKLYMASG
PMLQRFDEENCAYFIIWDTRAACAVKPOEVEVVNGTVINPATGKNFSLGDVYNKLYMASG
PAFKRFDVSCTYYFYWYSRAACAVRPOEVTMVNGTLTNPVTGKSFSLGEIYFKLFSASG
PAFKRFDIDSCYYFYWYSRAACAVRPOEVMVNGTLTNPVTGKSFSLGEIYFKLFSASG
PSFKRFDIDSCYYFHWDSRAACAVRPOEVQMVNGTLTNPVNGKSFSLGDIYFKLFSASG
PAFKRFDIDSCYYFSWDSRAACAVKPOEVQMVNGTITNPINGKSFSLGDIYFKLFRASG
PAFKRFDIDSCYYFSWDSRAACAVKPOEVQMVNGTITNPINGKSFSLGDIYFKLFRASG
PAFKRFDIDSCYYFSWDSRAACAVKPOEVQMVNGTITNPINGKSFSLGDIYFKLFRASG
PAFKRFDIDSCYYFSWDSRAACAVKPOEVQMVNGTITNPINGKSFSLGDIYFKLFRASG
PSFKRFDIDSCYYFSWDSRAACAVKPOEVQMVNGTITNPINGKSFSLGDIYFKLFSASG
PSFKRFDIDSCYYFSWDSRAACAVKPOEVRMVNGTITNPRNGKSFSLGDIYFKLFSASG
PSFKGFDIDSCYFSFRWDSRAACAVKPOEVQVVNGTITNPVNGKSFSLGDIYFKLFSASG
PSFTRFDVDSCTYHFSWDSRAACAVKPOEVQMVNGTITNPANGRSFSLGDIYFKRFSASG
PILQSISEDGCEYRIAWATRAACVVKPOVPEVMVNGMILNTRNGKNFTLGDYFKLYNASG
PTLNRYDAKLCEYHFIWNTRAACGSIPKPAEMKNG-ILSLDDGVNVNLTDIYFKSYNATG

.....2170.....2180.....2190.....2200.....2210.....2220

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DIRTNG-DQVVEIQLSGITNSFPECSEANICQVKTSERRF-RRIGWAKKAKYYVEDDD
DIRTNG-DQVVEIQLSGITNSFPECSEANICQVKTSERRF-RRIGWAKKAKYYVEDDD
DIRTNG-DQVVEIQLSGITNSFPECSEANICQVKTSERRF-RKIGWAKKAKYYVEDDD
DMRTNG-DNYLYEIQLSSITSSSYNACAGANICQVKPNDQHFSRKVGTSDMTKYYVQDGD
DMRSNG-DNYLYEIQLSSISSSNPACSGANICQVKPNDQHFSRKVGTSDMTKYYVQDGD
DMRTNG-DSYLYEIQLSSITSSSNPACFGANICQMKLNGEHFIRKVGTSDRTKYYIQDGD
DMRTNG-DNYLYEIQLSSITSSRNPAACSGANICQVKPNDQHFSRKVGTSDKTKYYLQDGD
DMRTNG-DNYLYEIQLSSITSSRNPAACSGANICQVKPNDQHFSRKVGTSDKTKYYLQDGD
DMRTNG-DNYLYEIQLSSITSSRNPAACSGANICQVKPDDQHFSRKVGTSDKTKYYLQDGD
DMRTNG-DNYLYEIQLSSITSSRNPAACSGANICQVKPNDQHFSRKVGTSDKTKYYLQDGD
DMRTNG-DKYLYEIQLSSITSSRNPAACSGANICQVKPNDQHFSRKVGTSDKTKYYIQDGD
DMRTNG-DKYLYEIQLSSITSSKNPAACSGANICQVKPNDQHFSRKVGTSDKTKYYVQDGD
DMRTNG-DKYLYEIQLSSITSSANPAACSGANICQVKPNDQHFSRKVGTSDKTKYYVQDGD
DVRTNG-DRYIYEIQLSSITGSSSPACSGASICORKANDQHFSRKVGTSNQTRYVQDGD
DLRTNG-DQVVEIQLSGTSDSAIKACRGANVCQVQTN-RNFYRQVGSSSAKYFIQDNG
DIRSNGKDSVVEIQLSGKADSRYECKDASVCQIKLN-GDFKRPVGSVRNVKYYINDDD
.....2230.....2240.....2250.....2260.....2270.....2280

