

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CRYO-162.fst Tue Feb 1 11:52:34 2022

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| Species | Sequence | Position |
|------------------------|---------------------------------------------------------------|----------|
| Pavo_muticus | ----- | |
| Pavo_cristatus | ----- | |
| Gallus_gallus | MRRKACLCIENSVDVKLAQVRAASGPEPVAAARQORLEIKARSFLPQLTLARQYPRGTLTP | 60 |
| Chelonia_mydas | ----- | |
| Mus_musculus | ----- | |
| Rattus_norvegicus | ----- | |
| Mesocricetus_auratus | ----- | |
| Homo_sapiens | ----- | |
| Pan_troglodytes | ----- | |
| Macaca_mulatta | ----- | |
| Callithrix_jacchus | ----- | |
| Bos_taurus | ----- | |
| Equus_caballus | ----- | |
| Canis_lupus_familiaris | ----- | |
| Rhinatrema_bivittatum | ----- | |
| Xenopus_tropicalis | ----- | |
| Danio_rerio | ----- | |
| | 1.....10.....20.....30.....40.....50.....60 | |

| Species | Sequence | Position |
|------------------------|-----------------------------------------------------------------|----------|
| Pavo_muticus | ----- | |
| Pavo_cristatus | ----- | |
| Gallus_gallus | TARSCRRGQQPARGHLGPGRVGLEGWPRPWAVPGRPPRRGGGRRGPPPPAAAAAGTRWRAGAG | 120 |
| Chelonia_mydas | ----- | |
| Mus_musculus | ----- | |
| Rattus_norvegicus | ----- | |
| Mesocricetus_auratus | ----- | |
| Homo_sapiens | ----- | |
| Pan_troglodytes | ----- | |
| Macaca_mulatta | ----- | |
| Callithrix_jacchus | ----- | |
| Bos_taurus | ----- | |
| Equus_caballus | ----- | |
| Canis_lupus_familiaris | ----- | |
| Rhinatrema_bivittatum | ----- | |
| Xenopus_tropicalis | ----- | |
| Danio_rerio | ----- | |
| |70.....80.....90.....100.....110.....120 | |

[illegible]

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Pavo_muticus      NKGSG--EAINLKSNOKESTTLLPALLKVYPNEEKNHSTEELSKSDIQEELKKANSLPSLTP 105
Pavo_cristatus    NKGSG--EAINLKSNOKESTTLLPALLKVYPNEEKNHSTEELSKSDIQEELKKANSLPSLTP 105
Gallus_gallus     NKGSG--EAINLKSNOKESTTLLPALLKVYPNEEKNHSTEELSKSDIQEELKKANSLPSLTP 232
Chelonia_mydas    SKGN--ESISVKSDDKKERMLLPELLKISONAEKNHSMEDLSNSVITEELKKANSLPSLAP 108
Mus_musculus      ASVE--NEPVSTSQKKENALSSEAVKIPQEDRRNHAEQPAILPMVDDLKPKDLPDSTP 106
Rattus_norvegicus ASAE--NESMSTSQKKENAPSSSEAVKIPQVEDRRNPAEQPAILPMVDDLKPKDLPDSTV 106
Mesocricetus_auratus ASVE--NEPMNTSQKKGIALSSEAVKIPQEDRRNHADQPAILPLDDPPKPNLDSNSAP 106
Homo_sapiens      ASVE--NEPMSTSQKKENVLSSSEAVKIROSEDKRNHAEKPVTLPVQEDPKKAYDLSSSTS 106
Pan_troglodytes   ASVE--NEPMSTSQKKENVLSSSEAVKIROSEDKRNHAEKPVTLPVQEDPKKAYDLSSSTS 106
Macaca_mulatta    ASVE--NEPMSTSQKKENVLSSSEAVKIROSEDKRNHAEKSVTPPVQEDPKKAYDVSSSTA 106
Callithrix_jacchus ASVE--NEPLSTSQKKENVLSSDAVKILOSEEKRNHTEKPVTFPVQEDPK----- 96
Bos_taurus        ASVE--NEPMSTSQKKENILSSSEAVKISOEDRRTOAQQLITLPTQEDSKKPNLSSSTS 106
Equus_caballus    ASVE--NEPMSTSQKKENVLSSSEAVKIPQTEDKRNCAEKPVTLPTPEGSKKPNDFSSAP 105
Canis_lupus_familiaris ASVE--NEPMSTSQKKENVLSSSEAVKIPQTEDKRNHAEKLITLPTQEDLKPKPNLDSRSTS 106
Rhinatrema_bivittatum LDAH--NREERDSPGQ-----VSQSVDESNCSSSEGENSSAQELMSTNDSPSVLP 94
Xenopus_tropicalis STLRSRFFSRASSSQEKDKKLANEKSALEESTEGHQSPSRFFSRASSSQEKDKKLANEKSA 106
Danio_rerio       SVPE----- 42
.....190.....200.....210.....220.....230.....240

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          . : . . : . * : .
Pavo_muticus      GNKAADKDKQPREGFFQFLGSLFN-----LATKSSLV-DSKPSACQDEPNRCEKDL 155
Pavo_cristatus    GNKAADKDKQPREGFFQFLGSLFN-----LATKSSLV-DSKPSACQDEPNRCEKDL 155
Gallus_gallus     GNKAADKDKQPREGFFQFLGSLFN-----LATKSSLV-DSKPPACQDEPNRCEKDL 282
Chelonia_mydas    GRKTADRDRQPKGFFQFLGSLFN-----IGSKSSLG-ESKQSTLQDGHKRPKGD 158
Mus_musculus      EAKTGESDRQPKESFFQFLGNLFN-----ISGKSSLG-EVKQSSFQDDQEKPEKDP 156
Rattus_norvegicus DAKTGESDRQPKESFFQFLGNLFN-----ISGKSSLG-EVKQSSFQDDQDKPEKDP 156
Mesocricetus_auratus DAKTGESERQPKESFFQFLGNLFN-----ISGKSSLG-EVKQSSSLKDDQDKSEKDP 156
Homo_sapiens      DTKIGESDRQPKESFFQFLGNLFN-----ISGKSSLG-EAKQSSFQDDQDKTEKDL 156
Pan_troglodytes   DTKIGESDRQPKESFFQFLGNLFN-----ISGKSSLG-EAKQSSFQDDQHKTEKDL 156
Macaca_mulatta    DSKIGESDRQPKESFFQFLGNLFN-----ISGKSSLG-EAKQSSFRDDHDKAEKDL 156
Callithrix_jacchus ---IGESDRQPKESFFQFLGNLFN-----ISGRSSLG-EAKQSSFQDDHDKTEKNL 143
Bos_taurus        EAKIGESDKQTKESFFQFLGNLFN-----ISGKSSLG-EAKQSSFQDEHDKPEKDL 156
Equus_caballus    DAKIGESDRQPKESFFQFLGNLFN-----ISGKSSLG-EAKQSSFQDNHDKTEKDL 155
Canis_lupus_familiaris DSKIGENDKQPKESFFQFLGNLFN-----ISGKSSLG-DAKQSSFQDDHDKTEKDS 156
Rhinatrema_bivittatum EVKMAENDKQPREPFLHFLGQLFN-----FASKSELNRESKPSALKDDHDKAEED- 144
Xenopus_tropicalis LEESTEGHQSPSRFFSRASSSQEKDKKLANEKSALEESTEGHQSPSRFFSRASSSQEKDK 166
Danio_rerio       ----DGADQTPGKAAACSG-----STGGHEGVSAAPRAPTAPPAHTL 81
.....250.....260.....270.....280.....290.....300

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Pavo_muticus      QNTNTLTTEGTQPOHPKTEEPVCS*ARIKEDSINKDDMILNDIGKDVSOEQ----- 205
Pavo_cristatus    QNTNTLTTEGTQPOHPKTEEPVCS*ARIKEDSINKDDMILNDIGKDVSOEQ----- 205
Gallus_gallus     QSTNTLTTEGTQPOHPKTEEPVCS*AGIKEDSLNKDDMIMNVGKDSQDQ----- 332
Chelonia_mydas    QTQTALQEDGITKHKTEIFVISTAGTEEVAVPKEEPALVNIREVGSQDL----- 208
Mus_musculus      QTPWGPPEEGSQREEEAASHPARTQVLLGGQOESTSSSELSDAFSLDSTQ----- 205
Rattus_norvegicus QTPITGPPEEGSQREKEITSCPVRIRILPEDQRESNSELSDAFSLDSTQ----- 205
Mesocricetus_auratus QTPSGPPEEGICREKEIADC PVKIQVLPVDEQESNSELSDAFSLDSTQ----- 205
Homo_sapiens      QNPSDHHEDGIKREREIFSGSLRTQTHPTTEQDSNSELSDAFSLDSTQ----- 205
Pan_troglodytes   QNPSDHHEDGIKREREIFSGSLRTQTHPTTEQDSNSELSDAFSLDSTQ----- 205
Macaca_mulatta    QNPSDHHEDGIKREREIFSGSLRTQTHPTTEQDSNSELSDAFSLDSTQ----- 205
Callithrix_jacchus QNPSDHHEDGIKRERDIFSGSLRSQTHPTTEQDSNSELSDAFSLDSTQ----- 192
Bos_taurus        RNPS-RHEEGGQRE--SAGGSLRTOALPAEEQ-SSSAELSDAFSLDSTQ----- 201
Equus_caballus    RNPSDRHEEGVRREQETVNGSLGAQALPAEEQESHAAKLSDACSLDSTQ----- 204
Canis_lupus_familiaris QNPSDHPEEGVRREREILHGSVGSQVLATEEPESNSAEPDAFSLDSTQ----- 205
Rhinatrema_bivittatum -SQQSSPDGGRNVLDLQTERLSTRSSASREEISLSNLTASSQDTEE----- 192
Xenopus_tropicalis KLANEKSALEESTEGHQSPSRFFSRASSSQEKDKKLANEKSALEESTEGHQSPSRFFFRG 226
Danio_rerio       PLQTSRTAHTHTLSSTVEPPGGRSQRTHTQSAEDGSEADINAKELLEK----- 131
.....310.....320.....330.....340.....350.....360

