

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/AOHErapsTue Feb 1 11:13:46 2022

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Pavo_muticus -----
Pavo_cristatus -----
Gallus_gallus -----
Chelonia_mydas -----
Rhinatrema_bivittatum -----
Mus_musculus -----
Rattus_norvegicus MYGSGGLKLTQSLLPLVQGIGSCGKTTYASGCFLFGKPAICDSELLEERISLSCDSAKLPT 60
Bos_taurus -----
Equus_caballus -----
Pan_troglodytes -----
Callithrix_jacchus -----
Macaca_mulatta -----
Homo_sapiens -----
Canis_lupus_familiaris -----
Xenopus_tropicalis -----
Latimeria_chalumnae -----
1.....10.....20.....30.....40.....50.....60

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::: :****:*. ::*:** *** * * : : * ***: . .
Pavo_muticus ----METQLDPTKDDLPLMANASHMLVKHYVLDLDVDFKSQVIEGIIVLFLETGSRYRKA 56
Pavo_cristatus ----METQLDPTKDDLPLMANASHMLVKHYVLDLDVDFKSQVIEGIIVLFLETGSRYRKA 56
Gallus_gallus ----MEMQLDPTKDDLPLMANTNHMIVKHYVLDLDVDFKSQVIEGNIVLFLETGSRYRKA 56
Chelonia_mydas ----METKLDPAKDDLPLMANTRHMLVKHYVLDLDVDFKSQVIEGTIVLFFEPGSRCKKG 56
Rhinatrema_bivittatum ----MEGKMDPSKDDLPLMANVGYMLVKHYVLDLDVDFSGNIIISGTIVLFLEMGDKFQKV 56
Mus_musculus ----MDIKLDPSRDDLPLMANTSHMLVKHYILDLDVDFGNQVIEGNIVLFFGDGNRFKKN 56
Rattus_norvegicus ANYTMDINLDPSRDDLPLMANTSHLLVKHYVLDLDVDFGSRVLEGNIVLFFGDGNRCKKQ 120
Bos_taurus ----MDIKLDPSRDDLPLVANTSHILVKHYVLDLDVDFESQVIGGTIVLFLESGNRFKKR 56
Equus_caballus ----MDVKLDPSRDDLPLANTGHILVKHYVLDLDVDFKSQIEGSIIVLFFEPGNRFKKQ 56
Pan_troglodytes ----MDIQLDPARDDLPLMANTSHILVKHYVLDLDVDFESQVIEGTIVLFLEDGNRFKKQ 56
Callithrix_jacchus ----MDIQLDPARDDLPLMANTSHILVKHYVLDLDVDFESQVIEGTIVLFLEDGNRFKKQ 56
Macaca_mulatta ----MDMQLDPAAGDDLPLMANTSHILVKHYVLDLDVDFESQVIEGTIVLFLEDGDRFKKQ 56
Homo_sapiens ----MDIQLDPARDDLPLMANTSHILVKHYVLDLDVDFESQVIEGTIVLFLEDGNRFKKQ 56
Canis_lupus_familiaris ----MDVKLEPSWDDLPLMANTSHILVKHYVLDLDVDFESQIFEGTIVLFFESRNRLEKQ 56
Xenopus_tropicalis -----MESCTEDLPLMANTNHVLVKHYGLDLDVCFDTQTIRGSIIVLFLEPNTRNKDG 52
Latimeria_chalumnae ----MHSNLDSTKDDLPLMANTSHMLVRHYVLDLTVDFDRKVIIGSAVLFFEAGKEYCOL 56
.....70.....80.....90.....100.....110.....120

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. : * . * : .
Pavo_muticus SSTGKEGCQSHLNETCKIGASEPRHVSVSASVFSSEVEYSDFAVCGKGEKDTSDKNGNH 116
Pavo_cristatus SSTGKEGCQSHLNETCKIGASEPRHVSVSASVFSSEVEYSDFAVCGKGEKDTSDKNGNH 116
Gallus_gallus GCTGKEGCQSHLNETCKTGASEPCHVSVSNASVFSSEVEYSDFAIKCGKGEKDTSDKNGNH 116
Chelonia_mydas GSAGEGDCLSQSDETFKIRASEPCHSPVINVSARSSKTGYNDFSVCAGKEKDTSDKNGNH 116
Rhinatrema_bivittatum HRRVREGCCSQPDEGCPARESKACCLPVASLS--SSNTGHNDFSASDQGEEDCSQENDHL 114
Mus_musculus SRSTQETTFOMESEEEADIFRTAEPCHVPKMDSSSTFSPKMGHRECAVCGKGDQDAFDNDGNH 116
Rattus_norvegicus SSSSQETTFOMESEEEAYILRTAEPCHVPKMDSSSTFSPKMGHREFAVFGKSDQDAFDNDGNH 180
Bos_taurus SSSSTEVACPSESNEACKFRMPEPCQIPVINTKTFSSKIGYNDFVICGKGEKDTSGKDG NH 116
Equus_caballus SSSIEETCQSESNEACKFRMPEPCHPVTHSTFSSKMGYDGFVCGKGVKDTSGKDG NH 116
Pan_troglodytes NSSIEEACQSESNEACKFGMPEPCHPVTHSTFSSKMGYDGFVCGKGVKDTSGKDG NH 116
Callithrix_jacchus NSSIEEACQSESNEACKFGMPEPCHPVTHSTFSSKMGYDGFVCGKGVKDTSGKDG NH 116
Macaca_mulatta NRSVEEACQSESNEACKFGMPEPCHPVTHSTFSSKMGYDGFVCGKGVKDTSGKDG NH 116
Homo_sapiens NSSIEEACQSESNEACKFGMPEPCHPVTHSTFSSKMGYDGFVCGKGVKDTSGKDG NH 116
Canis_lupus_familiaris SGSTKETCRSESNEACRFSTPEPCHPVTHSTFSSKMGYDGFVCGKGVKDTSGKDG NH 116
Xenopus_tropicalis SPVVEDCQSQLSEHSGNDQTHGINQTCAPVVRTCSSNSGNKDSADCDIGERDTSPKCDHH 112
Latimeria_chalumnae NYTSKESWCSDMDARCKTGASESVNTEAKSVGAHSSSTSCNNDLVA SVSEKDD---KNGNH 113
.....130.....140.....150.....160.....170.....180

