

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.p Tue Feb 1 11:27:13 2022

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Pavo_muticus          -----
Pavo_cristatus        -----
Gallus_gallus          MASNPQPQPPPPPPPPPPPPQQP-----PLPGA-----GAGAGSGAAEPQLVSM    44
Chelonia_mydas         MASNPQPQPPPPPPPPPPPPQQP-----PLPGA-----SGGG--GAVEPELVSV    42
Rattus_norvegicus      MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGAGPGASG---PGGAGAGSGDPQLVAM    54
Mus_musculus           MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGAGPGASG---PGSAGAGAGDPQLVAM    54
Homo_sapiens           MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGAGPGAGG---AGGAGAGAGDPQLVAM    56
Pan_troglodytes        MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGAGPGAGG---AGGAGAGAGDPQLVAM    54
Macaca_mulatta         MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGAGPGAGG---AGGAGAGAGDPQLVAM    54
Callithrix_jacchus     MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGAGPGTAG---AGGAGAGAGDPQLVAM    54
Equus_caballus         MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGAGPGAGG---AGGAGAGAGDPQLVAM    54
Canis_lupus_familiaris MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGTGPAGAGAGAAGGAGAGAGDPQLVAM    58
Bos_taurus             MATNPQPQPPPPAPPPPPPPQPQP--PPPPPGPGTGPAGAG---AGGAGAGAGDPQLVAM    54
Rhinatrema_bivittatum -----MAHLQPGDPQLVSL    14
Danio_rerio            -----MAALHPGDPQLVSV    14
Xenopus_tropicalis     -----MATPPPGDPKLVLSQ    14
1.....10.....20.....30.....40.....50.....60

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***** :***** :*** :***** :***** :
Pavo_muticus          -----ADVDTKPAYQNLQRQVDNFVCNHLATHTWSPHLNKNQLRNN    41
Pavo_cristatus        -----ADVDTKPAYQNLQRQVDNFVCNHLATHTWSPHLNKNQLRNN    41
Gallus_gallus          IVSHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVCNHLATHTWSPHLNKNQLRNN    104
Chelonia_mydas         IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVSNHLATHTWSPHLNKNQLRNN    102
Rattus_norvegicus      IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    114
Mus_musculus           IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    114
Homo_sapiens           IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    116
Pan_troglodytes        IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    114
Macaca_mulatta         IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    114
Callithrix_jacchus     IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    114
Equus_caballus         IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    114
Canis_lupus_familiaris IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    118
Bos_taurus             IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVANHLATHTWSPHLNKNQLRNN    114
Rhinatrema_bivittatum IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVSNHLASHTWSPHLNKNQLRNN    74
Danio_rerio            IVNHLKTEGLFDQFRRDCLADVDTKPAYLHLRQVDNFVSNHLANHTWSPQLNKNQLRNS    74
Xenopus_tropicalis     IVNHLKSQGLFDQFRRDCLADVDTKPAYQNLQRQVDNFVASHLASHTWSPHLNKNQLRNN    74
.....70.....80.....90.....100.....110.....120

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*** * :***** :*** :***** :* ***** :* :* :* :* :
Pavo_muticus          IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEAGPSTAPSE    101
Pavo_cristatus        IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEAGPSTAPSE    101
Gallus_gallus          IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEAGPSTAPSE    164
Chelonia_mydas         IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEASPTAPSE    162
Rattus_norvegicus      IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEETAGSTAPDD    174
Mus_musculus           IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEAGSTAPDD    174
Homo_sapiens           IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEGSGNTAPDD    176
Pan_troglodytes        IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEGSGNTAPDD    174
Macaca_mulatta         IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEASGNTAPDD    174
Callithrix_jacchus     IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEASGNTAPDD    174
Equus_caballus         IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEASGSTAPDD    174
Canis_lupus_familiaris IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEASGSTVPDD    178
Bos_taurus             IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLSHKEDTSGSTAPED    174
Rhinatrema_bivittatum IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATANNKEEANVSTTQNE    134
Danio_rerio            IRQLVQSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEASGNTAPDD    127
Xenopus_tropicalis     IRQQVLKSGMLESgidriiSQVDPKINHTFRPQVEKAVHEFLATLNHKEEASGNTAPDD    134
.....130.....140.....150.....160.....170.....180

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      .  .  *  :  :  :  *  .  :  :  *  :
Pavo_muticus      EKTDA SVAVQGVSTTA-PSGNVASDAMSILETITISLNQEAS--AARASTENSNSKNNDKAV 159
Pavo_cristatus    EKTDA SVAVQGVSTTA-PSGNVASDAMSILETITISLNQEAS--AARASTENSNSKNNDKAV 159
Gallus_gallus     EKMDASVAVQGVSTTA-PSGNVASDAMSILETITISLNQEAS--AARASTDNSSSKNSDKAA 222
Chelonia_mydas    EKADASITLQGVSTTA-PSANVASDAMSILETITISLNQEAS--AARASTENTNSKNSDRTS 220
Rattus_norvegicus EKLESSVITQGAPAPG-PSANVASDAMSILETITISLNQEANAAARASTEMSNAKASERIS 233
Mus_musculus      EKPESSVITQGAPAPG-PSANVASDAMSILETITISLNQEAN--AARASTEMSNAKVSERTS 232
Homo_sapiens      EKPDTSLITQGVPTPG-PSANVANDAMSILETITISLNQEAS--AARASTETSNAKTSEAS 234
Pan_troglodytes   EKPDTSLITQGVPTPG-PSANVANDAMSILETITISLNQEAS--AARASTETSNAKTSEAS 232
Macaca_mulatta    EKPDTSLITQGVPTPG-PSANVANDAMSILETITISLNQEAS--AARASTETSNAKTSEAS 232
Callithrix_jacchus EKPDTSLITQGVPTPG-PSANVANDAMSILETITISLNQEAN--AARASTETSSAKTSEAS 232
Equus_caballus    EKPDTSLITQGVPTPG-PSANVANDAMSILETITISLNQEAS--AARASTETSSAKSERVS 232
Canis_lupus_familiaris EKPDTSLITQGIPTPG-PSANVANDAMSILETITISLNQEAS--AARASTETSNAKTSEAS 236
Bos_taurus        EKPDTSLITQGVPTPG-PSANVASDAMSILETITISLNQEAS--AARASTETSNAKTSEAS 232
Rhinatrema_bivittatum EKMDSSVTAQGISSAG-PSISAADNALSILETITISLNQEAS--AAWASNNANPKGNEKTS 192
Danio_rerio       -----LPAVAPPL-PAEHLEAEVLIQDDAAVSWADVQMSSESAGAESNLELSVEEMD 178
Xenopus_tropicalis ERSEASISVPGSLPAVGPSSTNVASDAMSILETITISLNQEAT--AARAFIETPNKNNSDKVS 193
      .....190.....200.....210.....220.....230.....240

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      :  :  *  :  :  :  *  :  :  :
Pavo_muticus      KRLLSQSVVDGSTER--NMEDLPDKEKAISDLSGEGAETFKCEDSNELPCQSEEEKNSA 217
Pavo_cristatus    KRLLSQSVVDGSTER--NMEDLPDKEKAISDLSGEGAETFKCEDSNELPCQSEEEKNSA 217
Gallus_gallus     KRLLSQSVVDGSTER--NMEDLPDKEKAISDLSGEGAETFKCEDSNELPCQSEEEKNSA 280
Chelonia_mydas    KRLLSQSVVDGSTERERNSDFPDQEKPICDPS--EGSEAVAKCEDLNELPCPSEEEKNST 279
Rattus_norvegicus RKLSSQSPSTDISTDKERGSSEDAEREKVTPDSGGEGLETAPKSEEPNDLPCPVEETKNHT 293
Mus_musculus      RKLSSQSPSTDVSTDKERGSSEDAEREKATSDSGGDGLEAALKSEEPSDLPCPVEETKNHM 292
Homo_sapiens      KKLPSQPTTDTSTDKERTSEDMADKEKSTADSGEGLETAPKSEEFSDLPCPVEEIKNYT 294
Pan_troglodytes   KKLPSQPTTDTSTDKERTSEDMADKEKSTADSGEGLETAPKSEEFSDLPCPVEEIKNYT 292
Macaca_mulatta    KKLPSQPTTDTSTDKERTSEDMADKEKSTADSGEGLETAPKSEEFSDLPCPVEEIKNYT 292
Callithrix_jacchus KKLPTQPTTDTSTDKERTSEDMADKEKSTADSGEGLETALKSEEFSDLPCPVEEIKNYT 292
Equus_caballus    KKLPSQSPSTDISTEKERASEDMIDKEKSTPDSAGEGMEISPKSEEFNDLPCAVEEIKNHT 292
Canis_lupus_familiaris KKLPSQPSMDTSTEKERTSEDMAEKEKSASDSAGEGQETAPKSEEFNDLPCPVEEIKNHT 296
Bos_taurus        KKTPSQASTDTSAEKERTSEDTADKEKPTADSAGEGQEAAPRSEELSDPPCPAEEMKNHA 292
Rhinatrema_bivittatum KKLSSQSIDASTEKERNPEDIHDEKAPAPESLGEAEVILKQEEELMDTPSPSEEVNTASS 252
Danio_rerio       ISLPEEEEEELQLKEEPLLEEEEQPVKEEHPVKEAELETOEAVLKKEEPKEEADASKET 238
Xenopus_tropicalis KRT-IQQSFDATEEKDRITLEETOEVKESIPDMLVAETEPDIKTEDSNDISSVEAFKQPD 252
      .....250.....260.....270.....280.....290.....300

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      .  :  :  :  :  *  :  :  *
Pavo_muticus      KDTSSSSSVTIKDTSKETIQDSEDQSKSLIDKCEKKPE----GDRRKEKKE-KLDK----- 267
Pavo_cristatus    KDTSSSSSVTIKDTSKETIQDSEDQSKSLIDKCEKKPE----GDRRKEKKE-KLDK----- 267
Gallus_gallus     KDTSSSSSVTIKDTSKETIQDSEDQSKSLIDKCEKKPE----GDRRKEKKE-KLDK----- 330
Chelonia_mydas    KDVNN----LIHPSKEILOESDDQSKSLTDKGRKPSTTEKGERKKEKKE-KNDKRFDHS 334
Rattus_norvegicus KEN-SL----LFLSKDAQQENS DPKIKSTDGKEKKPDGNEKGERKKEKKE-KTEKKIDHS 347
Mus_musculus      KENNSL----LLLKDAQQESTDPKIKSMDKGEKKPDGNEKGERKKEKKE-KTEKKIDHS 347
Homo_sapiens      KEHNNL----ILLNKDVQQESSEQKNKSTDGKEKKPDNEKGERKKEKKE-KTEKKFDHS 349
Pan_troglodytes   KEHNNL----ILLNKDVQQESSEQKNKSTDGKEKKPDNEKGERKKEKKE-KAEKKFDHS 347
Macaca_mulatta    KEHNNL----ILLNKDVQQESSEQKNKSTDGKEKKPDNEKGERKKEKKE-KTEKKFDHS 347
Callithrix_jacchus KEHNNL----ILLNKDVQQESSEQKNKSTDGKEKKPDNEKGERKKEKKE-KTEKKFDHS 346
Equus_caballus    KESNSS----ILLNKDIQQESGDQKNKSTDGKEKKADSNKGERKKEKKE-KTEKKFDHS 347
Canis_lupus_familiaris KESNSS----IQLIKEVQQESSDQKNKSTDGKEKKPESNDKGERKKEKKE-KTEKKFDHS 351
Bos_taurus        RESTSS----VLLNKDAQQESSDQSKSADKGEKKPDNEKAERKKEKKE-KTEKKFDHS 347
Rhinatrema_bivittatum KEASTL----IQPTKETVQENEEQRGKLADKTERKMDSEKGEKKEEKRENNLEKKNELA 308
Danio_rerio       SSKSSG-----KSREENPETDSQKPTSVKOKTRERLREE----- 272
Xenopus_tropicalis AVGISQ-----SKDIPNNEEQKPKAVE-SEKKNEVSEIAQKKEKKEKTEKRENYEP 304
      .....310.....320.....330.....340.....350.....360

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

**File: /media/morpheus/disk1/fst/pep\_msa/BODD11:pep** **Date: Tue Feb 1 11:27:13 2022**

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	.*:***** :.*. :.* *****:.*: :.*: :.*	
Pavo_muticus	SDITVSSVHTSDLSSFEESEEEPVISDSTEEGEITSDDDEE-EKNKNKNKAKPHINELSDG	379
Pavo_cristatus	SDITVSSVHTSDLSSFEESEEEPVISDSTEEGEITSDDDEE-EKNKNKNKAKPHINELSDG	379
Gallus_gallus	SDITVSSVHTSDLSSFEESEEEPVISDSTEEGEITSDDDEE-EKN-KNKTkPHINELSDG	441
Chelonia_mydas	SDITVSSVHTSDLSSFEESEEEAVVSDSTEEGEITSDDDEE-EKNKQSKTKPOTNEICDG	448
Rattus_norvegicus	TDITVSSVHTSDLSSFEEDETEEEVVMSESMEEGEITSDEDE--EKNKQNKTKAQTSDSTDG	459
Mus_musculus	TDITVSSVHTSDLSSFEEDETEEEVVVSESMEEGEITSDEDE--EKNKQNKAKVOPGDSSDG	459
Homo_sapiens	TDITVSSVHTSDLSSFEEDETEEEVVTSDSMEEGEITSDDDE--EKNKQNKTKTQTSDSSEG	461
Pan_troglodytes	TDITVSSVHTSDLSSFEEDETEEEVVMSDSMEEGEITSDDDE--EKNKQNKTKTQTSDSSEG	459
Macaca_mulatta	TDITVSSVHTSDLSSFEEDETEEEVVMSDSMEEGEITSDDDE--EKNKQNKTKTQTSDSSEG	459
Callithrix_jacchus	TDITVSSVHTSDLSSFEEDETEEEVVMSDSMEEGEITSDDDE--EKNKQNKTKTQTSDSSEG	458
Equus_caballus	TDITVSSVHTSDLSSFEEDETEEEVVMSDSMEEGEITSDDDE--EKNKQNKTKTPASDPGEG	459
Canis_lupus_familiaris	TDITVSSVHTSDLSSFEEDETEEEVVMSDSMEEGEITSDDDE--EKNKQNKTKTQTSDPSEG	463
Bos_taurus	TDITVSSVHTSDLSSFEEDETEEEAVMSESMEEGEITSDDDE--EKNKQNKTKTQTSDPSEG	459
Rhinatrema_bivittatum	TDVTVSSVHTSDLSSFEESEEEVSVVSDSTEEGEITSDDDEEEKMDVHTTKTSQANEQIEG	428
Danio_rerio	SDITVSSVHTSDLSSFEGDEEAPVSESTEEGEISSEEDG-----GRKTPADGSDR	335
Xenopus_tropicalis	TDVTVSSVHTSDLSSFEESEEDPVVSDSTEEGEITSDDDEE-DKVDGKNIAKPETDQNEV	412
	.....430.....440.....450.....460.....470.....480	