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:: *** . :
Pavo_muticus      QGGRKRSADVKKQIQRKPOAPAVTYATYRGSARIROLLKSQS-----EVTEK-EESTEN 258
Pavo_cristatus    QGGRKRSADVKKQIQRKPOAPAVTYATYRGSARIROLLKSQS-----EVTEK-EESTEN 258
Gallus_gallus     QGGQKRSADVKKQIQRKPOAPAVTYATYRGSARIROLLKSQS-----EMTEKGEENTEN 386
Chelonia_mydas    QRGQEQAADALMHTCKPDAPAVTYATYRGSRLRIKOLLKQOA-----EEALRREENTEG 262
Mus_musculus      DSEQETTEMPPKDDTVGKPEKPSVTYATYRGATQIRKYLQQQPVLETMNLHLDGEDGSSDSS 265
Rattus_norvegicus ESEQETTDLTLDKTDAGKPEKPSVTYATYRGPTQIRKYLKQPGSETVNLHLDREDGNSDSS 265
Mesocricetus_auratus DSEQETDMPKDDTVGKPEKPSVTYATYRGPTQIRKYLKQQTGLATVNLHLDRED-ESFPS 264
Homo_sapiens      DSDQETTINLLK-QIDGKPEKPSVTYATYRGPRHIGKYLKQQTGLATVNLHLDRENESSDSS 264
Pan_troglodytes   DSDQETTINLLK-QIDGKPEKPSVTYATYRGPRHIGKYLKQQTGLATVNLHLDRENESSDSS 264
Macaca_mulatta    DSEQEATNLLK-QIDGKPEEPSTYATYRGPSHIRKYLKQQTGLATVNLHLDRENESSDSS 264
Callithrix_jacchus DSEQETTINLLK-QIDGKPEKPSVTYATYRGPRHIGKYLKQQTGLATVNLHLDRENESSDSS 251
Bos_taurus        DSEQETSDLLK-QMDGKSERPLVTYATYRGPRQIKKYLKQQTVSETVNLHLDRENASSDSS 260
Equus_caballus    DSEQETSDLLK-QMNGKLERPSVTYATYRGPRQIRKYLKQQTGLATVNLHLDRENASSDSS 263
Canis_lupus_familiaris DSEQETSDLLK-QLDGKPEKPSVTYATYRGPRQIKKYLKQQTGLATVNLHLDRENASSDSS 263
Rhinatrema_bivittatum -GSEPEIADALKQIECKESAPAVTYATYRGSRIKLLKRAHVDN--AIPERDENPGTN 249
Xenopus_tropicalis TTPDKEAKDKSFTPEEQEKLNLKLFYRGTPQGSNNVSNTEEPDSFSSMASRLSVTFSSQ 286
Danio_rerio       -----RRYDLSCPPVVTYGTYRGLREARKPKKKHS----- 161
.....370.....380.....390.....400.....410.....420

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Pavo_muticus      RNASVIKENGERTAVSPKSE-----HLTKENGE-DEKDRREDDVIVNSSTVVKMEL 308
Pavo_cristatus    RNASVIKENGERTAVSPKSE-----HLTKENGE-DEKDRREDDVIVNSSTVVKMEL 308
Gallus_gallus     KNASVIKENGERTAVSPKSE-----HLTKENGE-DENKDHEDDVIVNSSTVVKMEL 436
Chelonia_mydas    KHIFTVTGNGEIQTAVLNPSNPNVRVEITGPPSEENQK-DHAKDVKENVKANLSAVKTEL 321
Mus_musculus      PQAHAHSRS-IRDVTVTPLSTDSKDVATKGYLLGGPLE-ASGYSTQNTNINSHDLESPPEL 323
Rattus_norvegicus TQARTGSR-IPDVTVTPLSTASKDVTKGHLLGGPLE-VSGYSTQNTNINSHDLESPPEL 323
Mesocricetus_auratus THAHNGSR-TMDTVVAPLSSASKEVATKGYLLGGPLEKVSQINLNMESHLENNPEL 323
Homo_sapiens      TNRHIDPGSEIEAGVLPPLLSASTDSSMKGNLLEGPLE-DSDCKTSFKNENSLTNNPEL 323
Pan_troglodytes   TNRHIDPGSEIEAGVLPPLLSASTDSSMKGNLLEGPLE-DSDCKTSFKNENSLTNNPEL 323
Macaca_mulatta    INRHIDPGSEIEARILPPLLSASTDSSMKGNLLEGPLE-DSDCKTSFKNENSLTNNPEL 323
Callithrix_jacchus ANTHVDPGREIEAGILPVLSTSTDSVNGNLLLEGPFE-DSDCKTSFKNENSLTNNPEL 310
Bos_taurus        TSTHRGPGSEMEAGMVLLSSASTGIFVKGQGPGEQLE-DSDDNERNLNTGSHSTNNQGL 319
Equus_caballus    ASTYIGPSDIEAGMVPS-SSACTDIAMKGHLLLECPLE-DCDCSKINLSTGRHPTNDPEL 321
Canis_lupus_familiaris -SIHVGSSETEARMISLPSASTDISMKGHVLDVLE-VTDCKIKLNIESHLENNPEL 321
Rhinatrema_bivittatum DTFDVTKNGDIENGLTANTQTEGHWSERETKDEDEVAEIEWKSKDKVKQVFNHFAPEKCT 309
Xenopus_tropicalis EDESGTVKSKTSKINLSSQEDKSPITVRDNKEHLHPPEADQNKEEESRTDWNHDAKSLSQ 346
Danio_rerio       -----IELHSPICEGDEPAHPEQTCCFTVNTMSTDL 192
.....430.....440.....450.....460.....470.....480

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Pavo_muticus      KKSSEAEH-----YLSSNKHEITPNASASPTGSSSG----- 339
Pavo_cristatus    KKSSEAEH-----YLSSNKHEITPNASASPTGSSSG----- 339
Gallus_gallus     KKSGETQH-----YLGSNKHEITPNASASPTGSSSG----- 467
Chelonia_mydas    KKTDDAKN-----ILDSSEHGTIENTSASSTETNSNHNHIGELDL----- 361
Mus_musculus      QDIASSKC-----ILNKNSHGGLRSSWASPSSVSNPSYVVGEPDS-----QTES 367
Rattus_norvegicus QKIASSKY-----ILNKNSLGDPSSSWASPSSVSNPSYVVGEPDS-----QMER 367
Mesocricetus_auratus QNIASSKT-----VVDKNSHWGSGRSWASPSSVSNPSYVVGESDS-----QTES 367
Homo_sapiens      QNIASSNN-----LLNKNAGSIEERNRSPSSVTNSS-YDGESDSQHHLSCFPVSQTNR 376
Pan_troglodytes   QNIASSNN-----LLNKNAGSIEERNRSPSSVTNSS-YDGESDSQHHLSCFPVSQTNR 376
Macaca_mulatta    QNIASSNN-----FLNKNAGGIEERNRSPSSVTNSS-YDGESDSQHHLSCFPVSQTNR 376
Callithrix_jacchus QTVASSNN-----LLNKNVWRGTERNRSPS-LTSSS-YDGESDSQHHLSCFPVSQTNR 362
Bos_taurus        ANTASSRG-----VLNKAYPGGPETSRSS-HSVTSSSSTAGDSDSRHHLSCAPGSQTDR 372
Equus_caballus    ENISSYKD-----VLNKNDPGGPERSRSPSSVTNSSSTAGESDSQHHLSCFPVSQTD 375
Canis_lupus_familiaris PNTASSKE-----VLNKNDPGGPERSRSPSSVTNSSISTVRESDSQHHLSCAPVSQADR 375
Rhinatrema_bivittatum STPEAALN-----SNNTTEARSFPSKHVPFYITQSSS----- 341
Xenopus_tropicalis EKQPKKEKIREFFGQLFSFTSKSPVASPKQTPGNQEPQRESQDEPVRLNEEFVGVQRF 406
Danio_rerio       QESPSVLN----- 200
.....490.....500.....510.....520.....530.....540

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Pavo_muticus          -----VDLKDAPALGANKVKR-TYSQDSLLSSSRRSEIPTNSTHLITSALSAVDSSLF 390
Pavo_cristatus       -----VDLKDAPALGANKVKR-TYSQDSLLSSSRRSEIPTNSTHLITSALSAVDSSLF 390
Gallus_gallus        -----VDLEHTPALEANKVKR-TYSQDSLLSSSRRSEIPTSSTHQITSALSAVDSSLF 518
Chelonia_mydas       -----FVSLNHAPVSGTPEVNR-THFLGSVLS-ARDSSSNYQLMDSVKINSGNNKLA 412
Mus_musculus         VLVCSSSVFRGSKSSQGPC-PEFQR-KTIPTDSPPRVNSSAVIDGLPSVPGEEPARPORPSV 425
Rattus_norvegicus    SLVCSSSVFRGSKSSQGPC-PEFQR-KTIATENTLRVNSSAVSDGLPSVPAEERVQORPAV 425
Mesocricetus_auratus SLVSSSSLFIGSKSSQAPC-PEFQR-KTIATENTLRENSSMNDGMS-VPREGHVGORPAV 424
Homo_sapiens         NLVCSALLTGSNHRKVPCSPDFQR-VTTTTENTIKENSTVMSNRTL-VQREELVEPOGPAI 434
Pan_troglodytes      NLVCSALLTGSNHRKVPCSPDFQR-VTTTTENTIKENSTVMSNRTL-VQREELVEPOGPAI 434
Macaca_mulatta       NLVCSALFTGSSSSNVPCSPDFQR-VTTTTENTIKEN-TVMSNGTL-VQREELVEPOGPAI 433
Callithrix_jacchus   NLLCSALFTGINSSKVPCSPDFQR-VTTTTENTIKENSSVMSNRTL-VQREELVEPOGPAI 420
Bos_taurus           NLGCSALCTESNSSKIPYSPDLR-TATPGTVKRTSSVMSDGTP-VQAEN-----SAV 424
Equus_caballus       NLECLALFTGSNSEVPSSPDFQR-IITTETIIKENSSVMSDGTL-VHREHHVEPESPGV 433
Canis_lupus_familiaris NLVCLASFTGSNSGKVLCSLDFQG-IITTETTIKEVSSVMSDETL-VQSEEHVEPMSPAV 433
Rhinatrema_bivittatum ----DLDLLLSEAKSKISSSSCON-TITLRNLTNRLNKNESQANGLREVDFQSMARIS 396
Xenopus_tropicalis   QEPDPIAQATQATEDGPAREIDLGASDNKQTAEVLSQEQEESPAPSPIPNTSNLEPPSI 466
Danio_rerio          -----QSSPPWTQQMEDVLLTQGVLLAQPTVESPALP-----HPTY 237
.....550.....560.....570.....580.....590.....600

