

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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**      *:*****.* *****
Xenopus_tropicalis  MVDYHMTSGGAPPH-----MGQLGQDQRYMEQEDDWDRDLLLDPAWEK-QQRKTFTA 51
Rhinatrema_bivittatum -MDYHAANQPYQPG-----PTSDGQ-TLYMAQEDDWDRDLLLDPAWRKKQQRKTFTA 50
Gallus_gallus       MVDYHSAGQPYPYGGNGP-----GPNGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 51
Anas_platyrhynchos  MVDYHSAAQPCPYPAAGPG----A--GPDGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 53
Chelonia_mydas      MVDYHAAGQPYQYGGNGPS----SGGGGIGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 55
Homo_sapiens        MVDYHAANQSYQYGPSSAG-NGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Callithrix_jacchus  MVDYHAANQSYQYGPSSAG-NGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Pan_troglodytes     MVDYHAANQSYQYGPSSAG-NGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Macaca_mulatta      MVDYHAANQSYQYGPSSAG-NGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Mus_musculus        MVDYHAANQAYQYGPNSGGGNGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 59
Pteropus_alecto     MVDYHAANQSYQYGPSSAG-NGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Heterocephalus_glaber MVDYHAANQSYQYGPSSAG-NGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Equus_caballus      MVDYHAANQSYQYGPSSGS-NGAGGGGSMGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Ornithorhynchus_anatinus MVDYHAANQSYQYGPSSGG-NGAGGGGGGGDYMAQEDDWDRDLLLDPAWEK-QQRKTFTA 58
Pavo_muticus        -----PQQINDYMQPEEDWDRDLLLDPAWEK-QQRKTFTA 34
Pavo_cristatus      -----PQQINDYMQPEEDWDRDLLLDPAWEK-QQRKTFTA 34
1.....10.....20.....30.....40.....50.....60

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*****:*****.******
Xenopus_tropicalis  WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 111
Rhinatrema_bivittatum WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 110
Gallus_gallus       WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 111
Anas_platyrhynchos  WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 113
Chelonia_mydas      WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 115
Homo_sapiens        WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Callithrix_jacchus  WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Pan_troglodytes     WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Macaca_mulatta      WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Mus_musculus        WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 119
Pteropus_alecto     WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Heterocephalus_glaber WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Equus_caballus      WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Ornithorhynchus_anatinus WCNSHLRKAGTQIENIDEDFRDGLKLMMLLEVISGERLPKPERGKMRVHKINNVNKALDF 118
Pavo_muticus        WCNSHLRKAGTQIENIEEDFRDGLKLMMLLEVISGERLAKPERGKMRVHKISNVNKALDF 94
Pavo_cristatus      WCNSHLRKAGTQIENIEEDFRDGLKLMMLLEVISGERLAKPERGKMRVHKISNVNKALDF 94
.....70.....80.....90.....100.....110.....120

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*****:*****.******
Xenopus_tropicalis  IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 171
Rhinatrema_bivittatum IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 170
Gallus_gallus       IASKGVNVVVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 171
Anas_platyrhynchos  IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 173
Chelonia_mydas      IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 175
Homo_sapiens        IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Callithrix_jacchus  IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Pan_troglodytes     IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Macaca_mulatta      IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Mus_musculus        IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 179
Pteropus_alecto     IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Heterocephalus_glaber IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Equus_caballus      IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Ornithorhynchus_anatinus IASKGVKLVSIGAEIIVDGNKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 178
Pavo_muticus        IASKGVKLVSIGAEIIVDGNVVKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 154
Pavo_cristatus      IASKGVKLVSIGAEIIVDGNVVKMTLGMWIIILRFAIQDISVEETSACEGLLLWCQRKTA 154
.....130.....140.....150.....160.....170.....180