	..: * : ** : ** : *** : * : ***** : *** : * : : * : ***** : * : : * : ***** :	
Pavo_muticus	RAKPVRHAYVRKPFLYSKYFSDSDDERTVEQRRQSIAKEKEERLLRRRMNRERLEEKRKQ	439
Pavo_cristatus	RAKPVRHAYVRKPFLYSKYFSDSDDERTVEQRRQSIAKEKEERLLRRRMNRERLEEKRKQ	439
Gallus_gallus	RAKPVRHAYVRKPFLYSKYFSDSDDERTVEQRRQSIAKEKEERLLRRRMNRERLEEKRKQ	501
Chelonia_mydas	KAKPVRHAYVHKPFLYSKYYSDDERTVEQHRQSIAREKEERLLRRQINRERLEEKRKQ	508
Rattus_norvegicus	KARSVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRRINREKLEEKRKQ	519
Mus_musculus	KARGVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRRINREKLEEKRKQ	519
Homo_sapiens	KTKSVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRQINREKLEEKRKQ	521
Pan_troglodytes	KTKSVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRQINREKLEEKRKQ	519
Macaca_mulatta	KAKSVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRQINREKLEEKRKQ	519
Callithrix_jacchus	KTKSVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRRINREKLEEKRKQ	518
Equus_caballus	KAKSVRHSYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRQINREKLEEKRKQ	519
Canis_lupus_familiaris	KAKSVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRQINREKLEEKRKQ	523
Bos_taurus	KAKNVRHAYVHKPYLYSKYYSDSDELTEVEQRRQSIAKEKEERLLRRQINREKLEEKRKQ	519
Rhinatrema_bivittatum	RPKIVRHSYVHKPYLYSKYYSDSDELTEVEQRRLTIAAKEERLLRRQINRERLEEKRKQ	488
Danio_rerio	KPRGVRQGYVHKPFLYSRYYSDDDEVTEVEQRRQSVAKEKEERLLKQONRERMEEKRRL	395
Xenopus_tropicalis	KAKSRQIYVHKPYLYSKYYSDSDELVEQRRQSVAKEKEERLLKQVKRERLEEKRKQ	472
	.....490.....500.....510.....520.....530.....540	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      : .:: : :      : ::      : :      *: . ** : .***** *: :
Pavo_muticus      KTAEKTKSLKSGSQNAKGKSGLNLEEPSARSLESKATGTSIKDVLKEQKFLEKKVALSRK 499
Pavo_cristatus    KTAEKTKSLKSGSQNAKGKSGLNLEEPSARSLESKATGTSIKDVLKEQKFLEKKVALSRK 499
Gallus_gallus     KTAEKTKSLKSGSQNAKGKSGLNLEEPSARSLESKATGTSIKDVLKEQKFLEKKVALSRK 561
Chelonia_mydas    KAAEKTKSLKSGSQGAEGKSGLNLEESSTKDFELKVTGTSIKDVLKEQKFLEKKVALSRK 568
Rattus_norvegicus K-AEKTSSSKAKSQ---GKSSVDLEDSSKTILEPKAP--RIKEVLKERKVLEKKVALSKR 573
Mus_musculus      K-AEKTSSSKVKSQ---GKSTVDLEDSSAKTILEPKAP--RIKEVLKERKVLEKKVALSKR 573
Homo_sapiens      K-AEKTSSSKTKGQ---GRSSVDLEESSTKSLEPKAA--RIKEVLKERKVLEKKVALSKK 575
Pan_troglodytes   K-AEKTSSSKTKSQ---GRSSVDLEESSTKSLEPKAP--RIKEVLKERKVLEKKVALSKK 573
Macaca_mulatta    K-AEKTSSSKTKSQ---GRSSVDLEESSTKSLEPKAP--RIKEVLKERKVLEKKVALSKK 573
Callithrix_jacchus K-AEKTGSKTKSQ---GKGSVDLEESSTKSLEPKAP--RIKEVLKERKVLEKKVALSKK 572
Equus_caballus    K-AEKTSSSKAKTQ---GKNNMDLEESSTKSSEPKAP--RIKEVLKERKVLEKKVALSKK 573
Canis_lupus_familiaris K-AEKTSSSKAKSQ---GKNSVDLEESSTKSLEPKTP--RIKEVLKERKVLEKKVALSKK 577
Bos_taurus        K-AEKTYSKAKSQ---GKSSVDLEESSTKGLEPKAP--RIKEVLKERKVLEKKVALSKK 573
Rhinatrema_bivittatum KAVEKTKSLKSKSQ-----GKMNLEASSTKNLKSKEPAS--MKEVLKEQKFLEKKVALSKK 541
Danio_rerio       RAAQREEQER-----KKQASVCADARPR--AKEARKEKKFLEKKVALSRQ 438
Xenopus_tropicalis KAAEKTKNLKIISQG-----KAVTSKHVKAKSTTS--TKEVLKEQMFLEKKVARSKK 520
      .....550.....560.....570.....580.....590.....600

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      : : **      : : :      : : :
Pavo_muticus      RKRDSRHVEDSWKKKYEPSSEDDSKETQKINETCEK---NSSKELKHNHGKTETSKTLRRL 556
Pavo_cristatus    RKRDSRHVEDSWKKKYEPSSEDDSKETQKINETCEK---NSSKELKHNHGKTETSKTLRRL 556
Gallus_gallus     RKRDSRHVEDSWKKKYEPSSEDDSKAQKTITETCEK---NSSKELKHNHGKTETSKPPRRL 618
Chelonia_mydas    RKRDSRYVEDSWQKKYEHPEEDSKETQKINETCEK---IPSKELKHNHGKSEVTKPVRRV 625
Rattus_norvegicus RKRDSRNADESSEKKKQP-AEEESKEALKTSEHCEKEKASS-KDLKHTHGKGEPNRPARRL 631
Mus_musculus      RKRDSRNVDENSKKKQP-AEEESKEALKTTEYCEKEKASS-KDLRHTHGKGEPSPARRL 631
Homo_sapiens      RKKDSRNVEENSKKKQQ-YEEDSKETLKTSEHCEKEKISSSKELKHVHAKSEPSKPARRL 634
Pan_troglodytes   RKKDSRNVEENSKKKQQ-YEEDSKETLKTSEHCEKEKISSSKELKHVHAKSEPSKPARRL 632
Macaca_mulatta    RKKDSRNVEENSKKKQQ-SEEDSKETLKTSEHCEKEKISSSKELKHVHAKSEPSKPARRL 632
Callithrix_jacchus RKKDSRNVEENSKKKQQ-SEEDSKETLKTSEHCEKEKISSSKELKHVHAKSEPSKPARRL 631
Equus_caballus    RKKDSRNVEENSKKKQQ-SEEDAKETLKTNEHCEKEKASSSKDLKHVHAKNEPSKPARRL 632
Canis_lupus_familiaris RKKDSRNVEENSKKKLQ-SEEDSKETLKTSEHCEKEKVSSSKDLKHVHAKSEPSKPARRL 636
Bos_taurus        RKKDSRNIDENSKKKQQ-SEEDSRETLLKTSEHCEKEKASSSKDLKHVHAKSEPSKPARRL 632
Rhinatrema_bivittatum RKRDSRFAEDSGKRKCEFEFGSREIHKINEVYEKSSSSYAKELKHLVKSSETSKPSRRF 601
Danio_rerio       RKRDSRKEDDRKSDTE-----GDSLNKEVVKPAGQR 469
Xenopus_tropicalis KIRASRNEKNTLKSQSDLLLEEDMKDSIKNE-----SHDKTLLSKEAKHNIGRSDKPS 572
      .....610.....620.....630.....640.....650.....660

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      . .      * : . :      : :      * : * : :
Pavo_muticus      SESVHSAEENKTD SKVEKEHKRKISTSLHTEGTQODIETKDPKROLERTEANTIDELQOK 616
Pavo_cristatus    SESVHSAEENKTD SKVEKEHKRKISTSLHTEGTQODIETKDPKROLERTEANTIDELQOK 616
Gallus_gallus     SESVHSAEENKTD SKVEKEHKRKISTSLHTEGTQODIETKDPKROLERAEANTIDELQOK 678
Chelonia_mydas    SDSVHSTEESEKNDPKVEREHKRTSTSLQIEGTQODTETKDPKQOLDRAEINTIDELQOK 685
Rattus_norvegicus SESLSHVDDNKTESKVEREYKRRSTSPVVLEGAQEETDSRDGKKOPDRSEINMEETOKOK 691
Mus_musculus      SESLSHADENKTESKVEREYKRRSTSPVILEGAQEETDTRDGKKQPERSETNVEETOKOK 691
Homo_sapiens      SESLSHVVDENKNESKLEREHKRRSTSPVIMEGVQEETDTRDVKROVERSEICTEEPQOK 694
Pan_troglodytes   SESLSHVVDENKNESKIEREHKRRSTSPVIMEGVQEETDTRDVKROVERSEICTEEPQOK 692
Macaca_mulatta    SESLSHVVDENKNESKVEREHKRRSTSPIIMEGAQEETDTRDAKROVERAEICTEEPQOK 692
Callithrix_jacchus SESLSHVVDENKNESKIEREHKRRSTSPVMEGAQEETDTRDVKROVERSEICTEEPQOK 691
Equus_caballus    SESLSHAADENKNPKIEREHKRRSTSPVVVEGTQEESDTRDGKROMERSESCTEEPQOK 692
Canis_lupus_familiaris SESLSHPADENKNESKIEREHKRRSTSPVVVEGTQEEDTRDGKROVERSEIGTEEPQOK 696
Bos_taurus        SESLSHPADENKNESKIEREHKRRSTSPVVVEGVQEETDTRDGKRLPERSSECTEEPQOK 692
Rhinatrema_bivittatum SEPAHLTEDTKGDAKVEREQKKKTSSSLLMEGSVDNETREVRKQPDKLETTPEEPQOK 661
Danio_rerio       SGRVDEQRRKSDTEEKLCDNRNVHS-----FILDLESCTEERORTK 511
Xenopus_tropicalis KVIAELAECKTDIRTEKDFKK-----RTPLEKNEINVEEQOROK 612
      .....670.....680.....690.....700.....710.....720

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.pFue Feb 1 11:27:13 2022

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      *   :   .:.
Pavo_muticus      TIFKNEKHSKKDS--DTEIQHMRNAARKEAKSYRDKSEKEVAALDKLSLKHKCKGDSIHK 675
Pavo_cristatus    TIFKNEKHSKKDS--DTEIQHMRNAARKEAKSYRDKSEKEVAALDKLSLKHKCKGDSIHK 675
Gallus_gallus     TVFKNEKHPKKDS--DAEIQHMRNAARKEAKSHRDKNEKEVTALEDKLSLKHKCKGDSIHK 737
Chelonia_mydas    YAFKNEKHLKKD--DTEIQNLRSPKKEKLSFKDKNEKERTLSEDKLLVKHKYKGDVSHK 743
Rattus_norvegicus STLKNEKYQKKD--DPET--HGKGLPKKEAKSAKERPEKEKAQSEKSSSKHKHKSDSVHK 748
Mus_musculus      STLKNEKYQKKD--DPET--HGKGLPKKEAKSAKERPEKEKAQSEDKPSKHKHKSGDSVHK 748
Homo_sapiens      STLKNEKHLKKD--DSETPHLKSLKKEVKSSKEKPEREKTTPSEDKLSVKHKYKGDVCMHK 752
Pan_troglodytes   STLKNEKHLKKD--DSETPHLKSLKKEVKSSKEKPEREKTTPSEDKLSVKHKYKGDVCMHK 750
Macaca_mulatta    NILKNEKHLKKD--DSETPHLKSLKKEVKSSKEKPEREKTTPSEDKLPVKHKYKGDVCMHK 750
Callithrix_jacchus STLKNEKHLKKD--DSETPHLKSLKKEVKSSKEKPEREKTTPSEDKLSMKHKYKGDVCMHK 749
Equus_caballus    STVKNEKHLKKD--DSETPHVKNLPKKEAKSSKEKLEKEKTVPSEDKLSMKHKYKGDVCMHK 750
Canis_lupus_familiaris STLKNEKHLKKD--DSETPHMKSLPKKEAKSSKEKPEKEKTLPSEDKLFAKHKYKGDVCLHK 754
Bos_taurus        STLKNEKHLKKD--DSETPHLKSLPKKEAKSSKEKPEKEKTLPSEDKLPSTKHKYGDSAHK 750
Rhinatrema_bivittatum SGPKTEKHLKKDSIDTETQNLRSLSKKEAKSYRDKNERERNFSEDKSSSKHRYRADSIQK 721
Danio_rerio       TARKEVHLKDKE-----RKDEHKLKHLKMDSRKS 541
Xenopus_tropicalis SAHKTEKLKES--HDSESPSMKVAQKKDPKMHRN--ERERTVSEDRSSSKYRYKTENINK 669
      .....730.....740.....750.....760.....770.....780

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      :           .*      *      ::::  :  *  :  :  :  :  :
Pavo_muticus      SVEDIELHSSEKSLKGEDGAQKHNOQMKISSDDKSEKSKHRSERKISVTGKDGSISDS 735
Pavo_cristatus    SVEDIELHSSEKSLKGEDGAQKHNOQMKISSDDKSEKSKHRSERKISVTGKDGSISDS 735
Gallus_gallus     SVEDIELHSSEKSLKGEDGAQKHNOQMKISSDDKSEKSKHRSERKISVTGKDGSISDS 797
Chelonia_mydas    ISDDIDLHSFERSLKGEDSVQKHNOQTKVPSSDDKFEKSKHRSERKTSTTSKDGKNVSEY 803
Rattus_norvegicus VGDETEPHSSEKSEA--EESVRKQSQQTKLSSDDKTERKRKHNRERKLSVLGRDGKPVSEY 807
Mus_musculus      MSDETEPHSSEKGET--EESVRKQSQQTKLSSDDRTERKSKHKSERRLSVLGRDGKPVSEY 807
Homo_sapiens      TGDETEPHSSEKGLKVEENIQKQSQQTKLSSDDKTERKSKHNRERKLSVLGKDGPVSEY 812
Pan_troglodytes   TGDETEPHSSEKGLKVEENIQKQSQQTKLSSDDKTERKSKHNRERKLSVLGKDGPVSEY 810
Macaca_mulatta    TGDETEPHSSEKGLKVEENIQKQSQQTKLSSDDKAERKSKHNRERKLSVLGKDGPVSEY 810
Callithrix_jacchus TSDDTEPHSSEKGLKAEETNQKQSQQTKLSTDDKAERKSKHNRERKLSVLGKDGPVSEY 809
Equus_caballus    TGDETEPHSSEKGLRVDESIQKQSQQTKLSSDDKAERKSKHNRERKLSVLGKDGPVSEY 810
Canis_lupus_familiaris TSDESELHSSEKSLKVDENIQKQSQQTKLSSDDKTERKSKHNRERKLSVLGKDGPVSEY 814
Bos_taurus        AGDEPEPHSSERGSR--DENVQKTTOQAKLSSDDKAERRGKHNRERKLSVLGKDGPVSEY 809
Rhinatrema_bivittatum TTSECELQSSDRGLKGEENLQKSLQSKVSSDKNDRRSKYRERKSLISSKEGKTVDQ 781
Danio_rerio       TDTD-----EKDGGAGGGAEK--KGSVKPDRKSSVTSKDT----- 577
Xenopus_tropicalis TNDSDAQSKSKNSKDDDTPHKRS--QSKSGSEERSDRKSKHKSEKSSSYNKEKTSQTE 728
      .....790.....800.....810.....820.....830.....840

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      .   .   :  :  :  :  :  *  :  :  *  .  *:::  :  :  :
Pavo_muticus      TLKAEELLRKEN--KKDRHFSTEKSRAEYKSKRSLSDSKPQKDSVSASKQLAPASHKRSES 794
Pavo_cristatus    TLKAEELLRKEN--KKDRHFSTEKSRAEYKSKRSLSDSKPQKDSVSASKQLAPASHKRSES 794
Gallus_gallus     TLKAEELLRKEN--KKDRHLSSTEKSRAEYKSKRSLSDSRPQKDSVSASKPLSSVSHKRSES 856
Chelonia_mydas    TLKNEEMLRKENNKRRDHISTEKSRAEYKSKRSSSDSRPQKDSQGNKQLVSSQRRSES 863
Rattus_norvegicus TIKTDEHARKDN--KKDKHLSSEKTKAEHKSRRS--SDSKLQKDVL--SKQHSVILQKRSES 864
Mus_musculus      TIKTDEHARKDN--KKEKHLSEKSKAEHKSRRS--SDSKLQKDALS--SKQHSVILQKRSES 864
Homo_sapiens      IIKTDENVRKENNKKERRLSAEKTKAEHKSRRS--SDSKIQKDSL--SKQHGITLQRRSES 870
Pan_troglodytes   IIKTDENVRKENNKKERRLSAEKTKAEHKSRRS--SDSKIQKDSL--SKQHGITLQRRSES 868
Macaca_mulatta    IIKTDENVRKENNKKERRLSAEKTKAEHKSRRS--SDSKIQKDSL--SKQHGITLQRRSES 868
Callithrix_jacchus IIKTDENVRKENNKKERRLSAEKTKAEHKSRRS--SDSKIQKDSL--SKQHGITLQRRSES 867
Equus_caballus    IIKTDENVRKENNKKERHVSIEKTKAEHKSRRS--SDSKIQKDSL--SKQHGITLQRRSES 868
Canis_lupus_familiaris IIKTDENVRKENNKKERHISAEKTKAEHKSRRS--SDSKIQKDSL--SKQHGITLQRRSES 872
Bos_taurus        IIKSDENVRKEN--KKERHGSADKTKAEHKSRRS--SDSKIQKDSL--SKQHGSTVQRRSES 866
Rhinatrema_bivittatum VLKTDENLRKENSRRKEKYLSEKSKLEHKSKRS--SDPKIQRELHGTAKQHTATSRKSES 840
Danio_rerio       --KTPEAADEANLKKGKMAADAKDEKPKTSGK--SESKLLR-----RLDST 620
Xenopus_tropicalis HSKTGESVHRESKRERRQSEKSRSEHKYKRLSDSRTHRDSQIDSRQHSQKKSRI 788
      .....850.....860.....870.....880.....890.....900