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Pavo_muticus          GKEYVPPGEAEAPFQMDKNATSNCEKEIH-----CSDRSYQESAEKMQDGCLRSL 440
Pavo_cristatus       GKEYVPPGEAEAPFQMDKNATSNCEKEIH-----CSDRSYQESAEKMQDGCLRSL 440
Gallus_gallus        GKELG---EAEAPFQMDKNATSNCEKEIH-----CSDQSYQESTEKMQDGCLQSL 565
Chelonia_mydas       EKGTRMLEETEAQFQSDNNATFSFDKGINS-----CVPVSHEDSKETMQNDCECSS 463
Mus_musculus         PDFSRSKSDGSDTTKMESTNLSSPHKSIRHEDARLPEHKCGDKPAVDNPSRRTVNHACIM 485
Rattus_norvegicus    SDFSCSKSDGSDTTKMESTNLSSPNKSIRHEDVRLPESKCDKPAVDNPSRQDNHTRVT 485
Mesocricetus_auratus SDFS-SKSDGSDPKVESTNLSSPNKSIRHEDVRSPESQCDKPAADNPSRQNVGHTSIT 483
Homo_sapiens         SDFSCSKSDGSDTTEQESTNLSPPNKSIRHEHLQLPESECSDKQTIDSSKQAATHTNII 494
Pan_troglodytes      SDFSCSKSDGSDTTEQESTNLSPPNKSIRHEDLQLPESECSDKQTIDNSSKQAATHTNVI 494
Macaca_mulatta       SNFSCTKSDGSDTTEQESTNLSPPNKSIRHEDLQLPESECSDKQTIDNSSKQAATHTSVV 493
Callithrix_jacchus   SDFSCSKSDGSDTTEQESTNLSPPNSIRHEDLLLPESKCSDKQTVGNSSKQAT----- 475
Bos_taurus           ADFSCSKSDGSDPTTLRSADLLSPNKSIRREALQLPESKCSSNKQAVENSSKQPANHTSSM 484
Equus_caballus       SAFSSWEADGSDTTTKQESTHFPSSNKPVRHGDLRLPESRCSDKQTVGNSSEQAAGHNSTL 493
Canis_lupus_familiaris SDFSCNKSNGSNTTITWGSTDLPSPNESIRLEDPOLPESKCSDKQTADNSAKQAANHTSIP 493
Rhinatrema_bivittatum NMEKVPNSHPESSHHSESVSSP-----ERKCANEKLKLTDSFAGRS 437
Xenopus_tropicalis   TYGTYRGSKKIRKLRRADVNSPILEKEEVPDTETTTLLDYSTDSDITPYPTSHPDVK 526
Danio_rerio          SNWSITCVEMEPVYTLPQAEPRPP----- 261
.....610.....620.....630.....640.....650.....660

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Pavo_muticus          RSN-GKVNKELQLSKGEYCCNHQMN-----NHSELTSNVQTYHSN-TTFQQQADEHTG 491
Pavo_cristatus       RSN-GKVNKELQLSKGEYCCNHQMN-----NHSELTSNVQTYHSN-TTFQQQADEHTG 491
Gallus_gallus        RSN-DTVNKEPQLSKGEYCCSHQMN-----NHSELTSNVQMHHSN-TTFQQQADEHKG 616
Chelonia_mydas       KTKRGAVDKELPLIEGEYACNSHIG-----SQLELKFDAQMSPSSSTAFPHQADKRTE 516
Mus_musculus         ALQHAVTDSELVNEGKKLPARDSQ--KNMVSEILKETECASGREPTTLSHVRTPEVRIE 543
Rattus_norvegicus    TLRHAVTDSGLVNEGKKLPAQDKQ--KNVLSEVLRETECASGSEPTTYSHVRAPEVRIE 543
Mesocricetus_auratus TLQHAVTDSELVSEGKKLPAQDSK--KNVVSEIMPEAGTSGVEPTTSSHIRASEDKIE 541
Homo_sapiens         ALQRHAVTDTEFVNEGKRLSAQDSQ--KNVAVREIRRETESASAGESIASSHVKAPEDKIE 553
Pan_troglodytes      ALQRHAVTDTEFVNEGKRLSAQDSQQKNVAVREIRRETESASAGESIASSHVKAPEDKIE 554
Macaca_mulatta       ALQRHAVTINTELVNEGKRLSAQDSQ--KNVVREIRQETESASASESIASSHVKAPEDKIE 552
Callithrix_jacchus   ALQRRAVTDTELVNEGKLSAQDSH--KNMAVREIRRETESASAGEPIASSHVKAPVDKIE 534
Bos_taurus           AFQKQAVTDTELVNAGNRSSAQDTQ--KNLAPAEIKPETENTSGEPTASSHVKAPEDRIE 543
Equus_caballus       AFQMQAETDAELVNEGNRSSAQDSQ--ENLVCTEIRQETESASVGEPTISSHVKAPEGRIE 552
Canis_lupus_familiaris ALQRHAVTDTEFVNEGKRLFSQDSQ--KNLAPRKIKQETESILVGEPTTSSLIKAPEDRIE 552
Rhinatrema_bivittatum ELQGCTHGSQESSGLQMHMAPETEN-----SCGDENPRIVETEQSKAQNMQDPKLGVS 490
Xenopus_tropicalis   LHGGPNEETSENSNKLPPNLERNTKSEESFQLETHHYSYKKHSDDVPKDILCNSETVTLI 586
Danio_rerio          -----KHLVYTQEHLDLNAAP-----ETQSNTQSANTHRPHTAHPEPE---- 302
.....670.....680.....690.....700.....710.....720

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Pavo_muticus      SANKSDSDPR---KRDAQKIVADAEREQN-----PONFLATVLLPFNEQTCT---SRS    537
Pavo_cristatus    SANKSDSDPR---KRDAQKIVADAEREQN-----PONFLATVLLPFNEQTCT---SRS    537
Gallus_gallus     SANKSDSDPR---KSDAQKIVAAAEKEQN-----PONFLATVLSPPFKQTCT---SLS    662
Chelonia_mydas    NANKDSGPR---MDDSQKYVAAEEREQE-----TOTFLASVHFPLNQERST---EKL    562
Mus_musculus      SLPKETEPPEPPCETETKRLGLELHVKTTP--HEMGKTQEDPGSVKGVSDSVVVA---CTE    598
Rattus_norvegicus SLPKETELP---CDTETEKLGVEPHVQTTP--QEMGETQEDPGSVKSVSDSVGIA---CTE    596
Mesocricetus_auratus SLPKDTEPL---CKTETQRLDLVLHVKTH--SVEKNQEGPGSVKYINGSVAVV---NVE    592
Homo_sapiens      SLPKDDTDQ---YFETKAKKLDFRSHDKIP--HIRMNKKDLASLNYISESAVVA---SLG    604
Pan_troglodytes   SLPKDDTDQ---YFETKAKKLDFRSHDKIP--HIRMNKKDLASLNYISESAVVA---SLG    605
Macaca_mulatta    SSPKDDTDQ---YFETKAKKLDFRSHDKIP--HIRMNKKDLASLNYISESAVVA---CLV    603
Callithrix_jacchus SLPKDDTDQ---FFETEAKKLDFRSCDTIP--YTRRNKKDLGSVNYISESAVAA---CLG    585
Bos_taurus        SLHKDDTL---LLLTEVKNL--VRPHGKVP--PFRMNQKEAASVKHTSESVVVT---CLE    593
Equus_caballus    SLLKDDNDQ---LFITEDKKLDFRPHGKLQ--AIRINQKDPASVKCTSEPVVAA---CLD    604
Canis_lupus_familiaris PLPKDDTD---QFVTEAKKPDPRGRKMPP--VVRINQNNNSVSVKHISESAIVA---CLE    603
Rhinatrema_bivittatum FASRELVSDDVVRERENSRTCKYFHASKK-----SRHAPENLSQTVASEYQS---DST    540
Xenopus_tropicalis EHGASERTISQGLEPDGDDSLMIPDNIQNSGVIKDLQPDMAIINNKNKNSFEANNVBAQ    646
Danio_rerio       -----QNSAEVCVADRTDD-----317
.....730.....740.....750.....760.....770.....780

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Pavo_muticus      VESR-----EECIATGNLTASKLTVNNGKDSVVDQVTS--EELNELEKPMHVQNEH    587
Pavo_cristatus    VESR-----EECIATGNLTASKLTVNNGKDSVVDQVTS--EELNELEKPMHVQNEH    587
Gallus_gallus     VESRG-----EECIATGNLTASKLAVKNDNDTVVDQVTCN--EELNELGKPMHIQNEH    713
Chelonia_mydas    SEAVKDIQFCGVNKLMDVIDSLPTSVPSAKTVQDTGMDTVNSPGIKEFNESGKPTHVQNDP    622
Mus_musculus      SETAHELKSELNRNPTSESPFLLENSOOGVASDAEAPLHLDCKTSDYSASPPTLASRIN    658
Rattus_norvegicus SETAHELKSESNRNPISDSPCLLEPLQOGEVFSEAEPLNLDCKTSDCSASPPTASRTD    656
Mesocricetus_auratus SETAPKVNLELHRNPISSESLNMEKPKAKVFPDAKTALNLNCKTAYRSASPPTCVSGMD    652
Homo_sapiens      NENAPELKFELNRSHISETPLDSESPQAEVSPDAKTSLSLDCKKLNFNISPPPTFVSGVG    664
Pan_troglodytes   NENAPELKFELNRSHISETPLDSESPQAEVSPDAKTSLSLDCKKLNFNISPPPTFVSGVG    665
Macaca_mulatta    NKNAPELKFELNRSHISETPLDSESPQTKVSPDAKTSLSLDCKKLNFNISPPPTFVSGVG    663
Callithrix_jacchus NKNAPELKFELNRSHISETPLESQGPQAKVSPDAKTSLSLDCKKLNFNISPPPTFVSGDE    645
Bos_taurus        NKIAPELNIELNRNHISESLDSESPQAIASPDARTSPSLG-HKSDFSSASHPTFVSRVG    652
Equus_caballus    NKITPELNFELNRSHISESILGSECPQAKVSPDARTSLTQDSKESNFTVSPPTFVSGVG    664
Canis_lupus_familiaris NKIAPELNFEPNKNHISESLDSESLQAKASPDVRTSLIPDFKKSDFSISPTFVSRVG    662
Rhinatrema_bivittatum ISISPHARESDSGNAADVSVDLGKVSYPALIEINVASRLKAYEDEKLSLAIQVAMESIA    600
Xenopus_tropicalis NETQPOVEIAADADKSKTITVLQHDAGEISNITNVLQDEVNFKSTSGISLSLTDNNSN    706
Danio_rerio       -----RQESDPEPVERQAGVEEQLLREESRLMVDGILASALSALQEMEDSERG    365
.....790.....800.....810.....820.....830.....840