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      .   :   :.  :  **   . *  .: :*****:*** **::* . . * .
Pavo_muticus      SNEEQAFGTSG-SKNCCDTESHGKND FLLVLDCCDL SVLKVEEVDIAAVSGIEKFIMS AE 175
Pavo_cristatus    SNEEQAFGTSG-SKNCCDTESHGKND FLLVLDCCDL SVLKVEEVDIAAVSGIEKFIMS AE 175
Gallus_gallus     SNEEQASGIAS-SKN-CDTESHGKND FLLVLDCCDL SVLKVEEVDIAAVSGIEKFIMS AE 174
Chelonia_mydas    SNREQASGISS-SKNCCDIETHGSEDFLLVLDCCDL SVLKVEEVDVAAVPGIEKFTRSAK 175
Rhinatrema_bivittatum GYSEQASGISS-SKSSCDTEHHGREDFVLVLDCCDL SVIKVEAVDIAAAPGIEKYARSAG 173
Mus_musculus      DNQERDSEISS-SKYCCDTGNHGKRD FLLVLDCCDL SVLKVEEVDVAAVPGLEKFTKAPK 175
Rattus_norvegicus DNKEHDSESSS-SKYCCDTGNHGRED FLLVLDCCDL SVLKVEEVDVAAVPDLEKFTKAPN 239
Bos_taurus        DNQEQASGISS-SKYCCDTGNHGSEEFLLVLDCCDL SVLKVEEVDVAAVPGIEKFTRSP- 174
Equus_caballus    DNWEQASGISS-SKYCCDTGNHGSEDFLLVLDCCDL SVLKVEEVDVAAVPGIEKFARSPT 175
Pan_troglodytes   DNQEHASGISS-SKYCCDTGNHGSEDFLLVLDCCDL SVLKVEEVDVAAVPGLEKFTTRSP E 175
Callithrix_jacchus DNQEHASGISS-SKYCCDTGNHGSEDFLLVLDCCDL SVLKVEEVDVAAVPGMEKFTTRSPK 175
Macaca_mulatta    DNQEHAAGISS-SKRCCDTGNHGSEEFLLVLDCCDL SVLKVEEVDVAAVPGMEKFTTRSP E 175
Homo_sapiens      DNQEHASGISS-SKYCCDTGNHGSEDFLLVLDCCDL SVLKVEEVDVAAVPGLEKFTTRSP E 175
Canis_lupus_familiaris DNPEQASGISS-SKYCCDTGNHGSEDFLLVLDCCDL SVFKVEEVDVAAVPGIETFTGSPQ 175
Xenopus_tropicalis GNRKQASGITS-SENCCDRGNHGSEDFVLVLDCCDL SVLKVEEVDVTAVLGT ECKMSSSQ 171
Latimeria_chalumnae GNRGQTFGISSSQEDCCDTKDDGSEDFVLVLDCCDL SVLKVEEVDVSAVFGIEKLIRPGS 173
      .....190.....200.....210.....220.....230.....240

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      .   :   :.  :  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
Pavo_muticus      IIDVSKDLENLRNQIVHELVTLP SDRCEQLY YYYTCCSQAPGCGELEFTTGSWSLEIKKW 235
Pavo_cristatus    IIDVSKDLENLRNQIVHELVTLP SDRCEQLY YYYTCCSQAPGCGELEFTTGSWSLEIKKW 235
Gallus_gallus     LTDVSKELNLRNQIVHKLVTLP SDRCEQLY YYYTCCSQAPGCGELEFTTGSWSLEIRKR 234
Chelonia_mydas    LTDA-EELRNLRNQIVHELVTLPADHWREQLY YYYTHCSQAPGCCELLFSTGTWSLEIRKA 234
Rhinatrema_bivittatum LND A-SELNRNRRNIVSELVTLSADCWQEKLS CYAQCSQAPGCCELLFATDPWSLQIWKE 232
Mus_musculus      LLAT---PEKLRCEIVRDLVALPADAWREQLDCYTRCSQAPGCCELLIDSDNWSLRIRKT 232
Rattus_norvegicus LTAA---PEKRRCEIVRDLVALPADAWREQLDCYTRCSQAPGCCELLFSDKWSLQIRKK 296
Bos_taurus        -----KLRNQIVHEVMALPADRWREQLDYYARCSQAPGCCELLFDTDTWSLQIRKT 225
Equus_caballus    LTVV---SEELRNQIIRELVTLPADRWREQLDYYARCSQAPGCCELLFDTDTWSLQIRKT 232
Pan_troglodytes   LTVV---SEEFNRNQIVHELVTLPANRWREQLDYYACCSQAPGCCELLFDTDTWSLQIRKT 232
Callithrix_jacchus LTVV---SEELRNQIVYELVTLPADCWREQLDYYACCSQAPGCCELLFDTDSWSLQIRKT 232
Macaca_mulatta    LTVV---SEELRNQIVRELVTLPANRWREQLDYYARCSQAAGCGELLFDTDTWSLQIRKT 232
Homo_sapiens      LTVV---SEEFNRNQIVRELVTLPANRWREQLDYYARCSQAPGCCELLFDTDTWSLQIRKT 232
Canis_lupus_familiaris ITFV---SEELRNQIVHELVTLPADRWREQLFDYYAHCSQAPGCCELLFDTDTWSLQIRKT 232
Xenopus_tropicalis TIDNSKEHLSLSACILSEIEALPESQWKEQLFN YTKCSRAPGCGDLMFIMDKWSLRISKA 231
Latimeria_chalumnae GNLP-QELTDLRNVTVQKLVALPAGCWQEQHN FYLQCSRAPGCGELPFVTD AWSLQIRKP 232
      .....250.....260.....270.....280.....290.....300

