

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/MPDZ4es Tue Feb 1 14:04:05 2022

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      *.:::***:*.***** *:::*** ***:** *****.*.***.:*:*.:: :
Pavo_muticus      -----DTHRALQAVERLQAKLRDRGDIANEKLNLLKSVLQSPLEFNOILNLQTSVQQLRD 55
Pavo_cristatus    -----DTHRALQAVERLQAKLRDRGDIANEKLNLLKSVLQSPLEFNOILNLQTSVQQLRD 55
Gallus_gallus     MLETIDTHRALQAVERLQAKLRDRGDIANEKLNLLKSVLQSPLEFNOILNLQTSVQQLRD 60
Anas_platyrhynchos MLETIDTHRALQAVERLQAKLRDRGDIANEKLNLLKSVLQSPLEFNOILNLQTSVQQLRD 60
Chelonia_mydas    MLEAIDTHRALRAVERLQAKLRERGDLANEEKLSLLKSVLQSPLEFNOILNLQTSVHQLRD 60
Mus_musculus      MLETIDKNRALQAAERLQSKLKERGDVANEDKLSLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Rattus_norvegicus MLETIDKNRALQAAERLQSKLKERGDVANEDKLSLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Homo_sapiens      MLEAIDKNRALHAAERLQTKLRERGDVANEDKLSLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Pan_troglodytes   MLEAIDKNRALHAAERLQTKLRERGDVANEDKLSLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Macaca_mulatta    MLEAIDKNRALQAAERLQTKLRERGDVANEDKLSLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Callithrix_jacchus MLEAIDKNRALQAAERLQTKLRERGDVANEDKLSLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Bos_taurus        MLETIDKNRALQAAERLQAKLRERGDVANEDKLNLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Equus_caballus    MLETIDKNRALQAAERLQAKLRERGDVANEDKLNLLKSVLQSPLEFNOILNLQTSVQQLKE 60
Canis_lupus_familiaris MLETIDKNRALQAAERLQAKLRERGDVANEDKLNLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Heterocephalus_glaber MLETVDKNRALQAAERLQAKLRERGDVANEDKLSLLKSVLQSPLEFNOILNLQTSVQQLKD 60
Rhinatrema_bivittatum MLESIDTHRALQAVERLQAKVRERGDIANEEKLSLLKSVLQSPLEFNOILNLQTSVQQLRD 60
Xenopus_tropicalis MLETIDTHRALQAVERLQVKKRERGDIANEEKLCCLKSVLQSPLEFNOILNLQTSVQQLRD 60
1.....10.....20.....30.....40.....50.....60

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      *      ** :. : : : . : * : : * :.
Pavo_muticus      Q-----VNITPPVHSTGEFPQLLHHGVSVGSLPHNESYLLAQQNGSPANVLEA 103
Pavo_cristatus    Q-----VNITPPVHSTGEFPQLLHHGVSVGSLPHNESYLLAQQNGSPANVLEA 103
Gallus_gallus     Q-----VNITPPSVHSTGEFPQLLHHGVNVGSLPHNESYLLAQQNGSPANVLEA 108
Anas_platyrhynchos Q-----VNITPSIHSTGELPQLFHHGVNAGSLAHNESCLLAQQNGSPANVLEA 108
Chelonia_mydas    Q-----VNVAPSIHSAAGEFPQLPHHGASVDSLPHNESYLLAQQNGSPANVLEA 108
Mus_musculus      Q-----VNIATLATAADHAHTPQFSSAIVSNLQSESLLLSPNNGN----LEA 104
Rattus_norvegicus Q-----VNVATLATANADHAHTPQFSSAIVSNLQSESLLLSPNNGN----LEA 104
Homo_sapiens      Q-----VNIATSATSNIIEYAHVPHLSPAVIPTLQNESFLLSPNNGN----LEA 104
Pan_troglodytes   Q-----VNIATSATSNIIEYAHVPHLSPAVIPTLQNESFLLSPNNGN----LEA 104
Macaca_mulatta    Q-----VNIATSATSNIIEYAHVPHLSPAVIPTLQNESFLLSPNNGN----LEA 104
Callithrix_jacchus QADDDPAHQDLMTMVNISTSATSNTIEYAHVPHLSPAVIPTLQNESFLLSPNNGN----LEA 116
Bos_taurus        Q-----VNFATSTISNVEYGHIPHLSPGVIPTLQNESFLLSPNNGN----LEV 104
Equus_caballus    Q-----VNTATLASSNVEYAHVPHLSPAVIPTLQNESFLLSPNNGN----LEA 104
Canis_lupus_familiaris Q-----VNITTSVISNVEYAHVPHLSPAVIPTLQNESFLLSPNNGN----LEA 103
Heterocephalus_glaber Q-----VNIATSATSNIIEYAHVPHLSPAVIPTLQNESFLLSPNNGN----QEA 104
Rhinatrema_bivittatum Q-----VNMTTPLLPSQSEFTIRSHHHGVNATSSSHNESYSLLAQQNGFDVNL PDT 108
Xenopus_tropicalis Q-----VNVTPALSTVSEFAQVSSYGSSTFSALQNESYSMAQQNGSPINSET 108
.....70.....80.....90.....100.....110.....120

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Pavo_muticus      SMRSITP-QINGKSST--DDFEQLIRNMSQGRPVETIELIKPLSGGLGFSVVGLKSEN RG 160
Pavo_cristatus    SMRSITP-QINGKSST--DDFEQLIRNMSQGRPVETIELIKPLSGGLGFSVVGLKSEN RG 160
Gallus_gallus     SMRSITP-QINGKSSS--DDFEQLIRSMSQGRPVETIELIKPLSGGLGFSVVGLKSEN RG 165
Anas_platyrhynchos SMRSITP-QINGKSSS--DDFEQLVRSMSQGRPVETIELIKPLSGGLGFSVVGLKSEN RG 165
Chelonia_mydas    SVRSVTP-QINGKSSS--SDELEQLIRNMSQGRVETIELIKPLSGGLGFSVVGLKSEN RG 167
Mus_musculus      LPGPGAPAVMDGKPTC--DELDQLIKNMAQGRHVEIFELLKPPCGGLGFSVVGLRSEN RG 162
Rattus_norvegicus ISGPGAPPAMDGKPAC--EELDQLIKSMAQGRHVEIFELLKPPCGGLGFSVVGLRSEN RG 162
Homo_sapiens      LTGPGIP-HINGKPAC--DEFDQLIKNMAQGRHVEVFELLKPPSGGLGFSVVGLRSEN RG 161
Pan_troglodytes   LTGPSIP-HINGKPAC--DEFDQLIKNMAQGRHVEVFELLKPPSGGLGFSVVGLRSEN RG 161
Macaca_mulatta    LTGSGIP-HINGKPAC--DEFDQLIKNMAQGRHVEVFELLKPPSGGLGFSVVGLRSEN RG 161
Callithrix_jacchus LTGSGIL-HINGKPAC--DEFDQLIKNMAQGRHVEVFELLKPPSGGLGFSVVGLRSEN RG 173
Bos_taurus        LTGFGTA-HINGKPAC--DEFDQLIKNMAQGRHVEVFELLKPPCGGLGFSVVGLRSEN RG 161
Equus_caballus    LTGLGAA-HINGKPAC--DEFDQLIKNMAQGRHVEVFELLKPPCGGLGFSVVGLRSEN RG 161
Canis_lupus_familiaris FTGSGTL-HINGKPAC--DEFDQLIKNMAQGRHVEVFELLKPPCGGLGFSVVGLRSEN RG 160
Heterocephalus_glaber LTGSGTP-HINGKPV--DEFDHLIKNMAQGRHVEVFELLKPPSGGLGFSVVGLRSEN RG 161
Rhinatrema_bivittatum SSRSITV-QINGQPSG--EEFDQIIKKMALGRQTEVLVLVKPPSGGLGFSVVGLKSEN KG 165
Xenopus_tropicalis TTRPMSP-QINGKLGS--ENLEQIIKKMAQGRHIEITMDLLKPPSGGLGFSVVGLKSEN RG 165
.....130.....140.....150.....160.....170.....180

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*****.*:::***:***:****:**** *****:*.**.:*****: :***:*
Pavo_muticus      ELGIFVQEIQEGSVVAHRDGLKLEADQILAINQALDQTITHQQAISILQAKDNVOLVVA 220
Pavo_cristatus    ELGIFVQEIQEGSVVAHRDGLKLEADQILAINQALDQTITHQQAISILQAKDNVOLVVA 220
Gallus_gallus     ELGIFVQEIQEGSVVAHRDGLKLEADQILAINQALDQTITHQQAISILQAKDNVOLVVA 225
Anas_platyrhynchos ELGIFVQEIQEGSVVAHRDGLKLEADQILAINQALDQTITHQQAISILQAKDNVOLVVA 225
Chelonia_mydas    ELGIFVQEIQEGSVVAYRDGRLKEADQILAINQALDQTVTHQQAISILQAKDNVOLVVA 227
Mus_musculus      ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQVLDQTITHQQAISILQAKDVTVOLVIA 222
Rattus_norvegicus ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQVLDQTITHQQAISILQAKDVTVOLVIA 222
Homo_sapiens      ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDVTVOLVIA 221
Pan_troglodytes   ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDVTVOLVIA 221
Macaca_mulatta    ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDVTVOLVIA 221
Callithrix_jacchus ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDVTVOLVIA 233
Bos_taurus        ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDVTVOLVIA 221
Equus_caballus    ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDVTVOLVIA 221
Canis_lupus_familiaris ELGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDNVOLVIA 220
Heterocephalus_glaber QLGIFVQEIQEGSVVAHRDGLRKETDQILAINQALDQTITHQQAISILQAKDVTVOLVIA 221
Rhinatrema_bivittatum ELGIFVQEIQEGSIHRDGLKLEADQILSINGQVLDQTITHQQAIGILQAKDHVELVIA 225
Xenopus_tropicalis ELGIFVQEIQEDSVVAHRDGLKLEADQILSINGQPLDQTITHHQAIGILQAKAQVOLVIA 225
.....190.....200.....210.....220.....230.....240

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**.*: **:*:*.* **.* ****:***:*****:***:****
Pavo_muticus      RGNFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 280
Pavo_cristatus    RGNFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 280
Gallus_gallus     RGNFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 285
Anas_platyrhynchos RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 285
Chelonia_mydas    RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 287
Mus_musculus      RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 282
Rattus_norvegicus RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 282
Homo_sapiens      RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 281
Pan_troglodytes   RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 281
Macaca_mulatta    RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 281
Callithrix_jacchus RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 293
Bos_taurus        RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 281
Equus_caballus    RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 281
Canis_lupus_familiaris RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 280
Heterocephalus_glaber RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 281
Rhinatrema_bivittatum RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 285
Xenopus_tropicalis RGSFPQLISPVVSRSPSAASTVSAHSNPVHWQHVTIELVNDGSGLGFGIVGGKSTGVIV 285
.....250.....260.....270.....280.....290.....300

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*****:***:*****:*****:*****:*****:*****:*****:*****:
Pavo_muticus      KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLVIARGPVEEP 340
Pavo_cristatus    KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLVIARGPVEEP 340
Gallus_gallus     KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLVIARGPVEEP 345
Anas_platyrhynchos KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLVIARGPVEEP 345
Chelonia_mydas    KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLVIARGPVEEP 347
Mus_musculus      KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAVEET 342
Rattus_norvegicus KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAVEET 342
Homo_sapiens      KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAIEER 341
Pan_troglodytes   KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAIEER 341
Macaca_mulatta    KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAIEER 341
Callithrix_jacchus KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAIEER 353
Bos_taurus        KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAIEER 341
Equus_caballus    KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAVEEP 341
Canis_lupus_familiaris KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAIEER 340
Heterocephalus_glaber KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLMIARGAVEET 341
Rhinatrema_bivittatum KTILPGGIADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLVIARGPVEEP 345
Xenopus_tropicalis KTILPGGVADQHGRCLSGDHILKIGDIDLTMSSSEQVAQVLRQCGNRVKLVIARGPVEEP 345
.....310.....320.....330.....340.....350.....360