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.p Tue Feb 1 11:27:13 2022

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      . . . . . : : : : * : : :
Pavo_muticus      YSEEKHEIKSTNSDCNLKQEDGVHKDRRRSKSLAEDKILLKS--KSKSHSKQLKASETEL 852
Pavo_cristatus    YSEEKHEIKSTNSDCNLKQEDGVHKDRRRSKSLAEDKILLKS--KSKSHSKQLKASETEL 852
Gallus_gallus     YSEEKHEIKSTNSDCNLKQEDGVPKDRRRSKSLAEDKILLKS--KSKSHSKQLKASETEL 914
Chelonia_mydas    YSEDKNEIESTNSDSNLRQEDSIHRDRRRSKSFLEDKFLLS--KSKSHSKQSKPIETEL 921
Rattus_norvegicus CSEDKYETDSTNADSSSKPEELLHKERRRTKSILLEEKLVLS--KSKSQGKQIKVAETES 922
Mus_musculus      CSEDKCETDSTNADSSFKPEELPHKERRRTKSILLEDKVVSKS--KSKGQSKQTKAAETEA 922
Homo_sapiens      YSEDKCDMDSTNMDSNLKPEEVVHKEKRRRTKSILLEEKLVLS--KSKTQGKQVKVETEL 928
Pan_troglodytes   YSEDKCDMDSTNMDSNLKPEEVVHKEKRRRTKSILLEEKLVLS--KSKTQGKQVKVETEL 926
Macaca_mulatta    YSEDKCDMDSTNMDSNLKPEEVVHKEKRRRTKSILLEEKLVLS--KSKSQGKQLKVGETEL 926
Callithrix_jacchus YSEDKCDMDPTNMDCNLKPEEVVHKEKRRRTKSILLEEKMLKS--KSKSQGKQLKVIETEL 925
Equus_caballus    YSEDKCDTDTNLDNSNKPPEILHKEKRRRTKSILLEDKMLKA--KSKSQGKQLKVETEL 926
Canis_lupus_familiaris YSEDKCDTDTNLDNSNKPPEEVVHKEKRRRTKSILLEEKLTLSNQPKSQGKQLKVEMES 932
Bos_taurus        YSEDKCDNDLTNADSNKPEEAIHKERRRTKSILLEDKLVLS--KSRSQGKQLKASETES 924
Rhinatrema_bivittatum GTDDRYEAESTISDSNPKQEDSVHKXRRKVKSFSEDEKLLSKN--KSKYYSKQTKSLETET 898
Danio_rerio       GSSEERSEVETGSEVNRKKDKHPKEMLRKSKSHPEPHPEARP----- 662
Xenopus_tropicalis SDD---KTESDLARTNAKQEESTHRDKRRSYSCSEERVSLVKV--SKSSGKSSKLSDOE- 842
      .....910.....920.....930.....940.....950.....960

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      * . : : : :
Pavo_muticus      QENLIKQDTSQKLDKDKNMEENDSDKQHNKKNEDKLSEESGADFELESGMQSTQGSQKDS 912
Pavo_cristatus    QENLIKQDTSQKLDKDKNMEENDSDKQHNKKNEDKLSEESGADFELESGMQSTQGSQKDS 912
Gallus_gallus     QENLAKQDTSQKLDKDKNMEENDSDKQHNKKNEDKMSEESGADFELESGMQSTQGSQKDS 974
Chelonia_mydas    QESFTKHETVQKPDREKNMEENDTDKQCKSKNEDKVFEESIVDFELESQMRSIYSSQKDF 981
Rattus_norvegicus QEGVTKQVTTTPKPDKEKNTEDNDTERQRKSKLEDRTCEEAVAEPALESAPVSAHSSQKDS 982
Mus_musculus      QEGVTRQVTTTPKPDKEKNTEDNDTERQRKFKLEDRTSEETVTDPALENTVSSAHSQKDS 982
Homo_sapiens      QEGATKQATTTPKPDKEKNTENDSEKQRKSKVEDKPFEEETGVEPVLETASSAHSTQKDS 988
Pan_troglodytes   QEGATKQATTTPKPDKEKNTENDSEKQRKSKVEDKPFEEETGVEPVLETASSAHSTQKDS 986
Macaca_mulatta    QEGVTKQATTTPKPDKEKNTENDSEKQRKSKVEDKPFEEETGVEPVLEAASSAHSTQKDS 986
Callithrix_jacchus QEGVTKQSTTPKPDKEKNTENDSEKQRKSKVEDKPFEEETGVEPVLETASSAHSTQKDS 985
Equus_caballus    QESITKQATTTPKPDKEKNTESDSDRQRKSKVEDKP-EETGLEPVLENAAS-AHGTQKDS 984
Canis_lupus_familiaris QETVTKQATTPKPDKEKNTENDPDKQRKSKVEDKP-EESVVEAVDSAST-SHGAQKDS 990
Bos_taurus        QENTTKLATTPKPEKEKNTEEGEPEQRKSRVEDRPSEESGVEPTSESVAHSAHVSORES 984
Rhinatrema_bivittatum QEMG-----QKPDKDKSTEETDTERHRKSKNEDKTFEER-----VDIESENVAHPMKEP 947
Danio_rerio       -----GEKLKVRADRRDSSVDKTAQKSGSEP----- 689
Xenopus_tropicalis -----EPAQKNKDKTLLNENYAEKYQKLKSEDEHEEAKDAVTTQASSTVSKDVNYKSKH 895
      .....970.....980.....990.....1000.....1010.....1020

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      : : : : : : : : :
Pavo_muticus      SHRVLKHSGERGSVKEKCRGDKDLSNSKLERKFSVEGHKGRSIKHSNKEIKKREECAKVE 972
Pavo_cristatus    SHRVLKHSGERGSVKEKCRGDKDLSNSKLERKFSVEGHKGRSIKHSNKEIKKREECAKVE 972
Gallus_gallus     SHRVLKHSGERGSVKEKCRGDKDVNSRLERKFSVEGHKGRSIKHSNKEIKKKEECTKVE 1034
Chelonia_mydas    SHRVLKLQAGEKISVKEKNKSDKDLSSKLERKLSVEGHKSRNLKHSNKEIMKKKEESNKLE 1041
Rattus_norvegicus GHRAKVA----SVKEKHKTDKDSTSSKLERRVSDGHRSLKHSNKNKDVKRKEEN-KPD 1035
Mus_musculus      GHRAKLA----SIKEKHKTDKDSTSSKLERKVS-DGHRSLKHSNKNKMKKKEEN-KPD 1035
Homo_sapiens      SHRAKLP----LAKEYKSKDKDSTSTRLERKLS-DGHKSRSLKHSSKDIIKKKEDEN-KSD 1041
Pan_troglodytes   SHRAKLP----LAKEYKSKDKDSTSTRLERKLS-DGHKSRSLKHSSKDIIKKKEDEN-KSD 1039
Macaca_mulatta    SHRTKLP----LAKEYKSKDKDSTSTRLERKLS-DGHKSRSLKHSSKDIIKKKEEN-KAD 1039
Callithrix_jacchus SHRARLP----LAKEYKSKDKDSTSTRLERKLS-DGHKSRSLKHSSKDIIKKKEEN-KSD 1038
Equus_caballus    SHRAKLL----LAKEKCKGDKDSVSSRLERKLS-DGHKSRSLKHSSKDVKKKEEN-KSD 1037
Canis_lupus_familiaris NHRTKLA----LAKEYKADKDSGSSRPERKLS-DGHKSRSFKHGSKVEVKKKEE--KSD 1042
Bos_taurus        SHRAKLP----LAKERCKGEKESSTRLERKLS-DGHKSRSLKHSSKDVKKKEDN-KTE 1037
Rhinatrema_bivittatum SQKAKLMPGD--RIKERCKSDREVSYSKTERRLSAESHKNRSSKHSSKEMKKKEDK--SE 1003
Danio_rerio       -----EGDGRKPETSLKSKTLLKHSKSKSONPAGGKPERKTEAKSKP 731
Xenopus_tropicalis SGDKEKE-----KSRSDNRERSKLDKKHIGENIKGISKHSKHLKRRKGESSKPD 947
      .....1030.....1040.....1050.....1060.....1070.....1080

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.p Tue Feb 1 11:27:13 2022

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      :  :  .  .  *
Pavo_muticus      DKDMKEMDGGHEKVM-GITVTVDKKQSKKVSENKRGSSISN-----HNLLGEE-KQ 1021
Pavo_cristatus    DKDMKEMDGGHEKVM-GITVTVDKKQSKKVSENKRGSSISN-----HNLLGEE-KQ 1021
Gallus_gallus     DKDMKEMDGGHEKVM-GITVTVDKKQSKKVSENKRGSSISN-----HNLLGEE-KQ 1083
Chelonia_mydas    DKDIKEMDGSHEKVG-GIMI-MDKKSSKKLSCENKKGSLSA-----HEMTMEEEL 1090
Rattus_norvegicus DKNNGKEVDSSHEKGR-GNGPVTEKKLSR-RLCENRRGSTS-----QEMAK-EDKL 1082
Mus_musculus      DKNNGKEVDSSHEKGR-GNGPVTEKKLSR-RLCENRRGSTS-----QEMAK-EDKL 1082
Homo_sapiens      DKDGKEVDSSHEKAR-GNSSLMKKLSR-RLCENRRGSLs-----QEMAKGEEKL 1089
Pan_troglodytes   DKDGKEVDSSHEKAR-GNSSLMKKLSR-RLCENRRGSLs-----QEMAKGEEKL 1087
Macaca_mulatta    DKDGKESDSNHEKAR-GNSSLMKKLSR-RLCENRRGSLs-----QEMTKGEEKL 1087
Callithrix_jacchus DKDGKEVDSSNHEKAR-GNSSVMKKLSK-RFCE-KRGSLs-----QEMTKGEEKL 1085
Equus_caballus    DKEGKEVDSSNHEKTR-GNSSVLEKKLSR-RLCENRRGSLs-----QEMTKGEEKL 1085
Canis_lupus_familiaris DKDGKEVDSSNHEKGR-GNSSLMKKLSR-RLCENRRGSLs-----QEMTKGEEK- 1089
Bos_taurus        DKDGKEVDSSHEKPR-GSSSVVEKKLSR-RLCENRRGSLs-----QEMAKGEEKP 1085
Rhinatrema_bivittatum EKELKETEDNQGRMQ-GSSSVGRKTVK-RLCDsrKESLS-----ADISKKEAKL 1051
Danio_rerio       AEDKREEKKTSEEKL-RDTKVRKLKVQK-----DSKFEEESL 767
Xenopus_tropicalis DKGSKVTDEKRAQERSILDKKSSKKTPEFEKGESSKGSVTSKKGSKLENDGNDHAGRRRK 1007
.....1090.....1100.....1110.....1120.....1130.....1140

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      .  .  :
Pavo_muticus      SVGVTVSSSLPVPQKSNMNNDDVCSGHEG-EMMELDLDET--KVQEEISMEGKSIILNSVR 1078
Pavo_cristatus    SVGVTVSSSLPVPQKSNMNNDDVCSGHEG-EMMELDLDET--KVQEEISMEGKSIILNSVR 1078
Gallus_gallus     SVGVTVSSSLPVPQKSNNTNSDDMCSGHEG-EMMELDLDET--KVQEEISVGGKSIILNSVQ 1140
Chelonia_mydas    ATDIFVTSHIPSTQRPRTSDDSLHSEQGEEPMFVDSEQTYAKAHEASKIEEKSSSNLSL 1150
Rattus_norvegicus AANLSGTASTSSSLQRPKKSTETALIPEQE--PMEIDSEAAVENVSELSKTEDISSNSSQQ 1140
Mus_musculus      VANMSGTTSSSSSLQRPKKSTETTSIPEQE--PMEIDSEAAVENVSELSKTEDISSNSSQQ 1140
Homo_sapiens      AANTLSTPSSGSSSLQRPKKSGDMTLIPEQE--PMEIDSEPGVENVFEVSKTQDNRRNNSQQ 1147
Pan_troglodytes   AANTLSTPSSGSSSLQRPKKSGDMTLIPEQE--PMEIDSEPGVENVFEVSKTQDNRRNNSQQ 1145
Macaca_mulatta    AANTLSAPSGSSSLQRPKKSGDTTLIPEQE--PMEIDFEPGVENVFEVSKTQDSRNNSQQ 1145
Callithrix_jacchus AANTLSTPSSSSSLQRPKKSGDTTLIPEQE--PMEIDSEPGIENVSEVSKTPDNNNSQQ 1143
Equus_caballus    AVNTFTGTPSSSSSLQRPKRSGDTTLIPEQE--PMEIDSEAAVENLFEVSKNODSSNSSQQ 1143
Canis_lupus_familiaris SANLSAPNISVQKPKKTSQVTLMPQE--PMEIDSEPAVENVFEVSKTQDSNNNSQQ 1147
Bos_taurus        AANPSGAPSSSSSLQRPKKSGDPALMPQE--PMEIDPEPAMENAVEVRKTQDGS-SSQQ 1142
Rhinatrema_bivittatum ETEMFLNDRVTSYQIQNKTDGDSLNSERAEPMEID-EVETQEIHIHISKLETKSDVLQK 1110
Danio_rerio       DSAAVSSSTPVSDDPFAALSVDTPSEDE----EVEPKPRPLSAEADALLSLMDISVRR 823
Xenopus_tropicalis LSSCSDSDSKDMSSIMNEELSRDSVKSERISVEKGFETAESVAVSEPLFELNSICPNANAT 1067
.....1150.....1160.....1170.....1180.....1190.....1200

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      :  :
Pavo_muticus      ATDAKYTAKEK--ISSASKELKHSADLEASESKFLAA-----VEKAN-KQEDIPN 1126
Pavo_cristatus    ATDAKYTAKEK--ISSASKELKHSADLEASESKFLAA-----VEKAN-KQEDIPN 1126
Gallus_gallus     ATDAKYTAKEK--ISSVSKELKHSADLEASESKFLAA-----VDKTN-KQEDIPN 1188
Chelonia_mydas    DMDSENTAKENTNLQSSKNELRNRLADFEACVSEFPADR-----NSEQTI-EHEKNPV 1202
Rattus_norvegicus DTDGFENVTKHKAAGVLKDELRTSMVDSKPAAAVTCKSGRGLTITSNSEKHA-DHKSTLT 1199
Mus_musculus      DTDGFENVTKHKATAGVLKDEFRTSMVDSKPAAAVTCKSGRGLAVTISERHA-DHKSTLT 1199
Homo_sapiens      DIDSSEN-MKQKTSATVQKDELRTCTADSK-ATAPAYKPGRGTGVNSNSEKHA-DHRSTLT 1204
Pan_troglodytes   DIDSSEN-MKQKTSATVQKDELRTCTADSK-ATAPAYKPGRGTGVNSNSEKHA-DHRSTLT 1202
Macaca_mulatta    DIDSSEN-MKPKTSATVLKDELRTCTADSK-TTAPAYKPGRGTGVNSNSEKHT-DHRSTLT 1202
Callithrix_jacchus DIDSSEN-MKQKTATVTLKDELRTFTADSK-TTAPACKSGRGTGVNSNSEKHV-DHRSTLT 1200
Equus_caballus    DVDSSENGMKQKTATVTLKDELRTSTVDSK-TAVPACKLGRATGVNSNSEKHT-DHKITLT 1201
Canis_lupus_familiaris DPDSSENIMKHKTITIMVLNDELRTSTVDSK-TAVVACKSGRGTGVNSNSEKHA-DHKGTLT 1205
Bos_taurus        ELDSSENVTKQKTAAVLKEELQTPMGESK-TASPACKSGRGTGAVGNSEKHA-DHRSTLT 1200
Rhinatrema_bivittatum ENDTESTEKDQ---QVSRDEPTDTIIGAKESECNKFEFPIMTILSNSEQLFK-YENVLKE 1166
Danio_rerio       DVEADMKMQEAALTLLSMG-----PDAGRS-SDVVAAD 855
Xenopus_tropicalis SIDGGYGKENRLKQDSSIRGVNAASVCSRIFSGEHSENKPVDDFTQPSDDTRQYSETAA 1127
.....1210.....1220.....1230.....1240.....1250.....1260

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      :
Pavo_muticus      KQVCALDALSKQTSMDQGLHKEGAYKMGGVSGKGHKSLLNAPSKDRTSEDSRKPKNFKTV 1186
Pavo_cristatus    KQVCALDALSKQTSMDQGLHKEGAYKMGGVSGKGHKSLLNAPSKDRTSEDSRKPKNFKTV 1186
Gallus_gallus     KQVGALDTLSKQTSVDQGLHKEGAYKMGGVSGKSHRILLNAPSKDRASEDSRKPKNFKTV 1248
Chelonia_mydas    KGVDAALDTVSKQASEEQGPIKQAYQMNIVYETSGRILLNAPIKEQTSSEDAKPKNLNN 1262
Rattus_norvegicus KKVHVSQSTASKATPREREPAQRGAQEISVDSSEGRKVLSRAL-----SENEKGOKNLKGV 1254
Mus_musculus      KKVHVSQGNPSKAAPREREPIQRGAQEVSVDSSEVRKALSRAP-----SENEKGOKNLKGM 1254
Homo_sapiens      KKMHIQSAVSKMNPGEKEPIHRGTTEVNIDSETVHRMLLSAP-----SENDRVOKNLKNT 1259
Pan_troglodytes   KKMHIQSAVSKMNPGEKEPIHRGTTEVNIDSETVHRMLLSAP-----SENDRVOKNLKNT 1257
Macaca_mulatta    KKMHIQSAVSKLNPGEKEPIHRGTNEVNIDSETVHRMLLSAP-----SENDRVOKNLKNT 1257
Callithrix_jacchus KKMHFQSAVSKLNPGEKEPIHRGTNDVNIDSETVHRILPSVP-----SENDRVONNLKNA 1255
Equus_caballus    KKVHIESAVSKPNPGEKEPTQ-ATHEVNVDSETSHRILPHAL-----SENDKAKNLKNT 1255
Canis_lupus_familiaris KKVHIQSTVSKLNPGEKEPIQOGTYETNTDSETSHRPLCRAP-----SENDRTOKNLKNT 1260
Bos_taurus        KKMHLQSSVSKPNSEKESAQQETQEMNVDSSEMSHCLLPAP-----SESDRAOKNLKNT 1255
Rhinatrema_bivittatum VAVDVLNNDFKHSYGEQEPKQVITVG-----ETNRILLNPLSS 1205
Danio_rerio       DQVAMQTVATDP----- 867
Xenopus_tropicalis ATVGNCSERTPVTSAECSPTISDVIDLQHVSGGEHFALEQTSPPKPESCVTINSTFSFVDI 1187
.....1270.....1280.....1290.....1300.....1310.....1320