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*****:*****.* *****:*.*****:****.*:***:*****
Xenopus_tropicalis      PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAERYLDIP 231
Rhinatrema_bivittatum  PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPITNLNNAFEVAEKYLDIP 230
Gallus_gallus           PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 231
Anas_platyrhynchos     PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 233
Chelonia_mydas         PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 235
Homo_sapiens           PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Callithrix_jacchus     PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Pan_troglodytes        PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Macaca_mulatta         PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Mus_musculus           PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 239
Pteropus_alecto        PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Heterocephalus_glaber  PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Equus_caballus         PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Ornithorhynchus_anatinus PYKNVNVQNFHISWKDGLAFNALIHRHRPELIEYDKLRKDDPVTNLNNAFEVAEKYLDIP 238
Pavo_muticus           PYKNVNIQNFHISWKDGLGFCALIHRRPELIDYGKLRKDDPLTNLNTAFDVAEKYLDIP 214
Pavo_cristatus         PYKNVNIQNFHISWKDGLGFCALIHRRPELIDYGKLRKDDPLTNLNTAFDVAEKYLDIP 214
.....190.....200.....210.....220.....230.....240

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*****.******:*****
Xenopus_tropicalis      KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 291
Rhinatrema_bivittatum  KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 290
Gallus_gallus           KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 291
Anas_platyrhynchos     KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 293
Chelonia_mydas         KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 295
Homo_sapiens           KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Callithrix_jacchus     KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Pan_troglodytes        KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Macaca_mulatta         KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Mus_musculus           KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 299
Pteropus_alecto        KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Heterocephalus_glaber  KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Equus_caballus         KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Ornithorhynchus_anatinus KMLDAEDIVNTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEHLMEDY 298
Pavo_muticus           KMLDAEDIVGTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEQLMEDY 274
Pavo_cristatus         KMLDAEDIVGTARPDEKAIMTYVSSFYHAFSGAQKAETAANRICKVLAVNQENEQLMEDY 274
.....250.....260.....270.....280.....290.....300

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*:*****:***:* *.:*:* *** *****:*****
Xenopus_tropicalis      EKLASDLLEWIRRTIPWLENRVPEKTMHDMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 351
Rhinatrema_bivittatum  EKLASDLLEWIRRTIPWLENRVPEKTMQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 350
Gallus_gallus           EKLASDLLEWIRRTIPWLEDERSPOKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 351
Anas_platyrhynchos     EKLASDLLEWIRRTIPWLEDERSPOKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 353
Chelonia_mydas         EKLASDLLEWIKRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 355
Homo_sapiens           EKLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Callithrix_jacchus     EKLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Pan_troglodytes        EKLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Macaca_mulatta         EKLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Mus_musculus           ERLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 359
Pteropus_alecto        ERLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Heterocephalus_glaber  ERLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Equus_caballus         ERLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Ornithorhynchus_anatinus EKLASDLLEWIRRTIPWLEDVRPQKTIQEMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 358
Pavo_muticus           EKLASDLLEWIRRTIPWLENRAPENTMQAMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 334
Pavo_cristatus         EKLASDLLEWIRRTIPWLENRAPENTMQAMQOKLEDFRDYRRVHKPPKVQEKCOLEINFN 334
.....310.....320.....330.....340.....350.....360

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*****:*** * ***** **:*** ***** * *** **
Xenopus_tropicalis  TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNAIRRLERLDHLAEKF  411
Rhinatrema_bivittatum TLQTKLRLSNRPAFMPSSEGMISDINGEWOHLEQAEKGCEEWMLNEIRRLERLYHLAGKF  410
Gallus_gallus       TLQTKLRLSNRPAFMPSSEGRMVSDINTGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  411
Anas_platyrhynchos  TLQTKLRLSNRPAFMPSSEGRMVADINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  413
Chelonia_mydas      TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  415
Homo_sapiens        TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Callithrix_jacchus  TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Pan_troglodytes     TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Macaca_mulatta      TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Mus_musculus        TLQTKLRLSNRPAFMPSSEGRMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  419
Pteropus_alecto     TLQTKLRLSNRPAFMPSSEGRMVSDINNCWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Heterocephalus_glaber TLQTKLRLSNRPAFMPSSEGRMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Equus_caballus      TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Ornithorhynchus_anatinus TLQTKLRLSNRPAFMPSSEGMVSDINNGWOHLEQAEKGFEWLLNEIRRLERLDHLAEKF  418
Pavo_muticus        TLQTKLRLSNRPAFMPSSEGMVSDINNAWGGLQAEKGFEWLLNEIRRLERLDHLAEKF  394
Pavo_cristatus      TLQTKLRLSNRPAFMPSSEGMVSDINNAWGGLQAEKGFEWLLNEIRRLERLDHLAEKF  394
.....370.....380.....390.....400.....410.....420