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      .      .      :  :  .      : : * : * : * : * : * : * : * : * : *
Pavo_muticus      PPPAVP--PGTPVPIMTPEKQTDVSVDSYEEGEKFNVELTKNIOGLGITIAGYIGDKTSE 398
Pavo_cristatus    PPPAVP--PGTPVPIMTPEKQTDVSVDSYEEGEKFNVELTKNIOGLGITIAGYIGDKTSE 398
Gallus_gallus     PPPAVP--PGTPVPITTTTEKQTDVSVDSCEEGEKNVELTKNTQGLGITIAGYIGDKTSE 403
Anas_platyrhynchos PPPAVP--PGTPIPISTPEKQADASVNCEDGEKFNVELTKNIOGLGITIAGYIGDKTSE 403
Chelonia_mydas    PPPAVP--PSTPVPTSIPEKRAETSFIDIDEDGEKFDVELTKNLOGLGITIAGYIGDKSSE 405
Mus_musculus      PASSSLGITLSSSTSSTSEMRVDASTQKNDESETFDVELTKNVQGLGITIAGYIGDKKLE 402
Rattus_norvegicus PAPSSLGITLSSSTS-TSEMRVDASTQKNEESETFDVELTKNVQGLGITIAGYIGDKKLE 401
Homo_sapiens      TAPTALGITLSSSPTSTPELRVDASTQKGEESSETFDVELTKNVQGLGITIAGYIGDKKLE 401
Pan_troglodytes   TAPTALGITLSSSPTSTPELRVDASTQKGEESSETFDVELTKNVQGLGITIAGYIGDKKLE 401
Macaca_mulatta    TAPTALGITLSSSPTSTPELRVDASTQKGEESSETFDVELTKNVQGLGITIAGYIGDKKLE 401
Callithrix_jacchus TAPTSLGITLSSSPSTPELRVDASTQKGEESSETFDVELTKNVQGLGITIAGYIGDKKLE 413
Bos_taurus        TAPTSLGITLSSSPSTPEMRVDASTQKSEESSETFDVELTKNVQGLGITIAGYIGDKKLE 401
Equus_caballus    TASTSLGITLSSSSSTPDMRVDASTQKNEDSETFDVELTKNVQGLGITIAGYIGDKKLE 401
Canis_lupus_familiaris AAPNSLGITLSSSPSSIPEMQVDASTQKSEESSETFDVELTKNVQGLGITIAGYIGDKKLE 400
Heterocephalus_glaber TTPTSLGITLSSS-FSTPEMQVDASTQKSEESSETFDVELTKNVQGLGITIAGYIGDKKLE 400
Rhinatrema_bivittatum AIGVPAGTPTPNPLPSWPEKQVEASVPKVVDSDTFDVELTKNAQGLGITIAGYIGDKNSE 405
Xenopus_tropicalis STGVSTGVQITPALPSLLETQVCEGEIKDADGDAFDVKLTKNQGLGITIAGYVGDGKSE 405
.....370.....380.....390.....400.....410.....420

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Pavo_muticus      PSGIFVKSITKGS AVEQDGR IHVGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 458
Pavo_cristatus    PSGIFVKSITKGS AVEQDGR IHVGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 458
Gallus_gallus     PSGIFVKSITKGS AVEQDGR IHVGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 463
Anas_platyrhynchos PSGIFVKSITKGS AVEHDGR IHVGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 463
Chelonia_mydas    PSGIFVKSITKGS AVEHDGR IHVGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 465
Mus_musculus      PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 462
Rattus_norvegicus PSGIFVKSITKSS AVELDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 461
Homo_sapiens      PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 461
Pan_troglodytes   PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 461
Macaca_mulatta    PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 461
Callithrix_jacchus PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 473
Bos_taurus        PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 461
Equus_caballus    PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 461
Canis_lupus_familiaris PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 460
Heterocephalus_glaber PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 460
Rhinatrema_bivittatum PSGIFVKSITKSS AVEHDGR IQIGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 465
Xenopus_tropicalis PSGIFVKSITKGS AVEQDGR IQVGDQIIIVDGTNLQGF TNQQA VDLRHTGQTVRLTLIR 465
.....430.....440.....450.....460.....470.....480

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Pavo_muticus      RGHKQENYNQPQEDFSA AVERDLM LQTMDSS TAK-----DNS 495
Pavo_cristatus    RGHKQENYNQPQEDFSA AVERDLM LQTMDSS TAK-----DNS 495
Gallus_gallus     RGLKQENYIQPQEDFSA AVERDLM LQTVDSS TAK-----DSS 500
Anas_platyrhynchos RGLKQENHIQPPQEEFN A AVERD LLLPTMDSSG TAK-----DNS 500
Chelonia_mydas    RGLKQENHIQPHEDFTA AVEKDLIFQ TMDNGTAK-----EQC 502
Mus_musculus      KGASQEAELTSRG----DTAKDV DLP-----AENC 488
Rattus_norvegicus KGASQEAELTSRE----DTAKDV DLP-----AENY 487
Homo_sapiens      RGMKQEAELMSRE----DVTKDADLSPVNAS IIK-----ENY 494
Pan_troglodytes   RGMKQEAELMSRE----DVTKDADLSPVNAS IIK-----ENY 494
Macaca_mulatta    RGMKQEAELMSRE----DVTKDADLSPVNAS IIK-----ENY 494
Callithrix_jacchus RGVKQEAELMSRE----DITKDADLSPVNAS LGK-----ENY 506
Bos_taurus        R-TKQDAELASRE----DVTKDADLSPVNAS VSK-----DNY 493
Equus_caballus    RGTKQEAELTSRE----DVTKDADLSPVNAS LSK-----ENY 494
Canis_lupus_familiaris RGVKQEAELTSRE----DVTKDMVLSPLNASGNKGGICSAFTVYASLPFLNVQPPFLAENY 516
Heterocephalus_glaber RGMKQETEPLCRG----DIMKDAVSLANAS MSR-----ENY 493
Rhinatrema_bivittatum KGLKQDIHFQTNESSTAVPEKSLTLHSMENDVVK-----ENC 502
Xenopus_tropicalis RGLKQEAELIPQVEEPRKPTESGQPLQNAS S-----EAC 499
.....490.....500.....510.....520.....530.....540

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Pavo_muticus      ETEEGSPSPQPCSGSAVNVREDI-----KQETDFOLSATEEAAMKAKWORIMGSN 545
Pavo_cristatus    ETEEGSPSPQPCSGSAVNVREDI-----KQETDFOLSATEEAAMKAKWORIMGSN 545
Gallus_gallus     EPEQGSPSPQPCSGSAVNIREDI-----KQETDFOLSATEEAAMKAKWORIMGSN 550
Anas_platyrhynchos ETEQGSPSLPCSPSAINIGEDI-----KQETDFOLTTEEAATKAKWORIMGSD 550
Chelonia_mydas    EREQGSPPLPCSAAGVVHIGEDS-----KQESGFQLTSTGEAVLQNKWORIMGTN 552
Mus_musculus      EKDEESLSLKRNTSILPIEEEG-----FPLLSAELEEAEDVQ-QEAALLTKWORIMGIN 541
Rattus_norvegicus EKDEESLSLKRSTSILPIEEEG-----YPLLSTELEETEDVQ-QEAALLTKWORIMGIN 540
Homo_sapiens      EKDEDFLSSTRNTNINILPTEEEG-----YPLLSAEIEEIEDAQKQEAALLTKWORIMGIN 548
Pan_troglodytes   EKDEDFLSSTRNTNINILPTEEEG-----YPLPSAEIEEIEDAQKQEAALLTKWORIMGIN 548
Macaca_mulatta    EKDEDSLSLRRNTNINILPTEEEG-----YPLLSAEIEEIEDARKQEAALLTKWORIMGIN 548
Callithrix_jacchus EKDEDSLSLRRNTSILPIEEEG-----YPLLSAEIEEIEDAQQOEAALLAKWORIMGIN 560
Bos_taurus        QEDEDLSLRRNTSILPIEEEGKHMFP-----VSAEREEIEDAQQOEAALLTKWORIMGIN 549
Equus_caballus    EKEEDPLSLRRNTNINILPIEEEGKHLEPGYPILLSAEREEIEDAQQOEAALLAKWORIMGIN 554
Canis_lupus_familiaris EKDEDSLSLRRNTSILPIEEEGKHLEPGYPILLSAEIEDIEDAQQOEAALLTRWORIMGIN 576
Heterocephalus_glaber EKDEDSLSLRRNISMLPIEEEG-----HPVLSGEGQETEDAG--EAAMLTKWORMGIN 545
Rhinatrema_bivittatum DSLQDSPSLMDTSTMPICVIMES-----KSLQSGCQLTSAEEEMQNKWRKIMGAN 552
Xenopus_tropicalis VPIIPTSFSSDAQSQSPANWSS-----LQAEKETQVDTDEEDIKSKWORIMGVG 548
.....550.....560.....570.....580.....590.....600

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Pavo_muticus      YEIVVAVVSKFSESSGLGISLEATVGHHFIRSILPEGPVGRSGKLFSGDELLEVNEISLL 605
Pavo_cristatus    YEIVVAVVSKFSESSGLGISLEATVGHHFIRSILPEGPVGRSGKLFSGDELLEVNEISLL 605
Gallus_gallus     YEIVVAVVSKFSESSGLGISLEATVGHHFIRSILPEGPVGRSGKLFSGDELLEVNEISLL 610
Anas_platyrhynchos YEIVVAVVSKFSESSGLGISLEATVGHHFIRSILPEGPVGRSGKLFSGDELLEVNEISLL 610
Chelonia_mydas    YEIVVAEVNKFSESSGLGISLEAAVGHFIRSIVLPEGPVGRSGKLFSGDELLEVNEISLL 612
Mus_musculus      YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGINLL 601
Rattus_norvegicus YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGINLL 600
Homo_sapiens      YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGITLL 608
Pan_troglodytes   YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGITLL 608
Macaca_mulatta    YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGITLL 608
Callithrix_jacchus YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGITLL 620
Bos_taurus        YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGITLL 609
Equus_caballus    YEIVVAHVSKFSESSGLGISLEATVGHHFIQSIVLPEGPVGRSGKLFSGDELLEVNGITLL 614
Canis_lupus_familiaris YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGITLL 636
Heterocephalus_glaber YEIVVAHVSKFSESSGLGISLEATVGHHFIRSIVLPEGPVGRSGKLFSGDELLEVNGITLL 605
Rhinatrema_bivittatum YEIVVAQVSKFSESSGLGISLEATAGHHFIRLSILPEGPVGRSGKLFSGDELLEVNGIYLR 612
Xenopus_tropicalis YEIVVAKVNKFSESSGLGISLEASGGHHFIRLSILPEGPVGRSGSLYSDELLEVNGISLL 608
.....610.....620.....630.....640.....650.....660