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LDVIFSSDSRCGKDKSKF-VSSSIFFHCSPHVNEGIPEFLHETADCQYLF TWYTSAVCPL
LDVIFSSDSRCGKDKSKF-VSSSIFFHCSPHVNEGIPEFLHETADCQYLF TWYTSAVCPL
LDVIFSSDSRCGKDKSKF-VSSSIFFHCSPHVQEGEPIFLHETADCQYLF TWYTSAVCPL
LDVVFSSSSKCGKDKTKS-VSSTIFFHCDPLVKDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFSSSSKCGKDKTKS-VSSTIFFHCDPLLVKDGVEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVKEGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVEDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVEDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVEDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVKDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVKDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVKDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVKDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFASSSSKCGKDKTKS-VSSTIFFHCDPLVKDGIPEFSHETADCQYLF SWYTSAVCPL
LDVVFSSSSKCGKDKSKSNVSSTIVFHCNALAGEPIEFLHETLDCQYLF SWYTSAVCPL
LDAVFTSDSQCGKDKSKN-ATATILFYCSQIVGEGRPEFFHETDCQYLF TWYTSAVCPL
          2290          2300          2310          2320          2330          2340

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Pavo_muticus      ISTVAPGIHEGQSDQEAQVYKGLSRRSQAVGAVLSVLLVVLTAACLIILLFYKKERRETIVV 2315
Pavo_cristatus    ISTVAPGIHEGQSDQEAQVYKGLSRRSQAVGAVLSVLLVVLTAACLIILLFYKKERRETIVV 2315
Gallus_gallus     ISTIAPGIHGGQSDQEAQVYKGLSRRSQAVGAVLSVLLVVLTAACLIILLFYKKERRETIVV 2318
Mus_musculus      G----VDFEDE---SAGPEYKGLSERSQAVGAVLSLLLVALTGCCLLALLLHKKERRETVI 2326
Rattus_norvegicus G----VDFDDE---NAVPEYKGLSERSQAVGAVLSLLLVALTGCCLLALLLHKKERRETVI 2324
Heterocephalus_glaber G----VGFDRETRKEDIQSHKGLSERSQAVGAILSVLLVLTGCCLLALLLHKKERREIVI 2334
Homo_sapiens      G----VGFDSENPGDDGQMHKGLSERSQAVGAVLSLLLVALTGCCLLALLLYKKERRETVI 2336
Pan_troglodytes   G----VGFDSENPGDDGQMHKGLSERSQAVGAVLSLLLVALTGCCLLALLLYKKERRETVI 2336
Macaca_mulatta    G----VGFDNENPGDDEQVHKGLSERSQAVGTVLSLLLVALTGCCLLALLLYKKERRETVI 2336
Callithrix_jacchus G----VGFDGENPGDDGQAHKGLSERSQAVGAVLSLLLVALTGCCLLALLLYKKERRETVI 2335
Canis_lupus_familiaris G----VDLDGDNAGEDTQEHKGLSERSQAVGAVLSLLLVALTGCCLLALLLYKKERREIVV 2340
Felis_catus       G----VGLDGDGAGEDTQEHKGLSERSQAVGAVLSLLLVALTGCCLLALLLYKKERRETVV 2340
Equus_caballus    R----VGFDSESAGVDEPEHKGLSERSQAVGAVLSLLLVALTGCCLLALLLYKKERRETVL 2335
Bos_taurus        G----AGFDEEIAGDDAQEHKGLSERSQAVGAVLSLLLVALTGCCLLALLLYKKERREVMV 2345
Rhinatrema_bivittatum VN---DSIIREEEKSDEKEDKAGLSLRQAVGAVLGVLVILTAACLIILLLYKKERRETVI 2341
Xenopus_tropicalis VP-----NGNPGSEPNYQGLSGRSQAVGAILSVLLVVLVICLLVLLLYKKERRESVM 2247
.....2350.....2360.....2370.....2380.....2390.....2400