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Pavo_muticus      QLNLVENCKHTATPQGLSCLEEMKVLSEVAVENFADVSCTRGCENVKSNLDELTAISLSV    647
Pavo_cristatus    QLNLVENCKDTATPQGLSCLEEMKVLSEVAVENFADVSCTRGCENVKSNLDELTAISLSV    647
Gallus_gallus     QLNLVENSKDTATPQGLSCLEEMKVLSEVAVESFADVSRITRECDNVKSNLDELTAISLSV    773
Chelonia_mydas    SVTLEGESKDINTENTSIPSLSESDVETIKVSSISAEINVAGTSP-----667
Mus_musculus      RLGQLGFSGLGKERS----SSSKTGQGVFVSHPNQEEGVGTHSEATDRENPPALYLG    713
Rattus_norvegicus RLGQLGFPGLGKERS----TSSRTGQGNVCSHPNECR--EAVGAHSAADRENPRAPRLR    711
Mesocricetus_auratus MLCKLDFPCVRSEQS----LSSETGQGNILS-PSECQ--DVRNHSEAADRDTP--ALPLG    703
Homo_sapiens      MLSKLDIPDLMNEGSPVPIETGNVNIVGISYQPRKCKEENVKNHVEAAGRKSPPPSFCLE    724
Pan_troglodytes   MLSKLDIPDLMNEGSPVPIETGNVNIVGISYQPRKCKEENVKNHVEAAGRKSPPPSFCLE    725
Macaca_mulatta    MLSKLDIPDLMNEGSPVPIETGKVNIVGISCQPSKCKEENVKNHVEAAGGKSPPLSFCLE    723
Callithrix_jacchus ILSKVDIPDLMNEGSPVPIETGNVNIVGISYQPSKCKEENVKNHVEADAGRKSPPPSFCLE    705
Bos_taurus        MLSQVDIPILKNEGSSVLVETGDNVIVGISSQPPQCOEHVANHVEATDRKSLPAGLHSL    712
Equus_caballus    MLSKLDIPLLKNESYSLLIETEDVNTGGISNOSKCKEENVAKQVVAAGR---PACLRLE    721
Canis_lupus_familiaris MPNKLDPVLKDACSSVPTPEPGDVNIVGISSQPSKCKEENVANHIEATDWNKPPACLHLE    722
Rhinatrema_bivittatum STDLEGLSIGQHLPEANHVSMAE----SSRITSSSHDDHQIKFSIPDFSSDDISMLPNIF    656
Xenopus_tropicalis IISNLETVNKSDITKPLHEFTSITSIVQITDLSKKEENWNAPLEPKVDTEKDSEIAAGLQ    766
Danio_rerio       VLLTVELTSESGLME-----380
.....850.....860.....870.....880.....890.....900

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus      SFESSFETGDCYSASLHPDCRSVNKTIVKRGFGSKDKRDAVSAPDLECEKSKSFETADVS 707
Pavo_cristatus    SFESSFETGDCYSASLHPDCRSVNKTIVKRGFGSKDKRDAVSAPDLECEKSKSFETADVS 707
Gallus_gallus     SFESSFETGDCYSASLHPDCKSVSKTIVKRGVGSKDKRDAVSTPDLEYEKSKSFETVDM 833
Chelonia_mydas    ---SALECGSVKSHMPPPILESEDACLSK-----AITPVSIAKISPPVLEAEDGS 714
Mus_musculus      HASSTLESKEFLPHGEKCSPPSGPETAGTQLAGV-ALNFEHGDTSFDLNSVPSHGPKEE 772
Rattus_norvegicus QASAIIVDSKDILRDGEKCOFPSPGPETPGTHSAGLGLLNFEFGDLSENLSVPSHSPK 771
Mesocricetus_auratus RTSVSTESKETPPD--RCQFPVGPETIGTHLAGVDLLDLEHGGISEDHTSVPYHGCKK 761
Homo_sapiens      YTSAIFEFEVLNSSEKCOVLPGEASGPHLTGLELLSFDGSLNLSKDCSSILSQDPNR 784
Pan_troglodytes   YTSAIFEFEVLNSSEKCOVLPGEASGPHLTGLELLSFDGSLNLSKDCSSILSQDPNR 785
Macaca_mulatta    YTSAIFESKEVLFNSEKCOVLPGEASGPHLTGMELLSFDGSLNLSKDCSSILSQDPN 781
Callithrix_jacchus YTSVIFESKDVLSNSEKCOVLPSEASGPDLSGMELLSFDGSSKDCSSILSQDPNR 764
Bos_taurus        YAPTALESKEVLPDREKCOFLDLLEASDITDITAVDLS-FEPASLS-----QDPE 763
Equus_caballus    HASAIPESKEVLPDSEKCOVLPDLKVSDTHLTGVDSR-FESEHISKDCSSILSQHPN 780
Canis_lupus_familiaris HASAIFDSKQLLPEGEKSQVPLDLKARDIRVTGMDLR-LESERLSEDISSISSQDP 781
Rhinatrema_bivittatum DHSSMIKTSALTQSSDNSEINCPSALPSDCDTLAKISLPALVSDADPAAGISPTALV 716
Xenopus_tropicalis TSPVGLKAQQTDAKTSILGEVQQITAADVLDISLGLQEKTEKLSLIMDQQQCAEETF 826
Danio_rerio       ----- 380
.....910.....920.....930.....940.....950.....960

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Pavo_muticus      LSENSIPICGTASRKTVDIPEKTLVTLAEDNTSKPVPCPLVSTERTDDPTPAASKINE 767
Pavo_cristatus    LSENSIPICGTASRKTVDIPEKTLVTLAEDNTSKPVPCPLVSTERTDDPTPAASKINE 767
Gallus_gallus     LSENSIPHTGTSHKTVQDIPEKTLVTLAEDNTSKSPFPLDSTERTDDPTPAASKINE 893
Chelonia_mydas    LDNISPPPIHR-----SEDEIMTKKATNLQDVKKPNISPPDHVYENSK 756
Mus_musculus      LMSSNAKARKSTVEKSDS-FPLETQT---AKMLGKGEVCDSSFPVSSSGRRK--AL 826
Rattus_norvegicus LVSSSAKASRSPVEKSDS-LPLETQT---AKMLGNLEVCDSFVLVSSSGRGK--TL 825
Mesocricetus_auratus --SSNTKAS-STSEKADS-LSLETQT---AKMLLOVGVDACSSLPVALSSGKGK--AL 812
Homo_sapiens      LVSSNTKANMSIIEKSDS-LSLEAKT---ANIVSKAEIDGQNNVLVESHSGRGKTIS 840
Pan_troglodytes   LVSSNTKANMSVIEKSDS-LSLEAKT---ANIVSKAEIDGQNNVLVESHSGRGKTIS 841
Macaca_mulatta    VMSSNTKANMSIIEKSDS-LSLEAKA---ANIVSKAEIDGQNNVPEVESHSGRGKT 837
Callithrix_jacchus LMSSNTKANTTITGKSDS-LSLEAKTDNIAKIASKAEIDDQNNVLVESHSGRGKTIS 823
Bos_taurus        SVLSSTAASESTADKLDSSFSLETKTDSIAEMLPEADIGQNNVPEVESHSETGKTIS 823
Equus_caballus    LMLNSTKASENTIKSDS-LSLETKSDNIAKIFLEVDG--QYVPVESHSGRGKTIVAV 837
Canis_lupus_familiaris LMLSSTRASKGTIEKSDS-LYLKTIPTG-TAKILSKVKGDSNSVPAELHSGGRKTIS 839
Rhinatrema_bivittatum ADPAAGISPPALVSDADP-----AAGISPPALVSDADPAAGISPPA 757
Xenopus_tropicalis EETSAQNTQSDSMPKMES-LGLVEQVHPSSNSKINNNTLVNIYADIDDSIKNNEIE 885
Danio_rerio       -----DNRAADAELQCGVDPSSGRTASDV 403
.....970.....980.....990.....1000.....1010.....1020