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*:** ***.***** **:** * . : . : : *
Pavo_muticus      GENHKDVVNILKELPIKVTMVCCRPVAPSVSHTEVLESLSLS--EVQLAEKA----- 655
Pavo_cristatus    GENHKDVVNILKELPIKVTMVCCRPVAPSVSHTEVLESLSLS--EVQLAEKA----- 655
Gallus_gallus     GENHKDVVNILKELPIKVTMVCCRPVASSVSHTEVLENLSLS--EVQLAEKA----- 660
Anas_platyrhynchos GENHKDVVNILKELPIKVTMVCCRPVAPPISHPEVLDSLSLS--EVQLTEKA----- 660
Chelonia_mydas    GENHKDVVNILKELPIKVTMVCCRPVAPPVSSQSE-LDNLTL--EVQLTEKS----- 661
Mus_musculus      GENHQDVVNILKELPIDVTMVCCRRTPVPPIALSE-MDSLIDIN--DIELTEKP----- 650
Rattus_norvegicus GENHQDVVNILKELPIDVTMVCCRRTPVPPTALSE-VDSLIDIH--DIELTEKP----- 649
Homo_sapiens      GENHQDVVNILKELPIEVTMVCCRRTPVPPTQSE-LDSLIDLC--DIELTEKP----- 657
Pan_troglodytes   GENHQDVVNILKELPIEVTMVCCRRTPVPPTQSE-LDSLIDLC--DIELTEKP----- 657
Macaca_mulatta    GENHQDVVNILKELPIEVTMVCCRRTPVPPTQSE-LDSLIDLC--DIELTEKP----- 657
Callithrix_jacchus GENHQDVVNILKELPIKVTMVCCRRTPVPPTQSE-LDSLIDLC--DIELTEKP----- 669
Bos_taurus        GENHQDVVTILKELPIEVTMVCCRRTPVPPTAPSE-LESIDL--DIELTEKP----- 658
Equus_caballus    GENHQDVVNILKELPIEVTMVCCRRTPVPPTQSE-LDSLIDLC--DIELTEKP----- 663
Canis_lupus_familiaris GENHQDVVNILKELPIEVTMVCCRRTPVPPTQSE-LDSLIDLC--DIELTEKP----- 685
Heterocephalus_glaber GENHQDVVNILKELPIEVTMVCCRRTPVPPTQSE-LDGLDLS--DIELTEKP----- 654
Rhinatrema_bivittatum GQNHKDVVNILKELPIRVTMVCGRPVLQPGSQSE-TDNLNLPREEIQLEQTSDILPSSL 671
Xenopus_tropicalis GQNHIDVVNILKELPICVTMVCCRPVQKPPN--SLD-EKEQHISEQENDGPEGD--FPVPLP 665
.....670.....680.....690.....700.....710.....720

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

**File: /media/morpheus/disk1/fst/pep\_msa/MPIDates Tue Feb 1 14:04:05 2022**

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		.....	..**.*:	:	:	::	:	..****.	
Pavo_muticus	-----	HIDLG	FIGSSNTEETALEIS	-	TAQSI	EEVQNSS	SFTMWEAE		694
Pavo_cristatus	-----	HIDLG	FIGSSNTEETALEIS	-	TAQSI	EEVQNSS	SFTMWEAE		694
Gallus_gallus	-----	HIDLG	FIGSSNTEETALEIS	-	TAQSI	EEVQNSS	SFTMWEAE		699
Anas_platyrhynchos	-----	HVELG	FIGSSDTFGTTLEMADES	-	QSMEEVQSSS	LAMWETE		700	
Chelonia_mydas	-----	HVDL	DEVIGSSETEGTGLEMADVG	-	QNIDEVOGSP	LAMWETE		702	
Mus_musculus	-----	HIDL	GFIGSSETEDPMLAMSDVDQ	-	NAEEIQT	P-LAMWEAG		690	
Rattus_norvegicus	-----	HIDL	GFIGSSETEDPMLAMSDVDQ	-	NAEEIQT	P-LAMWEAG		689	
Homo_sapiens	-----	HVDL	GFIGSSETEDPVLAMTDAGQ	-	STEEVQAP	-LAMWEAG		697	
Pan_troglodytes	-----	HVDL	GFIGSSETEDPVLAMTDAGQ	-	STEEVQAP	-LAMWEAG		697	
Macaca_mulatta	-----	HVDL	GFIGSSETEDPVLAMTDADQ	-	STEEVQAP	-LAMWEAG		697	
Callithrix_jacchus	-----	HVDL	GFIGSSETEDPVLAMTDAGQ	-	STEEVQAP	-LAMWEAG		709	
Bos_taurus	-----	HIDL	GFIGSSETEDPVLTMVDVGR	-	NAEEVQGP	-LAMWEAD		698	
Equus_caballus	-----	HVDL	GFIGSSETEDPVLAMTDVGQ	-	NAEEVQGP	-LAMWETD		703	
Canis_lupus_familiaris	-----	HVDL	GFIGSSETEDPVLAMTDVQ	-	NAEEVQGP	-LAMWEVD		725	
Heterocephalus_glaber	-----	HVDL	GELIGSSETEDPVLTVTAMQ	-	ODTEEAHTT	-LAMWEAG		694	
Rhinatrema_bivittatum		PALWKYQEEGP	PHIDIDIAQIDFGGILD	-	SSETDDPIL	EATDMGDAEELQSS	LAMWETE	731	
Xenopus_tropicalis		ALWKMQEDI	POSILDIDSKLHIDFGG	-	TVGSSETDDL	TASTEDQSIDAEQSS	LAMWETD	725	
		.....730.....	740.....		750.....	760.....	770.....	780	

	* ****. *****:*.:.*:*****:*.:.*: *****:.	
Pavo_muticus	VQNAELEKGS MGLGFSILDYQDPVDP SKTIVILIRSLVPGGVAERDGR LSPGDR LMFVNDI	754
Pavo_cristatus	VQNAELEKGS MGLGFSILDYQDPVDP SKTIVILIRSLVPGGVAERDGR LSPGDR LMFVNDI	754
Gallus_gallus	VOHTELEKGS MGLGFSILDYQDPVDP SKTIIILIRSLVPGGVAEODGR LSPGDR LMFVNDI	759
Anas_platyrhynchos	VOHIDLEKGS MGLGFSILDYQDPVDPANTVIVIRSLVPGGVAEODGR LLLPGDR LMFVNDI	760
Chelonia_mydas	IQHVELEKGS MGLGFSILDYQDPVDPANTVIVIRSLVPGGVAEODGR LLLPGDR LMFVNDI	762
Mus_musculus	GQSIELEKGS RGLGFSILDYQDPIDPANTVIVIRSLVPGGIAEKDGR LFPGDR LMFVNDI	750
Rattus_norvegicus	IQAIELEKGS RGLGFSILDYQDPIDPANTVIVIRSLVPGGIAEKDGR LFPGDR LMFVNDI	749
Homo_sapiens	IQHIELEKGS KGLGFSILDYQDPIDPASTVIIIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	757
Pan_troglodytes	IQHIELEKGS KGLGFSILDYQDPIDPASTVIIIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	757
Macaca_mulatta	IQHIELEKGS KGLGFSILDYQDPIDPASTVIIIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	757
Callithrix_jacchus	IQHIELEKGS RGLGFSILDYQDPVDPASTVIVIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	769
Bos_taurus	IQNIELEKGS QGLGFSILDYQDPVDPASTVIVIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	758
Equus_caballus	VOYIELEKGS KGLGFSILDYQDPVDPASTVIVIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	763
Canis_lupus_familiaris	VOHIELEKGN KGLGFSILDYQDPIDPTSTVIVIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	785
Heterocephalus_glaber	IQHIELEKGS RGLGFSILDYQDPVDPASTVIVIRSLVPGGIAEKDGR LLLPGDR LMFVNDV	754
Rhinatrema_bivittatum	IQDIELEKGS IGLGFSILDYQDPVDPANTVIVIRSLVPGGVAEONGK LLLPGDR LMFVNEI	791
Xenopus_tropicalis	IQDILLEKGS LGLGFSILDYQDPIDPASTVIVIRSLVPGGVAEODGR LLLPGDR LMFVNEI	785
	.....790.....800.....810.....820.....830.....840	

	..*:. . .*****:*****. * * ***:*** ***** ***:: :. : *	
Pavo_muticus	SLENGSLLEEAVQALKGAPAGIVKIGVAKPLPLSP EEGCVSAKEDCFFYYTAQSL EE EGPAD	814
Pavo_cristatus	SLENGSLLEEAVQALKGAPAGIVKIGVAKPLPLSP EEGCVSAKEDCFFYYTAQSL EE EGPAD	814
Gallus_gallus	SLENGSLLEEAVQALKGAPVGAVKIGVAKPLPLSP EEGCVSAKEDCFFYYTAQSL EE EGPAD	819
Anas_platyrhynchos	NLENGSLLEEAVQALKGAPTGTVKIGVAKPLPLSP EEGYVSAKEDCFFYYTAQSF EE EGPAD	820
Chelonia_mydas	NLENGNLEEAVQALKGAPVGTVRIGVAKPLPLSP EEGYVSAKEDSFFYYTAQSL EE EGPVD	822
Mus_musculus	NLENSTLEEAVEALKGAPSGMVRIGVAKPLPLSP EEGYVSAKEDAF L C S P H A C K E S G L S D	810
Rattus_norvegicus	NLENSTLEEAVEALKGAPSGMVRIGVAKPLPLSP EEGYVSAKEDTFL C S P H T C K E M G L S D	809
Homo_sapiens	NLENSSL EEAVEALKGAPSGTVRIGVAKPLPLSP EEGYVSAKEDSFL Y P P H S C E E A G L A D	817
Pan_troglodytes	NLENSSL EEAVEALKGAPSGTVRIGVAKPLPLSP EE E V Y V S A K E D S F L Y P P H S C E E A G L A D	817
Macaca_mulatta	NLENSSL EEAVEALKGAPSGTVRIGVAKPLPLSP EEGYVSAKEDSFL Y P P H S C E E E G L A D	817
Callithrix_jacchus	NLENSSL EEAVEALKGAPSGTVRIGVAKPLLLSP EEGYVSAKEDSFL Y P P H S C E E E G L A D	829
Bos_taurus	NLENSSL EEAVQALKGAPSGTVRIGVAKPLPLSP EEGYVSAKEDSFL Y P P H S C E E E G L A D	818
Equus_caballus	TLENSSL EEAVQALKGAPSGTVRIGVAKPLPLSP EEGYASAKEDSFL Y P P H S C T E E G L A D	823
Canis_lupus_familiaris	NLENSSL EEAVQALKGAPSGTVRIGVAKPLPLSP EEGYVSAKEDSFL H P R H S C E E E G P A D	845
Heterocephalus_glaber	NLEHSSL EEAVEALKGASPGAVRIGVAKPLLLSP EEGYISAKEEYFLYSPL SCKEHS L P A	814
Rhinatrema_bivittatum	NLENATLEEAVQALKGAPAGRVRIGVSKPLPLSP EEGNVSAKDN S L F Y T A Q S F E E E G L A E	851
Xenopus_tropicalis	NLEHASL EEAVQALKGAPTGNVSGVAKPLPLSP EEGVSAKEDTL F Y T A Q S Y A E E G L S D	845
	.....850.....860.....870.....880.....890.....900	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/MPDZ4es Tue Feb 14:04:05 2022