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*** **:***:*****:***:*****:*****:*****
Xenopus_tropicalis  ROKALIEHAWTEGKEAMLKQKDYESATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  471
Rhinatrema_bivittatum SQKAAIHESWSDGKEALLKQKDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  470
Gallus_gallus       ROKASIEHAWTEGKEAMLKQKDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  471
Anas_platyrhynchos  ROKASIEHAWTEGKEAMLKQKDYESATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  473
Chelonia_mydas      ROKASIHESWTEGKEAMLRQKDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  475
Homo_sapiens        ROKASIEHAWTDGKEAMLKHRDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Callithrix_jacchus  ROKASIEHAWTDGKEAMLKHRDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Pan_troglodytes     ROKASIEHAWTDGKEAMLKHRDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Macaca_mulatta      ROKASIEHAWTDGKEAMLKHRDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Mus_musculus        ROKASIEHAWTDGKEAMLKQDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  479
Pteropus_alecto     ROKASIEHAWTDGKEAMLKHRDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Heterocephalus_glaber ROKASIEHAWTDGKEAMLKHRDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Equus_caballus      ROKASIEHAWTDGKEAMLKQDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Ornithorhynchus_anatinus ROKASIEHAWTDGKEAMLKQKDYETATLSDIKALIRKHEAFESDLAAHQDRVEQIAATAQ  478
Pavo_muticus        ROKASIHESWTDGKEAMLQKDYETATLSEIKALLKKHEAFESDLAAHQDRVEQIAATAQ  454
Pavo_cristatus      ROKASIHESWTDGKEAMLQKDYETATLSEIKALLKKHEAFESDLAAHQDRVEQIAATAQ  454
.....430.....440.....450.....460.....470.....480

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Xenopus_tropicalis  ELNELDYYDSPSVNARCQKICQDWDLLGSLTHTRREALEVTEKQLEAIDQLYLEYAKRAA  531
Rhinatrema_bivittatum ELNELDYYDSPSVNARCQKICQDWDVLGSLTHTRREALEQTEKQLETIDQLYLEYAKRAA  530
Gallus_gallus       ELNELDYYDSPSVNARCQKICQDWDVLGSLTHSRREALEKTEKQLETIDELHLEYAKRAA  531
Anas_platyrhynchos  ELNELDYYDSPSVNARCQKICQDWDVLGSLTHSRREALEKTEKQLETIDELHLEYAKRAA  533
Chelonia_mydas      ELNELDYYDSPSVNARCQKICQDWDALGSLTHSRREALEKTEKQLETIDQLHLEYAKRAA  535
Homo_sapiens        ELNELDYYDSHNVNTRCQKICQDWDALGSLTHSRREALEKTEKQLEAIDQLHLEYAKRAA  538
Callithrix_jacchus  ELNELDYYDSHNVNTRCQKICQDWDALGSLTHSRREALEKTEKQLEAIDQLHLEYAKRAA  538
Pan_troglodytes     ELNELDYYDSHNVNTRCQKICQDWDALGSLTHSRREALEKTEKQLEAIDQLHLEYAKRAA  538
Macaca_mulatta      ELNELDYYDSHNVNTRCQKICQDWDALGSLTHSRREALEKTEKQLEAIDQLHLEYAKRAA  538
Mus_musculus        ELNELDYYDSHNVNTRCQKICQDWDNLGSLTHSRREALEKTEKQLETIDQLHLEYAKRAA  539
Pteropus_alecto     ELNELDYYDSHNVNTRCQKICQDWDALGSLTHSRREALEKTEKQLETIDQLHLEYAKRAA  538
Heterocephalus_glaber ELNELDYYDSHNVNTRCQKICQDWDALGSLTHSRREALEKTEKQLETIDQLHLEYAKRAA  538
Equus_caballus      ELNELDYYDSHNVNTRCQKICQDWDALGSLTHSRREALEKTEKQLETIDQLHLEYAKRAA  538
Ornithorhynchus_anatinus ELNELDYYDSPSVNARCQKICQDWDALGSLTQSRREALEQTEKQLETIDRLHLEYAKRAA  538
Pavo_muticus        ELNELDYYDSPSVNARCQKICQDWDNLGALTQKRREALERTEKLLTIDQLYLEYAKRAA  514
Pavo_cristatus      ELNELDYYDSPSVNARCQKICQDWDNLGALTQKRREALERTEKLLTIDQLYLEYAKRAA  514
.....490.....500.....510.....520.....530.....540