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Pavo_muticus      GMNEMALAPFESKNCISELSSCISKAREK--NPEVSHSALRCEGKPLTDHFSTICEKN 825
Pavo_cristatus    GMNEMALAPFESKNCISELSSCISKAREK--NPEVSHSALRCEGKPLTDHFSTICEKN 825
Gallus_gallus     GMNEMALTPFESKNCISELSPHISKSQEK--NLEVSYSALRCEGKPLTDHFSTICEK 951
Chelonia_mydas    PLKSEGMT--LPNNVVPARVPLNLTTPSLK--TGEVVFANVR-----IAKLSVT 800
Mus_musculus      PSVSQAEPDRDVPQCNISSSQVTVAEKLAETVLSSELNVLGMEKDEDVQPVDRKEIK 886
Rattus_norvegicus PPVSQAEPDRDVSQCDISSSQGTAAEKLSETVLSSELNVLGMEKDKDAQPVDRHRE 885
Mesocricetus_auratus LPVSQAEPDRDISQDELASSQLTVAGELAEIVLSSELNLSLEIEKDKNGQSVDHKE 872
Homo_sapiens      VLSKVEPRNISQDKMSSFPLKITHVPEKPILSELTFLEVEQKRFQSIHNEIEGKCS 900
Pan_troglodytes   VLSKVEPRNISQDKMSSFPLKITHVPEKPILSELTFLEVEQKSFQSIHNEIEGKCS 901
Macaca_mulatta    VSFSQAEPDRDISQDKMSSFPLKITHVPEKPILSELTFLEVEQDKSFQSIHNEIEG 897
Callithrix_jacchus ISLSQAESRDISQDKMSSFLLRIIHVPEKPILSELTSLEVKQDKSFQSIHNEIEEK 883
Bos_taurus        IPVTRTEPRDISQDEISS-PLDITGVNPANPALSELTSLEVEQDKIFQLVDHEEIE 882
Equus_caballus    ISISQTEPRDISQDTVSS-SFEITDVPKPISELTSLEFEQNKSFQSLIDHKEVTEK 896
Canis_lupus_familiaris IAVSQTEPRDISQNKIYS-PFEVTDVPGNLILSELTSQEIQDKSFQSLDHKEIREK 898
Rhinatrema_bivittatum LVSDADPAAGISPPALVSDADPAAGISPPALVSDADPAAGISPPALVSDADPAAGIS 817
Xenopus_tropicalis HAEAKIAHETLPTSQITGHLGSDNDNNSVNSDGGFEHLQHNEFIISQSVQSQVLDS 945
Danio_rerio       LEPPAGALGDCSRSLPSSGYESIAGSDSD----- 432
.....1030.....1040.....1050.....1060.....1070.....1080

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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| | | |
|--------------------------------------------------------|-----------------------------------------------------------------|------|
| Pavo_muticus | VDIISASSPGCESRHINISSEVESNNKHGISIVLYSSSDNQGVPSPATNFENDQVARW | 885 |
| Pavo_cristatus | VDIISASSPGCESRHINISSEVESNNKHGISIVLYSSSDNQGVPSPATNFENDQVARW | 885 |
| Gallus_gallus | VDIISASSPGCESRHINISSEVESNNKHGISIVLYSSSDNQGVPSLATNSENQGVARW | 1011 |
| Chelonia_mydas | SDKVSESK-----CAFLEGDTPKIVAS---FLENGDVSA | 832 |
| Mus_musculus | GGFKENHQTGISP-ASEHHGGQETEMNTPDRSAAVLTNLPGLPLPPEEESTRHRPQNC | 945 |
| Rattus_norvegicus | GGFKENHQTGIIPP-ASKHQSVOETEINTLGTITASILRSRLPGIN-LAPEEESTRHRMAQNC | 943 |
| Mesocricetus_auratus | RGFKESHQARMSP-ATQRHSVQSEVDILDNPASLLKSSQPGIVPLGPVEESTGHMAQNC | 931 |
| Homo_sapiens | AGLKENCQAELESPAASKYEDKPEPEVDALGSPALLKSNISWILPPIHDEKISRQMAQNC | 960 |
| Pan_troglodytes | AGLKENCQAELESPAASKYEDKPEPEVDALGSPALLKSNISWILPPIHDEKINRQMAQNC | 961 |
| Macaca_mulatta | AGLKENCQAELESPATSKYEDIPETEVDAALGSPALLKSIISGILPPIRDEKVSQRMAQNC | 957 |
| Callithrix_jacchus | AGLKEKCAELSPAASKYEDIAETEADALCSPALLQSNISEILPPVHDEKVGQRMAQNC | 943 |
| Bos_taurus | ASLKESCQTEVSPASASKYQGVQGTVEGACRALPACLOSNRPETSPPVHDEKVTQRVAQNC | 942 |
| Equus_caballus | AGLKENCQIEISSSLASKYQGIQTEVEALGYPSAFLLKSNISGILPPVRDENVTQKMMQNC | 956 |
| Canis_lupus_familiaris | SGLKENCQTEGSPASASKYQGIQTEAEALVYLPAPFESNISETLPSVHNEKVTGQMSQNY | 958 |
| Rhinatrema_bivittatum | LVSEADPAAGISPPVLVSADPAAGISPPALVLEADPPIQGGISHLTSVPNDVN-TLNI | 876 |
| Xenopus_tropicalis | ESYKNVVPQSSSKNSVCVKESLHNVLFGKPDISDIPDAAEVPAAANNNISDDHNKHNNV | 1005 |
| Danio_rerio | ----- | 432 |
|1090.....1100.....1110.....1120.....1130.....1140 | | |

| | | |
|--------------------------------------------------------|----------------------------------------------------------------|------|
| Pavo_muticus | SAASKQNGCVFVIADSKRVIPMDRMTEIPLCSEDLRASCPPISLEPEFTPAVLHHFTSEV | 945 |
| Pavo_cristatus | SAASKQNGCVFVTADSKRVIPKDRMTEIPLCSEDLRASCPPISLEPEFTPAVLHHFTSEV | 945 |
| Gallus_gallus | SAASKQDSCVFLTADSNRIIPEDRMTEIPRCSEDLRASCPPISLEPEFTPAELHHFTSEV | 1071 |
| Chelonia_mydas | TVISP---AFENADVS-----VTOISPCSEDISAKTSFTLKSDVILAESDCPP--P | 879 |
| Mus_musculus | EASTCLITPSLAICVTKKSSSISETEGLSLDNIFPKFOETDNTRVYSFSLSSD-AHLEKN | 1004 |
| Rattus_norvegicus | KASTSLLSPSFAVCGTKKSSSISEEMEELRLDNISPKFOETDNTQVYTSFSLGSD-GRLEKN | 1002 |
| Mesocricetus_auratus | KASVCITSPSLAMCRTRKSSSVSEMEEPNSDNISSKFOETNTTQVYSFSLGSG-AYLEKN | 990 |
| Homo_sapiens | EAHTCVFHQSLDICGTTKISGHSEMAELSLTNISPKFOETGSMKVNSPFLDSD-SSLEKN | 1019 |
| Pan_troglodytes | EAHTCMIHQSLDICGTTKISGHSEMAELSLTNISPKFOETGSKVNSPFLDSD-SSLEKN | 1020 |
| Macaca_mulatta | EANTYMIHQSLDICGTTKISGHSEMAELSLANIFHKFOETGSSKVNSPFLDSD-SSLGKN | 1016 |
| Callithrix_jacchus | EASTCMIHQSLDICGTTKISGHSEMAELNLTNISPKFOETGSKVNSPFLDSD-TSLEKN | 1002 |
| Bos_taurus | AARASIIHPPSVPCGSKKIFDFS---QLSLANTSPKFOETDSTKAKSPFLGSG-ISLRKE | 998 |
| Equus_caballus | EASAWVICQLDICGTTKISGFSEMAELSLTNISPKFOETDNTKVNSPFLGSD-TSLEKK | 1015 |
| Canis_lupus_familiaris | EANACVIHQSLDICGTTKISGFSEMAELSLTSAPAFQFOETDSTKVNSPFLDSDKKSLENN | 1018 |
| Rhinatrema_bivittatum | AKMLPSVLASKGVCAKVSVKSIDVNRVKILAHITLDPVIVHVKIIPSALEPEYICIANL | 936 |
| Xenopus_tropicalis | PPDITDTSFNFSASFSDGSETLLHDEKCKSHLITDYQTNNIGSLNSSSLNEENIREALD | 1065 |
| Danio_rerio | ----- | 432 |
|1150.....1160.....1170.....1180.....1190.....1200 | | |

| | | |
|--------------------------------------------------------|----------------------------------------------------------------|------|
| Pavo_muticus | DAQDFCIPRLPSPTQEFKEGNSLSISALET-----GIAQENCSSSGHR-- | 989 |
| Pavo_cristatus | DAQDFCIPRLPSPTQEFKEGNSLSISALET-----GIAQENCSSSGHR-- | 989 |
| Gallus_gallus | DVQDFCSARPPSPPTQESKEGNSLSISALET-----GIAQENCSSSGHR-- | 1115 |
| Chelonia_mydas | NSEDVCIPKLASPTLRSEISKLFPSALETADVLDSINLPVVKY-EVVKKGKISSKLRGS | 938 |
| Mus_musculus | VFAPEGSSSLTVPSLLGLEKEASSRR--DNAYFQSAGTGNTSPSFCHTKGES-TAVNSHD | 1061 |
| Rattus_norvegicus | VLAPFVSSSLNVPSPGLGEDESSHG--DNSYFQSAGTGSTSPS-CHSKGDS-TDVNSHD | 1058 |
| Mesocricetus_auratus | LFTSEDSSSLSVPSLLGPEGECSSHR--ENANFLSAGSGAASSSSSCHSKEDSTVAVSSHD | 1048 |
| Homo_sapiens | SSASEDSSFLKVPVSVLKLEKSSSYRKKENIHFLNGGIDSVSSS-SSYPEEVSMIVNSHK | 1078 |
| Pan_troglodytes | SSASEDSSFLKVPVSVLKLEKSSSYRKKENIHFLNGGIDSVSSS-SSYPEEVSMIVNSHK | 1079 |
| Macaca_mulatta | VSASEDSSFLNVPVSVLRSEKSSSYRKKENIHFLNGGIDSVSSS-SSYPEEVNVIINSHK | 1075 |
| Callithrix_jacchus | VSASEDSSFLNVPVSVLRSEKSSSYRKKENIHFLNGGIDSLSSS-SSYPEEVS-IINSHK | 1060 |
| Bos_taurus | AFASEDSSFLPNPVLRTKRASSPRNKEDAHSLRGTHSLPSS-SSN-SEVSMVRSSYN | 1056 |
| Equus_caballus | AFASEDSSFCNVPSELRSKVMSLREKENPHFLSGGIGRVSSS-SSCSEASMAAHSHN | 1074 |
| Canis_lupus_familiaris | AFASEDSSQFHNFP-MLKSEKKALSHRKKENAPFLSGGIDSMSSS-SNS-EKANVVVLNLQN | 1075 |
| Rhinatrema_bivittatum | PALPNESSVLISKISPPTLGTEDPTLVTDSAHMVNNISSLSITNG-NDCVGNISSTSDDD | 995 |
| Xenopus_tropicalis | VDSIDEGHFTFAIPSTSSSFASAYVDECKSSLPSSSDSVDSGLISPACTPDENIYNDN | 1125 |
| Danio_rerio | ----- | 432 |
|1210.....1220.....1230.....1240.....1250.....1260 | | |