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Pavo_muticus      INSNSDNVPLAINSPPREDAADPKSVDMDISGFTHSLGSMSTTSKEECHNSDGTSLFEDDA 1246
Pavo_cristatus    INSNSDNVPLAINSPPREDAADPKSVDMDISGFTHSLGSMSTTSKEECHNSDGTSLFEDDA 1246
Gallus_gallus     INSADNVPLAVNSLREDAADPKSMDMDISDFTHSLGSMSTTSKEECHNSDGTSLFEDDA 1308
Chelonia_mydas    VNPIEESVSLAINSSRDASHKKSMIDICISDFTHSLP---NVAKEESHTLDKICLNKDSF 1319
Rattus_norvegicus SKTTEECGTHRNASLEFSTD-----SDLLSSLGSVSVVPQKESHDSSTITVVDREA 1305
Mus_musculus      SKTTEECGTHRNASLEYSTD-----SDLLSSSGSVTVVPQKESHNSNTIPVIDREA 1305
Homo_sapiens      AA--EEHVAQGDATLEHSTN-----LDSSPSLSSVTVPVPLRESYDPDVIPLFDKRT 1308
Pan_troglodytes   AA--EEHVAQGDAALEHSTN-----LDSSPSLSSVTVPVPLRESYDPDVIPLFDKRT 1306
Macaca_mulatta    AA--EEHVAQGDAALEHSTN-----LDSSPSLSLVTVPVPLRESYDPDVPVFDKRT 1306
Callithrix_jacchus AKPTEEHVAQGDVVLHSTN-----LDSSPSLSSVTVPVPLRESYDPDVIPLFDKRT 1306
Equus_caballus    TKPTEEHNAQGDAAVEHSTN-----LDPSPSLSSVTVPVPLRESYDPDVIPLFDKRT 1306
Canis_lupus_familiaris TGPTEEHVAQGHADHEHSPN-----LDPSPSLSSVTVPVPLRESYDPDVIPLFDKRT 1311
Bos_taurus        TRPTEERLAPGDPPLKHSTK-----VDPAPSLGSMTAGPQKQSHDSGVPLPLVDRRS 1306
Rhinatrema_bivittatum VFVQDVTVDDESQNIQSPSKE-----HVSPLMSFSAQEEAELSGHKYPSSEDTDS 1254
Danio_rerio       ----EDAGSLPECAADAAP----- 884
Xenopus_tropicalis STEITNDVISTTATGETDANKEAVKIKHTSDCDTLAVDNIVTGNDVEEVMQITSDNDMA 1247
.....1330.....1340.....1350.....1360.....1370.....1380

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      :
Pavo_muticus      ASKSDATQVVYMEQKDNVVLSSIMKGGD-NTKTNNMEKDSAPHPDEQAMENSAAGSPIQ 1305
Pavo_cristatus    ASKSDATQVVYMEQKDNVVLSSIMKGGD-NTKTNNMEKDSAPHPDEQAMENSAAGSPIQ 1305
Gallus_gallus     ASKNGATQVVYMKQEDSVVLSIVKGGDDNTKTSNIEKDNEAPHPDEQAMENCAAGSPIQ 1368
Chelonia_mydas    ILDKNETQTAYMKQQGSFVLGCVMKEGE-VIMIDTEKKDGETPLIGEEAVGENMGDVSIQ 1378
Rattus_norvegicus ISEGGKASTSLVNHS DIPNQLAVKKSE-ILKTINGSKEGNDGFTVDILAKANGSGKRHLS 1364
Mus_musculus      ISEGGRASTSLANHS DVPNQYSTVKKSE-VHKTINGSKEGNDGFTVDMPTKANGGSKRHLS 1364
Homo_sapiens      VLEGSTASTSPADHSALPNQSLTVRESE-VLKTSDSKEGGEGFTVDTPAKASITSKRHIP 1367
Pan_troglodytes   VLEGSTASTSPADHSALPNQSLTVRESE-GLKTSDSKEGGEGFTVDTPAKASITSKRHIP 1365
Macaca_mulatta    VLEGGTASSSPVDHSALSNQSLTVRESE-VLKTSDSKEGGEGFTVDTPAKASIASKRHIP 1365
Callithrix_jacchus VFEGGTASTSPVDHSALPNQSLTVKESE-VLKTSDSKEGGDSFTVDTPAKASISSKRHIP 1365
Equus_caballus    VLEGGTASTSPVDHPHIPSQSLAVRESE-APGTSDSKEGGTVSTVDTPAKASIDSKRHIP 1365
Canis_lupus_familiaris VLEGSTASTSLMEHSDIPNQSATVREPE-VPRTSDSRKGNVSTVDTPAKANMDNRRHIP 1370
Bos_taurus        GSEGTASTSLIHHSEIPKQSWTDEESE-VPRTSDSRKGNVSTVDTPAEASVESRRHIP 1365
Rhinatrema_bivittatum TVDTCCKDKIDYLKSSCLHDSINLNDSTELPAVVQNESTMHSFSLSEHENIMDTSIEKCYE 1314
Danio_rerio       ----AATVEPMETESLRLQEVTSQSGD---EQKEERDTHHTTDTAQILSADTAEPITL 936
Xenopus_tropicalis ENNCESVGEESVSAVGTCTFVPYRESSIDSTIVETSERNDIVVAELNERYAFPSRAQDR 1307
.....1390.....1400.....1410.....1420.....1430.....1440

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.pFue Feb 1 11:27:13 2022

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:
Pavo_muticus      D-YDKASKLESIPRSELKIKE---ESLKTRVTEDCGDPVPTKE--LLKKLKKNEKECLHTD 1359
Pavo_cristatus    D-YDKASKLESIPRSELKIKE---ESLKTRVTEDCGDPVPTKE--LLKKLKKNEKECLHTD 1359
Gallus_gallus     D-NDKASKLESTPRSELKIKE---ESLKTCTVEDCEDVPTKE--LKKLKKK---ECLNTD 1419
Chelonia_mydas    EGYDQVTMLDSVQRRNAYNVTTGGIEGLMTDQVADHGGISMKKSVLNMLGKKESDENLNIG 1438
Rattus_norvegicus E-DSQAMLLCSKEG----KVGIALAGKPSGVIGENKISKQRS-LMGTAKKES--DLNV 1416
Mus_musculus      E-DSQATLLYSKES----KISIPADKSMSTVDNKNINKQRS-LMGTAKRES--DLKVN 1416
Homo_sapiens      E-AHQATLLDGGKQG---KVIMPLGSKLTGVIVENENITKEGG-LVDMAKKEN--DLNAE 1419
Pan_troglodytes   E-GHQATLLDGGKQG---KVIMPLGSKLTGVIVENENITKESG-LVDMAKKEN--DLNAE 1417
Macaca_mulatta    E-GHQATLLDGGKQG---KVIMPLGSKLTGMIVENENVTKEGG-LVDMAKKES--DLNAE 1417
Callithrix_jacchus E-GHQATLLDGGKQG---KIIMPLGSKLMGMIVENENVTKEGG-LVDVAKKES--DLNAE 1417
Equus_caballus    E-GYQATVLENKQG---KVNMPLGSEFTDVMENENVHKVRG-LMDMAQKD---DLITE 1416
Canis_lupus_familiaris E-GDQPTVLHTROG---KVN--IDSKLTDVNMDNENANKAGS-LMDMTRES--DFNTE 1420
Bos_taurus        E-GAQAFILHSRQG---KVDTPVGSSEGDRTVEKENIDKEGG-LMDVDGKG-----SN 1413
Rhinatrema_bivittatum N-----AMNGAQAEIDSTLMGIHTEAYSETKRCADPQS----- 1348
Danio_rerio       N----- 937
Xenopus_tropicalis NMSECEDTATSSCSITIEHTENVSLRGTIIYINSLGENSATSTNVHLDNVMATNRSEYAVG 1367
.....1450.....1460.....1470.....1480.....1490.....1500

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Pavo_muticus      YSAKGERSTVMDNVKQNETHDTCNVIQSSSVLACK---RDPEETVEDSVPAEQEGS--- 1413
Pavo_cristatus    YSAKGERSTVMDNVKQNETHDTCNVIQSSSVLACK---RDPEETVKDSVPATQEGS--- 1413
Gallus_gallus     FSTKGERSTMDNVKQNETCDTYINVIQSSSVLACK---REPEEAVKDSVPATQEGN--- 1473
Chelonia_mydas    PAAKEEKGITMVDNVKSDGHDMDGDAVESSLLLVPMNVIRVPEEIIKDSFIVSGAEEGDGI 1498
Rattus_norvegicus PDVKQ-----DSAAGEHVVDLSTRKEAETIRRKHNKDPDESKKIPTD----- 1458
Mus_musculus      PDIKQ-----DSAAGEHVVDLSTRKEAETVRRKHN-----KEIPTD----- 1452
Homo_sapiens      PNLKQTIKATVENGKKDGIADVHVGLNTEKYAETVKLKHKRSFGKVKDISID----- 1472
Pan_troglodytes   PNLKQTIKATVENGKKDGIADVHVGLNTEKYAETVKLKHKRGPGKVKDISID----- 1470
Macaca_mulatta    PNLKQTVKATVENGKKDGLADVHVGMSTEKYAEPVKLKHKRGPGKVKDISID----- 1470
Callithrix_jacchus PNLKQTVKATVENDKKDSITIDHVGISTEKYTETVQLKHKRGGLKVKDISID----- 1470
Equus_caballus    PSSKQTFRAAVENGTKNGIADVHVGMSTGKDTETIELRHRSRGPGEVENMSID----- 1469
Canis_lupus_familiaris PSSKQTVRAVLENGKKHSITIDPAVGMSIEQDAETVQHKCSSGPGDTEDTSVA----- 1473
Bos_taurus        SSSKQTVRASVENGHKVGVAVDQVGMSTK--TDITGLKQSRGPAEVENIPAD----- 1464
Rhinatrema_bivittatum -----ETNFEITILSKDEISVMSTTKEDPTIHVDEVSAT----- 1383
Danio_rerio       ----- 937
Xenopus_tropicalis VGNSGECTATTSAFENLGEADITMLSENSFEVATTSSVSTACSPERSRESAP----- 1420
.....1510.....1520.....1530.....1540.....1550.....1560

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:
Pavo_muticus      -SGIEDKNESSAVGTSAGSGKISLLYSSVQTIPATVIGTSTEK-IESTVMASSTGEERAE 1471
Pavo_cristatus    -SGIEDKNESSAVGTSAGSGKISLLYSSVQTIPATVIGTSTEK-IESTVMASSTGEERAE 1471
Gallus_gallus     -SSVEDKNESSAVGTSAGSSKLSLLYSSVQTVPATVIGTSTEK-IESTVMASST-EERVE 1530
Chelonia_mydas    ITDTEDKNENNVGTSAGS--VDHIYNQLETTAATAIGTSTEKMIESTVMSTSRGDGKGE 1556
Rattus_norvegicus ---IERKTENSEVDTSARRDSAP-VPQORHGKMERGAAGSGRR--DKSFIATST-EGTDK 1511
Mus_musculus      ---VERKTENSEVDTSARRDSAP-VPQORHGKMERGAAGSGRR--DKAFIATST-EGTDK 1505
Homo_sapiens      ---VERRNENSEVDTSAGSGSAPSVLHORNGQTEDVATGPRA--EKTSVATST-EGKDK 1526
Pan_troglodytes   ---VERRNENSEVDTSAGSGSAPSVLHORNGQTEDVATGPRA--EKTSVATST-EGKDK 1524
Macaca_mulatta    ---VERRNENSEVDTSAGSGSAPSVLHORNGQTEDVATGPRA--EKTSVATST-EGKDK 1524
Callithrix_jacchus ---VERSNNENSEVDTSAGSGSAPFVLQORNGQTEDVATGPRA--GKTSVATST-EGKDK 1524
Equus_caballus    ---VERRNENSEVDTSAGSNTTSSVLEQRNGKTEENVITGSGRA--EKTSVATST-EGKDD 1523
Canis_lupus_familiaris ---VERRTENNEVDTSAGSNAAFSVLQORNEKTANGAAGSGRA--EKTSLATST-AGKDE 1527
Bos_taurus        ---ADRRHGHSEVDTSAESNAVSSVLHORSKVEIPTARPSRG--EKASIASST-EGKDS 1518
Rhinatrema_bivittatum ---EEHEVAEQIACNDAAGRKDDLVTGAFIKDDCAVKDVGTGGDAIMVLAPEESNKDI 1439
Danio_rerio       ---TAADEPMTQPSADAAPLEPVTAAEPASPVTEDAAEQRQ-----TSSADETPAQ 986
Xenopus_tropicalis --TSSQRGIGAVLEAEAIQDVLKPATSSDGNMASSAGTPKNAATSSNSQESDTENG DVS 1478
.....1570.....1580.....1590.....1600.....1610.....1620

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.pFue Feb 1 11:27:13 2022

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Pavo_muticus      GAS-HSEKGS DATTTCSEE-ESEMALICTSIEADEGFTTGIWVKS GEGSSFITGTDIGEC 1529
Pavo_cristatus    GAS-HSEKGS DATTTCSEE-ESEMALICTSIEADEGFTTGIWVKS GEGSSFITGTDIGEC 1529
Gallus_gallus     GAS-HSEKES DATTTCSEE-ESEMALICTSIEADEGFTTGIWVKS GEGSSFITGTDIGEC 1588
Chelonia_mydas    GAVIHSEKES DATTTCSEK-ESEVTLICTSIEADEGFTTSIWAKS NEGVSFSTEADG-EC 1614
Rattus_norvegicus GIMLNTIKAG DATTTSSETGGKGVALPCTSI EADEGFIMGACPRNN---PLQVGAEASEC 1568
Mus_musculus      GIMLNTVKTG DATTTSSEVGEKGTALPCTSI EADEGFMMGACPKKH---PLQVGAEASEC 1562
Homo_sapiens      DVTLSPVKAG PATTTSSETRQSEVALPCTSI EADEGLIIGHHSRNN---PLHVGAEASEC 1583
Pan_troglodytes   DVTLSPVKAG PATTTSSETRESEVALPCTSI EADEGLIIGHHSRNN---PLHVGAEASEC 1581
Macaca_mulatta    DVTLSPVKAG PATTTSSETRESEVALPCTSI EADEGLIIGHHSRNN---PLHVGAEASEC 1581
Callithrix_jacchus DVTLSPVKAG AATTTSSEIRESEVALPCTSI EADEGLIIGHHSRNN---PPRVGAETSEC 1581
Equus_caballus    NVNSIPVKAG DATTTSSETGEGEVAVPCTSI EADEGFITGACCRNN---PLHIGAEASEC 1580
Canis_lupus_familiaris GVPLHTVKAG DATTTSSETGEGEVAVPCTSI EADEGFITGACSRNN---PLHAGAEASEC 1584
Bos_taurus        GVPLNLVKAG TATTTS AETVEGGVAMPCTSI EADEGLITGTICSENH---PLHVGEAEAREG 1575
Rhinatrema_bivittatum TGNEADVANGD GILVVREE-ENEKILVCN SVEGGERFLLDSSTKETLDFLVQSDPDSEGT 1498
Danio_rerio       TLPKHTAETH TPTTVNPAEPTAES AQMEESDEPEPVQILSAGTAES-----A 1033
Xenopus_tropicalis EATKYFTRHA SSSVSAEDNDDRFP TSENIIITHSAT SSIHAVENKAADLISENDSINAAT 1538
.....1630.....1640.....1650.....1660.....1670.....1680