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Xenopus_tropicalis  PFNNWMEGAMEDLQDMFIVHTIEEIEGLIAAHEQFKSTLPDADREREAILGIQNEAQKIA  591
Rhinatrema_bivittatum PFNNWMEGAMEDLQDMFIVHTIEEIEGLMAAHEQFKSTLPDANKEREAILGIQNEAQKIA  590
Gallus_gallus       PFNNWMEGAMEDLQDMFIVHTIEEIEGLIAAHDQFKATLPDADREREAILGIQNEAQRIA  591
Anas_platyrhynchos  PFNNWMEGAMEDLQDMFIVHTIEEIEGLIAAHDQFKSTLPDADKEREAILGIQNEAQRIA  593
Chelonia_mydas      PFNNWMEGAMEDLQDMFIVHTIEEIEGLIAAHAQFKSTLPDADKEREAILGIQNEAQRIA  595
Homo_sapiens        PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADREREAILAIHKEAQRIA  598
Callithrix_jacchus  PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADREREAILAIHKEAQRIA  598
Pan_troglodytes     PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADREREAILAIHKEAQRIA  598
Macaca_mulatta      PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADREREAILAIHKEAQRIA  598
Mus_musculus        PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADREREAILAIHKEAQRIA  599
Pteropus_alecto     PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADREREAILAIHKEAQRIA  598
Heterocephalus_glaber PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADREREAILAIHKEAQRIA  598
Equus_caballus      PFNNWMEGAMEDLQDMFIVHTIEEIEGLISAHDQFKSTLPDADRERDAILAIHKEAQRIA  598
Ornithorhynchus_anatinus PFNNWMEGAMEDLQDMFIVHTIEEIEGLITAHQDQFKSTLPDADKEREAILDIQNEAQKIA  598
Pavo_muticus        PFNNWMEGAMEDLQDTFIVHTIEEIQGLTAAHEQFKATLPDADKERQAILGIHNEVSKIV  574
Pavo_cristatus      PFNNWMEGAMEDLQDTFIVHTIEEIQGLTAAHEQFKATLPDADKERQAILGIHNEVSKIV  574
.....550.....560.....570.....580.....590.....600

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Xenopus_tropicalis  DYSHIKLASGNPYTTVTPTQIINSKWEKVQQLVLPKRDGALKGEHDKQQSNEHLRLOFASLA  651
Rhinatrema_bivittatum DYNHIKLAVGNPYTSVTPQIINSKWEKVQQLVLPKRDNALKGEQNKQQSNERLLOFANQA  650
Gallus_gallus       DLHSIKLSGNPNPYTSVTPQVINSKWERVQQLVPTDRALQDEQSRQOCNERLRRQFAGQA  651
Anas_platyrhynchos  DFNISIKLGGNNPYTSVTPQIINSKWERVQQLVLPKRDHALLDQSKQQSNEHLRRQFASQA  653
Chelonia_mydas      EYNNIKLPGNNPYTSVTPQIINSKWERVQQLVLPKRDHALQDEQSKQQSNEHLRRQFASQA  655
Homo_sapiens        ESNHIKLSGSNPYTTVTPTQIINSKWEKVQQLVLPKRDHALLEEQSKQQSNEHLRRQFASQA  658
Callithrix_jacchus  ESNHIKLSGSNPYTTVTPTQIINSKWEKVQQLVLPKRDHALLEEQSKQQSNEHLRRQFASQA  658
Pan_troglodytes     ESNHIKLSGSNPYTTVTPTQIINSKWEKVQQLVLPKRDHALLEEQSKQQSNEHLRRQFASQA  658
Macaca_mulatta      ESNHIKLSGSNPYTTVTPTQIINSKWEKVQQLVLPKRDHALLEEQSKQQSNEHLRRQFASQA  658
Mus_musculus        ESNHIKLSGSNPYTTVTPTQIINSKWEKVQQLVLPKRDHALLEEQSKQQSNEHLRRQFASQA  659
Pteropus_alecto     ESNHIKLSGSNPYTTVTPTQIINSKWEKVQQLVLPKRDHALLEEQSKQQSNEHLRRQFASQA  658
Heterocephalus_glaber ESNHIKLSASNPYTTVTPTQIINSKWEKVQQLVLPKRDHALMEEQSKQQSNEHLRRQFASQA  658
Equus_caballus      ESNHIKLSGSNPYTTVTPTQIINSKWEKVQQLVLPKRDQALLEEQSKQQSNERLRRQFASQA  658
Ornithorhynchus_anatinus DYHGIKLPGGNPYTSVTPAIINSKWEKVQQLVLPKRDRAALLDEQSKQQSNEHLRRQFASQA  658
Pavo_muticus        QTYHVNMAGTNPYTTITPQEIINGKWEHVRQLVPRRDQALMEEHARQQQNERLRKFQAQA  634
Pavo_cristatus      QTYHVNMAGTNPYTTITPQEIINGKWEHVRQLVPRRDQALMEEHARQQQNERLRKFQAQA  634
.....610.....620.....630.....640.....650.....660