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      .   ** * : ** * * . . * * * * * . * * * * * * * * * * * * * * * * : : *
Pavo_muticus      GVQTP TDFPFAIRIRYKTKPEGRSVTWTTDQSGRPCVYTVGSPINNRA LFPCQ EPPIALS 295
Pavo_cristatus    GVQTP TDFPFAIRIRYKTKPEGRSVTWTTDQSGRPCVYTVGSPINNRA LFPCQ EPPIALS 295
Gallus_gallus     GVQTP TDFPFAIRIYKTKPEGRSVTWTTDQSGRPCVYTMGSPINNRA LFPCQ EPPIALS 294
Chelonia_mydas    EVQAPRDFPFAIRIYKTKPEGRSVTWTTDQSGRPCVYTMGSPINNRA LFPCQ EPPVAMS 294
Rhinatrema_bivittatum GVQTPADFPFAVRIYKTKPGGRSVMWTTDQSNRLCVYTVGSPINNRA LFPCQ EPPVAMS 292
Mus_musculus      GTSTPADFPFAIRIYKTKPEGQSVAVTTDQNGRPCVYTMGSPINNRA LFPCQ EPPVAMS 292
Rattus_norvegicus GVPTAADFPFAIRIYKTKPEGQSVTWTS DQDGRPCVYTMGSPINNRA LFPCQ EPPVAMS 356
Bos_taurus        GAQTATDFPFAIRIQYRTKPKQGRSVTWTS DQSGRPCVYTVGSPINNRA LFPCQ EPPVAMS 285
Equus_caballus    GTQAATDFPFAIRIRYRTKPKQGRSVTWTS DQSGRPCVYTMGSPINNRA LFPCQ EPPVAMS 292
Pan_troglodytes   GAQTATDFPFAIRIYKTKPEGRSVTWTS DQSGRPCVYTVGSPINNRA LFPCQ EPPVAMS 292
Callithrix_jacchus GAQTATDFPFAIRIYKTKPEGRSVTWTS DQSDRPCVYTVGSPINNRA LFPCQ EPPVAMS 292
Macaca_mulatta    GAQTATDFPFAIRIYKTKPEGRSVTWTS DQSGRPCVYTVGSPVNNRA LFPCQ EPPVAMS 292
Homo_sapiens      GAQTATDFPFAIRIYKTKPEGRSVTWTS DQSGRPCVYTVGSPINNRA LFPCQ EPPVAMS 292
Canis_lupus_familiaris GAQTATDFPFAIRIYSTKPKQGRSVTWTS DQSGRPCVYTMGSPVNNRA LFPCQ EPPVAMS 292
Xenopus_tropicalis GIKMPTNFPFAIRIYQTTTNGSSVKWTKDQSGRHCVYTIGSPINNRA LFPCQ EPPVAMS 291
Latimeria_chalumnae GVHNPGRFPFAIRIRYETKPEGGSVRWYTDQNSRPCVYTAGSPINNRA LFPCQ EPPVAMS 292
      .....310.....320.....330.....340.....350.....360

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**:::..*****:.**: :*****:*****:***** * *: * :
TWQASVRASAGFVVLMSGENSAEPVOLQEGIMSWYYYVTMPMPASTFTTIAVGCWQEVKQQ 355
TWQASVRASAGFVVLMSGENSAEPVOLQEGIMSWYYYVTMPMPASTFTTIAVGCWQEVKQQ 355
TWQASVRASAAFVVLMSGENSAEPVOLQEGVMSWYYYVTMPMPASTFTTIAVGCWQEVKQQ 354
TWQTFVTRTASCFVVLMSGENSAEPAQLQEGLLSWYYYVTMPMPASTFTTIAVGCWTEVVKQE 354
TWQATVQASDCFFVVLMSGENSAEPLACQGGSSWFYVVTMPMPASTFTTIAVGCWEEVKRE 352
TWQATVRAAASFVVLMSGENSAKPTPLREGYMSWHYYYVTMPMPASTFATIAVGCWTEMKPK 352
TWQATVRAAASFVVLMSGESKSAKPTPLREGYMSWHYYYVTMPMPASTFTTIAVGCWTEMKPK 416
TWQATVRAAASFVVLMSGENSAKPTQLQEDYSSWHYYYVTMPMPASTFTTIAVGSWTEMKPE 345
TWQATVRAAASFVVLMSGENSAKPTQLHEGCSSWHYYYVTMPMPASTFTTIAVGSWAEMKPE 352
TWQATVRAAASFVVLMSGENSAKPTQLWEGCSSWHYYYVTMPMPASTFTTIAVGCWTEMKME 352
TWQATVRAAASFVVLMSGENSAKPTQLWEGCSSWHYYYVTMPVPASTFTTIAVGCWTEMKLE 352
TWQATVRAAASFVVLMSGENSAKPTQLWEGCSSWHYYYVTMPMPASTFTTIAVGCWTEVKME 352
TWQATVRAAASFVVLMSGENSAKPTQLWEECSSWHYYYVTMPMPASTFTTIAVGCWTEMKME 352
TWQATVGAASFVVLMSGENSAKPTQLREGRASWHYYYVTMPMPASTFTTIAVGSWAEMKPE 352
TWHATIOAACFVVLMSGENCATPYSSCEGFFSWFYVVTMPMPASTFTTIAVGCWEEIKEN 351
TWQAQIQSPDGTVVLMSGENSAGPTQTETEAAVSTWFYVVTMPMPASTFTTIAVGHWIEVKGE 352
.....370.....380.....390.....400.....410.....420