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Pavo_muticus      --VGVEAEELSSAQQAD---DSVLAEAVPSPVCPWKKAENSE-----CTETCKNAVQ 1036
Pavo_cristatus    --VGVEAEELSSAQQAD---DSVLAEAVPSPVCPWKKAENSE-----CTETCKNAVQ 1036
Gallus_gallus      --VGVEAEELSSAQQAG---DSVLAEAMPSPVCPWKKAENSE-----CTEVCKNAVQ 1162
Chelonia_mydas     DETDYVPPDIPPAQKLE---DAWLTKSITSTTCPLLEVEVSS---VDYSKDMHKTPSE 991
Mus_musculus       LPSNFESLKVTVNLTCE---GASVIDPLGHNSFYALDTPSPKEAEVTSLOGCVGTHTR 1117
Rattus_norvegicus  LPSNFESLKVNVNLTGE---GASVTDPLGHNSFYALDIPNPKETDMTSIOGGLGTHTR 1114
Mesocricetus_auratus LPSHFDSLKVTVNLTCE---GASVTDLRGHNSAYLELTPCPKGSEVTPCQGLGTQTG 1104
Homo_sapiens       PQNNLDSIQVTKDLTHE---GTSVTNLLYPTTSYLEFETSVSIGTEVTPFOEHFGIYTG 1134
Pan_troglodytes    PQNNLDSIQVTKDLTHE---GTSVTNLLYPTTSYLEFETSVSIGTEVTPFOEHFGIYTG 1135
Macaca_mulatta     PQNHLDSIQVTKDLTHE---GTSVTDPLYPNTSYLEFETSISIGKEVTPFOEHF----G 1127
Callithrix_jacchus PQSNFNSIQVTKDLTHE---GTPLTNLLCPNSAHLEFETPIIWIWAEVTPIQERSGIYTG 1116
Bos_taurus         PTNMFSSVKVPIDVTHE---GASLTNLLDPKSSYLESETSDLTGAEVTPLODHLGDPTG 1112
Equus_caballus     PPNNFGSVKVTIDVTQE---GASLANLLDPNSYLEFETSVSIGTEVTPFOEHFGIYTG 1130
Canis_lupus_familiaris PQNNLNSVKVTRDATCE---GASLTNLLYPKCSYLELETSIPTGSEVTPFOEHFGNPTG 1131
Rhinatrema_bivittatum NNIAIIVTESEHCNENK---ITSPAECKNVSLANICPHSPESTGISMATISIPALKLDG 1051
Xenopus_tropicalis KLATLDVNDQGNNTIVEPDKTVYDFCNVGTIDVKNTSQVDNMTTEEVSGLSSETINTIQGT 1185
Danio_erio         -----IRGFVCAASE 442
.....1270.....1280.....1290.....1300.....1310.....1320

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Pavo_muticus      QMNLGNQTSGISSEALSEKGEQTAATAATESNDLYFEKIWKSTNG-----VGQDCTDLQDA 1090
Pavo_cristatus    QMNLGNQTSGISSEALSEKGEQTAATAATESNDLYFEKIWKSTNG-----VGQDCTDLQDA 1090
Gallus_gallus      QVNLGNQTAGMSSEALSEKGEQTAATAATESNDLYFEKIWKSTNG-----VGQDCTDLQDT 1216
Chelonia_mydas     QVNPCHNPAMTKNQAKMNDHTASFTKSN-VCSQKWEDKET-----AKQVHIESQDT 1044
Mus_musculus       KACLDSPPTTAYFDNLMKAETGTAVAGAPVSVNRSCQCCSEASAD-QDSRRRRARDPLL-LR 1175
Rattus_norvegicus  KASLDSPPTTAYFDNPMKAETGTAVAGAPVSVNRSCQCCSEASAD-QTEARRRAHDPLL-LR 1172
Mesocricetus_auratus KLSLTFPTTASFDSMPKAEAGTVAGAPVSVNRSCQCCSEASADLQTEARRRAHDHFL-LK 1163
Homo_sapiens       KISIDFPTAAQFDNLVEAETGAVAGPAASVNSGQCCSEASAE-HIEARRRAHDQLLDLK 1193
Pan_troglodytes    KISLDFPTAAQFDNLVEAETGAVAGPAASVNSGQCCSEASAE-HIEARRRAHDQLLDLK 1194
Macaca_mulatta     KISTDFPTTARFDNPVEAETGAVAGPAASVNSGQCCSEASAE-HIEARRRAHDQLLDLE 1186
Callithrix_jacchus KISPDLFTAAQYDNPTEAEIGAVAGPAAAVNSDQHCSEASTE-HLEARRRRARDQLSGVK 1175
Bos_taurus         MVSLDFPTAAQFDNPLEAATGAVAGTPASVNSSSQCCSEASAE-HTEARKRAHAQLLDLE 1171
Equus_caballus     KY-LNFPPTAAQFDSPMEAEFGAVAEPASVNSSSQCCSEASAE-HVEARRRAHDQLLDLFK 1188
Canis_lupus_familiaris MVSLGFPTAAQSYNPMEAEFGAVAGAPTNSVNSSSQCCSEASAE-HIEARRRAHDQLLDLK 1190
Rhinatrema_bivittatum GCQIKIKNPVLTSKNVNMNDNISFAIKPNKNSITKNSFPDLECG-----KTIVTKASPESS 1106
Xenopus_tropicalis NVVTVNNNISPRLENDTTTAKTAPTILKERIGKLSNQISQPNKDVYIAKVSVKSIDVKEV 1245
Danio_erio         VCSAPAAVSSQSQNPAPVDYSCEGKSADPAEIRSVHSPASSE----- 485
.....1330.....1340.....1350.....1360.....1370.....1380

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Pavo_muticus      SLLFKKAAEEIVDSVLHLAIEEIIAKQAVGVCQVCGRKDSLNTDILNDQKIVTVQPEAAEE 1150
Pavo_cristatus    SLLFKKAAEEIVDSVLHLAIEEIIAKQAVGVCQVCGRKDSLNTDILNDQKIVTVQPEAAEE 1150
Gallus_gallus      SLLFKKAAEEIVDSVLHLAIEEIIAKQAVGVCQVCGRKDSLNTDILNDQK--TLQLEAAEE 1274
Chelonia_mydas     -ILFKKAAEEIVDAVLCLAIEEIRSKQAAGVYQPCGSKDSLKLDILKEQKTKGIQLEAK- 1102
Mus_musculus       SGLPKRADTLTEEILSSVREELKSKHTVGTCEHLAQEDVMNPPTVKEAIP----SEVVL 1231
Rattus_norvegicus  SSLLAKADTLTEEILSSIREELKSKHTVGTCEHLAQDDIMNPPTVKEAIP----SEVVL 1228
Mesocricetus_auratus SGLLSKADTLLEEIFFSSVREELKSKHTAGTCQEHPAKDDVMNPPTVEEDIS----SEVSL 1219
Homo_sapiens       SSLLKKADTLGIEIFNSVREELKFKHTVSTCEHIAIEGIMNLGTLKEDISEKNPSEVTL 1253
Pan_troglodytes    SSLLKKADTLGIEIFNSVREELKFKHTVSTCEHIAIEGIMNLGTLKEDISEKNPSEVTL 1254
Macaca_mulatta     SSLLKKADTLGIEIFNSVREELKFKHTVSTCEHIAIEGIMNQGLTKEDVSEKNPLEVTL 1246
Callithrix_jacchus SDLLKKANTLIDEVFNSSVREELIFKHTVSTCEHIAIEGIMNLDTLKEDNSEKNPSEVTL 1235
Bos_taurus         SDFCKKAVTLIGEAFNSVREELKSKHSVGTCEHRAIDSIMNPPTLEEDIPEKNPSEVTL 1231
Equus_caballus     CGLLKKADTLGIEIFNSVREELKSKHTVDTCEHIAIDSIMNPPTLKEDTPEKNPQEVTR 1248
Canis_lupus_familiaris SALLKKADTLTSEIFNSVREELKSKNIVAPCEHIAIDIMNPPTLKEDVPEKNPPEVTL 1250
Rhinatrema_bivittatum DVTGWSVSLGTESLNASVTKNPLGDGDAIMVEALPSDICHLESFDTVSPSIKQINKER 1166
Xenopus_tropicalis KIAPYNFQSEIITITIKLPTPTFEPEYIQLSVPSLPPMEAKNDLQEFQEQDNEKVITIEK 1305
Danio_erio         ----- 485
.....1390.....1400.....1410.....1420.....1430.....1440

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus      IQSAVHSLKHFNESSRGGGSLFTGNEMYDTN-NQDETVPSTYIPAKIDLHSLVLAALKAKEII 1209
Pavo_cristatus    IQSAVHSLKHFNESSRGGGSLFTGNEMYDTN-NQDETVPSTYIPAKIDLHSLVLAALKAKEII 1209
Gallus_gallus     IQSAVHSLKHFNESSRGGGSFSTGNEMCGTN-NQDETIPSTYIPAKIDLHSLVLAALKAREII 1333
Chelonia_mydas    -----VKHFNESYAGSSSEVKEKETVAIN-TQAEKIPFNIHKIDLHSSIALKAREII 1154
Mus_musculus      AGIQL--KESLDEKGVDSMSGVKEEEEISVSSAVGETSLLFDFDRGNSSWMLEERARELV 1289
Rattus_norvegicus AGIQL--KESLDEKGVDSNMSEVKEEEQISVSSVSVSETSLLFDFDRVHSSYLLEEQAKELV 1286
Mesocricetus_auratus AGIQP--EERLEERSVENMSEIQGEKDSVSPVTGETNLLFDFDRVSS--LLEEQTTELV 1275
Homo_sapiens      TEIIQQ--TEGLEEQGMENMSEVK--EKPCVSPVTGKSNLLVDPNSMNVSCLEEDKARELV 1309
Pan_troglodytes   TEIIQQ--TEGLEEQGMENMSEVK--EKPCVSPVTGKSNLLVDPNSMNVSCLEEDKARELV 1310
Macaca_mulatta    TEIIQQ--TEGLEEQGMENMSEVE--EKPCDSPAVGEKTLVDPDSMNVSCLLEEDKARELV 1302
Callithrix_jacchus TEIIQQ--TEGLEEQGVENKSEVE--EKPCVSPVTGKSNLLVDPDSMNVSCLLEEDKARELV 1291
Bos_taurus        TEIQS--TEHLEEQAVERNIPVQGEKACVSPVVGENSLLFNSDKMNVCWLEEDRARELV 1289
Equus_caballus    AGIRL--AEHLEEQVMKNMLEVQGEKARVSPTAGESLLFSDRMNVSCLEEDQARKLV 1306
Canis_lupus_familiaris TGIQL--TEHFEEQGMENRSAVRGEKVCVSPTAGESFLSDSDRMSLSCLEEDQARELV 1308
Rhinatrema_bivittatum ASIPLP--CQPNPGISEVVKPSFVSSEAKEITDQADIQAKAEHSTSRDVS CVLLNKVDEIV 1224
Xenopus_tropicalis SSFRHFKPKSDNSSKVEPDTEAVQNILPALINNSPD-VTIENIKNNNFTALMRSSNDNFM 1364
Danio_rerio       -----SLFQEKHAADVVCVCTDSSVNTSQDTATEHVLSNNCGHSPHGAATISADQERLQ 537
.....1450.....1460.....1470.....1480.....1490.....1500