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Pavo_muticus      NKITNCCRRTSGVSYKYTKINSEEEANENETEWLMEEIAAPNQRIVKGVQENGHVTTKSV 2375
Pavo_cristatus    NKITNCCRRTSGVSYKYTKINSEEEANENETEWLMEEIAAPNQRIVKGVQENGHVTTKSV 2375
Gallus_gallus     NKITNCCRRTSGVSYKYTKINSEEEANENETEWLMEEIAAPNQRIVKGVQENGHVTTKSV 2378
Mus_musculus      NKLTSCCRRSSGVSYKYSKVSKEEETDENETEWLMEEIQVPAARLGKDGQENGHITTKAV 2386
Rattus_norvegicus NKLTNCCRSSGVSYKYSKVSKEEETDENETEWLMEEIQVPAARLGKDGQENGHITTKTV 2384
Heterocephalus_glaber NKLTNCCRSSNVSYKYSKVNKEEETDENETEWLMEEIQMPPPRLVKEGQENGHITTKSM 2394
Homo_sapiens      SKLTTCCRSSNVSYKYSKVNKEEETDENETEWLMEEIQLPPPRQGKEGQENGHITTKSV 2396
Pan_troglodytes   SKLTTCCRSSNVSYKYSKVNKEEETDENETEWLMEEIQLPPPRQGKEGQENGHITTKSV 2396
Macaca_mulatta    SKLTTCCRSSNVSYKYSKVNKEEETDENETEWLMEEIQLPPPRLGKEGQENGHITTKSV 2395
Callithrix_jacchus SKLTTCCRSSNVSYKYSKVNKEEETDENETEWLMEEIQLPPPRLGKEGQENGHITTKSV 2395
Canis_lupus_familiaris SRLTSCCRRSANVSYKYSKVNKEEETDENETEWLMEEIQAPTTPRGKEGQENGHITTKSV 2400
Felis_catus       SRLSSCCRSSASVSYKYSKVNKEEETDENETEWLMEEIQVTPPRPGKEGQENGHITTKSV 2400
Equus_caballus    SKLTNCCRSGADVSYKYSKVNKEEETDENETEWLMEEIQVPPPRPGKEGQENGHITTKSV 2395
Bos_taurus        SRLTCCRSSANVSYKYSKVNKEEETDENETEWLMEEIQPPAPRGKEGQENGHVAASKSV 2405
Rhinatrema_bivittatum QKISSCCRSSNVSYKYTKVNNDEEADENETEWLMEEISSNLRPGRESQENGHITTKAV 2401
Xenopus_tropicalis FKITNCCRNSPVSYKYTKISTEEAADNETEWLMEEVSTGNN--AKQROENGHIKSVKP 2305
.....2410.....2420.....2430.....2440.....2450.....2460