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* .
Pavo_muticus      TVTAAEEGGG SVVTEGLAESESFLTSTKAEENNDCTMVDA-----EESGKDSVNESGVE 1583
Pavo_cristatus    TVTAAEEGGG SVVTEGLAESESFLTSTKAEENNDCTMVDA-----EESGKDSVNESGVE 1583
Gallus_gallus     TVTAAEEGGG SVVTEGLAESESFLTSTKEEENDDYAMIDA-----EESGKDSVNESGVE 1642
Chelonia_mydas    TVAAAEEGGG -VVTGGFAETEGFLTSTKEGESGECSMIYT-----EENGGRDSVNAGRME 1667
Rattus_norvegicus TVFAAAEEGK GVVTEGFAESEILLTSSKEGESGECTVAES-----EDRVAGPLTAHTVQ 1622
Mus_musculus      TVFAAAEEGK GVVTEGFAESEILLTSSKEGESGECVAES-----EDRVAGPLAHTVQ 1616
Homo_sapiens      TVFAAAEEGG AVVTEGFAESETFLTSTKEGESGECVAES-----EDRAADLLAVHAVK 1637
Pan_troglodytes   TVFAAAEEGG AVVTEGFAESETFLTSTKEGESGECVAES-----EDTAADLLAMHAVK 1635
Macaca_mulatta    TVFAAAEEGG AVVTEGFAESETFLTSTKEGESGECVAES-----EDRAADLLAVHAVK 1635
Callithrix_jacchus TVFAAAEEGG AIVTEGFAESETFLTSTKEGD SGECAVAES-----EDRAADLLAVHAIK 1635
Equus_caballus    TVFAAAEEGG GIVTEGFAESETFLTSTKEGEI RECTMAES-----EEAADPVTAHTVK 1634
Canis_lupus_familiaris TVFAAAEEGG GIVTEGFAESETFLTSTKEGESGECAMVES-----EERAVEPVAAHTIM 1638
Bos_taurus        TIFAAAEEGG GVVTEGFAESETFLTSTKEGESGECALAEF-----EERAADPVTAPTGT 1629
Rhinatrema_bivittatum MMYVADRDS VIDTGTDNEVESVVKDCTEREQHESIIICSGK---EDEVA TSSGTL LDDSS 1555
Danio_rerio       QTHAAEEPAQ THAADEAESAO TL TADTESAQT RNADLN EP-----VLKMN 1078
Xenopus_tropicalis SSYNALEKDSL SIPENVMLLA SSSDNVEI HDDHSGLVAAATSSDIAAPLSNP DGVS HDIG 1598
.....1690.....1700.....1710.....1720.....1730.....1740

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;
Pavo_muticus      NEDSVNSAGT EEKDDAVTSAGSEEK RK-TLTCGGAGKLESSVSCLG-EVESDGA VTSAGT 1641
Pavo_cristatus    NEDSVNSAGT EEKDDAVTSAGSEEK RK-TLTCGGAGKLESSVSCLG-EVESDGA VTSAGT 1641
Gallus_gallus     NEDSVNSAGT AEEKDDAVTSAGSEEK RK-TLTCGGAGKLESSVSCLG-EVESDGA VTSAGT 1700
Chelonia_mydas    IEDNVNGAGT EEKDDAVTSAGSEEK CK-TSICRR TGKFE GSITCIG-ETESDGA VTSAGT 1725
Rattus_norvegicus AETNVNSIT TEEKDDAVTSAGSEEK CG-----GSSCAVEGTATFVG-EVESDGA VTSAGT 1676
Mus_musculus      AEANVNSIT TEEKDDAVTSAGSEEK CG-----GSACTVEGTATFIG-EVESDGA VTSAGT 1670
Homo_sapiens      IEANVNSVVT EEEKDDAVTSAGSEEK CD-GSLSRDSEIVEGTITFIS-EVESDGA VTSAGT 1695
Pan_troglodytes   IEANVNSIVT EEEKDDAVTSAGSEEK CD-GSLSRDSEIVEGTITFIS-EVESDGA VTSAGT 1693
Macaca_mulatta    IEANVNSVVT EEEKDDAVTSAGSEEK CD-GSSSRDSEIVEGTITFIS-EVESDGA VTSAGT 1693
Callithrix_jacchus IEANVNSVVT EEEKDDAVTSAGSEEK CD-GSSSRDSEIVEGTITFIS-EVESDGA VTSAGT 1693
Equus_caballus    IEDNVNSVVT EEEKDDAVTSAGSEEK CDDGSSSRDSEIVEGTITFIS-EVESDGA VTSAGT 1693
Canis_lupus_familiaris VEDNVNSGV TEEKDDAVTSAGSEEK CD-GSSRRDSEMAEGTVAFI ISEVESDGA VTSAGT 1697
Bos_taurus        TEADARSAAT EEEKDDAVTSAGSE GKCD-GSSGGDSELVEGT VRFIS-EVESDGA VTSAGM 1687
Rhinatrema_bivittatum MEEEEKGAI ICTEKENENIATSSSSILD-----IRTL EKVVSTFLCKEKESENTAT SGT 1609
Danio_rerio       ADQAEHVQTH SADDAECVQTP TAE TMR-----IYNADA 1111
Xenopus_tropicalis IITHASTSD VRVDNEVLQGS DIFSVN-AATSDS TVEDNGILQSGENAHAAATSSDII 1657
.....1750.....1760.....1770.....1780.....1790.....1800

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.p Tue Feb 11 11:27:13 2022

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      :      ..      :
Pavo_muticus      ES GEGSTSGDSSGEFRDNMR-AVQVKEHESVTCTGAEESSNFIMCSVTGTDAQGE GSV 1700
Pavo_cristatus    ES GEGSTSGDSSGEFRDNMR-AVQVKEHESVTCTGAEESSNFIMCSVTGTDAQGE GSV 1700
Gallus_gallus     ES GEGSTSGDSSREFRGNMR-AGQVKEHESVTCTGAEESSNFIMCSVTGTDAHGE GSV 1759
Chelonia_mydas    EAGEGSMSSNNSDECQSNVTGAGQLKDEGAVTCTGAEEERGLGFIIGSVTGVDAQEDSAV 1785
Rattus_norvegicus EIRAGSVSSEEDVDGSGQENRIQVGPKEKETEGTCTGAAGRNDFVFCVLTGAGTQEQRVV 1736
Mus_musculus      EIRAGSLSSEEDVDGSGQENRIQVGPKEKETEGTCTGKGRNDFI-CLVTRVETQEQRVV 1729
Homo_sapiens      EIRAGSISSEEVVDGSGQNMRRMGPKKETEGTCTGAEGRSNDFVICSVTGAGPREERMV 1755
Pan_troglodytes   EIRAGSISSEEVVDGSGQNMRRMGPKKETEGTCTGAEGRSNDFVICSVTGAGPREERMV 1753
Macaca_mulatta    EIRAGSISSEEVVDGSGQNMRRMGPKKETEGTCTGAEGRSNDFVICSVTGAGPREERMV 1752
Callithrix_jacchus EIRAGSISSEEVVDGSGRGN-MRRMGPKKETEGTCTGAEGRSNDFVICSVTGAGSREEH MV 1752
Equus_caballus    EIREGSLGSEEVVDGFGQNTMRMGCTKETEGTCTGAERRSDNFVICSVTGAGPOEERMV 1753
Canis_lupus_familiaris EIREGSLSSEEVVDGFGQNTMRMGCTKETEGTCTGAERRSATSIMCSVTGAEQOE --- 1754
Bos_taurus        DIREGSLSNEELDGFQSPPRAGPKKESEGTCTGAGGRDGSVLCSAAGVEPOEERRV 1747
Rhinatrema_bivittatum MMDSGSEEDKEETVQMFSEKDHEAAAASSVTDSMHEKTEEAVISSGKSDDEDAASSSS 1669
Danio_rerio       DVPAQTIHADAESVOTPTAETDEPVETADADTSEPAQTLTADADSQAQTHIADTEPAQT 1171
Xenopus_tropicalis VDNSGALQASENVLANAATSSDSLAEENVLEVSENVLSAASSSAIDSSRI LHFEGSISS 1717
.....1810.....1820.....1830.....1840.....1850.....1860

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      .
Pavo_muticus      SGACIAVITDNNATTGTTGDKCEDAIN----GESTVTSTGITPED--DAEISVVCTGLED 1754
Pavo_cristatus    SEACIAVITDNNATTGTTGDKCEDAIN----GESTVTSTGITPED--DAEISVVCTGLED 1754
Gallus_gallus     SGACIAVVTNNNTTGTGDKCEDTIN----GESTVTSTGITPED--DAEISVVCTGLED 1813
Chelonia_mydas    TGAGVEMVMNNNTMTGTSADKGEDPVN----GESTVTSTGIIAED--DAESA AVCTGLED 1839
Rattus_norvegicus TGADVVDQENDDKSLEASANQ-GDGS GTDGTGESAVTSTGITTEE---DGEASANCTGSED 1792
Mus_musculus      TGADVVDQVNAAKPQEANANQ-GDGS GTDGAEGESAVTSTGITTEE---DGEASANCTGSED 1785
Homo_sapiens      TGAGVVLGDNDAPPGTSASQEGDGSVNDGTGESAVTSTGITTEE---DGE GPASCTGSED 1811
Pan_troglodytes   TGAGVVLGDNDAPPGTSASQEGDGSVNDGTGESAVTSTGITTEE---DGE GPASCTGSED 1809
Macaca_mulatta    TGAGVALGDNDAPPGTSASQEGDGSVNDGTGESAVTSTGITTEE---DGE GPASCTGSED 1808
Callithrix_jacchus TGAGVVLVDNDAPPGTSASQEGDGSVNDGTGESAVTSTGITTEE---DGE GPASCTGSED 1808
Equus_caballus    TGAAVILVDNNTPPGTSATQEGDGSVNDGTGESAVTSTGIMEE---DGE GPASCTGSEE 1810
Canis_lupus_familiaris ---RVALVSNNDTPPGTSAPQEGDASVNDGAEGESAVTSTGITTEE---DGE GPASCTGSEE 1808
Bos_taurus        TGAPGGPIDTPTPTAASAAQESGSGVMDGPEGESAVTSTGITTEE---DGE GLASCTGSEE 1804
Rhinatrema_bivittatum ILVGSDTQERKDDLAVSSQNEGETAT-----SSGTVMDIGLHS--ELGEGAI EYTKQE 1721
Danio_rerio       LTADITVKITLNADAEAPVQTVQDET VQ-----MVD A 1202
Xenopus_tropicalis EIDNENVAASSSNIMESSLADASGVWLQNP SGNTASSSGYLDRDSRFQHN TIQFGSAEE 1777
.....1870.....1880.....1890.....1900.....1910.....1920

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      :      .      ..      .
Pavo_muticus      SNEGFAVCLDTEK-CESAMDSTGTKEEASITIVSIGPCDDEGFVTSTGSK EEEDEEGEDIV 1813
Pavo_cristatus    SNEGFAVCLDTEK-CESAMDSTGTKEEASITIVSIGPCDDEGFVTSTGSK EEEDEEGEDIV 1813
Gallus_gallus     SNEGFAVCLDTEK-CESAMDSTGTKEEASITIVSIGPCDDEGFVTSTGSK EEEDEEGEGIV 1872
Chelonia_mydas    SNEGFAVGLDIEK-CESAMDSTGAKEEATIAMISIGPCDDEGFVTSTGAKE EEEDEEGEGIV 1898
Rattus_norvegicus STEGCAISSETEENAESAMDSTEAKDMTNTPLVATGPCDDEGIVTSTGAKE EEEDEEGGVV 1852
Mus_musculus      NREGCAISSETEESAESAMDSTEAKDITNAPLVAAGPCDDEGIVTSTGAKE EEEDEEGVV 1845
Homo_sapiens      SSEGFAISSESEENGESAMDSTVAKEGTNVPLVAAGPCDDEGIVTSTGAKE EEEDEEGDVV 1871
Pan_troglodytes   SSEGFAISSESEENGESAMDSTVAKEGTNVPLVAAGPCDDEGIVTSTGAKE EEEDEEGDVV 1869
Macaca_mulatta    SSEGFAISSESEENGESAMDSTVAKEGTNVPLVAAGPCDDEGIVTSTGAKE EEEDEEGGVV 1868
Callithrix_jacchus SSEGFAISSESEENGESAMDSTVAKEGTNVPLVAAGPCDDEGIVTSTGAKE EEEDEEGGVV 1868
Equus_caballus    SSEGFAISSESEENGESAMDSTVAKEGTNVPLVAAGPCDDEGIVTSTGAKE EEEDEEGGVV 1870
Canis_lupus_familiaris GSEGFAISSESEEDSGESAMDSTVAKEATNVPSVAAGPCDDEGIVTSTGAKE EEEDEEGGVV 1868
Bos_taurus        SREGFALSSSESEENEEESAMDSTVAKDPTDAPVAPGPCDDEGVVTSTGAKE EDEEGGVV 1864
Rhinatrema_bivittatum AEDLTITTSSTEGENIGVLVCTGAPKFLVMAENDGNTDATTEAEVTECLVAVSAKECENFF 1781
Danio_rerio       DEVESAQTLTITETDGTAEMDNAEPAHTLTANEAEHELTADEAKSAQTLTAD EADSQAQTLT 1262
Xenopus_tropicalis SKNVRATSTITLKDIGVSERCSSVSISSGTHVNVNSDSLVMDSSTEVSVISQ VDGDAASCs 1837
.....1930.....1940.....1950.....1960.....1970.....1980

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/BODM11.pFue Feb 1 11:27:13 2022

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      . . .
Pavo_muticus      TSTGRGNEEIEHASTCTGAEGENTLICIGAEEG-ENSIICIVAEQME--AESGLAGTNIS 1870
Pavo_cristatus    TSTGRGNEEIEHASTCTGAEGENTLICIGAEEG-ENSIICIVAEQME--AESGLAGTNIS 1870
Gallus_gallus     TSTGRGNEEMEHTSTCTGTEGENTLICIGAEEG-ESSIICIVAEQME--AESGLAGTKIN 1929
Chelonia_mydas    TSTGRGNEEIEHSSTCAGIEGESALICIGSEEG-ESSIICIVAEQVE--AESGMAATNIN 1955
Rattus_norvegicus TSTGRGNE-TGHASACTGIEE-SEGMLVCESGE-GGGPIGPTMDHVD--AEAGAAAMNTN 1907
Mus_musculus      TSTGRGNE-PGHASACTGIEE-SEGMMVCESGE-GGAQIGPTIDHVN--AEAGAAATVNTN 1900
Homo_sapiens      TSTGRGNE-IGHASTCTGLGEESEGVLCESAE-GDSQIGTVVEHVE--AEAGAAIMNAN 1927
Pan_troglodytes   TSTGRGNE-IGHASTCTGLGEESEGVLCESAE-GDSQIGTVVEHVE--AEAGAAIMNAN 1925
Macaca_mulatta    TSTGRGNE-IGHASTCTGLGEESEGVLCESAE-GDSQIGTVLEHVE--AEAGAAIMNAN 1924
Callithrix_jacchus TSTGRGNE-IGHASTCTGIEE-SEGLVLCESAE-GDSQIGTVVEHVE--AEAGAAIMNAN 1923
Equus_caballus    TSTGRGNE-VGHASTCTGIEEESGISICESAEEGDSQIGTAVGHVE--AEAGAAITNAN 1927
Canis_lupus_familiaris TSTGRGNE-IGHASTCTGTEEESEGSICGSAEEGDSQIGTAAGCMG--ADAGPAITNAN 1925
Bos_taurus        TSTGRGNE-VGHASTCTGMEEESEGMSVCESAG-GDAQLGPVAGRVD--AEAGGTVPHAY 1920
Rhinatrema_bivittatum TGTASGEDGVFMTSTSVNREDESSVTDEEKESK-----TVIVVMERG--DHLNSEHTEEK 1834
Danio_rerio       ADEAKSAQ-----TLTAD-----ANSAQTLTAD 1287
Xenopus_tropicalis SSGAEQGHEDQKHADHLKERENTASSCALDNSIEDMCVDPEVPSQNGSDEAASSSSSLN 1897
      .....1990.....2000.....2010.....2020.....2030.....2040

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      * .
Pavo_muticus      KLTVDSMTDAEKEANC GTNCKSAKGIVESSVTSASADDEDAVAACIEKHGEGTSIPLDAED 1930
Pavo_cristatus    KLTVDSMTDAEKEANC GTNCKSAKGIVESSVTSASADDEDAVAACIEKHGEGTSIPLDAED 1930
Gallus_gallus     KLTVDSMTDAEKETNCGTNCKSAKGIVESSVTSASADDEDAVAACIEKHGEGTLISLHAED 1989
Chelonia_mydas    KDGVDSTGAKKEANSIIICESAKGIVESSVTSASVADEDALTPNTEKDEDAMMSIDVEE 2015
Rattus_norvegicus DSNVDSMSGAKEIKD TDICSSAKGIVESSVTSASA-GNSDRPPVLESSENPMASATSHH 1966
Mus_musculus      DSNVDSMSGAKEIKD TNICSSAKGIVESSVTSALA-GNSDRPPVLCGSEGPMASSSHH 1959
Homo_sapiens      ENNVDSMSGTEKGSKDT DICSSAKGIVESSVTSAVS-GKDEVTPVPGGCEGPMTSAASDQ 1986
Pan_troglodytes   ENNVDSMSGTEKGSKDT DICSSAKGIVESSVTSAVS-GKDEVTPVPGGCEGPMTSAASDQ 1984
Macaca_mulatta    ENNVDSMSGTEKESKDT DICSSAKGIVESSVTSAVS-GKDEVTPVPGGCEGPMTSAASDQ 1983
Callithrix_jacchus ENNVDSMSGAEKESKDT DICSSAKGIVESSVTSAIS-GKDEVTPIPGGCEGPMTSAASDQ 1982
Equus_caballus    ESNVDSMTGAEKEIKD TEICSSAKGMVSSVTSAVS-GKGEAPVPEGCEGPMTSVASDQ 1986
Canis_lupus_familiaris ESKVDSMSGAEKGMKHVEICSSAKGIVESSVTSAA-SGKGEVAPIPEGCEGPMTSAASGQ 1984
Bos_taurus        ESTVDSVSGAEKDKDAEICSSAKGVVSSVSSGAA-GEGMAAPASEGROGPMTSAALDR 1979
Rhinatrema_bivittatum ENIVSSAGSEKKHSE DGQEFVSGVDEIDS-----DGAVTISAGVEMCDASITSEDSE 1886
Danio_rerio       AESVQTLTAD EADS AQTLTVDEAK----- 1311
Xenopus_tropicalis TSSVQRS GHKSSLSPNNINVAASSSVAMN SSSDLSNFSVLCPGNSTDNAATSSSNITVSG 1957
      .....2050.....2060.....2070.....2080.....2090.....2100