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Xenopus_tropicalis  NVVGPWIQAKMEEIGRIAIELHGTLEDQMLHLKQYEQSVINYKPNIDKLEQQHQHQLIQEAL  711
Rhinatrema_bivittatum NIVAPWIHTKMEEIGRIAIEMNGTLEDQLNHLKQYEKSIINYKPNIDKLEQQHQHQLIQEAL  710
Gallus_gallus       NIVGPWMIQAKMEEIGRISIEMHGTLEDQLHLKHQYEQSVIDYKPNLELLEHEHQHQLIQEAL  711
Anas_platyrhynchos  NIVGPWIQTKMEEIGRISIEMHGTLEDQLNHLKQYEQSVIDYKPNIDLEQQHQHQLIQEAL  713
Chelonia_mydas      NIVGPWIQTKMEEIGRISIEMHGTLEDQLNHLKQYEQSVIDYKPNIDLEQQHQHQLIQEAL  715
Homo_sapiens        NVVGPWIQTKMEEIGRISIEMHGTLEDQLSHLKQYERSIVDYKPNLDLLEQQHQHQLIQEAL  718
Callithrix_jacchus  NVVGPWIQTKMEEIGRISIEMHGTLEDQLSHLKQYERSIVDYKPNLDLLEQQHQHQLIQEAL  718
Pan_troglodytes     NVVGPWIQTKMEEIGRISIEMHGTLEDQLSHLKQYERSIVDYKPNLDLLEQQHQHQLIQEAL  718
Macaca_mulatta      NVVGPWIQTKMEEIGRISIEMHGTLEDQLSHLKQYERSIVDYKPNLDLLEQQHQHQLIQEAL  718
Mus_musculus        NMVGPWIQTKMEEIGRISIEMHGTLEDQLSHLKQYERSIVDYKPSLDLLEQQHQHQLIQEAL  719
Pteropus_alecto     NIVGPWIQTKMEEIGRISIEMHGTLEDQLSHLKQYERSIVDYKPNLDLLEQQHQHQLIQEAL  718
Heterocephalus_glaber NVVGPWIQTKMEEIGRISIEMHGTLEDQLNHLKQYERSIVDYKPNLDLLEQQHQHQLIQEAL  718
Equus_caballus      NIVGPWIQTKMEEIGRISIEMHGTLEDQLSHLKQYERSIVDYKPNLDLLEQQHQHQLIQEAL  718
Ornithorhynchus_anatinus NIVGPWIQTKMEEIGRISIEMHGTLEDQLNHLKQYEQSVHYKPNLDLLEQQHQHQLIQEAL  718
Pavo_muticus        NVIGPWIQTKMEEIGRISIEMHGTLEDQLNHLRQYEKSIVNYKPKIDQLEGDHQIQEAL  694
Pavo_cristatus      NVIGPWIQTKMEEIGRISIEMHGTLEDQLNHLRQYEKSIVNYKPKIDQLEGDHQIQEAL  694
.....670.....680.....690.....700.....710.....720