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      :      * *: ***** . * * :*:****. *
C-FTAAIQTEDEFSVLFSQADFRWHKESCGHVEYPCRFONPAATLORVIPYRVFAPLCLM 414
C-FTAAIQTEDEFSVPFSQADFRWHKESCGHVEYPCRFONPAATLORVIPYRVFAPLCLM 414
C-FTAAIETEDEFSVPFSQADFRWHKESCGHVEYPCRFONPAATLORIIPYRVFAPLCLM 413
S-HTADVQINNEFFSSLFSRADLRLLIEGSCGHVAYPCRFONPAASSOLVIPHRVFAPWCLK 413
S--SMKGIS-----FPDNECRLAKRQCSHVAYPCRFNSPVAEVCAIIPHRVFAPLCLR 404
ASPDDDLMT EHS LPLSPSEADLRYDN-TCNHMEYPCRFQSASAASQDIIPYRVFAPVCL 411
TSPLDDL T-EHTLPLRPSDADFRYGN-TCSHMEYPCRFQSASAATONIIPYRVFAPVCL 474
ICSSNDVATERSF--SPSEADFRYIG-VCGHMEYPCRFQKASATTQKIIPHRVFAPACLK 402
TCLNDLATERSL--SSSEADFRYVG-VCGHMEYPCRFQNASATTQEIIPHRVFAPVCLK 409
TWSSNDLATERPF--SPSEANFRHVG-VCSHMEYPCRFQNASATTQEIIPHRVFAPVCLT 409
TYSLNDLATERPF--SPSEADFRHIG-VCSHMEYPCRFKNASATTQEIIPYRVFAPVCLK 409
PCSSGDSATETPF--SPPEADFRHVG-VCSHMEYPCRFQNASATTQIIPHRVFAPVCLT 409
TWSSNDLATERPF--SPSEANFRHVG-VCSHMEYPCRFQNASATTQEIIPHRVFAPVCLT 409
ICSSFDLAAERSL--TPSEADFRCVG-ICGHMEYPCRFQNP SATTQEVIPHRVFAPVCLQ 409
S--SCNIKTSDLSTPLYINNGSRLKEQKCKHMEYPCRFSLPEACAIAIPHRVFASHVLF 409
VDSSFDHNDLSL---FSSDCKLKPEYCSHMEYPCRFQSPAAQVCAVIPHRVFAPCLR 409
.....430.....440.....450.....460.....470.....480

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* * *: *: ** *: **:***:***:***:*.*****:****:**** * *	
ECCEEHLFQLIPQCLSAAYSTLGTHPFSRLDVLIVPSNFFSSLGMASPHIIFLSQSIVLPGG	474
ECCEEHLFQLIPQCLSAAYSTLGTHPFSRLDVLIVPSNFFSSLGMASPHIIFLSQSIVLPGG	474
ECCEEHLQLIPQCLSAAYSTLGTHPFSRLDVLIVPSNFFSSLGMASPHIIFLSQSIVLPGG	473
DRCAEILLELIPQCLSAAHAILGTHPFSRIDVLIVPSNFFSSLGMASPHIIFLSQSIVLTGG	473
DRCEMILLPLIPQCLSAAHATLGTHPPRLDVLIVPSNFFSSLGMASPHIIFLSQSIVLTGG	464
GACQEALLWLIPSCLSAAHSLVGLGTHPFSRLDILIVPTNFFPSLGMASPHIIFLSQSITLTGT	471
GACREALLWLIPSCLSAAHSLVGLGTHPFSRLDILIVPTNFFPSLGMASPHIIFLSQSITLTGT	534
GACQETILLPLIPPCLSAAHSLVGLGTHPFSRLDILIVPANFFSSLGMASPHIVFLSQSITLTGM	462
GACQETLLRLIPPCLSAAHSLVGLGTHPFSRLDVLIVPANFFPSLGMASPHIIFLSQSITLTGM	469
GACQETLLRLIPPCLSAAHSLVGLGTHPFSRLDVLIVPANFFPSLGMASPHIMFLSQSILTGG	469
GACQETLLRLIPPCLSAAHSLVGLGTHPFSRLDVLIVPANFFPSLGMASPHIVFLSQSILTGR	469
GACQETLLQLIPPCLSAAHSLVGLGTHPFSRLDVLIVPANFFPSLGMASPHIMFLSQSILTGG	469
GACQETLLRLIPPCLSAAHSLVGAHPFSRLDVLIVPANFFPSLGMASPHIMFLSQSILTGG	469
GACQETILLPLVRPCLSAAHSLVGLGTHPFSRLDILIVPANFFPSLGMASPHIIFLSQSIVLTGM	469
KQCSEVLLPLVSPCLEAAHVLGTHPFSRLDILVVPNFFSSLGMASPHIIFLSQSIVLYGS	469
EKCNEVLLPLLPQCLMAHNVLGTHPFARLDVLIVPAGFSSSLGMSPHIIFLSQSIVLSGR	469
.....490.....500.....510.....520.....530.....540	