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Pavo_muticus      CEGPMTSAMALQDRGQPGAEHENAMTFGSG-----EL 1963
Pavo_cristatus    CEGPMTSAMALQDRGQPGAEHENAMTFGSG-----EL 1963
Gallus_gallus     CEGPMTSAMTLQDRGQPGAEHENAMTCGSG-----EL 2022
Chelonia_mydas    YEGLMTSAVTEKDKGQSAAAAEKNDNSANGNH-----GREC 2052
Rattus_norvegicus SDSQLTRKETVEDTTISTGLVKGSDDLVSGAVPEYEVGHMS-----PRENEEC 2015
Mus_musculus      SDSQLTRKETVEDTTISTGLVKGSDDLVSGEVPECEVGHMS-----PRKNEEC 2008
Homo_sapiens      SDSQL---EKVEDTTISTGLVGGSYDVLVSGEVPECEVAHTSPSEKEDEDIITSVNEEC 2043
Pan_troglodytes   SDSQL---EKVEDTTISTGLVGGSYDVLVSGEVPECEVAHTSPSEKEDEDIITSVNEEC 2041
Macaca_mulatta    SDSQL---EKVEDTTISTGLVGGSYDILISGEVPECEVAHTSPSEKEDEDIITSVNEEC 2040
Callithrix_jacchus SASQL---EKVEDTTISTGLVGGSYDVLVSGEVPECEVAHTSPSEKEDEGIITSVNEEC 2039
Equus_caballus    SASQLTRKEKVEDTPISTGLVGGSYEVLVSGAVPEYEVHHTLPSEKEDEGIITSVNEEC 2046
Canis_lupus_familiaris SDSLLNRKEKVEDTTISTGLVGGSYEVLASGAVPERKAGHTSPSGKEDEGIITSVNDEEC 2044
Bos_taurus        RDGELS RNEKADDTTPSTGLVGD SYEALVSAAPVEHEPPHTSPGK-DEGDITSVNEEC 2038
Rhinatrema_bivittatum FEN----- 1889
Danio_rerio       ----- 1311
Xenopus_tropicalis ADCVLSNNTLATTSSNISMDSSSTGEDLELDTEKASTSSSTLLNNDKRAQDIGTEKDSI 2017
      .....2110.....2120.....2130.....2140.....2150.....2160

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Pavo_muticus      DGSISSAVPKEDENSLIPTDREEIKGDIISTSTVEGSDAPLHS-AIDAEEGPLTVARAN 2022
Pavo_cristatus    DGSISSAVPKEDENSLIPTDREEIKGDIISTSTVEGSDAPLHS-AIDAEEGPLTVARAN 2022
Gallus_gallus     DGSISSAIPKGDENSFI PADREEIKGDIISTSTVEGSDAPLHS-AIDAEEGPLTVARAN 2081
Chelonia_mydas    EGPITSAVTKKDES PAASD-EEKAKGDVISTSTVEEGDAPMPCSATGIEGSLTVARTD 2111
Rattus_norvegicus DGLMASTASCDVSNKDSLAKGSKSGNGLVIPS-TNDCTPPIISA-VIDVRGGHSCITLSTE 2073
Mus_musculus      DGLMASTASCDVSNKDSLAKGSKSGNGLMISTS-TNACTPQISA-VIDVRGGHSLTLSTE 2066
Homo_sapiens      DGLMATTASGDITNQNSLAGGKNOGKVLIIISTSTTNDYTPQVSA-ITDVEGGLSDALRTE 2102
Pan_troglodytes   DGLMATTASGDITNQNSLAGGKNOGKVLIIISTSTTNDYTPQVSA-ITDVEGGHSDALRTE 2100
Macaca_mulatta    DGLMATTASDDITNQNSLAGGKDORKGLMISTSTTNDYTPQVSA-ITDVEGGHSNALRTE 2099
Callithrix_jacchus VGLMATTASDDITNQNSLAGGKSGKGLMISTSTTNDYTPHIST-IIDVEGGHSTALRTE 2098
Equus_caballus    DGLMATTASDSITNQTCLGKGKSGKGLMISTSTTNDCTIQLSM-IADVEG-HSSALRTE 2104
Canis_lupus_familiaris DGLMATTASDVTNQICVAGAKSPGKGLMISTSTTNDYTTQLST-VTGMEEGHSSALRTG 2103
Bos_taurus        DGLAVATAIDSVANQAGVAGGSGEGKGLVISTSTTDDLTPQLST-VVDMRAGHSSALRPE 2097
Rhinatrema_bivittatum -KVTCASPEKSDNNVVAWVNEEYPAGGTVFADTEHCSQGVV-----GAVVEE 1938
Danio_rerio       ---SAQTLTADAEADSAQTLTADAEADSAQTLTADAEAKSAQTLTAD----- 1352
Xenopus_tropicalis TASSSTTIENCPIANEETAGSSFTVSGNAATSSDTTSSSKNKNTSTPDINTATTSTVIAE 2077
.....2170.....2180.....2190.....2200.....2210.....2220

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Pavo_muticus      ESGESSVISVD---AEGTEVPMPSTATEFKESVLAFSSKQDKDECTMISTSIVEEF--- 2075
Pavo_cristatus    ESGESSVISVD---AEGTEVPMPSTATEFKESVLAFSSKQDKDECTMISTSIVEEF--- 2075
Gallus_gallus     ESGESSMISVD---VEGTEVPMSSTATEFKESVLAFSSKQDKDECTMISTSIVEEF--- 2134
Chelonia_mydas    EN-ESTVTLIE---KEEFEAPMPSTATEFKENTYTASSKQAKDECTMISTSIVEEF--- 2163
Rattus_norvegicus ENRNDARVHM-----EGFEAPMPSAISD-EKSQLTASRSEKDECAMISTSIGEEF--- 2123
Mus_musculus      EIRDGVRVHR-----EGFEAPMPSAVSG-ENSQLTASRSEKDECAMISTSIGEEF--- 2116
Homo_sapiens      ENMEGTRVTT-----EEFEAPMPSAVSG-DDSQLTASRSEKDECAMISTSIGEEF--- 2152
Pan_troglodytes   ENMEGTRVTT-----EEFEAPMPSAVSG-DDSQLTASRSEKDECAMISTSIGEEF--- 2150
Macaca_mulatta    ENMEGTRVNT-----EEFEAPMPSAVSG-DNSQLTVSRNEEKDECAMISTSIGEEF--- 2149
Callithrix_jacchus ENMEGTREST-----EEFEAPMPSAVSE-DDSQLTASRSEKDECAMISTSIGEEF--- 2148
Equus_caballus    ENMEGTRVNV-----EEFEAPMPSAVSG-DESQLPATRTEEKDECAMISTSIGEEF--- 2154
Canis_lupus_familiaris ESMEGTGINM-----EEFEVPMPSAVSG-DGSQLPAMRNEEKDECAMISTSIGEEF--- 2153
Bos_taurus        ESAEGPRVNM-----EEFEAPMPSAASG-DGSQLTAAARNEEKDECAMISTSIGEEF--- 2147
Rhinatrema_bivittatum SSINSAIPDAC---IENTSDAMSSTDAELDTEEVVNTARTEDSDGAVTSTGITEE--- 1991
Danio_rerio       -----EAKSAQTLTADAEAEHQTLNADAEADSAQTLTADAEADSA--- 1390
Xenopus_tropicalis ILTADERTENVNICCDINSEATAASSNNMES-SCSVGGNATSSDYMMDSLEGENVSET 2137
.....2230.....2240.....2250.....2260.....2270.....2280

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Pavo_muticus      ---EAPMSSATIEYDG--QLPSVKTKEINESTVVSIGTEIYDIPMPSSASSAGGDDESHPT 2130
Pavo_cristatus    ---EAPMSSATIEYDG--QLPSVKTKEINESTVVSIGTEIYDIPMPSSASSAGGDDESHPT 2130
Gallus_gallus     ---EAPMSSATIEYNG--QLPSVKTKEINESTVVSIGTEIYDIPMPSSASSAGGD-ESHSA 2188
Chelonia_mydas    ---EAPMPSAAMEYNS--QVTAARTEEVNESTVFCIDMEIYEVAMPSSASSARDD-ENHPT 2217
Rattus_norvegicus ---EVPISAVTITCAERQQ-PVAAVEESTTGPALVSTEDFEIPMPSPAP---TEAESPLA 2176
Mus_musculus      ---ELPISSAVTITCAERQQ-PVAAVEESTTGPALVSTEDFEIPMPSPAP---TEAESPLA 2169
Homo_sapiens      ---ELPISSATTIKCAESLQPVAAVEERATGPVLISTADFEFGMPSPAP---PEAESPLA 2206
Pan_troglodytes   ---EVPISAVTITCAERQQ-PVAAVEESTTGPALVSTEDFEIPMPSPAP---TEAESPLA 2204
Macaca_mulatta    ---EVPISATTIKCAESLQPVAAVEERATGPVLISTADFEFGMPSPAP---PEAESPLA 2203
Callithrix_jacchus ---EVPISATTMKCAGSLQPVAAVEERTTGPVLISTADFDGMPSPAP---PEAESPLA 2202
Equus_caballus    ---EVRISATTIKDAESQQ-TVATVEERAKGPMPLASTDDFEFGMPSPAP---TEVDSPLA 2207
Canis_lupus_familiaris ---EVPISATTITCVDSPQPVAAAEES-TPGPSLASTDDFEFGMPSPAP---AEVESPLA 2206
Bos_taurus        ---EVPISATALHGAQSPQ-PVAAVEDRAKALALVSADDFEGPTSPAP---AQAESPLA 2200
Rhinatrema_bivittatum ---ENESPLMGADSEHDVFMICSGTEGKEGDGFTSIPGTEGSNLTVTRKDADDDDEGIIT 2048
Danio_rerio       ---QTLT-----ADEADSA 1401
Xenopus_tropicalis OKNEEAASSSGLSTNIRLQEIQTVTVGSONLEATTSSSTERANTSFVYSNNSESNVSY 2197
.....2290.....2300.....2310.....2320.....2330.....2340

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      .      . .      .
Pavo_muticus      AS-SKEEKDECAMISTSVVEEQVILMSGEVTEETVQHISE-TESKNETVMISTSTAECFE 2188
Pavo_cristatus    AS-SKEEKDECAMISTSVVEEQVILMSGEVTEETVQHISE-TESKNETVMISTSTAECFE 2188
Gallus_gallus     AS-SKEEKDECAMISTSVVEEQVILMSGEVTEETVDISE-TQSKNETVMISTSTAECFE 2246
Chelonia_mydas    AS-SKEEKDECAMISTSIMEEQVILMSSEATEDRIQHVAAGTETKSDTAMISTS-REYFE 2275
Rattus_norvegicus ST-SKEEKDECALISTSTIAEECEASASGVSR-----NAP--SDGNAVISTSSVEDCE 2225
Mus_musculus      ST-SKEEKDECALISTSTIAEECEASVFGVSR-----NAPSVTDGNAVISTSSVEDCE 2220
Homo_sapiens       ST-SKEEKDECALISTSTIAEECEASVSGVVVESENERAGTVMEEKDGSGLISTSSVEDCE 2265
Pan_troglodytes    ST-SKEEKDECALISTSTIAEECEASVSGVVVESENERAGTVMEEKDGSGLISTSSVEDCE 2263
Macaca_mulatta     ST-SKEEKDECALISTSTIAEECEASVSGVVVESENERAGTVMEEKDGSGLISTSSVEDCE 2262
Callithrix_jacchus ST-SKEEKDECALISTSTIAEECEDSVSGVVVESENERAGTVMEEKDGSGLISTSSVEDCE 2261
Equus_caballus     ST-SKEEKDECALISTSTIAEECEASISGVAVENENEQSLTVMEEKDGSGLISTSSVEDCE 2266
Canis_lupus_familiaris ST-SKEEKDECALISTSTIAEECEASISGVLAESKARPATILEEKDGSGLISTSSGEDCE 2265
Bos_taurus         ST-SKEEKDECALISTSTIAEDCEASVCGVSREREHEQP--VLEEKDGSGLISTSSGEDCE 2257
Rhinatrema_bivittatum STGSKEEEDGIVTSSGTGNEDSLTCTGIEENPQNAEVSTGIEEDTGAVVCTSFKEKKEKE 2108
Danio_rerio        QTLTAEADSAQMLTAEAEASQMLTAEAEHG----- 1434
Xenopus_tropicalis HNVEATVESSFASSQSDIDTSGTSEETLVLSSAGKNAAMHFPVLSDDNVNQDYERADEKE 2257
      .....2350.....2360.....2370.....2380.....2390.....2400

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      :      :
Pavo_muticus      APMSSVTVDENKLTASETEGRYEAAVITTSMTTECEIVLISAAPQAEQDQLLVAEGDEED 2248
Pavo_cristatus    APMSSVTVDENKLTASETEGRYEAAVITTSMTTECEIVLISAAPQAEQDQLLVAEGDEED 2248
Gallus_gallus     APMSSVAAQDENKLTASETEGRYEAAVITTSMAEECEIVLISAAPQAEQDQLLVAEGDEED 2306
Chelonia_mydas    APMPSAATQDEDQLSASGTEGRLEAAMIIRSGTEECATVLISAATQAESQLIAAETEEKD 2335
Rattus_norvegicus GSVSSAVPQESVCPSPVPVEETGDTAMISTSTSEGREAVMVGTIPTDDEQASTVRGEDLS 2285
Mus_musculus      GSVSSAVPQESVCPSPVIPVEETGDTAMISTSTSEGREAVMVGTIPTDDQATTVRGEDLS 2280
Homo_sapiens       GPVSSAVPQEEGDPSPVTPAEEMGDTAMISTSTSEGCCEAVMIGAVLQDEDRLLTITRVEDLS 2325
Pan_troglodytes    GPVSSAVPQEEGDPSPVTPAEEMGDTAMISTSTSEGCCEAVMIGAVLQDEDRLLTITRVEDLS 2323
Macaca_mulatta     GPVSSAVPQEEGHASVTPAEEMGDTAMISTSTSEGCCEAVMIGAVLQDEDRLLTITRVEDLS 2322
Callithrix_jacchus GPVSSAVPQEEGHPSVTPAEEMGDTAMISTSTSEGREAVMIGAVLQDEDRLLTITRVEDLS 2321
Equus_caballus     GPVSSAVPQEEVHPSVTPVEEISDTTMTISTSTTEGCCEAVMMGAVPPDEDOPTVARMEDLS 2326
Canis_lupus_familiaris GPVSSAAPREEVQPSVTRVEEISDTTMTISTSTSEGREAVMMGAAPQDEPPTAARMEDLS 2325
Bos_taurus         GPVSSAVTREDAQASVRPAEEASDMAMISTSTSEGCCEAVMAGAVPQEEELPAGTGTEDVS 2317
Rhinatrema_bivittatum ESLTVTSAGDTFIEATSNIDNDAGCGIIGTSAEESFKSEVINLSMEEKAEFNLIS----- 2162
Danio_rerio        ---KTLNANEAESQMLTAEIKTDRMLAADTDEPAQTLTAETAAP----- 1477
Xenopus_tropicalis DAVSSASSQKEYKLCNSAPRONIKQTRDGEVDGAVTSGGAEVSESAMAPENFETFDHVTCA 2317
      .....2410.....2420.....2430.....2440.....2450.....2460

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Pavo_muticus      ----ISPNASEECKIVETTATVNEQFGLAAFNTDAGGKGSVIFVG---ECGGPVLRVATN 2301
Pavo_cristatus    ----ISPNASEECKIVETTATVNEQFGLAAFNTDAGGKGSVIFVG---ECGGPVLRVATN 2301
Gallus_gallus     ----ISPNASEECKIVETTATVDEQFGLAAFNTDARGKGSVIFVG---ECGGPVLRVATN 2359
Chelonia_mydas    EGSMISPNAAEECKVVETSAARDEQRELTAINTEGKSGGSMIFVRKVVECEAPMLRVASS 2395
Rattus_norvegicus DAAIISTSTAECVLCTSLSRHEESQQASTHNPRNGGRLVTKQS---KCELPMPSLMTE 2342
Mus_musculus      DAAIISTSTAECVLCTSLSRHEENQQA-THNPEGNNGGHLATKQS---KCELPMPSLVAE 2336
Homo_sapiens       DAAIISTSTAECMPISASIDRHEENQLT-ADNPEGNNGDLSATEVS---KHKVPMPSLIAE 2381
Pan_troglodytes    DAAIISTSTAECMPISASIDRHEENQLT-ADNPEGNNGDLSATEVS---KHKVPMPSLIAR 2379
Macaca_mulatta     DAAIISTSTAECVPISASIDRHEENQLT-ADNPEGNNGDLSATEVS---KHKVPMPSLIAE 2378
Callithrix_jacchus DAAIISTSTAECVPISASINRHEENQPT-AGNPEGNNGDPSATKVS---KHKVPMPSLIAE 2377
Equus_caballus     DAAVISTSTAECVLIVTGLDRHEENRLT-ADNPEGKHDLSAAKAS---KYEVPMPSLIAE 2382
Canis_lupus_familiaris DAAIISTSTAECMLAPAGLDRHEEGPQT-ASNLVGKEDTSATRMN---KSEAPSPSLMAE 2381
Bos_taurus         DAAIISTSTAECMLAPAGLDRHEEVHLS-ADSPKPKGDAPSATMMS---KPEAPLSSSLMAE 2373
Rhinatrema_bivittatum -----AADSSENKHSIETYES-----FRFTVS 2184
Danio_rerio        ----- 1477
Xenopus_tropicalis KAGAIVDDGDVLLVPVEDTPVSHTSRTDPSSEESLVAEDTENNASFESANCETIPASIGNAY 2377
      .....2470.....2480.....2490.....2500.....2510.....2520