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****:*:*****:**** ** *:*****:*****
Xenopus_tropicalis  IFDNKHTNYTMEHIRVGWEHLLTTIARTISNEVENQILTRDAKGISQEQMHEYRASFNHFD 771
Rhinatrema_bivittatum IFDNRHTNYTMEHIRVGWEHLLTTTARTINEIDNQILTRDAKGISQEQMHEFRASFNHFD 770
Gallus_gallus        IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 771
Anas_platyrhynchos   IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 773
Chelonia_mydas       IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 775
Homo_sapiens         IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 778
Callithrix_jacchus   IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 778
Pan_troglodytes      IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 778
Macaca_mulatta       IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 778
Mus_musculus         IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 779
Pteropus_alecto      IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 778
Heterocephalus_glaber IFDNKHTNYTMEHIRVGWEQLLTTIARTINEIENQILTRDAKGISQEQMQEFRASFNHFD 778
Equus_caballus       IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 778
Ornithorhynchus_anatinus IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMQEFRASFNHFD 778
Pavo_muticus         IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMNEFRASFNHFD 754
Pavo_cristatus       IFDNKHTNYTMEHIRVGWEQLLTTIARTINEVENQILTRDAKGISQEQMNEFRASFNHFD 754
.....730.....740.....750.....760.....770.....780

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Xenopus_tropicalis  R-----DHTGALGPEEFKACLISLGYDVENDROKRIGA 804
Rhinatrema_bivittatum K-----DHTGALGPEEFKACLISLGYDVENDRO----- 798
Gallus_gallus        K-----DHCGALGPEEFKACLISLGYDVENDRO----- 799
Anas_platyrhynchos   K-----DHGGALGPEEFKACLISLGYDVENDROKRITGS 806
Chelonia_mydas       K-----DHGGTLGPEEFKACLISLGYDVENDRO----- 803
Homo_sapiens         K-----DHGGALGPEEFKACLISLGYDVE----- 802
Callithrix_jacchus   K-----KQTGSMDSDDFRALLISTGYSL----- 801
Pan_troglodytes      KDHGGALGPEEFKACLISLGYDVENDROKQTGSMDSDDFRALLISTGYSL----- 828
Macaca_mulatta       KDHGGALGPEEFKACLISLGYDVENDROKQTGSMDSDDFRALLISTGYSL----- 828
Mus_musculus         K-----DHGGALGPEEFKACLISLGYDVENDRO----- 807
Pteropus_alecto      K-----DHGGALGPEEFKACLISLGYDVENDROKQTGS 811
Heterocephalus_glaber K-----DHGGALGPEEFKACLISLGYDVENDROKQTGS 811
Equus_caballus       K-----DHGGALGPEEFKACLISLGYDVENDROKQTGS 811
Ornithorhynchus_anatinus R-----DHCGALGPEEFKACLISLGYDVENDROKQTGS 811
Pavo_muticus         R-----DHSGLTGPEEFKACLISLGYDIGNDAQ----- 782
Pavo_cristatus       R-----DHSGLTGPEEFKACLISLGYDIGNDAQ----- 782
.....790.....800.....810.....820.....830.....840

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Xenopus_tropicalis  LDADDFRALLISTGYSLGDAEFNRIMAVDPNNTGMVTFQAFIDFMSRETTDTDTADQVI 864
Rhinatrema_bivittatum -----GDAEFHRIMGIVDPNNTGIVTFQAFIDFMSRETTDTDTADQVI 841
Gallus_gallus        -----GDAEFNRIMSLVDPNNGSGSVTFQAFIDFMSRETTDTDTADQVI 842
Anas_platyrhynchos   TDADDFRALLISAGCSLGD AEFNRIMSLVDPNNGSGSVTFQAFIDFMSRETTDTDTADQVI 866
Chelonia_mydas       -----GDAEFNRIMSVVDPNNSGIVTFQAFIDFMSRETTDTDTADQVI 846
Homo_sapiens         -----NDRQGEAEFNRIMSLVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 849
Callithrix_jacchus   -----GDAEFNRIMSLVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 844
Pan_troglodytes      -----GEAEFNRIMSLVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 871
Macaca_mulatta       -----GEAEFNRIMSLVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 871
Mus_musculus         -----GDAEFNRIMSVVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 850
Pteropus_alecto      MDSDDFRALLISTGYSLGDAEFNRIMSVVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 871
Heterocephalus_glaber MDSDDFRALLISTGYSLGDAEFNRIMSVVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 871
Equus_caballus       MDSDDFRALLISTGYSLGDAEFNRIMSMVDPNHSGLVTFQAFIDFMSRETTDTDTADQVI 871
Ornithorhynchus_anatinus MDCDDFRALLISTGYSLGDAEFNRIMSVVDPNNGSGIVTFQAFIDFMSRETTDTDTADQVI 871
Pavo_muticus         -----GEAEFARIMSVDPNRMGVVTFQAFIDFMSRETADTDTADQVM 825
Pavo_cristatus       -----GEAEFARIMSVDPNRMGVVTFQAFIDFMSRETADTDTADQVM 825
.....850.....860.....870.....880.....890.....900