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..* .:.*:*****:****:*****:*****:*** * : .*: * * .:.*
Pavo_muticus      SHLCGTRLCEIAHSWFGLAIGARDWTEEWISEGFATFLEDIFWARAQOQLSHDEGKEQQ 534
Pavo_cristatus    SHLCGTRLCEIAHSWFGLAIGARDWTEEWISEGFATFLEDIFWARAQOQLSHDEGKEQQ 534
Gallus_gallus     SHLRGTRLCEIAHSWFGLAIGARDWTEEWISEGFATFLEDIFWTRAQOQLSYDEGKEQQ 533
Chelonia_mydas    SHLCGTRLCEIAHAWFGLAIGARDWTEEWISEGFATYLEDVFWAVAQOQLPHDEAREQQ 533
Rhinatrema_bivittatum SDLCGSRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDIFWANAQR-LLHEEAKEQK 523
Mus_musculus      SHLCGTRLCEIAHSWFGLAIGARDWTEEWLSEGFATHLEDIFWAEAAQ-LPPHEALEQQ 530
Rattus_norvegicus SHLCGTRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDIFWAEAAQ-LPPHEALEQQ 593
Bos_taurus        SQLCGTRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDVFWAKAQOQLAPHEAREQQ 522
Equus_caballus    SHLCGTRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDVFWARAQ-LAPREAQEQ 528
Pan_troglodytes   NHLCGTRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDVFWATAQ-LAPHEAREQQ 528
Callithrix_jacchus SHLCGTRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDVFWAAAQ-LDPREAREQQ 528
Macaca_mulatta    SHLCGTRLCEIAHAWFGALGARDWTEEWLSEGFASHLEDVFWAAAQ-LAPHEAREQQ 528
Homo_sapiens      NHLCGTRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDVFWATAQ-LAPYEAREQQ 528
Canis_lupus_familiaris NHLCGTRLCEIAHAWFGLAIGARDWTEEWLSEGFATHLEDVFWAKAQ-LAPHEAREQQ 528
Xenopus_tropicalis NHLCATRLCEIAHAWFGLVIGARDWTEEWLSEGFATHLEDVFLANVQK-LPQEEARDQQ 528
Latimeria_chalumnae SHLCGTRVCEIAHAWFGLAIGARDWTEEWLSEGFATYLEDIFWAHVQK-LSLQEAKEQH 528
.....550.....560.....570.....580.....590.....600

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:.*: * *: * *: . :.*:
Pavo_muticus      ELKALLRWRRRLRDEVQNSEEELOVL----- 559
Pavo_cristatus    ELKALLRWRRRLRDEVQNSEEELOVL----- 559
Gallus_gallus     ELKALLRWRRRLRDEVQNSEEELOVL----- 558
Chelonia_mydas    ELKALLRWRRRLRDEVQNSKEELOVL----- 558
Rhinatrema_bivittatum ELKALLRWRRRLRDEVQNSEEELOVL----- 548
Mus_musculus      ELRACLRWHRLQDELQNSPEGMQVL----- 555
Rattus_norvegicus ELRACLRWHRLQDELQNSPEGMQVL----- 618
Bos_taurus        ELRACLRWHRLQDEVQNSPEEMQVL----- 547
Equus_caballus    ELRACLRWHRLQDEVQNSPEEMQVL----- 553
Pan_troglodytes   ELRACLRWHRLQDEMOCSPPEMQVL----- 553
Callithrix_jacchus ELRACLRWHRLQDEMRCSPPEMQVL----- 553
Macaca_mulatta    ELRACLRWHRLQDEMOCSPPEMQVL----- 553
Homo_sapiens      ELRACLRWHRLQDEMOCSPPEMQVL----- 553
Canis_lupus_familiaris ELKADLRWRCLQDEVQNSPEEMQVLSCLSETPSLGPNTVIAMTTEAPSPLOPSVWNMQS 588
Xenopus_tropicalis KLKALLRWRRRLTDELKDSQEELQIL----- 553
Latimeria_chalumnae ELKALLRWRRLLRDEVENSEEELOVL----- 553
.....610.....620.....630.....640.....650.....660