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      . * : * * * : : . . * : * . . : . . * . . * : : .
Pavo_muticus      AALFHAELALVDSSGAGLAVEPIFEPHFATENL---VFPTSSPVTSDSFCSDDFNFG--- 868
Pavo_cristatus    AALFHAELALVDSSGAGLAVEPIFEPHFATENL---VFPTSSPVTSDSFCSDDFNFG--- 868
Gallus_gallus     AALFHAELALVDSSGAGLAVEPSFESQLAPENL---TFPTSSPAASDSFCSEDLNFG--- 873
Anas_platyrhynchos AALFHADLAMVDSSGEADLADESTLESQYSPESD---TFQASMLALHGSACSDELNYS--- 874
Chelonia_mydas    AALFRAELALVDSSSEADLADESTFESQYTSNDND--TFQASVLALHGSSCSDGLNYS--- 877
Mus_musculus      KALFRADLALIDTPDAESIAESRFESQFSPDNDSVYSTQASIFSLHDGTCSDGMNYG--- 867
Rattus_norvegicus KALFRADLALIDTPDAESVAESRFESQFSPDNDSVYSTQASVLSLHDGACSDGMNYG--- 866
Homo_sapiens      KPLFRADLALVGTINDADLVDESTFESPYPSPENDSIYSTQASILSLHGSSCGDGLNYG--- 874
Pan_troglodytes   KPLFRADLALVGTINDADLVDESTFESPYPSPENDSIYSTQASILSLHGSSCGDGLNYG--- 874
Macaca_mulatta    KPLFRADLALVDTINDADLVDESTFESQYSPDNDSIYSTQTSILSLHGSSCGDGLNYG--- 874
Callithrix_jacchus KPLFRADLALVDTINDVDLVDESTFESQYSPDNDSIYSTQASVLSLHGSSCGDGLNYG--- 886
Bos_taurus        KALFRADLALVNTINDADLADESFAFESQYSPDNDSIYSTQASLLSLHGSSACSDNLNYG--- 875
Equus_caballus    KALFRADLALVDTINDADLADESTFESQYSPDNDSIYSTQASILSLHGSSACSDGLNYG--- 880
Canis_lupus_familiaris RALFRADLALVDTINEADLADESTFESQYSPDNDSIYSTQASILSLHGSSACSDGLNYG--- 902
Heterocephalus_glaber KALCRADLALVDTQNAEMVDESTFESQYSPDNDSVYSTQASVLSFHGSACSDGLSYE--- 871
Rhinatrema_bivittatum AALFHAELALVDSSREADLTDESTFESQYFPENDN--SLQVSLIELHGSSCTENLNYNQL 909
Xenopus_tropicalis AALFHAELALVETILEVDLTSESALERSFSAQDD--TFQASLLALHGSACNDLDTDE--- 900
      .....910.....920.....930.....940.....950.....960

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      : . .
Pavo_muticus      -----FPFSTSTPK-----IAGKEYLSYADDTHISTES 896
Pavo_cristatus    -----FPFSTSTPK-----IAGKEYLSYADDTHISTES 896
Gallus_gallus     -----VPFSASTPK-----IAGKEYLSYADDNDISTES 901
Anas_platyrhynchos -----LSLPSSSTPK-----AVGDEFNLVAADYHISNKN 902
Chelonia_mydas    -----LSLPSSSTPK-----GVGEDSSNASTDFQPSNKN 905
Mus_musculus      -----PSLPSSPPK-----DVTSSSEVVGLHLHLSLEE 894
Rattus_norvegicus -----PSLPSSPPK-----DVTNSSDLVLGLHLHLSLEE 893
Homo_sapiens      -----SSLPSSPPK-----DVIENSCDPVLDLHMSLEE 902
Pan_troglodytes   -----SSLPSSPPK-----DVIENSCDPVLDLHMSLEE 902
Macaca_mulatta    -----SSLPSSSPK-----DVIENSCDPLLDLHMSLEE 902
Callithrix_jacchus -----SSLPSSPPK-----DVIENSSDPVLDLHMSLEE 914
Bos_taurus        -----PSLPSSPPK-----DIAENSSDSVLDLQMSLEE 903
Equus_caballus    -----SSLPSSPPK-----DVTENSSDPVLDLHMSLEE 908
Canis_lupus_familiaris -----PSLPSSPPK-----DVTENSSDPVLDLHMSLEE 930
Heterocephalus_glaber -----PSLASSPPK-----DVDENASNPVHDLHMSLEE 900
Rhinatrema_bivittatum PLPLSISKNVREESFGRDSLPSLSLELVSEDSQSYPEETSGSMASWITAPALDFRMSKD 969
Xenopus_tropicalis -----FLPKDVSE-----ESFLDTTFNSEINTES 924
      .....970.....980.....990.....1000.....1010.....1020

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      : * :
Pavo_muticus      -TYNTDLSE--GREQSTAEDRSLETTTTFSEEVS-----QSED----- 932
Pavo_cristatus    -TYNTDLSE--GREQSTAEDRSLETTTTFSEEVS-----QSED----- 932
Gallus_gallus     -SYSMDLSE--GREQAAEDRSLEATATFSDETF-----LSED----- 937
Anas_platyrhynchos -LYNMDLSE--VREQSVSGKNLETAFAFTKKDLPLDVSVINQENENTEAWAASQTTT 959
Chelonia_mydas    -LYNVDLIQ--VGENQSLEDTSMIPAGGVSKKGLPSDVSEKHAHEYENIAAWMEPOVSA 962
Mus_musculus      -LYTQNLLQ--QHAGSPPTDMRPAPTSGFPISDYTTTNAVEQKYECANPVAVPHSQLP 950
Rattus_norvegicus -LYTQNLLQ--QHAGSPPTDMSPAATSGFTVSDYTPANAIVEQKYECANTVAWTPSQLP 949
Homo_sapiens      -LYTQNLLQ--QDENTPSVDISMGPASGFTINDYTPANAIEQQYECENTIVWTESHLP 959
Pan_troglodytes   -LYTQNLLQ--QDENTPSVDISMGPASGFTINDYTPANAIEQQYECENTIVWTESHLP 959
Macaca_mulatta    -LYTQNLLQ--QDENIPLVDISMGSASGFTINDYTPANAIEQQYECENTIVWTESHLP 959
Callithrix_jacchus -LYTQNLLQ--QDENIPSVDISMGTTSSFTINDYTPANAIEQQCECENTIVWNESHLP 971
Bos_taurus        -LYAQNLLQ--QDESAPSVDLISMGPASGFTVNDYTPANAIEQQYECDDLRAWTESHLP 960
Equus_caballus    -LYAQNLLQ--QDESPPSVDLISMGPASGFTINDYTPANAIVEQQYECENTGAWTDSHLP 965
Canis_lupus_familiaris -LYTQNLLQ--QDESPPSVDLISMGPASGFTVNDYTPANAIEQQYECENTRTWAESHLP 987
Heterocephalus_glaber -LYAQSLQ--QDENPPSINLSLGSASGVAINNYTPGNTIEQ--YGHENTIAWTESQLPR 956
Rhinatrema_bivittatum -LYNMKLIK--GTESIPSGEMSDPAA--TQKNALLIDSHEKOVGNKTTTLIESOPTV 1024
Xenopus_tropicalis SSFPKPLSEKELWATSTPMLDFKLPSINFYNLEKENPKNSPSELKDHFERAAFEKQKDD 984
      .....1030.....1040.....1050.....1060.....1070.....1080

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus      -----LLDIKHDKEMLMESLLLTMD-----KIFGASNRVKNIFEETITIA 973
Pavo_cristatus    -----LLDIKHDKEMLMESLLLTMD-----KIFGASNRVKNIFEETITIA 973
Gallus_gallus     -----IFDIKHDKEVVTESLILPVN-----KDFTISKMIKNIFEETITIA 978
Anas_platyrhynchos EFAQSTSLATTMQLDGTGKDQVLSMEKSCSVSVE-----GSSTTPNSVKNIYEKTTITIA 1013
Chelonia_mydas    EVAQNTNSAITAHPDLTGKDAVYLMEKSYLTSTTE-----GSSTIQNTPKNMHEKTTITIA 1017
Mus_musculus      SSLSTSELAP-ALPAVAQK---YLTDQSSSLASDA-----ESVNLQSMSQEAFFERTVTIA 1000
Rattus_norvegicus SGLSTTELAP-ALPAVAPK---YLTEQSSLVSDA-----ESVTLQSMSQEAFFERTVTIA 999
Homo_sapiens      EVISSAELPS-VLPDSAGKGSEYLLQSSSLACNA-----ECVMLQNVSKESFERTINIA 1012
Pan_troglodytes   EVISSAELPS-VLPDSAGKGSEYLLQSSSLASNA-----ECVMLQNVSKESFERTINIA 1012
Macaca_mulatta    EVISSAELPS-VLPDSAGKGSEYLLQSSSLASNA-----ECVMLQNVSKESFERTINIA 1012
Callithrix_jacchus EVISSAELPS-VLPDSAGKSSEYLLQSSSLASNA-----ECVMLQNVSKESFERTITIA 1024
Bos_taurus        EVLSSAELSSPVLTDTSTGKGSKFLIQSSSLASAA-----ECVMLQNTPRESFERTIVIA 1014
Equus_caballus    EVISSAELTS-VLPDATGKGSKFLIHQSSSLGYTA-----ECVMLQNTSEESFERTITIT 1018
Canis_lupus_familiaris EIISSAELTSPVLPDSTGKGSSEFLIQSSSLTSTG-----ECVMLQNLKEMFERTITIA 1041
Heterocephalus_glaber EVVSGSELPSVTVVPDSAGQSEYLLQSSSLASD-----KCVMLENMSKESFERTITIA 1010
Rhinatrema_bivittatum ETLPETNITSEVCSDLNLKVHGHSLDKSPMAKE-----ECITLPLSSKNLLERTINIA 1078
Xenopus_tropicalis VSPSSWINFSENSEISADFISPELKDEGFSFGKQYLETSEHSSANALIKSKLEKIISVN 1044
.....1090.....1100.....1110.....1120.....1130.....1140

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:*****:*** *:****:***:*****: ***** *: * : :*****
Pavo_muticus      KGNSSLGMTVSSDKDGAGMIVRSVIHGGSSISRDGRINVGDCILSINEESSTNLTAQARA 1033
Pavo_cristatus    KGNSSLGMTVSSDKDGAGMIVRSVIHGGSSISRDGRINVGDCILSINEESSTNLTAQARA 1033
Gallus_gallus     KGNSSLGMTVSSDKDGTGMIVRSVIHGGSSISRDGRINVGDCILSINEESSTNLTAQARA 1038
Anas_platyrhynchos KGNSSLGMTVSSNKDGSVMIVRSVIHGGSSISRDGRIGVGDICILSINEESTNLTAQARA 1073
Chelonia_mydas    KGNSSLGMTVSSNKDGSVMIVRSIIHGGSSISRDGRIGVGDICILSINEESTNLTAQARA 1077
Mus_musculus      KGSSSLGMTVSANKDGLGVIVRSIIHGGAIISRDGRIVGDCILSINEESTISLTNAQARA 1060
Rattus_norvegicus KGSSSLGMTVSANKDGLGVIVRSIIHGGAIISRDGRIVGDCILSINEESTISLTNAQARA 1059
Homo_sapiens      KGNSSLGMTVSANKDGLGMIVRSIIHGGAIISRDGRIVGDCILSINEESTISVTNAQARA 1072
Pan_troglodytes   KGNSSLGMTVSANKDGLGMIVRSIIHGGAIISRDGRIVGDCILSINEESTISVTNAQARA 1072
Macaca_mulatta    KGNSSLGMTVSANKDGLGMIVRSIIHGGAIISRDGRIVGDCILSINEESTISVTNAQARA 1072
Callithrix_jacchus KGNSSLGMTVSANKDGLGMIVRSIIHGGAIISRDGRIVGDCILSINEESTISVTNAQARA 1084
Bos_taurus        KGNSSLGMTVSANKDGLGVIVRSIIHGGAIISRDGRIVGDCILCINEESTISLTNAQARA 1074
Equus_caballus    KGNSSLGMTVSANKDGLGMIVRSIIHGGAIISRDGRIVGDCILSINEESTISLTNAQARA 1078
Canis_lupus_familiaris KGNSSLGMTVSANKDGLGMIVRSIIHGGAIISRDGRIVGDCILSINEESTISLTNAQARA 1101
Heterocephalus_glaber KGNSSLGMTVSANKDGLGMIVRSIIHGGAIISRDGRIVGDCILFINEESTISLTSAQARA 1070
Rhinatrema_bivittatum KGSSSLGMTVSANKDGTGMIVRSIIHGGSVSRDGRINVGDCILAINESTINLTNAQARA 1138
Xenopus_tropicalis RGSSSLGMTVSASKDGAGMIVRSIINGGSSISRDGRISVGDCILSINNECTANLTNAQARA 1104
.....1150.....1160.....1170.....1180.....1190.....1200