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Pavo_muticus	SEDQDAASSIVNKEEGAVIALSTMEECDLFTFTVIEESQLDAESSEVKDKSEEVFNAAN	2361
Pavo_cristatus	SEDQDAASSIVNKEEGAVIALSAMEECDLFTFTVIEESQLDAESSEVKDKSEEVFNAAN	2361
Gallus_gallus	SEDHDAASSIGNKEEGAVIALSTMEECDLFTFTVIEESQLDAESSEVKDKSEEVFNTAN	2419
Chelonia_mydas	NEDQHIASSIEGKEEGAVITLSTMEECDLFTFSVIEESQLVAANTEVKDENDVIFNSTK	2455
Rattus_norvegicus	SNCKCPGPFPTTGKGVGPLMAVSTRGEHD-RLPVCEPSAGQSQPGTALCLGEEKSHGMDCP	2401
Mus_musculus	RNCKCPGPFPRMGKGVGPLMAVGTRGEHD-RLPVCEPSVGGQPGTALCLGEEESHGMDCP	2395
Homo_sapiens	NNCRCPGPVRRGGKEPGPVLAVSTEEGHN-GPSVHKPSAGQGHP-SAVCAEKEEKHGKECP	2439
Pan_troglodytes	NNCRCPGPVRRGGKEPGPVLAVSNEEGHN-GPSVHKPSAGQGHP-SAVCAEKEEKHGKECP	2437
Macaca_mulatta	NNCRCPGPVRRGGKEPGPVLTVSTEEGHN-LPSVHKPSAGQGHP-SAVCAEKEEKYKKECP	2436
Callithrix_jacchus	NNCQCPGPPVRGGKELGPVMAVSTEEGHN-GLSVQIPSAEQGHP-SAVCAEKEEKHGKECP	2435
Equus_caballus	NNCQHPGPFPTGGREVGPMVAVSSKEGRD-STSIISVLSAEGGQP-GAVCTQEKERHKGDCI	2440
Canis_lupus_familiaris	NSHLPPGPLAGNR-----AMGPEEGHH-RLAVNVQSAVGGQP-GATGALG-EGCSKDG	2432
Bos_taurus	DKCQCPGPSTGGKEVGPVAVGGTGEHD-RVSVMLSAVG-----IVAESERLKGDC	2426
Rhinatrema_bivittatum	VEESEDHLLTSSGSEKIEKAFHTTDTIRIVKCLQFPVETEKCASTLIPASTEECISN---	2241
Danio_rerio	-----	1477
Xenopus_tropicalis	EAETPNQFTLEELEGAVTSTGITEESDRAKVRQDIRKSDSSCTEAETEPGGHAMSRQEV	2437
	.....2530.....2540.....2550.....2560.....2570.....2580	

Pavo_muticus	QIECILSTAGPEKSGNSLLVIGQE-----NETHESVVRGASTASQMTVDSEITEAD	2412
Pavo_cristatus	QIECILSTAGPEKSGNSLLVIGQE-----NETHESVVRGASTASQMTVDSEITEAD	2412
Gallus_gallus	QIECILSTAGPEKSGNSLLVIGQE-----NETHESVVRGASTASQMTVDSEITEAD	2470
Chelonia_mydas	EVCEILSSTDPEKSDSSLFVGGREGDECIFRGEIEHEDAVMGESAVGKITVDTEVAETA	2515
Rattus_norvegicus	GQD-----LNAKERNTLLSCVQRESKSVAAEAAGDSSSTASGIVRKDSERNA	2447
Mus_musculus	GQD-----LNAKERNTLLSSVQRESKSAEAAAGDSSSTARRIVRKDSERNA	2441
Homo_sapiens	EIGPFAGRGQKESTLHLINAEKENVLLNSLQKEDKSPETGTAGGSSTASYSAGRGLEGNA	2499
Pan_troglodytes	EIGPFAGRGQKESTLHLINAEKENVLLNSLQKEDKSPETGTAGGSSTASYSAGRGLEGNA	2497
Macaca_mulatta	EVGPFPVGRGEQESTLHLINAEKENVLLNSLQKEDKSPETGTAGGSSTASYSAGRGLEGNA	2496
Callithrix_jacchus	ETGPFAGRGWKESTLHLINAEKENVLLN-----VVPETGTAAGSSTASCSAGRGLOGSA	2489
Equus_caballus	GKVSPTGRGQNAESTLPLVNAEEKSVQLSSVEREDKSPEAGTAGDSTTGSCSAERGEERSA	2500
Canis_lupus_familiaris	HEVPLAGKGQSONSSCLGNAADRSVWLSSVQGEQGSQEA TPAGHS---TCWAGRGLKRG	2489
Bos_taurus	DR-----VQREDERPEAGTSGGSTPARCPAG-----GSG	2455
Rhinatrema_bivittatum	-----EMDNDVVKRTSVEDEFTSGVTDTEQT	2267
Danio_rerio	-----	1477
Xenopus_tropicalis	TDSNAITEDDESAITSTGAKEEEEEGEGFVTSTGTASEDSSFSSTIDENSNCQMNFNS	2497
	.....2590.....2600.....2610.....2620.....2630.....2640	

Pavo_muticus	ENSVNLMSVDEALCVEISTETAVSPSPSEVNGDDEQAEDVLHEDVTSELSCIIEASVE	2472
Pavo_cristatus	ENSVNLMSVDEALCVEISTETAVSPSPSEVNGDDEQAEDVLHEDVTSELSCIIEASVE	2472
Gallus_gallus	ENSVNLMNVDEALCVEISTETAVSPSPSEVNEDEQAEDVLHENITSELSCIIEASVE	2530
Chelonia_mydas	ETTVNLISVVEALCMEISTESTVIVGPSIEMDASDERAEYIPYVEVTSEPCIPSEAKR	2575
Rattus_norvegicus	NSLSEINCL-RRPEQKSAEDSSGSIHCLAAVNTGAKTDNMLPTDAASECPS-----DQ	2502
Mus_musculus	NSLSEINCL-REPEQKPAEDTSGSTHCLTAVNPGAEDGMLPITHAALEYP-----DHQ	2495
Homo_sapiens	NSPAHLRGP-EQTSQTAKDPSVSIRYLAAVNTGAIKADDMPVQGTVAEHSFLPAEQQG	2558
Pan_troglodytes	NSPAHLRGP-EQTSQTAKDPSVSIRYLAAVNTGAIKADDMPVQGTVAEHSFLPAEQQA	2556
Macaca_mulatta	NSPAHLRGP-EQTSQTVKDPSPSVHYLAAVNTGAIKADDMPVQGTAAEHSFLPPEQQG	2555
Callithrix_jacchus	NSPAHPRGP-EQTSQTAQDPSVSIHYLAAVNTGAN-AGDMPPVQGTVEHSFLPPEQQG	2547
Equus_caballus	DSPVHLRGP-EQTCGQMAEDSAVSIGCLTAKHTGAIEAGDMPQVKDAAAEPSSPPPDQQR	2559
Canis_lupus_familiaris	DSPEDPMGP-EQMAGPRAEDPSLRITSLPVAVSLGAKKADDVPPARDAGELP---SPEQSW	2546
Bos_taurus	DSPVNPGL-EQAP-----EGTISVRCLTAVNPGAADDQ-----WG	2492
Rhinatrema_bivittatum	KNPETLVDVEQAVFVPSVSGISLITEVDINFKIVEDNIQDTKDIN-----VMF	2314
Danio_rerio	-----	1477
Xenopus_tropicalis	KGQPIAVNS--EERREPKNHELTEEIKSAVILITTEGSEPSIAGRSTEENNLNALLLT	2555
	.....2650.....2660.....2670.....2680.....2690.....2700	

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Pavo_muticus	SETLRDINCNSN-VLLESDFSEIRTPLPGEQTPSLVS--ASELTVNN-HSEETIEAELGE	2528
Pavo_cristatus	SETLRDINCNSN-VLLESDFSEIRTPLPGEQTPSLVS--ASELTVNN-HSEETIEAELGE	2528
Gallus_gallus	SETLRDINYSN-VLLESDFSEIRTPLPGERTPSLVS--ASELTVNN-HNEETVEAELGE	2586
Chelonia_mydas	NDDFKNIDYNVNSLLENDFSEIRTSPPRAQTLPVSKYESKLTVNTKQGEITIEAKLGE	2635
Rattus_norvegicus	PENNLKA-TTKCITGQESKMPSS-----HTAVLFSVCRVAPSAPKREGGLPAKSDHSG	2554
Mus_musculus	PESNLKT-TTKCITGQESQMPSS-----HTGVLSAVCHVAPCASEQEGGLPTKSDHSG	2547
Homo_sapiens	SEDNLKTSTTKCITGQESKIAPS-----HTMIPPATYSVALLAPKCEQDLTIKNDYSG	2611
Pan_troglodytes	SEDNLKTSTTKCITGQESKIAPS-----HTMIPPATYSVALLAPKCEQDLTIKNDYSG	2609
Macaca_mulatta	PEDSLKTGTTKCTGQESKIAPS-----HTMILPATYSVALLAPKCEQDLTVRSYDYS	2608
Callithrix_jacchus	PADNLKTSTTKCITGQESKIGPS-----HTVILPATYSVALLAPKCEQDLAIKSDYSG	2600
Equus_caballus	PEGNLKTTVTTECINGQESEVAPS-----HTTVLPAAFDVALSAPKCEQNLTIESDHSG	2612
Canis_lupus_familiaris	PSAPVKT-TTECINGRESEIGPS-----QVPVLPAAV-----DG	2579
Bos_taurus	PEGHLKTTTAEACINGQESMAPS-----HTAALPTAYNVALSAAKQEQNLTISRSDHRG	2545
Rhinatrema_bivittatum	SNEATDKKQTKTLGYEMSDSPQN-----IARLSLVSALASASAIKSNQFVSEYKP	2365
Danio_rerio	-----	1477
Xenopus_tropicalis	PDGSAVLSTAENPHMOENNQTAEMEIDTSRTEEIFEVETCVAIHSAADDETTTLNAQQQ	2615
	.....2710.....2720.....2730.....2740.....2750.....2760	

Pavo_muticus	KSDCPVLHVEELYGSNDKMNLVKIDG-TGIEVTFQKNNTAFN-----SGNNG	2574
Pavo_cristatus	KSDCPVLHVEELYGSNDKMNLVKIDG-TGIEVTFQKNNTAFN-----SGNNG	2574
Gallus_gallus	KSGCPVLHVEELYGSNDKMNLVKIDD-TGIEVTFQKNNTAFN-----SGNNG	2632
Chelonia_mydas	KSDFPVSHMDKQFENDGKRNTVEVDNLGIEVTFQKNNTAFN-----SGKKE	2681
Rattus_norvegicus	TWTSEGS-AEKMGHVAGARQSYHREGNLDVTIPPEDNGCGIVS-----LGNEE	2601
Mus_musculus	TWTSEGS-PEKMGHVAGARQSFHREGNLDVTIPPEDNGCG-----VGNEE	2591
Homo_sapiens	KWTDQAS-AEKTGDDNSTRKSFPEEGDIMVTVSSEENVCD-----IGNEE	2655
Pan_troglodytes	KWTDQAS-AEKTGDDNSTRKSFPEEGDIMVTVSSEENVCD-----IGNEE	2653
Macaca_mulatta	KWTDQAS-AEKTGDGNSTRKSFPEEGDMVTVSSEENVCD-----IGNEE	2652
Callithrix_jacchus	KWTDQAS-AEKTGDDNSTRKSFHEEGDLTATLSSEENVCD-----IGNEE	2644
Equus_caballus	TWTVQVS-AEKTGDGNGMTKLLQEEGDLEVTVSSEENLCN-----KGNEE	2656
Canis_lupus_familiaris	KRLVQGS-SEKAGDGNMRKSSQOEGDLKVIVPPEENFHD-----LGVEE	2623
Bos_taurus	QCTVPAS-TKKTGEDNSVTKSCQOEG-LQVTVSSEENLRD-----RGRKE	2588
Rhinatrema_bivittatum	GHGDAVSHNEECDHVYKQSGVVETDQKVGFOELNQAVMT-----	2405
Danio_rerio	-----	1477
Xenopus_tropicalis	NLLTSETNEDNLRTSAGENS LVDAASHLQENPTADKSVTHDQEDGNLNISEQVPSNDEQT	2675
	.....2770.....2780.....2790.....2800.....2810.....2820	

Pavo_muticus	ALPKLAEELEFETNLRTEEVFPP-RPESPKSEEVYADLHLKELQ-KDSLQKNSAIERETI	2632
Pavo_cristatus	ALPKLAEELEFETNLRTEEVFPP-RPESPKSEEVYADLHLKELQ-KDSLQKNSAIERETI	2632
Gallus_gallus	ALPKLAEELEFETNLRTEEDVFTPPQPEGPKSEEVYADLHLKELQ-KDSLQKNSAIERETI	2691
Chelonia_mydas	TLPILTEDLELKTNLKTEE---POKSRSPTRQELHEEPHIEDRL-KDLPLKNAALKKDP	2737
Rattus_norvegicus	LPPKGIEGSELSANLTTEISVSSEEDTNHGVAAPENPCVGRPSGAAELQVEALLMSESL	2661
Mus_musculus	SPPKGIGGLELSTGLTTEISVSSEEDTSHGVVAAPENPCVGRRRGAAELQMEALLMRESL	2651
Homo_sapiens	SPLNVLGGLKLKANLKMEAYVPSSEEEKNGEILAPPESLCGGKPSGIAELQREPLLVNESL	2715
Pan_troglodytes	SPLNVLGGLKLKANLKMEAYVPSSEEEKNREILAPPESLCGGKPSGIAELQRELLLMNESL	2713
Macaca_mulatta	SPLNVLGGLKLKANLKMEAYVPSSEEEKNREILAPPESLCGGKPSGIAELQKEPLLVNESL	2712
Callithrix_jacchus	SPLNVLGGLKLKANLKMEAYVPSSEEEKNREILAPPESLCGGKPSGIAELQRETLVNESL	2704
Equus_caballus	SPTNVLGGLKLKANLKTEFTVPTSEEEKNPEILAPPESPRGKSSGLAKLQREPSLVNESL	2716
Canis_lupus_familiaris	SPLNVLGGLKLKANLKTEFTVPTSEEEKRPEILAPPESPCGRKPSGVAELQREPFLLNESL	2683
Bos_taurus	SPSNVAVGRLGLKTNLKPEVFVPSSEEEKNHMPAPPASPSGRKLSGTVELQREPSLAIDSP	2648
Rhinatrema_bivittatum	-----NLAMHICLGNEVTLTPDKAKELKEANMKIEDKEERSIFERVYGAHSPNEEAL	2458
Danio_rerio	-----PSSSGEQESAAAAAEDDEDGDDDEEDTRVSRTPRRGRSSR	1516
Xenopus_tropicalis	VVDNTVPNPTIKPEDSPLVSVSEISPSNTVPSGGLSVDHGRSFDHGSINREVVETEESR	2735
	.....2830.....2840.....2850.....2860.....2870.....2880	