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Pavo_muticus      DEVINSAKOKLTSSQWQGRESEKHSEKTERKPKAEN----- 1245
Pavo_cristatus    DEVINSAKOKLTSSQWQGRESEKHSEKTERKPKAEN----- 1245
Gallus_gallus     DEVINSAKOKLTSSQWQGRESEKHSEKIERKPKMAEN----- 1369
Chelonia_mydas    DEVINSAKOKLMFNQLENSESRSPSSETFVLKHKTGF----- 1190
Mus_musculus      NEVIYAAQENLIRDAFDEIEDTRVSEPOANTSKNWNSSGGGNPHAVVREFLVSEQAVNQS 1349
Rattus_norvegicus NEVTYAVQENLLNDAFDEIENITWVSEPOADPSNIWNSNGGDEPHALVREFLVAEQTVNQS 1346
Mesocricetus_auratus NEVIYAAQENLT---DDAEDTWATEPOANTAEILN-SGGVKPHDIVREFLVSEQAVNQS 1330
Homo_sapiens      NEIIYVAQEKLRNDTFEDTETDSELOANTSKILN-SDSVKPHDVVREFLVSEQPVNQS 1368
Pan_troglodytes   NEIIYVAQEKLRNDTFEDTETDSELOANTSKILN-SDSVKPHDVVREFLVSEQPVNQS 1369
Macaca_mulatta    SEIIYVAQEKLRNDAFEDTETDSELOADPSKILN-SDSVKPHDVVREFLVSEQPVNQS 1361
Callithrix_jacchus NEIIYVAQEKLRNDAFEDTETDSELOANTSKILN-SGSVKPHDVVREFLVSEQPVNQS 1350
Bos_taurus        NQIIYSAQETVAN---DAQGTSDSELOANTSEILR-SDSVQPCDMVREFLVSEQAINQS 1344
Equus_caballus    NEIIYSAQESLTNA-FEDTETCTYELQANPSKILN-SDGGKPHDIVREFLVSEQAINRS 1364
Canis_lupus_familiaris NEVIYLAQENLTNDAFEDTETDSELOANTSEILT-SDSVRPHDTLREFLVSEQAVNQS 1367
Rhinatrema_bivittatum GNILHSAIEDLRANQASPVHQIRAKKEASLSSKIPE----- 1260
Xenopus_tropicalis NMSSLTGTHDNDIDKILLSTCVSELETKDVNLQGLEPKETNIYSDFSLQAKVNSSNEMNG 1424
Danio_rerio       ----- 537
.....1510.....1520.....1530.....1540.....1550.....1560

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Pavo_muticus      -----SEIL 1249
Pavo_cristatus    -----SEIL 1249
Gallus_gallus     -----PEIL 1373
Chelonia_mydas    -----SKIL 1194
Mus_musculus      TCEISENEVLSSKLSS-VSYLVSGTESIKGREIVPYQECPDFGSGAGQASVKLETLLETVF 1408
Rattus_norvegicus TCEISENEVLSSKFSS-VSHLLSGTESVKGREIVPYQESPGFSGAGQSVSRKLQRTSETVV 1405
Mesocricetus_auratus TCEISDNKVSQKFFSSSVSDLVSGTKSIKGREIVPYQQLPGVRSAGQSDIINLQKSEAVL 1390
Homo_sapiens      T-QISENKVLNEFFS-LSNLASGTESIKGGEIVLYQKSLFSGNGSGLSDSINLQESDTVL 1426
Pan_troglodytes   T-QISENKVLNEFFS-LSNLASGTESIKGGEIVLYQKSLFSGNGSGLSDSINLQESDTVL 1427
Macaca_mulatta    T-QISENKVLSSKFFS-VSNLASGTESIKGREIVLYQKSPFSGNGSGLSDSINLQESDTVL 1419
Callithrix_jacchus T-QISENKVLSSKFFS-ISDLASGTESIKGREIVLYQKSPFSGNIAGLSDSINLQESDTVL 1408
Bos_taurus        TCEISG-KVLGRFFA-ESNLGSDTESIRGREIVLYQKSPFSGTRDQSDSINLQESDTVL 1402
Equus_caballus    TCEISENKALGRLFS-VSNLVSDTESIKGREIVLYQKSPFSGNGVGSQSDSIDLQESDTVL 1423
Canis_lupus_familiaris TCEISENKVLGRFFS-VSNLVNDTESIKGREIVLYQKSPFSGNGAGQSDSISLQESDAVL 1426
Rhinatrema_bivittatum -----EC 1262
Xenopus_tropicalis TSPSSPTDSTIPEKD-TMQLATEHSALYDTLLQOKANELICTVLNKAVTEMTNNSTLNT 1483
Danio_rerio       ----- 537
.....1570.....1580.....1590.....1600.....1610.....1620

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus      NLDGHLSSKTQELIREPA-----GKAETONISINCEKAVCSGPPLLPN-----SMENSI 1298
Pavo_cristatus    NLDGHLSSKTQELIREPA-----GKAETONISINCEKAVCSGPPLLPN-----SMENSI 1298
Gallus_gallus     NLDGNLSSETQELIREPA-----GKAETONISINCEKAVCSGPPLLPN-----SMDNSI 1422
Chelonia_mydas    NTDVQLVAKTQEIIVKEPLGLNIGKELTONVARICEKAGCS-VPLLLT-----RVEGST 1247
Mus_musculus      QGEGVPRTRLDAKVKTGFLVSEDIYKKAETECVDNHHKMAAADTRTLVLNLFNLP-FARDDI 1467
Rattus_norvegicus QAEGMPPTSLEGGKVRPRLFVSEDIYKKAETECVDNHHKMAATEETRTLVLNLFNLP-LANDDI 1464
Mesocricetus_auratus QAE DLLHTRLDDGVKPHLYVSEDCCKAAETVCVDNHHKMTTKDARTLVLNLFNLPFPFANDDI 1450
Homo_sapiens      LAEDMSHKRLDDRVRKTHLFRSEDCNETMEIENVDNKKTETEDRRTLVLNLFNFKWPPPLVNDI 1486
Pan_troglodytes   LAEDMSHKRLDDRVRKTHLFRSEDCNETMEIENVDNKKTETEDRRTLVLNLFNFKWPPPLVNDI 1487
Macaca_mulatta    LAEDMSRKRSDDRVRKTHLFCNEDCNETMEIENVDNKKTETEDRRTLVLNLFNFKWPPPLVNDI 1479
Callithrix_jacchus LAEDMSHEQLDDGVKTHLICSEDIYDETMERGVDDNETETEDGRSLVLNLFNFKWPPPLVNDI 1468
Bos_taurus        LAENIPLTGLDDKAKTHSFLKEDSKEKMGTECDNHHKPEDETRTLVLNLFNFKWPPFVNDI 1462
Equus_caballus    LAEDTPHKGLDDNIKTFFLQEDSKDKMEIECDNHHKGTREDTRTLVLNLFNFKWPPFANDDI 1483
Canis_lupus_familiaris LAKDT-HKGLDN-VETHLFLKEDSKEKVEIEHVDNHHKGTSEDARTLILNFKWPPFLSDDI 1484
Rhinatrema_bivittatum LEESPLTSENEIFOGDGNRSFGTTPARVDVQSLLALKAEIINAVINLAKEKVTSEEV 1322
Xenopus_tropicalis ISTTENGCSLLSPVSEANDISNLKSSEHGKKNNECPNAINDTSSKVTDNQMNDDLSEKRL 1543
Danio_rerio       -----QSQ 540
.....1630.....1640.....1650.....1660.....1670.....1680

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Pavo_muticus      DSLQRDADIRNNAFACQINGFLSTGS----- 1324
Pavo_cristatus    DSLQRDADIRNNAFACQINGFLSTGS----- 1324
Gallus_gallus     DWLQRDEDVFNNAIACQINGFLSTGS----- 1448
Chelonia_mydas    DLTIGGETVPSNGLSHQRHGLLHSD----- 1273
Mus_musculus      HVPSTSKNSFSDSLVCISEKSFPGHN-KSTPLAMSDLGKAHKNDNEVNVGKMALTPSMLE 1526
Rattus_norvegicus HAPGTSKSSFSDSLVCISEKSLPWHN-KSMPLVMSDLGKAYKIDNEVNVGKMVALTPSMLE 1523
Mesocricetus_auratus HMPSTSKSSLSDSLVCISEKSFPGHS-KSTPLAMADLGKAHKNDNEVNVAGKITLTPSMLE 1509
Homo_sapiens      HAPGTSKSSLSDSLVCISEKSNLPGHS-KNTPLAMSDVGKVHKKDNEINIGKIELIPSMLE 1545
Pan_troglodytes   HAPGTSKSSLSDSLVCISEKSNLPGHS-KNTPLAMSEVGKVHKKDNEINIGKIELIPSMLE 1546
Macaca_mulatta    HAPGTSKSSLSDSLVCISEKSNLPGHS-KNTPLVMSSEVGKVHKKDNEINIGKIELIPSMLE 1538
Callithrix_jacchus HAPSTSKSSLSDFSVCISEKSNLPGHS-KSTPLATSEVGKIHKKDNEINMGKIELTPSMLE 1527
Bos_taurus        HVPGTSKSSLSDTYVCLSEKSLPGHSNKSTSLAMSEVGKIHK-DTEVNIGKIELIPSMVE 1521
Equus_caballus    HVPGTSKSSLSDSLVCSEKTLPGHGNKSTPLTMSEVGKVHKKDTEVNMGKIELIPSMLE 1543
Canis_lupus_familiaris HVPGTSKSSFSDSLVRISEKSLPGQSNKSTLLTTESEVGNVHKDTEVNMGKIELRPSVLE 1544
Rhinatrema_bivittatum ELSLDKTHNIMVLTSCIGSSAGPDAA----- 1348
Xenopus_tropicalis ESQNQIHTEKTEDNHMPSTIAELGSCGNDQVDHIPTGSFISLSNENDIGAIMLNSANVE 1603
Danio_rerio       SLSDSDSHSFTSDSGVVSLELRAVH----- 566
.....1690.....1700.....1710.....1720.....1730.....1740