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:***** * : * . * * * . * : : . * . :
Pavo_muticus      MLRRHSLIGREIKSSSAPSDDQALFYVITYVVAENLSKYRASLEQQSEETMSVSSSQSA 1093
Pavo_cristatus    MLRRHSLIGPEIKSSSAPSDDQALFYVITYVVAENLPKYRASLEQQSEETMSVSSSQSA 1093
Gallus_gallus     MLRRHSLSGPEIRSSPAPSDDQALFYVITYVLAENLPKYRASLEQQSEETMSVSSSQSA 1098
Anas_platyrhynchos MLRRHSLIGPDIKSSPAPADDQALFYVITYVPAENLEFYRASLEQQTEETVPIELFPSHT 1133
Chelonia_mydas    MLRRHSLIGSDIKSSPAPADDQAPFYVIIYVPAEHLEFYKASLGQQPEDITPLNLFSAHT 1137
Mus_musculus      MLRRHSLIGPDIK-----ITYVPAEHLEEFVRSFGQQAGGIMALDIFSSYT 1106
Rattus_norvegicus MLRRHSLIGPDIKFSAAPADDRAPFYVITYVPAEHLEEFVRSFGQQAGGIMALDIFSSYT 1119
Homo_sapiens      MLRRHSLIGPDIKF-----ITYVPAEHLEEFKISLGQQSGRVMALDIFSSYT 1118
Pan_troglodytes   MLRRHSLIGPDIKFSAAPADDRAPFYVITYVPAEHLEEFKISLGQQSGRVMALDIFSSYT 1132
Macaca_mulatta    MLRRHSLIGPDIK-----ITYVPAEHLEEFKISLGQQSGKIMALDIFSSYT 1118
Callithrix_jacchus MLRRHSLIGPDIKFSATPADDQAPFYVITYVPAEHLEEFKISLGQQSGRMMALDIFSSYA 1144
Bos_taurus        LLRRHSLIGPDIK-----ITYVPAEYLEEFKISLGQQSGGIMALDIFASYT 1120
Equus_caballus    MLRRHSLIGPDIK-----ITYVPAEHLEEFKISLGQQSGGIMALDIFSSYT 1124
Canis_lupus_familiaris MLRRHSLIGPDIK-----ITYVPAEHLEEFKISLGQQSGGIMALDIFSSYT 1147
Heterocephalus_glaber MLRRHSLIGPDIKFSAAPADERAPFYVITYVPAEHLEEFKISLGQQSGGIMALDIFSSYT 1130
Rhinatrema_bivittatum MLRRHSLIGPDIN-----ITYVPGGHLEEFKISLGQQSGGIMALDIFSSYT 1184
Xenopus_tropicalis MLRRHSLIGPDIRSSPAPADDQAPFYVITYVPAEHLEEFKISLGQQSEVKGTGEIYESNT 1164
.....1210.....1220.....1230.....1240.....1250.....1260

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

**File: /media/morpheus/disk1/fst/pep\_msa/MPIDates Tue Feb 1 14:04:05 2022**

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	*****:.*.*.*:*****.*****	
Pavo_muticus	SIREIPELPEREEGEGEESELQSAAFSSWNQPRKVELWREP GKSLGISIVGGRGMGSRLS	1153
Pavo_cristatus	SIREIPELPEREEGEGEESELQSAAFSSWNQPRKVELWREP GKSLGISIVGGRGMGSRLS	1153
Gallus_gallus	SIREIPELPEREEGEGEESELQNAAFSSWNQPRKVELWREP GKSLGISIVGGRGMGSRLS	1158
Anas_platyrhynchos	VSREIPELPEREEGEGEESELQNAATFSNWNQPRKVELWREP SKSLGISIVGGRGMGSRLS	1193
Chelonia_mydas	VSRPEIPELPEREEGEGEESELQNAAYSHWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1197
Mus_musculus	G-RDIPELPEREEGEGEESELQNAAYSSWSOPRRVELWREP SKSLGISIVGGRGMGSRLS	1165
Rattus_norvegicus	G-RDIPELPEREEGEGEESELQNAAYSSWSOPRRVELWREP SKSLGISIVGGRGMGSRLS	1178
Homo_sapiens	G-RDIPELPEREEGEGEESELQNTAYSNWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1177
Pan_troglodytes	G-RDIPELPEREEGEGEESELQNTAYSNWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1191
Macaca_mulatta	G-RDIPELPEREEGEGEESELQNTAYSNWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1177
Callithrix_jacchus	G-RDIPELPEREEGEGEESELQNTAYSNWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1203
Bos_taurus	G-RDIPELPEREEGEGEESEDLQNAAYSNWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1179
Equus_caballus	G-RDIPELPEREEGEGEESELENAAYSNWNQTRRVELWREP SKSLGISIVGGRGMGSRLS	1183
Canis_lupus_familiaris	G-RDIPELPEREEGEGEESELQNAAYSNWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1206
Heterocephalus_glaber	G-GEIPELPEREEGEGEESELQNAAYSNWNQPRRVELWREP SKSLGISIVGGRGMGSRLS	1189
Rhinatrema_bivittatum	V-RETPELPEREEGEGEESELQNAATFNWNQPRRIELWREAGKSLGISIVGGRGMGSRLS	1243
Xenopus_tropicalis	E-SFVPELPEREEGEGEESELENATYSNWNPNRRVELWREP GKSLGISIVGGRGMGSRLS	1223
	.....1270.....1280.....1290.....1300.....1310.....1320	

	*****:.*:*****:****.****:**** ** *:*.*****.****	
Pavo_muticus	SGEVMRGIFIKHILEDSPAGKNGTLKTGDRIVEVDGIDLTDASHEQAVEAIRKAGNPVVF	1213
Pavo_cristatus	SGEVMRGIFIKHILEDSPAGKNGTLKTGDRIVEVDGIDLTDASHEQAVEAIRKAGNPVVF	1213
Gallus_gallus	SGEVMRGIFIKHILEDSPAGKNGTLKTGDRIVEVDGIDLTDASHEQAVEAIRKAGNPVVF	1218
Anas_platyrhynchos	NGEVMRGIFIKHILEDSPAGKNGTLKTGDRIVEVDGIDLTDASHEQAVEAIRKAGNPVVF	1253
Chelonia_mydas	NGEVMRGIFIKHILEDSPAGKNGTLKTGDRIVEVDGIDLTDASHEQAVEAIRKAGNPVVF	1257
Mus_musculus	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIEEEVDGMDLRDASHEQAVEAIRKAGNPVVF	1225
Rattus_norvegicus	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGSPVVF	1238
Homo_sapiens	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1237
Pan_troglodytes	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1251
Macaca_mulatta	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1237
Callithrix_jacchus	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1263
Bos_taurus	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1239
Equus_caballus	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1243
Canis_lupus_familiaris	NGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1266
Heterocephalus_glaber	SGEVMRGIFIKHVLEDSPAGKNGTLKPGDRIVEVDGMDLRDASHEQAVEAIRKAGNPVVF	1249
Rhinatrema_bivittatum	NGEVMRGIFIKHILEDSPAGKNGTLKTGDRIVEVDGTDLRDSSHKOAVEAIRKAGNPVVF	1303
Xenopus_tropicalis	NGEVMRGIFIKHILEDSPAGKNGTLKTGDRIVEVDGTDLRDASHEQAVEAIRKAGNPVVF	1283
	.....1330.....1340.....1350.....1360.....1370.....1380	

	*** :.* * .:	:	
Pavo_muticus	VVQSIISRPRPESLYSPSSASALCEQKTTNPFYRQSSKNSSPPFPQSYIFCRPAVFSSTN	1273	
Pavo_cristatus	VVQSIISRPRPESLYSPSSASALCEQKTTNPFYRQSSKNSSPPFPQSYIFCRPAVFSSTN	1273	
Gallus_gallus	MVQSIISRSRPESLYSPSSASALCEQKTTNPFYHQSSKNSSLFPFPQNYLFCRPAIFSSTN	1278	
Anas_platyrhynchos	MVQSIISRPRPESLYSPSSASAPCGQKTTNPFYHQSSKNPSLFPFPQNNLFCRPAVFSSTN	1313	
Chelonia_mydas	MVQSIINRSRPESLNSSSTTSALSGQKPTNPFYRQSSQASS-----	1298	
Mus_musculus	MVQSIINRPRKSPLPS-----LPHSLYPKYS-----FSSTN	1256	
Rattus_norvegicus	MVQSIIVNRPRKSPLPS-----LPHSLYPKCS-----FSSTN	1269	
Homo_sapiens	MVQSIINRPRKSPLPS-----LLHNLYPKYN-----FSSTN	1268	
Pan_troglodytes	MVQSIINRPRKSPLPS-----LLHNLYPKYN-----FSSTN	1282	
Macaca_mulatta	MVQSIINRSRKSPLPS-----LPHNLYPKYN-----FSSTN	1268	
Callithrix_jacchus	MVQSIINRPRKSPLPS-----LPHNLYPKYN-----FSSTN	1294	
Bos_taurus	LVQSIINRPRKSPLPS-----LPHNLYPKYK-----FSSTN	1270	
Equus_caballus	MVQSIINRPRKAPLPS-----LLHNLYPKST-----FSSTN	1274	
Canis_lupus_familiaris	MVQSIINRPRKSPLPS-----LPHNLYPKYN-----FSSTN	1297	
Heterocephalus_glaber	MVQSTINRPRKSPLPS-----LPHNLYPKYN-----FSSTN	1280	
Rhinatrema_bivittatum	LVQSIINRQKNPLSF-----LHLNLATKPL-----FSSTN	1334	
Xenopus_tropicalis	LVQSIINRPRPESVYCSPPSSALRQHPITNPFSSHSPKKPALPLLOSTFG-TKPLERCTN	1342	
	.....1390.....1400.....1410.....1420.....1430.....1440		



# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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                                * . * . . .
Pavo_muticus      PFADSSQFNANKEVSNPIRVTFRCSPTNPFAPTPFKAFSSQSSSEPEKTSFCNLPLPPPSA 1333
Pavo_cristatus    PFADSSQFNANKEVSNPIRVTFRCSPTNPFAPTPFKAFSSQSSSEPEKTSFCNLPLPPPSA 1333
Gallus_gallus     PFADSSQFNANKEVSNPIRVTFRCSPTNPFAPTPFKAFGQSTSEPEKTSFCNLPLPPPPST 1338
Anas_platyrhynchos PFADSSQFNTNKEISNPIRVTFRCSPTNPFAPTPFKAFSSQSDSEPEKTSFCNLPLPPPPPA 1373
Chelonia_mydas    -----QSDSEPGKTSFSCNLPLPPPPSA 1319
Mus_musculus      PFADSLQLTTD-----QAPSQSESETEKPAFCNVPPSSPSV 1292
Rattus_norvegicus PFAESLQLTSD-----KAPSQSESESEKATLCVPSSSPSV 1305
Homo_sapiens      PFADSLQINAD-----KAPSQSESESEKAPLCSVPPPPPSA 1304
Pan_troglodytes   PFADSLQINAD-----KAPSQSESESEKAPLCSVPPPPPSA 1318
Macaca_mulatta    PFADSLQINADKELQNSSRIIFCCSPTNPFAPIPFKAPSQSESESEKAPLCSVPPPPPSA 1328
Callithrix_jacchus PFADSLQINAD-----KAPSQSESESEPEMAPLCNVSPPPPSA 1330
Bos_taurus        PFAGSLQFNADKALQKSSRVLFRCSPTNPFAPTPFKVPSQSESESEPENPPLCHSPPPQPPV 1330
Equus_caballus    PFAGSLPFNADKAP-----SQSESESEKAPSVRVPPPPPSA 1310
Canis_lupus_familiaris PFADSLQFNADKELQNSSRVTFRCSPTNPFAPTPFKAPSQSESESESEKAPLSTVPPPPPSA 1357
Heterocephalus_glaber PFADSLQFTAD-----KAPSHSESESEKAPVCDVLRPSSPA 1316
Rhinatrema_bivittatum PFADSLQLNTN-----KASSQSDSEPEKTSICNLPLPPPPSE 1370
Xenopus_tropicalis PFDSS-QLNINKGTIMNPVRIAFRCSPTNPFAPTPFKASSSDSETEKTSSSN-YLTGPST 1400
.....1450.....1460.....1470.....1480.....1490.....1500

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: . : . * : :*****: :*** * *.**.******:*****
Pavo_muticus      FSGISCDVAQSSSSQVTEDEVEKEDEFGYSWKKITQRYGSLPGELHMIIELEKGRITGLGLSL 1393
Pavo_cristatus    FSGISCDVAQSSSSQVTEDEVEKEDEFGYSWKKITQRYGSLPGELHMIIELEKGRITGLGLSL 1393
Gallus_gallus     FLGINSQVAQSSSSQVTEDEVEKENEFGYSWKKITQRYGSLPGELHMIIELEKGRITGLGLSL 1398
Anas_platyrhynchos FSGMSCDVTQSSSSSKVQEDVEKEDEFGYSWKKIMQRYGNLPGELHMIIELEKGRITGLGLSL 1433
Chelonia_mydas    FSGMSCEIAQSSSSSKMEEDVEDDDEFGYSWKKITQRYGNLPGDLHMIIELEKGRITGLGLSL 1379
Mus_musculus      FSEMGSDCAQPSATAVSEDEDEKEDEFGYSWKNIQERYGSLTGQLHVIIELEKQSGGLGLSL 1352
Rattus_norvegicus FSEMGSDYAQPSATTVAEDEDKEDEFGYSWKNIQERYGTLTGQLHMIIELEKGHSGLGLSL 1365
Homo_sapiens      FAEMGSDHTQSSASKISQDVKDEDEFGYSWKNIRERYGTLTGELHMIIELEKGHSGLGLSL 1364
Pan_troglodytes   FAEMGSDHTQSSASKISQDVKDEDEFGYSWKNIRERYGTLTGELHMIIELEKGHSGLGLSL 1378
Macaca_mulatta    FAEMGSDHTQSSASKISQDVKDEDEFGYSWKNIRERYGTLTGELHMIIELEKGHSGLGLSL 1388
Callithrix_jacchus FAEMGSDQAQSSASKISQDVKDEDEFGYSWKNIRERYGTLTGELHMIIELEKGHSGLGLSL 1390
Bos_taurus        LAEMSGDHALSSANETSSEDVDEDEFGYSWKNIRERYGTLTGELHMIIELEKGRSGLGLSL 1390
Equus_caballus    FAEMSGDQARSSASTVSEDGDEDEFGYSWKNIRERYGTLTGDLHMIIELEKGRSGLGLSL 1370
Canis_lupus_familiaris FAEMGSDHTQSSASKISQDVKDEDEFGYSWKNIRERYGTLTGELHMIIELEKGRSGLGLSL 1417
Heterocephalus_glaber FAEMGSDHAQTSAGMISEDVDEDEFGYSWKNIRERYGTLTGKLHMIIELEKGHSGLGLSL 1376
Rhinatrema_bivittatum FSEVSSDSIQSACSIISEDPEDEFGYSWKKIWQRYGNLPGDLHMIIELEKGKAGLGLSL 1430
Xenopus_tropicalis LSSVNSEKLQMTSS---TDPEKEDEFGYSWKKISQRYGNLPGELHMIIELEKGKTLGLGLSL 1457
.....1510.....1520.....1530.....1540.....1550.....1560

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*****:*****:*****.*****:*****:*****:*****:*****:*****
Pavo_muticus      AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRTHQNASIIKCAPSK 1453
Pavo_cristatus    AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRTHQNASIIKCAPSK 1453
Gallus_gallus     AGNKDRSRMSVFVVGIDPNGAAGKDGRLQIADELLEINGQILYGRTHQNASIIKCAPSK 1458
Anas_platyrhynchos AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQMLYGRTHQNASIIKCAPSK 1493
Chelonia_mydas    AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRTHQNASIIKCAPSK 1439
Mus_musculus      AGNKDRTRMSVFIVGIDPTGAAGRDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1412
Rattus_norvegicus AGNKDRTRMSVFIVGIDPTGAAGRDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1425
Homo_sapiens      AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1424
Pan_troglodytes   AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1438
Macaca_mulatta    AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1448
Callithrix_jacchus AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1450
Bos_taurus        AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1450
Equus_caballus    AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1430
Canis_lupus_familiaris AGNKDRSRMSVFVVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1477
Heterocephalus_glaber AGNKDRTRMSVFIVGIDPNGAAGRDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1436
Rhinatrema_bivittatum AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1490
Xenopus_tropicalis AGNKDRSRMSVFIVGIDPNGAAGKDGRLQIADELLEINGQILYGRSHQNASIIKCAPSK 1517
.....1570.....1580.....1590.....1600.....1610.....1620

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/MPDZ4es Tue Feb 14:04:05 2022

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*.*.*.*.* **::.*.*.* : : .* : : :. :. :.
Pavo_muticus VKIIFIRNKDAVNQMAVCPAKSIEVLPCSETLQNEVDF-TAESG-VSPDFGSYKNIQH 1511
Pavo_cristatus VKIIFIRNKDAVNQMAVCPAKSIEVLPCSETLQNEVDF-TAESG-VSPDFGSYKNIQH 1511
Gallus_gallus VKIIFIRNKDAVNQMAVCPAKSIEALPCASETLQNEIDT-TADGG-VSPDFSSYKNIQY 1516
Anas_platyrhynchos VKIIFIRNKDAVNQMAVCPKTSIES--CTSGTLQNEIDP-SAGNSVSSDFSSYKNIQY 1550
Chelonia_mydas VKIIFIRNKDAVNQMAVCPGKSIVESLPSPTGTPQNQEGEP-SATSPVLAIDFNINVTNIQH 1498
Mus_musculus VKIIFIRNADAVNQMAVCPGIAADSPSTSDSPONKEVEP-CSTTSASAADLSSSLTDVYQ 1471
Rattus_norvegicus VKIIFIRNKDAVNQMAVCPGSAADPLPSTSESPONKEVEP-SITTSASAVDLSSSLTNVYH 1484
Homo_sapiens VKIIFIRNKDAVNQMAVCPGNAVEPLPSNSENLOKETEPTVTTSDAAVDLSSSFKNVQH 1483
Pan_troglodytes VKIIFIRNKDAVNQMAVCPGNAVEPLPSNSENLOKETEPTVTTSDAAVDLSSSFKNVQH 1497
Macaca_mulatta VKIIFIRNKDAVNQMAVCPGNAVEPLPSTSENLOKETEPTVTTSDAAVDLSSSFKNVQH 1507
Callithrix_jacchus VKIIFIRNKDAVNQMAVCPGNAVEPLPSTSENLOKETEPTVTTSDNGVVDLSSSFKNVQH 1509
Bos_taurus VKIIFIRNKDAVSNQMAVCPGHTVPEPSPATSENLOKETEPTVTTSEAVVDLSSSLTNVQH 1509
Equus_caballus VKIIFIRNKDAVSNQMAVCPGNTIEPLSSASENLOKETEPTVTTSDSAVDLSSSFKNVQY 1489
Canis_lupus_familiaris VKIIFIRNKDAVSNQMAVCPGNTVEPLPSASENLOKETEPTGTTSDAAVDLCSFKNVQH 1536
Heterocephalus_glaber VKIIFIRNKDALSNQMAVCPGNTVESLLS-SDNLOKKEVEP-SIPASDPVADLSSSLKNVRH 1494
Rhinatrema_bivittatum VTIIIFIRNKDAVNEMAVCPVKSMES-SSITLGTFOKKEIEQ-SAASPVPADLSSSFKNVQH 1548
Xenopus_tropicalis VKIIFIRNKDAVNQMAVCPVKATEPSFPNSSAFSLNLEVEEESVPSVPLPLNVGSFKNVLH 1577
.....1630.....1640.....1650.....1660.....1670.....1680

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:*****:.*.*.*.* **** ***:*:*: * **.*.*.*: * :*:*** * * * *
Pavo_muticus VELPKDEGGLGIAISEEDTVSGVVIKSLTDHGAAAKDGRIKTGNQILAVDDEIVVGYPVE 1571
Pavo_cristatus VELPKDEGGLGIAISEEDTVSGVVIKSLTDHGAAAKDGRIKTGNQILAVDDEIVVGYPVE 1571
Gallus_gallus VELPKDEGGLGIAISEEDTVSGVVIKSLTDHGAAAKDGRIKTGNQILAVDDEIVVGYPVE 1576
Anas_platyrhynchos VELPKDQGGLGIAISEEDTINGVVIKSLTDHGAAAKDGRIKVGDIQILAVDDEIVVGYPVE 1610
Chelonia_mydas VELPKDQGGLGIAISEEDTLNGVVIKSLTDHGAAAKDGRIKVGDIQILAVDDEIVVGYPIE 1558
Mus_musculus LELPKDQGGLGIAICEEDTINGVMIESLTHGGAAGDGRILKPGDRIQILAVDDEVVAGCPVE 1531
Rattus_norvegicus LELPKDQGGLGIAICEEDTLNGVTIKSLTERGGAAGDGRILKPGDRIQILAVDDELVAGCPVE 1544
Homo_sapiens LELPKDQGGLGIAISEEDTLGVIKSLTEHGVAATDGRILKVGDIQILAVDDEIVVGYPIE 1543
Pan_troglodytes LELPKDQGGLGIAISEEDTLGVIKSLTEHGVAATDGRILKVGDIQILAVDDEIVVGYPIE 1557
Macaca_mulatta LELPKDQGGLGIAISEEDTLRGVVIKSLTEHGVAATDGRILKVGDIQILAVDDEIVVGYPVE 1567
Callithrix_jacchus LELPKDQGGLGIAISEEDTLNGVVIKSLTEHGVAATDGRILKVGDIQILAVDDEIVVGYPVE 1569
Bos_taurus LELPKDQGGLGIAISEEDTVSGVVIKSLTEHGAAAKDGRILKVGDIQILAVDDEVVGYPVE 1569
Equus_caballus LELPKDQGGLGIAISEEDTLGVIKSLTEHGVAAGDGRILKVGDIQILAVDDEVVGYPVE 1549
Canis_lupus_familiaris LELPKDQGGLGIAITEEDTHSGVVIKSLTEHGVAAGDGRILKVGDIQILAVDDEVVGYPVE 1596
Heterocephalus_glaber LELPKDQAGLGIAISEEDTLGVIKSLTEHGVAAGDGRILKVGDIQILAVDDEVVGYPVE 1554
Rhinatrema_bivittatum IELPKDQGGLGIAISEEDTVNGVLIKSITDHGAAAKDGRIKIGDRIQILAVDDECVLGHPTE 1608
Xenopus_tropicalis VELPKDQGGLGIAISEEDTVNGVVIKSLTDHGAAAKDGRIKVGDCILAVDDEPVGDPPIE 1637
.....1690.....1700.....1710.....1720.....1730.....1740