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** : * . ** .:.*: * *****:*** *: *: *: :.*:
Pavo_muticus      -RPHKENTGEVSESGASIVKHGLKAEKVFMQVHYLKGYFLLRSLASTLGEASYLASLRKF 618
Pavo_cristatus    -RPHKENTGEVSESGASIVKHGLKAEKVFMQVHYLKGYFLLRSLASTLGEASYLASLRKF 618
Gallus_gallus     -RPHKENTGEVSESGASVVKHGLKEEKVFMQVHYLKGFFLLRFLASTLGEASYLASLRKF 617
Chelonia_mydas    -RPNKENTGEVSESGTCIIKHGLNAEKIFMOMVHYLKGYFLLQSLAKRIGEATYFEFLRKF 617
Rhinatrema_bivittatum -RPNKENTGEVSESGSIVKHGLNPEKIFMOMVHYLKGYFLLRFLANQIGETSYFAFLRKF 607
Mus_musculus      -RPNKEETGHVSASGASVVKHGLNPEKIFMOMVHYLKGYFLLRFLTRTLGEKIYFPFLRKF 614
Rattus_norvegicus -RPNKEETGHVSASGASVVKHGLNPEKIFMOMVHYLKGYFLLRFLARTLGEETYPFLRKF 677
Bos_taurus        -RPNKEETGHVSDSGSSVIRHGLNPEKIFMOMVHYLKGYFLLRFLAKRLGEDTYFSFLRKF 606
Equus_caballus    -RPNKEETGCVSDSGSSVIKHGLNPEKAFMOMVHYLKGYFLLRFLAKRLGDDTYFSFLRKF 612
Pan_troglodytes   -RPSKDKTGHTSDSGASVIKHGLNPEKIFMOMVHYLKGYFLLRFLAKRLGDETYFSFLRKF 612
Callithrix_jacchus -RPSKDKTGHTSDSGASVIKHGLNPEKIFMOMVHYLKGYFLLRFLAKRLGDETYFSFLRKF 612
Macaca_mulatta    -RPNKDKTGHTSDSGASVIKHGLNPEKIFMOMVHYLKGYFLLRFLAERLGEDTYFSFLRKF 612
Homo_sapiens      -RPSKDKTGHTSDSGASVIKHGLNPEKIFMOMVHYLKGYFLLRFLAKRLGDETYFSFLRKF 612
Canis_lupus_familiaris DRPNKEKTGHVSDSGSSVIKHGLNPEKIFMOMVHYLKGYFLLRFLAQLRGDDTYFAFLRKF 648
Xenopus_tropicalis -RPHGENTGKVNESGASVVRHGLNAEKTFMOMVHYLKGYFLLRSLANTTGQDAYFAFLROF 612
Latimeria_chalumnae -RPKKEYIGDVSASGASIVKHGLNPGKIFMOMVHYLKGYFLLRFLANKIGEEKYLKFFROF 612
.....670.....680.....690.....700.....710.....720

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*: ****:*:*:* :*:*** : * : **:**:** : :
Pavo_muticus      VHKEFGQLVLSQDFLSLLEDIPEQKESGLTVEISIQNWLDTSIGIPKPLLEKGETW--KE 676
Pavo_cristatus    VHKEFGQLVLSQDFLSLLEDIPEQKESGLTVEISIQNWLDTSIGIPKPLLEKGETW--KE 676
Gallus_gallus     VHKEFGQLVLSQDFLSLLEDIPEQKESGLTVEISIQNWLDTSIGIPKPLLEKGETW--KE 675
Chelonia_mydas    VQKFGHQLILSQDFLYMLLEDIPEQKGYGLSVENIIGAWLDTSIGIPKPLLEECQSW--DQ 675
Rhinatrema_bivittatum VQIFHGQLILSQDFLNMLLEDIPEQKGCESVEAIYHNWLDTSIGIPKPLLEESSAW--TE 665
Mus_musculus      VHLFHGQLILSQDFLOMLLENIPENKRLGLSVENIVRDWLECSGIPKALQERKAEDCSP 674
Rattus_norvegicus VHLFHGQLILSQDFLOMLLESIPENKRFGLSVENIVGDWLECPGIPKALQERKAEDCSP 737
Bos_taurus        VHTFHGQLILSQDFLOMLLENIPEEKRPELSVGNIFRDWLESSGIPQPLQERQAL--AA 664
Equus_caballus    VHTFHGQLILSQDFLOMLLENIPEEKRLELSVENIFRDWLESSGIPQPLQERQAL--AA 670
Pan_troglodytes   VHTFHGQLILSQDFLOMLLENIPEEKRLELSVENIHQDWLESSGIPKPLQERERRAG--AA 670
Callithrix_jacchus VHTFHGQLILSQDFLOMLLENIPEEKRGLSVENIYQDWLESSGIPKPLQERERRAG--AA 670
Macaca_mulatta    VHAHFGQLILSQDFLOMLLENIPEEKRLELSVENIYQDWLESSGIPKPLQERERRAG--AA 670
Homo_sapiens      VHTFHGQLILSQDFLOMLLENIPEEKRLELSVENIYQDWLESSGIPKPLQERERRAG--AA 670
Canis_lupus_familiaris VHTFHGQLILSQDFLOMLLENIPEEKRLDLVENIFRDWLESSGIPQPLQERQAR--AA 706
Xenopus_tropicalis VNTCHGQLILSKDFLHMLFESVPELNROHLCVQAIYEIWLDTGIPQPLLGESRTW--KG 670
Latimeria_chalumnae VQAFHGQLILSQDFLHMLLESFPELNSQGLSIDVTYQEWLDTAGIPKPLMEKSTSW--VE 670
.....730.....740.....750.....760.....770.....780