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Pavo_muticus      T-SDAFTSLHVDDLSEDEVLTIPDVKIQT-GRRQDK-SKHPQKKPPSFA-----SDDKA 2427
Pavo_cristatus    T-SDAFTSLHVDDLSEDEVLTIPDVKIQT-GRRQDK-SKHPQKKPPSFA-----SDDKA 2427
Gallus_gallus     T-SDAFTSLHVDDLSEDEVLTIPDVKIQT-GRGLDK-SKHPQKKPPRFA-----SDDKA 2430
Mus_musculus      K-AEALSSLHGDDQDSEDEVLTIPDVKVHS-GRGAEVSSQPLRNPORKV-LKEREGERL 2443
Rattus_norvegicus K-AEALTSLHGDDQDSEDEVLTIPDVKVHT-GRGAEVSSQPLRNPORKV-LKEREGERM 2441
Heterocephalus_glaber K-AEALTSLHGDDQDSEDEVLTIPDVKVHA-GRGARVDSSHVPVRNPORKA-LQERKDDRA 2451
Homo_sapiens      K---ALSSLHGDDQDSEDEVLTIPDVKVHS-GRGAGAESSHPVRNAQSNA-LQEREDDRV 2451
Pan_troglodytes   K---ALSSLHGDDQDSEDEVLTIPDVKVHS-GRGAGAESSHPVRNAQSNA-LQEREDDRV 2451
Macaca_mulatta    K---ALSSLHGDDQDSEDEVLTIPDVKVHS-GRGAGAESSHPLRNPQSSA-LQEREDDRA 2451
Callithrix_jacchus K-AEALSSLHGDDQDSEDEVLTIPDVKVHS-GRGAGAESSHVPVRNPORNA-LWEREDDRA 2452
Canis_lupus_familiaris T-AEALTSLHGDDQDSEDEVLTIPDVVRHS-GRGTGAASVPHGRIPORRG-LRESADGAG 2457
Felis_catus       K-AEALTSLHGDDQDSEDEVLTIPDVKVQA-GRGTGAASVQHGRNAQRKG-LRESADGAG 2457
Equus_caballus    K-AEALSPLHGDDQDSEDEVMTIPDVKVHS-SRGPGAESAQPLRSPPRKA-LWERAEDRV 2452
Bos_taurus        RAADTLSALHGDEQDSEDEVLTIPDVVRPPGRAPGAEGGPPLRPLPRKAPPLRADDRV 2465
Rhinatrema_bivittatum K-SPFSSSLHVDDLSEDEVLTIPDVRIHS-KRGKELRGPSRSGNQSKKPVGATGDESAS 2459
Xenopus_tropicalis G---TFTSLFPVDDLSEDEVLTIPDVRIQS-ARNKEMNASQAQRGYSSAI-----DEKLM 2356
.....2470.....2480.....2490.....2500.....2510.....2520

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      *      :.      :*****:*.:
Pavo_muticus      YLLNGGKERKAKAKPGQQQAQNSTNSTSFHDDSDEDLLNV      2467
Pavo_cristatus    YLLNGGKERKAKAKPGQQQAQNSTNSTSFHDDSDEDLLNV      2467
Gallus_gallus     YLLNGGKERKAKAKPGQQQAQNSTNSVSFHDDSDEDLLNV      2470
Mus_musculus      GLVRGEKARKGKFRPGQRKPTAPAKLVSFHDDSDEDLLHI      2483
Rattus_norvegicus GLVRGEKARRGKFRPGQRKPTTPAKLVSFHDDSDEDLLHI      2481
Heterocephalus_glaber RLVPGETWKGKPRSGQHKMVTSTKLVSFHDDSDEDLLHI      2491
Homo_sapiens      GLVRGEKARKGKSSSAQOKTVSSTKLVSFHDDSDEDLLHI      2491
Pan_troglodytes   GLVRGEKARKGKSSSAQOKTVSSTKLVSFHDDSDEDLLHI      2491
Macaca_mulatta    GLVRGEKARKGKFRSAQOKTVSSTKLVSFHDDSDEDLLHI      2491
Callithrix_jacchus GLVRGERVRKGKPRSAQOKTVSSTKLVSFHDDSDEDLLHI      2492
Canis_lupus_familiaris GLVTGDRVRRGKPRVPQKTGTSGGLASFHDDSDEDLLHI      2497
Felis_catus       VLVRGDRARRGRPRPAQOKPAQPGSLASFHDDSDEDLLHI      2497
Equus_caballus    GLVSGEKARRGRPRNAPQKAGTPGGLVSFHDDSDEDLLHI      2492
Bos_taurus        GLVRGEPARRGRPRAAATP-----ISTFHDDSDEDLLHV      2499
Rhinatrema_bivittatum VLLNGG---KGMRKSGQRKGPNSLNVGSFHDDSDEDMLNV      2496
Xenopus_tropicalis GAQNGARGNQGKAKPGHHKKEDKLNVLSFHDDSDEDMLNV      2396
.....2530.....2540.....2550.....2560

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