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*.* ***.: :*: : : .* : *
Pavo_muticus KFINLLKSSKNTVKLTINSAEADSC----TVAPILSSAAPAERRNIQPPITAVS--NSPEP 1625
Pavo_cristatus KFINLLKSSKNTVKLTINSAEADSC----TVAPILSSAAPAERRNIQPPITAVS--NSPEP 1625
Gallus_gallus KFINLLKSSKNTVKLTINSAEADSC----TIAPVLSSAAPGERNNIHPPTAICSSNSPEP 1632
Anas_platyrhynchos KFISLLKTSKTMVRLTINSAEAGSL----TTASVST--TPAERRNIQPPATVPPSSSPEP 1664
Chelonia_mydas KFISLLKTSKTTVKLTINSIEHDSQTSLOSTPPLCSANTGERKNIQOQLMIPSSGSPEP 1618
Mus_musculus KFISLLKTAKATVKLTIVRAENPACP----AVPSAVTVSGERKDNSTPAVPAP-DLEP 1585
Rattus_norvegicus KFISLLKTAKTTVKLTIVGAENPGCQ----AVPSAAVTASGERKDNSTPAVPAP-DLEP 1598
Homo_sapiens KFISLLKTAKMTVKLTIHAENPDSQ----AVPSAAGAASGEKKNSSQSLMVPQSGSPEP 1598
Pan_troglodytes KFISLLKTAKMTVKLTIHAENPDSQ----AVPSAAGAASGEKKNSSQSLMVPQSGSPEP 1612
Macaca_mulatta KFISLLKTTKTTVKLTIHAENPDSQ----AVPSAAGAASGEKKNSSQSLMVPQSGSPEP 1622
Callithrix_jacchus KFISLLKTAKMTVKLTIHAENADSC----AVSSAAGAASGEKKNSSQSLIIPQSGSPEP 1624
Bos_taurus KFINLLKTAKTKVKLTIRAENPDSQ----ATTSGTGTANGEKKSSPQSPVAPPSSSPEP 1624
Equus_caballus KFISLLKTAKTTVKLTICAENPDSQ----AIASAAGTANGEKKNSSQSPMVPQSGSPEP 1604
Canis_lupus_familiaris KFISLLKTAKTTVKLSIRAENRDPQ----AVASAAGAASGEKKSSSLALMAPSSGSPEP 1651
Heterocephalus_glaber KFIDLLKTAKRTIKLTVQAEAPDSQ----TFPEAAGAASGEKPHS-ASPLVLQSGSPEP 1608
Rhinatrema_bivittatum KVINLLKKNSTVKLTISATEPDIEKPLPSALSFAATTISERKDSQOPALSLAGLLEV 1668
Xenopus_tropicalis KVICLLKKAKTTVKLTISSDEKDMF-QLLPLPSITLTSSITGEIKNGQOCLPLSNFSEPEP 1696
.....1750.....1760.....1770.....1780.....1790.....1800

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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: .:***** ..*: *****:****:*****:*****
Pavo_muticus      --EAVKNTSRSSPATLASDPATCPIIPGCETTIDISKGTGLGLSIVGGSDDLGAIII 1683
Pavo_cristatus    --EAVKNTSRSSPATLASDPATCPIIPGCETTIDISKGTGLGLSIVGGSDDLGAIII 1683
Gallus_gallus     --EPVKNTSRSSPATLASDPATCPIIPGCETTIDISKGTGLGLSIVGGADTLLGAIII 1690
Anas_platyrhynchos --EAVKNTSRSSPATLASDPATCPIIPGCETTIDISKGTGLGLSIVGGADTLLGAIII 1722
Chelonia_mydas    --ETIKNTSRSSPATLASDPATCPIIPGCETTIDISKGTGLGLSIVGGADTLLGAIII 1676
Mus_musculus      ----IPSTSRSSPAVFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1641
Rattus_norvegicus ----IPSTSRSSPAIFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1654
Homo_sapiens      --ESIRNTSRSSPAIFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1656
Pan_troglodytes   --ESIRNTSRSSPAIFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1670
Macaca_mulatta    --ESIRNTSRSSPAIFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1680
Callithrix_jacchus --ESIRNTSRSSPAIFASDPAMCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1682
Bos_taurus        --EPMRSTSRSSPAIFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1682
Equus_caballus    --ESIRSTSRSSPAVFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1662
Canis_lupus_familiaris --ESIPSTSRSSPAIFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1709
Heterocephalus_glaber EAESLLSTSRSSPAIFASDPATCPIIPGCETTIEISKGTGLGLSIVGGSDDLGAIII 1668
Rhinatrema_bivittatum --EPLKSTSRSSPAIFASDPATCPIIPGCETTIDISKGTGLGLSIVGGADTLLGAIII 1726
Xenopus_tropicalis ----VRSSSRSSPATFSPDPATCPIIPGCETTIDISKGTGLGLSIVGGADTLLGAIII 1752
.....1810.....1820.....1830.....1840.....1850.....1860

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*****:*****:***** **:.*****:*****:* *:****: *:
Pavo_muticus      HEVYEEGAASKDGRWLWAGDQILEVNGIDLRSAHDEAINVLRQTPQKVRLTVYRDEAQYK 1743
Pavo_cristatus    HEVYEEGAASKDGRWLWAGDQILEVNGIDLRSAHDEAINVLRQTPQKVRLTVYRDEAQYK 1743
Gallus_gallus     HEVYEEGAASKDGRWLWAGDQILEVNGIDLRSAHDEAINVLRQTPQKVRLTVYRDEAQYK 1750
Anas_platyrhynchos HEVYEEGAASKDGRWLWAGDQILEVNGIDLRNATHDEAINVLRQTPQKVRLTVYRDEAQYK 1782
Chelonia_mydas    HEVYEEGAASKDGRWLWAGDQILEVNGIDLRNATHDEAISVLRQTPQKVRLTVYRDEAQYK 1736
Mus_musculus      HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1701
Rattus_norvegicus HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1714
Homo_sapiens      HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1716
Pan_troglodytes   HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1730
Macaca_mulatta    HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1740
Callithrix_jacchus HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDETPYK 1742
Bos_taurus        HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1742
Equus_caballus    HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1722
Canis_lupus_familiaris HEVYEEGAACKDGRWLWAGDQILEVNGIDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYK 1769
Heterocephalus_glaber HEVYEEGAACKDGRWLWAGDQILEVNGTDLRKATHDEAINVLRQTPQKVRLTVYRDEAPYR 1728
Rhinatrema_bivittatum HEVYEEGAASKDGRWLWAGDQILEVNGIDLRNATHDEAINVLRQTPQKVRLTVYRDEAQYK 1786
Xenopus_tropicalis HEVYEEGAASKDGRWLWAGDQILEVNGIDLRNATHDEAINVLRQTPQKVRLTVYRDEAQYK 1812
.....1870.....1880.....1890.....1900.....1910.....1920

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*:*: *.. :****:****:*****:*****: *****: *****:* **
Pavo_muticus      EEDMYDVLIIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADTDGRIMOGDQILTVN 1803
Pavo_cristatus    EEDMYDVLIIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADTDGRIMOGDQILTVN 1803
Gallus_gallus     EEDMYDVVVIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADTDGRIMOGDQILTVN 1810
Anas_platyrhynchos EEDMYDVLIIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADTDGRIMOGDQILTVN 1842
Chelonia_mydas    EEDMYDVLNIIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADTDGRIMOGDQILTVN 1796
Mus_musculus      EEDVCDTFTIELQKRPKGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILMVN 1761
Rattus_norvegicus EEDVCDTFTIELQKRPKGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILMVN 1774
Homo_sapiens      EEEVCDTLTIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILMVN 1776
Pan_troglodytes   EEEVCDTLTIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILMVN 1790
Macaca_mulatta    EEEVCDTLTIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILMVN 1800
Callithrix_jacchus EEEVCDTLTIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILMVN 1802
Bos_taurus        EEDVYDTLTVELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILTVN 1802
Equus_caballus    EEDVYDTLTVELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILTVN 1782
Canis_lupus_familiaris EEDVYDTLTIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADADGRIMOGDQILTVN 1829
Heterocephalus_glaber EEDMCDTLTVELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIAEADGRIMOGDQILTVN 1788
Rhinatrema_bivittatum EEDMYDTLTVELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIADTDGRIMOGDQILTVN 1846
Xenopus_tropicalis EEDMYDVLDTIELQKKPGKGLGLSIVGKRNDTGVFVSDIVKGGIAEIDGRIMOGDQILMVN 1872
.....1930.....1940.....1950.....1960.....1970.....1980

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

**File: /media/morpheus/disk1/fst/pep\_msa/MPIDates Tue Feb 1 14:04:05 2022**

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	**** :. *. *****	**** * *:***:*. **:*. **.*. *:** *	
Pavo_muticus	GEDVRNANQEAVAALLKVSRKQEC	SLGTVRLEVGRKAGPFQSERRTSQSSQVSEGS	1863
Pavo_cristatus	GEDVRNANQEAVAALLKVSRKQEC	SLGTVRLEVGRKAGPFQSERRTSQSSQVSEGS	1863
Gallus_gallus	GEDVRNTNQEAVAALLKVSRKQEC	SLGTVRLEVGRKAGPFHSERRTSQSSQVSEGS	1870
Anas_platyrhynchos	GEDVRNANQEAVAALLK-----	CSLGTVRLEVGRKAGPFHSERRTSQSSQVSEGS	1896
Chelonia_mydas	GEDVRNANQEAVAALLK-----	CSLGIVRLEVGRKAGPFHSERRTSQSSQVSEGS	1850
Mus_musculus	GEDVRHATQEAVAALLK-----	CSLGAVTLEVGRVKAAPFHSERRPSQSSQVSESS--L	1813
Rattus_norvegicus	GEDVRNATQEAVAALLK-----	CSLGTVTLEVGRKAAPFHSERRPSQSSQVSESS--L	1826
Homo_sapiens	GEDVRNATQEAVAALLK-----	CSLGTVTLEVGRKAGPFHSERRPSQSSQVSEGS--L	1828
Pan_troglodytes	GEDVRNATQEAVAALLK-----	CSLGTVTLEVGRKAGPFHSERRPSQSSQVSEGS--L	1842
Macaca_mulatta	GEDVRNATQEAVAALLK-----	CSLGTVTLEVGRKAGPFHSERRPSQSSQVSEGS--L	1852
Callithrix_jacchus	GEDVRNATQEVVAALLK-----	CSLGTVTLEVGRKAGPFHSERRPSQSSQVSEGS--L	1854
Bos_taurus	GEDVRHATQEAVAALLK-----	CSLGTVTLEVGRVKTGPFHSERRPSQSSQMSEAS--L	1854
Equus_caballus	GEDVRSATQEAVAALLK-----	CSLGTVTLEVGRMKAGPFHSERRPSQSSQMSEGS--L	1834
Canis_lupus_familiaris	GEDVRNATQEAVAALLK-----	CSLGTVTLEVGRKAGPFHSERRPSQSSQMSEGS--L	1881
Heterocephalus_glaber	REDVRHATQEAVAALLK-----	CSLGTVTLEVGRKAGPFHSERRPSQSSQVSESS--L	1840
Rhinatrema_bivittatum	GEDVRNATQEAVAALLK-----	CSLGTVKLDVGRKAGPFHSERRTSQNSQVSECCSL	1900
Xenopus_tropicalis	GEDVRNATQEAVAALLK-----	CSLGTVKLEVGRIKTGPFHSERRTSQSSQVSEGTSSL	1926
	.....1990.....2000.....	.....2010.....2020.....	.....2030.....2040