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* . * ** ** : : :
Pavo_muticus      CKLVQQVSAEVT-----KWIQANQRIR 698
Pavo_cristatus    CKLVQQVSAEVT-----KWIQANQRIR 698
Gallus_gallus     CKLVQQVRTEVT-----KWIQANQRIR 697
Chelonia_mydas    CRLVQQVNDEVT-----KWIQANQRAR 697
Rhinatrema_bivittatum NRLARQVKDEVR-----KWIRLNQRNR 687
Mus_musculus      SRLARQVGSEVA-----KWIRVNRRPR 696
Rattus_norvegicus SRLVRQVGSEVA-----KWIRVNRRPG 759
Bos_taurus        CGLAQQVSAEVSAGDAVHAFPLPPRAVGPALHPWRGARRRRRRATTVAKWVRVNRRPR 724
Equus_caballus    CGLARRVSAEV-----AKWIRVNRRPR 692
Pan_troglodytes   CGLARQVRAEVT-----KWIRVNRRPR 692
Callithrix_jacchus CGLARQVRAEVT-----KWIRVNRRPR 692
Macaca_mulatta    CGLARQVRAEVT-----KWIRVNRRPR 692
Homo_sapiens      CGLARQVRAEVT-----KWIRVNRRPR 692
Canis_lupus_familiaris CGLARRVGAEVH-----KWIRVNRRPH 728
Xenopus_tropicalis CRLVQQVNEEVL-----KWIRFDQRNK 692
Latimeria_chalumnae NRLVYEVKDEVT-----KWIRFNQKNK 692
.....790.....800.....810.....820.....830.....840

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::* * : : : : :
Pavo_muticus      KSS--KKKRKQDEVVFQK-----LLPDQL-----VLLLEYLLEET 731
Pavo_cristatus    KSS--KKKRKQDEVVFQK-----LLPDQL-----VLLLEYLLEET 731
Gallus_gallus     KSS--KKKRKQDEVVFQK-----LLPDQL-----VLLLEYLLEEK 730
Chelonia_mydas    KRT--KKRRQDEVAFRKLAGLSVTLKIFGLEQLLPDQL-----VLLLESLLLEEK 745
Rhinatrema_bivittatum KSS--KKRRTQDEVLFQK-----LLPDQL-----VLLLESLLLEEK 720
Mus_musculus      K----RKRKGKREAVAFEK-----LSPDQI-----VLLLEWLLEQK 726
Rattus_norvegicus K----RQRRKREAAFEK-----LSPDQI-----VLLLEWLLEQK 789
Bos_taurus        K----RKRKDRREEVFEK-----LLPDQL-----VLLLEHLLEQK 754
Equus_caballus    K----RKRRETEEVFEK-----LLPDQL-----VWLLLECLLEQK 722
Pan_troglodytes   K----RKRREKEEVFEK-----LLPDQL-----VLLLEHLLEQK 722
Callithrix_jacchus K----RKRREKEEVFEK-----LLPDQL-----VLLLEHLLEQK 722
Macaca_mulatta    R----RKRREKEEVFEK-----LLPDQL-----VLLLEHLLEQK 722
Homo_sapiens      K----RKRREKEEVFEK-----LLPDQL-----VLLLEHLLEQK 722
Canis_lupus_familiaris K----RKRRETEEVFEK-----NLSPSLRLEERRTQSSPSLTSDQVLEET 768
Xenopus_tropicalis KCS--RRKRPHTEEFDEK-----ILPEQL-----VLLLDLLEER 725
Latimeria_chalumnae IGANKRRRRHQGEDVFKEVG---SIHLKNIHRLQLLPDQL-----VLLLELLEEK 739
.....850.....860.....870.....880.....890.....900

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          *      *      .*:
Pavo_muticus      TLCPRTLQRLKTYQLHDQDAEV----- 754
Pavo_cristatus    TLCPRTLQRLKTYQLHDQDAEV----- 754
Gallus_gallus     TLCPRTLQHLKTYQLHDQDAEV----- 753
Chelonia_mydas    MLCLRILQCLEKTYHLDEQDAEV----- 768
Rhinatrema_bivittatum TLYPRTLCLLENTYRLREQDAEV----- 743
Mus_musculus      TLPQTLLHCLQOTYHLPEQDAEV----- 749
Rattus_norvegicus TLPQTLLHRLQOTYHLQEQDAEV----- 812
Bos_taurus        TVTPRTLQSLERIYRLSEQDAEV----- 777
Equus_caballus    TLKPRTLQSLERTYHLPEQDAEV----- 745
Pan_troglodytes   TLPRTLQSLQRTYHLQDQDAEV----- 745
Callithrix_jacchus TLPRTLQSLQRTYHLHDQDAEV----- 745
Macaca_mulatta    TLSHRTLQSLQRTYHLQDQDAEICACCELASTYLPFIPLTLDKLTLPAPSLIEDPAVWST 782
Homo_sapiens      TLPRTLQSLQRTYHLQDQDAEV----- 745
Canis_lupus_familiaris STAPSRPACLASGASLRAEDSEPPNSAKPQEDIPALPTGCRDLRKKPTICLLD----- 822
Xenopus_tropicalis PLLPRTLRLCLLENTYRLRNQDAEV----- 748
Latimeria_chalumnae TLRPVTLQRLQRYHCLWKRDQDAEV----- 762
          .....910.....920.....930.....940.....950.....960