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:***:*****
Xenopus_tropicalis ASFKVLAGDK-----NYITAAELRREL 886
Rhinatrema_bivittatum SSFKVLAGDK-----NYITAAELRREL 863
Gallus_gallus ASFKVLAGDK-----NYITAAELRREL 864
Anas_platyrhynchos ASFKVLAGDK-----NYITAAELRREL 888
Chelonia_mydas ASFKVLAGDK-----NYITAAELRREL 868
Homo_sapiens ASFKVLAGDK-----NFITAEELRREL 871
Callithrix_jacchus ASFKVLAGDKVRPHEAHGGWQEGSLHREGLREPVCGWGLRVPSCQSONFITAEELRREL 904
Pan_troglodytes ASFKVLAGDK-----NFITAEELRREL 893
Macaca_mulatta ASFKVLAGDK-----NFITAEELRREL 893
Mus_musculus ASFKVLAGDK-----NFITAEELRREL 872
Pteropus_alecto ASFKVLAGDK-----NFITAEELRREL 893
Heterocephalus_glaber ASFKVLAGDK-----NFITAEELRREL 893
Equus_caballus ASFKVLAGDK-----NFITAEELRREL 893
Ornithorhynchus_anatinus ASFKVLAGDK-----NFITAEELRREL 893
Pavo_muticus ASFKILAGDK-----NYITVDELREL 847
Pavo_cristatus ASFKILAGDK-----NYITVDELREL 847
.....910.....920.....930.....940.....950.....960

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Xenopus_tropicalis PPDQAEYCIARMAPYQGPDAVPGALDYMSFSTALYGESDL 926
Rhinatrema_bivittatum PPDQAEYCIARMAPYQGPDAVPGALDYMSFSTALYGESDL 903
Gallus_gallus PPEQAEYCIARMAPYRGPDAAPGALDYKSFSTALYGESDL 904
Anas_platyrhynchos PPEQAEYCIARMAPYRGPDAAPGALDYKSFSTALYGESDL 928
Chelonia_mydas PPDQAEYCIARMAPYQGPDAVPGALDYKSFSTALYGESDL 908
Homo_sapiens PPDQAEYCIARMAPYQGPDAVPGALDYKSFSTALYGESDL 911
Callithrix_jacchus PPDQAEYCIARMAPYQGPDAVPGALDYKSFSTALYGESDL 944
Pan_troglodytes PPDQAEYCIARMAPYQGPDAVPGALDYKSFSTALYGESDL 933
Macaca_mulatta PPDQAEYCIARMAPYQGPDAVPGALDYKSFSTALYGESDL 933
Mus_musculus PPDQAEYCIARMAPYQGPDAAPGALDYKSFSTALYGESDL 912
Pteropus_alecto PPDQAEYCIARMAPYQGPDAAPGALDYKSFSTALYGESDL 933
Heterocephalus_glaber PPDQAEYCIARMAPYQGPDTVPALDYKSFSTALYGESDL 933
Equus_caballus PPDQAEYCIARMAPYQGPDAVPGALDYKSFSTALYGESDL 933
Ornithorhynchus_anatinus PPDQAEYCIARMAPYQGPDAIPGALDYKSFSTALYGESDL 933
Pavo_muticus PPEQAEYCIARMAPYNGRDAVPGALDYMSFSTALYGESDL 887
Pavo_cristatus PPDQAEYCIARMAPYNGRDAVPGALDYMSFSTALYGESDL 887
.....970.....980.....990.....1000

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