	**	.	..:	..	*:		:*****	
Pavo_muticus	SSFGIPASASSTPEVFESSLKKNT	-----	AASEIQGLRT	1897				
Pavo_cristatus	SSFGIPASASSTPEVFESSLKKNT	-----	AASEIQGLRT	1897				
Gallus_gallus	SSFSISASASSTPEVFESGLKRNT	-----	ASSEIQGLRT	1904				
Anas_platyrhynchos	SSFSFPASGSSAPEVFESGLKK-T	-----	SASEIQGLRT	1929				
Chelonia_mydas	SSFSFPPSGSNPSEGFESGLKKNA	-----	LSSEIQGLRT	1884				
Mus_musculus	SSFTPPLSGINTSESLESNSKKNA	-----	LASEIQGLRT	1847				
Rattus_norvegicus	SSFSLPRSGIHTSESSESSAKKNA	-----	LASEIQGLRT	1860				
Homo_sapiens	SSFTFPLSGSSTSESLESSSKKNA	-----	LASEIQGLRT	1862				
Pan_troglodytes	SSFTFPLSGSSTSESLESSSKKNA	-----	LASEIQGLRT	1876				
Macaca_mulatta	SSFTFPLSGSSTSESLESSSKKNA	-----	LASEIQGLRT	1886				
Callithrix_jacchus	SSFTFPLCGSSTSESLESSSKKNA	-----	LASEIQGLRT	1888				
Bos_taurus	SSFTFPLSGSGTPELLESSSKKNASVHMCLSVONTSCPCLIQSGLCSCIS	VASEIQGLRT	1914					
Equus_caballus	SSFTFPLSGSSTSESLESSSKKNA	-----	LASEIQGLRT	1868				
Canis_lupus_familiaris	SSFTFPLSGSSTSESLESSLKKNA	-----	LASEIQGLRT	1915				
Heterocephalus_glaber	SSFTLPLSETCASETQECSSKRNA	-----	LASEIQGLRT	1874				
Rhinatrema_bivittatum	SSFSFPVSGSNPSDIFESGPKKLA	-----	TSEIQGLRT	1933				
Xenopus_tropicalis	TSFSFPMPPAAAD---SGSKKSD	-----	TSEIQGLRT	1956				
	.....2050.....2060.....2070.....2080.....2090.....2100							

	**.***.*:*:**.******.*:*****.:*:**.******:***.*:	
Pavo_muticus	VEIKKGPADSLGVS IAGGVGSP LGDIP IFIAMHPNG LA AQTOKLRVGDRI VSI CGTSTE	1957
Pavo_cristatus	VEIKKGPADSLGVS IAGGVGSP LGDIP IFIAMHPNG LAG AQTOKLRVGDRI VSI CGTSTE	1957
Gallus_gallus	VEIKKGPADSLGVS IAGGVGSP LGDIP IFIAMHPNG VAA AQTOKLRVGDRI VSI CGTSTE	1964
Anas_platyrhynchos	VEIKKGPADSLGVS IAGGVGSP LGDVPIFIAMHPNG VAA AQTOKLRVGDRI VSI CGTSTE	1989
Chelonia_mydas	VEIKKGPADSLGVS IAGGVGSP LGDVPIFIAMHPNG VAA AQTOKLRVGDRI VNICGTSTE	1944
Mus_musculus	VEIKKGPADSLGLS IAGGVGSP LGDVPIFIAMHPNG VAA AQTOKLRVGDRI VTICGTSTD	1907
Rattus_norvegicus	VEIKKGPADALGLS IAGGVGSP LGDVPIFIAMHPNG VAA AQTOKLRVGDRI VTICGTSTD	1920
Homo_sapiens	VEMKKGPTDSLGIS IAGGVGSP LGDVPIFIAMHPTG VAA AQTOKLRVGDRI VTICGTSTE	1922
Pan_troglodytes	VEIKKGPTDSLGIS IAGGVGSP LGDVPIFIAMHPTG VAA AQTOKLRVGDRI VTICGTSTE	1936
Macaca_mulatta	VEIKKGPTDSLGIS IAGGVGSP LGDVPIFIAMHPTG VAA AQTOKLRVGDRI VTICGTSTE	1946
Callithrix_jacchus	VEIKKGTTDSLGIS IAGGVGSP LGDVPIFIAMHPTG VAA AQTOKLRVGDRI VTICGTSTE	1948
Bos_taurus	VEIKKGPTDSLGIS IAGGVGSP LGDVPIFIAMHPNG VAA AQTOKLRVGDRI VTICGTSTE	1974
Equus caballus	VEIKKGPTDSLGS IAGGVGSP LGDVVPF IAMHPNG VAA AQTH KLRVGDRI VTICGTSTE	1928
Canis_lupus_familiaris	VEIKKGPADSLGIS IAGGVGSP LGDVPIFIAMHPNG VAA AQTOKLRVGDRI VTICGTSTE	1975
Heterocephalus_glaber	VEIKKGPADSLGIS IAGGVGSP LGDVVPF IAMHPNG VAA AQR KLRVGDRI VTICGTSTQ	1934
Rhinatrema_bivittatum	VEIKKGPSDSLGIS IAGGVGSP LGDVPIFIAMYPNG VAA AQTOKLRVGDR II SICGTSTE	1993
Xenopus_tropicalis	VEIKKGPTDSLGIS IAGGVGSP LGDVPIFIAMHANG VAA AQTH KLRVGDRI VSI CQPTE	2016
	.....2110.....2120.....2130.....2140.....2150.....2160	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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**:::***:::*.:::***.*****:*.::*:   .:   :.:.*:::: **
Pavo_muticus      GMTHSQAVNILKNASGTIELQVVAGGDVSVITGQQQDPPTSSLS---LAGLTSTSIPODD 2014
Pavo_cristatus    GMTHSQAVNILKNASGTIELQVVAGGDVSVITGQQQDPPTSSLS---LAGLTSTSIPODD 2014
Gallus_gallus     GMTHSQAVSILKNASGTIELQVVAGGDVSVITGQQQDPPTSSLS---LAGLTSTSIPODD 2021
Anas_platyrhynchos GMTHSQAVSVLKNASGTIELQVVAGGDVSVITGQQQEPPTSSLT---FAGLTSTSIPODD 2046
Chelonia_mydas    GMTHSQAVSLLKNASGTVELQVVAGGDVSVVTGQQQDPPTSSLS---FAALTSSSIPODD 2001
Mus_musculus      GMTHTQAVNLMKNASGSIEVQVVAGGDVSVVTGHQQELANPCLA---FTGLTSSSIPODD 1964
Rattus_norvegicus GMTHTQAVNLMKNASGSIEVQVVAGGDVSVVTGHQQELANPCLA---FTGLTSSSIPODD 1977
Homo_sapiens      GMTHTQAVNLLKNASGSIEMQVVAGGDVSVVTGHQQEPASSLS---FTGLTSSSIPODD 1979
Pan_troglodytes   GMTHTQAVNLLKNASGSIEMQVVAGGDVSVVTGHQQEPACSSLS---FTGLTSSSIPODD 1993
Macaca_mulatta    GMTHTQAVNLLKNASGSIEMQVVAGGDVSVVTGHQQEPASSLS---FTGLTSSSIPODD 2003
Callithrix_jacchus GMTHTQAVNLLKNASGSIEMQVVAGGDVSVVTGHQQEPASSLS---FTGLTSSSIPODD 2008
Bos_taurus        GMTHTQAVNLLKNASGSIEMQVVAGGDVSVVTGHQQEPASSLS---FTGLTSSSIPODD 2031
Equus_caballus    GMTHTQAVNLLKSASGSVEMQVVAGGDVSVVTGHQQEPNTLS---FTGLTSSSIPODD 1985
Canis_lupus_familiaris GMTHTQAVNLLKNAPGSIEMQVVAGGDVSVVTGHQQEPASSLS---FTALTSSSIPODD 2032
Heterocephalus_glaber GMTHTQAVNILKNASGSIEMQVAAGGDVSVVTGHQQEPAGSSLS---FSGLPSSSVPODD 1991
Rhinatrema_bivittatum GMAHSAVSVLLKNATDTIELQVVAGGDVSVVTNHQEPAGSSLN---FSGLTSSSIPODD 2050
Xenopus_tropicalis GMTHSQAVTLLKNASGTIELQVVAGGDVSVVTGQQQEHLGSTVS---FSGLASSSILODD 2073
.....2170.....2180.....2190.....2200.....2210.....2220

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** ** *: * *: * *****:*****:*****:*****
Pavo_muticus      LGPPQYKTIITLERGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2074
Pavo_cristatus    LGPPQYKTIITLERGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2074
Gallus_gallus     LGPPQYKTIITLERGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2081
Anas_platyrhynchos LGPPQYKTIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2106
Chelonia_mydas    LGPPQYKTIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2061
Mus_musculus      LGPPQSKTIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2024
Rattus_norvegicus LGPPQSKTIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2037
Homo_sapiens      LGPPQCKSIITLERGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAEDGRLKRGDQIIA 2039
Pan_troglodytes   LGPPQCKSIITLERGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAEDGRLKRGDQIIA 2053
Macaca_mulatta    LGPPQCKSIITLERGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAEDGRLKRGDQIIA 2063
Callithrix_jacchus LGPPQCKSIITLERGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAEDGRLKRGDQIIA 2068
Bos_taurus        LGPPQCKSIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAEDGRLKRGDQIIA 2091
Equus_caballus    LGPPQCKSIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAEDGRLKRGDQIIA 2045
Canis_lupus_familiaris LGPPQCKSIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAEDGRLKRGDQIIA 2092
Heterocephalus_glaber LG-PQCKSIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2050
Rhinatrema_bivittatum LGPPQYKTIITLDRGPDGLGFSIVGGYGS PHGDLPIYVKTVFAKGAAAEDGRLKRGDQIIA 2110
Xenopus_tropicalis LGPPQYKTIITLERGPDGLGFSIVGGHGS PHGDLPIYVKTVFSKGAASEDGRLNRGDQIIA 2133
.....2230.....2240.....2250.....2260.....2270.....2280

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*****:*. ***** :**
Pavo_muticus      VNGQSLEGVTHEEAVALIKRTKGTVTILTVLS 2105
Pavo_cristatus    VNGQSLEGVTHEEAVALIKRTKGTVTILTVLS 2105
Gallus_gallus     VNGQSLEGVTHEEAVALIKRTKGTVTILTVLS 2112
Anas_platyrhynchos VNGQSLEGVTHEEAVALIKRTKGTVTILTVLS 2137
Chelonia_mydas    VNGQSLEGVTHEEAVALIKRTKGTVTILTVLS 2092
Mus_musculus      VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2055
Rattus_norvegicus VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2068
Homo_sapiens      VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2070
Pan_troglodytes   VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2084
Macaca_mulatta    VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2094
Callithrix_jacchus VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2099
Bos_taurus        VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2122
Equus_caballus    VNGQSLEGVTHEEAVALIKRTKGTVTILVLS 2076
Canis_lupus_familiaris VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2123
Heterocephalus_glaber VNGQSLEGVTHEEAVALIKRTKGTVTILMVLS 2081
Rhinatrema_bivittatum VNGQSLEGVTHEEAVALIKRTKGTVTILVLS 2141
Xenopus_tropicalis VNGQSLEGVTHEEAVALIKRTKGTVTILTVLS 2164
.....2290.....2300.....2310.

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