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          :*****::**:: * .:::* :.*
Pavo_muticus      -----RHRWCELVVKHKYVPGYGDVEKFLREDQA 783
Pavo_cristatus    -----RHRWCELVVKHKYVPGYGDVEKFLREDQA 783
Gallus_gallus     -----RHRWCELVVKHKYVPGYGDIEKFLREDQA 782
Chelonia_mydas    -----RHRWCELVVKHKYTRYAEVEKFLKEDQA 797
Rhinatrema_bivittatum -----QHRWCELIVKHKYSTAYGDVEQFLQDHQA 772
Mus_musculus      -----RHRWCELVKHKYTKAYNQVERFLLEDQA 778
Rattus_norvegicus -----RHRWCELVKHKYTKAYDQVKRFLQEDQA 841
Bos_taurus        -----RHRWCELVKHKYTKAYRDVERFLQEDQA 806
Equus_caballus    -----RHRWCELVVKHRYTKAYKDVERFLQEDQE 774
Pan_troglodytes   -----RHRWCELVKHKFTKAYKSVERFLQEDQE 774
Callithrix_jacchus -----RHRWCELVKHKFTKAYDSVERFLQEDQE 774
Macaca_mulatta    PGRTLKSLLSLPCVRGGCGNLKSAAVPSSRVHRWCELVKHKFTKAYESVERFLQEDQE 842
Homo_sapiens      -----RHRWCELVKHKFTKAYKSVERFLQEDQ- 773
Canis_lupus_familiaris -----SR5FLKVRHRWCELVKHKYTKAYKDVERFLQEDQE 858
Xenopus_tropicalis -----RHRWCELVVKHKYTVAYKDVEKFLHEDQA 777
Latimeria_chalumnae -----RHRWCEMVIKHKYTAAYAEIEKFLQEDQA 791
          .....970.....980.....990.....1000.....1010.....1020

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Pavo_muticus      MG-----VYLYGELMVNEDAKQOELAYKCFAAAEQMDMS----- 818
Pavo_cristatus    MG-----VYLYGELMVNEDAKQOELAYKCFAAAEQMDMS----- 818
Gallus_gallus     MG-----VYLYGELMLNEDAKQOELAFKCFAAAEQMDMS----- 817
Chelonia_mydas    MG-----VYLYGELMVNEDAKQOELAYKCFAAATQKQMDVS----- 832
Rhinatrema_bivittatum MG-----VYLYGELMVNKDITQOQLARRCFVIREQMDVS----- 807
Mus_musculus      MG-----IYLYGELMVSEARLQQLAHRCFELVKEHMDR----- 812
Rattus_norvegicus MG-----IYLYGELMVSEARLQQLAHRCFELVKGHMDK----- 875
Bos_taurus        MG-----IYLYGELMLSSEDPRQOHLARRCFELSREQMDK----- 840
Equus_caballus    RSQPDSLSYIYSWPWWAQDPLTLTDIKGRIMGLLRPSADSRGHVVLVLLFPGAVPSRAQEKG 834
Pan_troglodytes   RPOQDSFIRLLLLAWGTRLALT-LDIKGGIMWLLKPSAHSFVHVLVLLFPRG---WSQ-PG 829
Callithrix_jacchus RSQDSFICLLLLAWGTRLALT-LDIKGGIMWLLKPSARSTVHISVLLFPRG---WSQ-PG 829
Macaca_mulatta    RPQDSFIHLLLLAWGTGPGHQRRDYVAAKAVSPQPGSSLGASLSQRLVLPAR---HAQKAD 899
Homo_sapiens      --AMGVYLYGELMVSEARQQQLARRCFERTKEQMDRSSAQVVAEMLF----- 819
Canis_lupus_familiaris RSQDSFPCMCCTQPPWDRGRVDAGRQRKNGAAEASSIHTVLLFPRLESP---GLMERVV 916
Xenopus_tropicalis MG-----VYLYGELMVNEDAKQOELARRCFAAVRDEMDIS----- 812
Latimeria_chalumnae MG-----VYLYGELMVNEDARQORLAQKCFALQEEMDPA----- 826
          .....1030.....1040.....1050.....1060.....1070.....1080

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Pavo_muticus	-----SAKVVAEMLF-----	828
Pavo_cristatus	-----SAKVVAEMLF-----	828
Gallus_gallus	-----AAKVVAEMLF-----	827
Chelonia_mydas	-----SAKVVAEMLF-----	842
Rhinatrema_bivittatum	-----SAKVVGEMLF-----	817
Mus_musculus	-----ASAQVVTEMLF-----	823
Rattus_norvegicus	-----ASAQVVTEMLF-----	886
Bos_taurus	-----SSAEVVAEMLF-----	851
Equus_caballus	ASSRPWPPAPGCRVRAVALLWARGSSVTWTPGDMGALKPAHRSALIPSAACGCSAVSLLPK	894
Pan_troglodytes	THKRQILVNTIASLPGGCLLPWIWSGAALRF-----	859
Callithrix_jacchus	THKRQILINTASHSGACLPP-----	849
Macaca_mulatta	SHKRGLPPWIWSGAALGFRVLLHR-----	923
Homo_sapiens	-----	819
Canis_lupus_familiaris	PLCRPGLTASGHGVRIGSPSWGEGTSVTGDESHLRVIG---KAAVHFAYGCSGYF---	968
Xenopus_tropicalis	-----CVKVVGEMLF-----	822
Latimeria_chalumnae	-----SLKVVGEML-----	836
1090.....1100.....1110.....1120.....1130.....1140	

Pavo_muticus	-----	828
Pavo_cristatus	-----	828
Gallus_gallus	-----	827
Chelonia_mydas	-----	842
Rhinatrema_bivittatum	-----	817
Mus_musculus	-----	823
Rattus_norvegicus	-----	886
Bos_taurus	-----	851
Equus_caballus	VTEFVYTGTSSEHLLWVISEGFCAILICPLFRFFQNFSSRFS	935
Pan_troglodytes	-----	859
Callithrix_jacchus	-----	849
Macaca_mulatta	-----	923
Homo_sapiens	-----	819
Canis_lupus_familiaris	-----	968
Xenopus_tropicalis	-----	822
Latimeria_chalumnae	-----	836
1150.....1160.....1170.....1180.	