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Pavo_muticus          HVENPDTQITEEHHSVIECKTS GIMDKKCSQL----- 2666
Pavo_cristatus        HVENPDTQITEEHHSVIECKTS GIMDKKCSQL----- 2666
Gallus_gallus         HVENLDTQITEEHQSRVIECKTS GIIDKKCSQL----- 2725
Chelonia_mydas        DVENSdTQRVEECsyKERKSKSPVTTDKETAQETSNTIDMTAAAKIQIEVKDQEIETPDQ 2797
Rattus_norvegicus     NVENSESRINEEIHYSRNKEEISCGRKDS TEALSG---CSAEADPEEVEEEERHISKR 2717
Mus_musculus          NVEKSESRINEEIHFSQNKEEICCGRKGST EALSG---CSVEADPEEVEEEEEKQISQR 2707
Homo_sapiens          NVENSGFRTNEEIHSESYNKGEISSGRKDNAE AISG---HSVEADPKVEVEEEERHMPKR 2771
Pan_troglodytes       NVENSGFRTNEEIHSESYNKGEISSGRKDNAE AISG---HSVEADPKVEVEEEERHMPKR 2769
Macaca_mulatta        NVENSDFRTNEEIHSKSYNKGEISSDRKDNAE AIS---HSVEADPKVEVEEEERHMPKR 2768
Callithrix_jacchus    NVENSGFRTNEEIHGKSYSKGEIPSGGKDS TEAVDS---HSVEADPKVEVEEEERHMPKR 2760
Equus_caballus        NVENSGSRTNEEIHSPHNKEEISSGRKDS TEVVRG---HSVEANPKVEVEEEERHMPKR 2772
Canis_lupus_familiaris NVKNSGSRANEIHSKSSNKEEISNSRKDNTEALRD---YSVEANPKVEVEEEERQMPKR 2739
Bos_taurus            NVENAGSET-TEIHGKFYSKEEISNGGKDNTEAIRC---HSAEANPKVEVEEEERHIPKR 2703
Rhinatrema_bivittatum KAFSSTEDIVSEPSRKLKRSKKEHSSSSSGKSRESE----- 2494
Danio_rerio           AAAPQRETRSASQPKVEPAVEEPEKQSRGRRS----- 1552
Xenopus_tropicalis    APGVRSVHFADVLADVSGNDALQDEQEKITTEEKEECLETTSGSAVLESKNODESVTA 2795
.....2890.....2900.....2910.....2920.....2930.....2940

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Pavo_muticus          -----IAQDVGKDDDPSCSKTKPSNIKEITPCDAAEVSE 2701
Pavo_cristatus        -----IAQDVGKDDDPSCSKTKPSNIKEITPCDAAEVSE 2701
Gallus_gallus         -----IAQDIGKDDDPSCSRTPKPSNIKEITPCDAAEVSK 2760
Chelonia_mydas        EKVSSMPGMEKNQSPITREGESDDYPITQDLRKGKPSQCSKIKDN--KDVTSGDIAEVSK 2855
Rattus_norvegicus     NR-----KQDYSSEEEELDDSPDVLDSRIQTAQRQCSETEPHDTKEENSGDLEEFST 2769
Mus_musculus          NR-----KPDYSSSEEEELDDSPDVLDSRIETAQRQYSETEPHDTKEENSGDVEEFSS 2759
Homo_sapiens          KR-----KQHYLSSSEDEPDNDPVLDSRIETAQRQCPETEPHDTKEENSRDLEELPK 2823
Pan_troglodytes       KR-----KQHYLSSSEDEPDNDPVLDSRIETAQRQCPETEPHDTKEENSRDLEELPK 2821
Macaca_mulatta        KR-----KKHYLSSSEDELDDNPVLDSRIETAQRQCSETEPHDTKEENSRDLEELSK 2820
Callithrix_jacchus    KR-----KKHCPSSSEDELDDNPVLDSGIETAQRQCSETEPHDTKEENSGDLEELSK 2812
Equus_caballus        KR-----KKHYPPSSSEDELDDNPVLDSKIETAQRQCSETELQDAKEENSGDLEELSK 2824
Canis_lupus_familiaris KR-----KKHYPPSSSEDELDDNPVLDSKIETAQRQCSETEPDQTKENAGDLEEFSS 2791
Bos_taurus            KT-----KKQYLSSSEDELDDTPDVLDSKIETAQRQCSETEPDQTKENSGDLEELSK 2755
Rhinatrema_bivittatum -----KRAQEVVYETAETDETEKSMAEKKSQFKKLPICSQ 2530
Danio_rerio           -----AAQTRDTPAVKPAKRRKRSDEELKEDPE 1580
Xenopus_tropicalis    ES-----ENDVNPTNNQEEKSEASEISLMOPPETGSSESEAVLRQAEHSDLGKQQS 2848
.....2950.....2960.....2970.....2980.....2990.....3000

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Pavo_muticus          EVVVTHTPPESAVEEEKDEFTIEQEMFEKTKOSLES-NENSVEDSQPVIIKRKRGRPRKHP 2760
Pavo_cristatus        EVVVTHTPPESAVEEEKDEFTIEQEMFEKTKOSLES-NENSVEDSQPVIIKRKRGRPRKHP 2760
Gallus_gallus         ELVITHTPPASAVEEEKDEFTIEQEMFEKTKORLES-NENSVEDNQPVIIKRKRGRPRKHP 2819
Chelonia_mydas        EIIRKHIPLSSAVEEEKDELTSKQDTCERAKOSLES-NLSSVEENQPVIVKRKRGRPRKYP 2914
Rattus_norvegicus     LNSKANSSP--ALEDRDEFSSSEGTGEKIEPNEDDGSVKSQEDDQPIIIKRKRGRPRKYP 2827
Mus_musculus          VTSKTNSSST--GLEDRDEFSSSEGTGEKTEPNEDDGSIKSQEDDHPPIIIKRKRGRPRKYP 2817
Homo_sapiens          TSSETNSTTSRVMEEEKDEYSSSETTGKPEQNDDD-TIKSQEEDQPIIIKRKRGRPRKYP 2882
Pan_troglodytes       TSSETNSTTSRVMEEEKDEYSSSETTGKPEQNDDD-TIKSQEEDQPIIIKRKRGRPRKYP 2880
Macaca_mulatta        TSSETNSTASRVMEEEKDEYSSSETTGKPEQNDDD-TIKSQEEDQPIIIKRKRGRPRKYP 2879
Callithrix_jacchus    TGSETNSTASRVTEEKDEYSSSEATGEKTEQNDDD-TMKSQEEDQPIIVKRKRGRPRKYP 2871
Equus_caballus        PTSKTNSTASRCMEEEKDEYSSSEAAAGEKTEQNDDD-NIKSQEEDQPVIIKRKRGRPRKYP 2883
Canis_lupus_familiaris TSSKTNNTASRAMDEKDEYSSGEAASEKTEQNDDD-NMKSQEEDQPVIIKRKRGRPRKHP 2850
Bos_taurus            ASSKIDSTASRAMEEKDESSSSEAAAGEKTEQNDDD-TVKSQEDQPVIIKRKRGRPRKHP 2813
Rhinatrema_bivittatum LMSITDHHRTCYKYQGN-MCNEQDAHEKAEQNQET----- 2564
Danio_rerio           PSAKHRRDAVSPAGDQDASKASDEEEERKEEEEE----- 1615
Xenopus_tropicalis    FVETIDSNITSEEQCSSEQNVLETIKDEVPREEKATCETSGPEAEVPCSEESSPKVKKP 2908
.....3010.....3020.....3030.....3040.....3050.....3060

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Pavo_muticus      VEAVQPGGGGESKADMSTGNLOF-PTSASR--GKSPQRGTDISNKKE--TANED EAGKAE 2815
Pavo_cristatus    VEAVQPGGGGESKADMSTGNLOF-PTSASR--GKSPQRGTDISNKKE--TANED EAGKAE 2815
Gallus_gallus     VEAVQPGGGGESKADMSTGNLOF-PTSASR--GKSPQRGTDISNKKE--TANED EAGKAE 2874
Chelonia_mydas    VEAVQSR--VDSEADTNTGNVQLSPNLATR--GKFSQAKDTSNKKE--TANE G EAGKAE 2968
Rattus_norvegicus AETAfKSK-EDSKTETDITTV EQSPGDKLVSKADEFNKETITDLQEKSTSNDDNEEK-T 2885
Mus_musculus      AETAfKSK-EDSKTETDITTV EQSPSGKLVSKADESNKETANLEEKSTSNDDSEEK-T 2875
Homo_sapiens      VETTLKMK-DDSKTDTGIVTVEQSPSSSKLVKVMQTDENKETANLQERSISNDDGEEKIV 2941
Pan_troglodytes   VETTLKMK-DDSKTDTGIVTVEQSPSSSKLVKVMQTDENKETANLQERSISNDDGEEKIV 2939
Macaca_mulatta    VETTLKMK-DDSKTDTGIATVEQSPSSSKLVKVMPTDENKETANLQERSISNDDGEEKTV 2938
Callithrix_jacchus VETTLKMK-DDSKTDTVIVTVEQSPSSSKLVKIQTDENKETANLQERSISNDEGEDKIV 2930
Equus_caballus    VETALKTK-EDCKTDTGIVTVDQSPGGKLVKVMQTDENKETPNLQERSISNDDGEEKTI 2942
Canis_lupus_familiaris VETMLKTK-EDCKTDTGTVTVEQSPGSKPKLTQTDENKETTTPQERSMSNDDGEEKTV 2909
Bos_taurus        VETSLKTK-DDCKTDAGLVTVEQSPGGKLVKVMQTDENKETPNLQERSGSNDDSEEKSV 2872
Rhinatrema_bivittatum -----SMKEDEVMPQQSTTITEISQLAECKQHLCISSEEDTEKHEEKSSITDDDGAEKSE 2619
Danio_rerio       -----TTEDDQQ 1621
Xenopus_tropicalis RGRKSLEKLKEESLAKDKPTEEIPEEPKPEKRRGRPPKKRPLVPDTLSVKESSEEGK 2968
.....3070.....3080.....3090.....3100.....3110.....3120

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      :      *
Pavo_muticus      MIVRRGRGRKPRRSLAQAE-----ETEMLEPERKRRKLTS 2850
Pavo_cristatus    MIVRRGRGRKPRRSLAQAE-----ETEMLEPERKRRKLTS 2850
Gallus_gallus     MIVRRGRGRKPRRSLVQAE-----ETEMLEPERKRRKLTS 2909
Chelonia_mydas    MIVRRGRGRKPRCSVIPSE-----ETEMLEPERKRRKLASA 3003
Rattus_norvegicus GSVRRGRGRKPKRSLTSSD-----DAESSEPERKROKPFSE 2920
Mus_musculus      ASMRLRGRKPKRSLTSSD-----DAESSEPERKROKSVSE 2910
Homo_sapiens      TSVRRGRGRKPKRSLTVSD-----DAESSEPERKROKSVSD 2976
Pan_troglodytes   TSVRRGRGRKPKRSLTVSD-----DAESSEPERKROKSVSD 2974
Macaca_mulatta    ASVRRGRGRKPKRSLTVSD-----DAESSEPERKROKSVSE 2973
Callithrix_jacchus ASVRRGRGRKPKRSLTVSD-----DAESSEPERKROKSVSE 2965
Equus_caballus    ASVRRGRGRKPKRSLTLSD-----DAESSEPERKROKSVSE 2977
Canis_lupus_familiaris ANVRRGRGRKPKRSLTLSD-----DAESSEPERKROKSVSE 2944
Bos_taurus        ASVRRGRGRKPKRSLTLSD-----DAESSEPERKROKSVSE 2907
Rhinatrema_bivittatum EYDNRGRKQKYSYSSAE-----ETETSEPDKRKRSELA 2654
Danio_rerio       RKPARRGRPSKASSATDD-----SDTG----- 1643
Xenopus_tropicalis TSNARLRQEESTSTKKDVRTLEKTEQCQKTSQVRLLEDKSGQTVPRRGRKPKRSLTSESE 3028
.....3130.....3140.....3150.....3160.....3170.....3180

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Pavo_muticus      -EEEIREQEEGEEEDNEEDEE-----STARPATRLEAORMQSSKPTTRATSKGSSP 2900
Pavo_cristatus    -EEEIREQEEGEEEDNEEDEE-----STARPATRLEAORMQSSKPTTRATSKGSSP 2900
Gallus_gallus     -EEEIREQEEGEEEDNEEDEE-----STARPATRLEAORMQSSKPTTRATSKGSSP 2959
Chelonia_mydas    AEEETKEQEEDDDDDDDDDDDDDDETHSGATTRSATRLEAOKKQPSKPTTRAASKGNP 3063
Rattus_norvegicus TSEDKNQDSDEEEEEEEDEEP-----LGATTRSATRSEAQRNHSKPSTRATSKLGIP 2974
Mus_musculus      TSEDKKDEESDEEEEEEEEEEPEP-----LGATTRSATRSEAQR----- 2947
Homo_sapiens      PVEDKKQESDEEEEEEEEEEDEP-----SGATTRSTTRSEAQR----- 3013
Pan_troglodytes   PVEDKKQESDEEEEEEEEEEDEP-----SGATTRSTTRSEAQRKHHSKPSARATSKLGS 3028
Macaca_mulatta    PAEDKKQESDEEEEEEEEEEDEP-----SGATTRSTTRSEAQRKHHSKPSARATSKLGS 3027
Callithrix_jacchus PTEDKKQESDEEEEEEEEEEDEP-----SGATTRSTTRSEAQRKHHSKPPARAASKLGS 3019
Equus_caballus    ATEDKKQESDEEEEEEEEEEDEP-----LGATTRSSTRSEAQRKHHSSEPPARATSKPGNP 3031
Canis_lupus_familiaris ATEDKKQESDEEEEEEEEEEDEP-----SGATTRSTTRSEAQRKHHSKPPARATSTLGNP 2998
Bos_taurus        ATEDKKQESDEEEEEEEEEEDEP-----SGATTRSSTRSEAQR----- 2944
Rhinatrema_bivittatum AKEEEKNEQTEDEDDNEEEDEEEK---HKGATTRAASRLAQRNPHKPTTRAASKLNLS 2711
Danio_rerio       -ASEKRKGEEKEDEEEEEKS-----RATTRAASRLAERNKPSKPSTRALSKLSKE 1693
Xenopus_tropicalis PEKKRMKSVSEEEENAETHETDNEDDHKGATTRAASRLAERNLPHKPTTRAASKLSSP 3088
.....3190.....3200.....3210.....3220.....3230.....3240

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                                * *: **. : :* :
Pavo_muticus                   SSVSPRKQOKLSAKKRSPSDTKTNKSP--PSTQOKVQSTKRKREGSPPTAVRRKGQOKAEE 2958
Pavo_cristatus                 SSVSPRKQOKLSAKKRSPSDTKTNKSP--PSTQOKVQSTKRKREGSPPTAVRRKGQOKAEE 2958
Gallus_gallus                  SSVSPRKQOKLSAKKRSPSDTKINKSS--PSTQOKVQSTKRKREGSPPTAVRRKGQOKTEE 3017
Chelonia_mydas                 SPVSPKKQONSAAKKRSPSEAKVSRSP--PLAQLKMQASKRKREASPPAVRRKGQPKVDE 3121
Rattus_norvegicus             ETVSPRNRQKLAKEKLSTSEKVSNSPPLGRSKAQLSPSVKRKRELSPPGARTRGQOKVDE 3034
Mus_musculus                   -----SKAQLSPSVKRKREVSPPGARTRGQOKVDE 2977
Homo_sapiens                   -----SKTQLSPSIKRKREVSPPGARTRGQORVEE 3043
Pan_troglodytes               DTVSPRNRQKLAKEKLPTSEKVSNSPPLGRSKTQLSPSIKRKREVSPPGARTRGQORVEE 3088
Macaca_mulatta                DTVSPRNRHKLAKELPTSEKVSNSPPLGRSKTQLSPSIKRKREVSPPGARTRGQORVEE 3087
Callithrix_jacchus            DTVSPRNRQKLAKEKLPTSEKVSNSPPLGRSKTQLSPSVKRKREVSPPGARTRGQORVEE 3079
Equus_caballus                ETVSPRNRQKLAKEKLSTSEKVSNSPPLGRSKAQLSPPTKRKREVSPPGARTRGQORVEE 3091
Canis_lupus_familiaris        ETISARNRQKLAKEKFTSEKVSNSPPLGRSKAQLSPSSKRKREASPPGARTRGQORVEE 3058
Bos_taurus                    -----SKAQLSPSAKRKREASPPGARTRGQORVEE 2974
Rhinatrema_bivittatum         ESIPSRERRLSSSKEKSTPEMKNKSGLLPRSKTQSSAKRKREASPPPTVTRTGQOPPDE 2771
Danio_rerio                   E-----NTPHTRSVRGRKRDPSPPVSRTRGGOKSED 1724
Xenopus_tropicalis            EPSSRRKRRKNKNSLESKSPKNTN-----IRMKTQLSGTKRCREPSPPPLAKSRGQOTSEE 3142
                                .....3250.....3260.....3270.....3280.....3290.....3300

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                                *:***
Pavo_muticus                   TPVKKAKR- 2966
Pavo_cristatus                 TPVKKAKR- 2966
Gallus_gallus                  TPVKKAKR- 3025
Chelonia_mydas                 MPLKKTKR- 3129
Rattus_norvegicus             TPLKKAKR- 3042
Mus_musculus                   NPLKKAKR- 2985
Homo_sapiens                   APVKKAKR- 3051
Pan_troglodytes               APVKKAKR- 3096
Macaca_mulatta                APVKKAKR- 3095
Callithrix_jacchus            APVKKAKR- 3087
Equus_caballus                APVKKAKR- 3099
Canis_lupus_familiaris        APSKKAKR- 3066
Bos_taurus                    ILVKKAKR- 2982
Rhinatrema_bivittatum         TLIKRAKRQ 2780
Danio_rerio                   PAAKRAKR- 1732
Xenopus_tropicalis            ITPKRAKRQ 3151
                                .....

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