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Pavo_muticus      -----SVRPESTPVIPAKEERDKKVEHLAAEMCGKAGLSATSRKSD 1367
Pavo_cristatus    -----SVRPESTPVIPAKEERDKKVEHLAAEMCGKAGLSATSRKSD 1367
Gallus_gallus     -----SVRPESTPMILAKEECDKKVCEHLAAETCGKAGLSATSRKSD 1491
Chelonia_mydas    -----LASLESDLAIMAKGECSTVYDSTVMTEISDKTSIWTASNKSE 1316
Mus_musculus      IGKTNKRDELNIMKHEAAPLMPHREKACKVDPELNSMKAEPANVFARGSVYQMDAQMY 1586
Rattus_norvegicus TGKTNKRDAELNIRKHEAAPLMPHREKCKMDAELNIMKAEPVNMFTRGVYQMDAQMH 1583
Mesocricetus_auratus MGSPSKRDAELNIMKHEAAPHMSHKEKACKRDAELNITKAGPEVDILTRGGVYQMDAQIH 1569
Homo_sapiens      TGKTNKKDAELNILKYEAVPPMIEMGRIHKMDAELNVTKTEPKANVFKMGVEVYQMDAES 1605
Pan_troglodytes   TGKTNKKDAELNILKYEAVPPMIEMGRIHKMDAELNVTKTEPKANVFKMGVEVYQMDAES 1606
Macaca_mulatta    TGKTNKKDAELNILKYEAVPPMLEMGRVHKMDAEMNVKKTPEKANVFKMGVEVYQMDAES 1598
Callithrix_jacchus TGKTNKKDAELNIVKYEAVPPMLEMGRVHKMDAELNVTKTEPKANVFKMGVEVYQMDAERC 1587
Bos_taurus        MGKPNKKDAELNIMKYEAVPPMSEVGRAHKEDAELSTSETEPTAEILKMREAYQMDAERY 1581
Equus_caballus    MGKTCCKDADLNIKREAVPPMSEMGRAHEKDAELNTIKTEPIADIFKMHEAYQIDSERY 1603
Canis_lupus_familiaris LGKTNKKDAELNIMKYEAVPPRSEMGRAHCKEAEELNIAKTEPTADILKVGVEVYQVDAERC 1604
Rhinatrema_bivittatum -----LTLKAEDITNKYSGTKIPKSELLEDGLFKVSEASNCVPLS 1389
Xenopus_tropicalis GNAVLDNSNVSVAVISNEAPTDLIEIPITQSSSLGMLTDHSNEAEIGKIFISNNSELEH 1663
Danio_rerio       -----SHESMEPEAPYSGEQELCYSQAAADLSVLLSG----- 598
.....1750.....1760.....1770.....1780.....1790.....1800

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus          V----- 1368
Pavo_cristatus        V----- 1368
Gallus_gallus         V----- 1492
Chelonia_mydas        E----- 1317
Mus_musculus          VEKPEELPITLGMKAFKT-DSEGDIG-----KAEVMPAMS 1621
Rattus_norvegicus     VEKPEDLPVTLGMKAYKM-DSEGDIG-----KADVMPVMS 1618
Mesocricetus_auratus VEKPEELPVTLGMKAYKT-DREGGTG-----KPEVMPAMS 1604
Homo_sapiens          IEKTEGSAVILGMKAYKMKDTEGDIG-----KIEVIPMMP 1641
Pan_troglodytes       IEKTEGSAVILGMKAYKMKDTEGDIG-----KIEVIPMMP 1642
Macaca_mulatta        IEKTEGSPVILGMKAYKMKGTGEGDVG-----KIEVIPVMP 1634
Callithrix_jacchus    IEKPEGSPVILGMKAYKMKDTEGDVG-----KIVVIPIRP 1623
Bos_taurus            IEKTEGLP-----ATL 1592
Equus_caballus        IEETEGLPITILEMEKGCKTRDTERDIGRSDVMPIMSEVKNVHQKDAEVIYGKTEVRPVML 1663
Canis_lupus_familiaris IEKTERLPAILEMKKAYKMRDTEGELG-----KIDMLPVIS 1640
Rhinatrema_bivittatum LQTVLN----- 1395
Xenopus_tropicalis    ENDESNINESD-----LHSEIRIPKEL 1684
Danio_rerio           ----- 598
.....1810.....1820.....1830.....1840.....1850.....1860

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Pavo_muticus          ---SLHLINRDAAVTEEIFLPLQLNDS----- 1392
Pavo_cristatus        ---SLHLINRDAAVTEEIFLPLQLNDS----- 1392
Gallus_gallus         ---SLHLINRDAAVTEEIFLPLQLNDS----- 1516
Chelonia_mydas        ---TLHVLNRDVTMIEERMPPLQLKDL----- 1341
Mus_musculus          ELKTVHLKDAEGAIVKTEVAPISIEMESFYQKRAEGDVGKAGVASVMPEVEIFYQSDGVG 1681
Rattus_norvegicus     ELKALHLKDAEGDIAKTEVAPISIEMESFYQKHAEGDVGKTGVASVMSDVDFYQKDVVG 1678
Mesocricetus_auratus EMKNICQKDAEGDIVKTEVMPVSIEMENIYQKHAEGDVGKTGVASIMTEVETVYQKDGE 1664
Homo_sapiens          EVKNIHQKDAEGDIVKTEMTPTVDMENIYQTHAEGDIGKTG-TIALSEVENIHKGGEG 1700
Pan_troglodytes       EVKNIHQKDAEGDIVKTEMTPTVDMENIYQTHAEGDIGKTG-TIALSEVENIHKGGEG 1701
Macaca_mulatta        EVKNVHQKDAEGYIVKTEMAPVTIHMENIYQTHAEGDIGKTG-AIPLSELENIYRKDGE 1693
Callithrix_jacchus    EVKNIHQKDAEGDIVKTEMTPTVDMENIYQTHAEGDIGKTG-AVSMSEVANVYQKDGE 1682
Bos_taurus            EMENICQKDAEGDIAKTEVTPVTLMEENIYQKHAEGDVGKTGMTSVVSEMSDIYQKDIE 1652
Equus_caballus        EMENIYPKDAEGDIAKTEMTPTVTLMEENIYQKHAEGDVGKTGVTSVRSEMENIYQKDAEG 1723
Canis_lupus_familiaris EVKNFYQKDAEVIITGKTEMTPTVTLMEENIYQKHAEGDVGRGTAVMSEMEDVYQKDFEG 1700
Rhinatrema_bivittatum -CTDLTLTKGETVQNSMHLTPRN----- 1417
Xenopus_tropicalis    RLSDDTLLSSTSQNDRITNVEINHSINELLTQTSDEATKVDQAKKDINRISSISQDDRTN 1744
Danio_rerio           ----- 598
.....1870.....1880.....1890.....1900.....1910.....1920

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Pavo_muticus          ----- 1392
Pavo_cristatus        ----- 1392
Gallus_gallus         ----- 1516
Chelonia_mydas        ----- 1341
Mus_musculus          SASEAEATTVTILGMEDTYQKDEESTVAETDVIDMVPAELEMESIVPKDSEGDITDSISEGM 1741
Rattus_norvegicus     ISPKAEVTTVTILGMEDTYQKEEESDVAKTDVTGMVPAELEMEDTYPKGSEGDITDST-EGK 1737
Mesocricetus_auratus IISKAEVTAVTILGMEDTFQKDEGSDVAKTDGVD-VPVELEMEDTYPKDTERTDGGKT-EVM 1722
Homo_sapiens          ISEKAEVIPVTLAMENTYQKDAEGDIGKA---EVMVRLMENTYPKDTERDGGKT-EVM 1756
Pan_troglodytes       ISEKAEVIPVTLAMENTYQKDAEGDIGKA---EVMVRLMENTYPKDTERDGGKT-EVM 1757
Macaca_mulatta        ISEKAKGIPITLAVENAYQKDAEGDIAKA---EVMVRLMENTYPKDTERDSGKT-EVM 1749
Callithrix_jacchus    ISEKAEVITVTLAIESACQKDAEGDIAKA---EVMVRLMENTYPKDTERDSGKT-EVM 1721
Bos_taurus            TAEKPESIPA-----RLEMESIVQKDAEGKVDKT-GVM 1684
Equus_caballus        ITEKAEVIPATLGMEDSYPKDAEGVIAKT---EVS SDRLEVENSYPKDAEGDVDPK-EVM 1779
Canis_lupus_familiaris ITEKTEVMPPTLLEMDIYPEDAEGDLEET---EVIPESEMEDTYVRDAEGDLDT-EVM 1756
Rhinatrema_bivittatum ----- 1417
Xenopus_tropicalis    VDKINHLTNELLTQSSDEALKVEQATNELS----SISQNDRTNVDKINHLTNELLTQSSV 1800
Danio_rerio           ----- 598
.....1930.....1940.....1950.....1960.....1970.....1980

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| | | |
|--------------------------------------------------------|----------------------------------------------------------------|------|
| Pavo_muticus | ----- | 1392 |
| Pavo_cristatus | ----- | 1392 |
| Gallus_gallus | ----- | 1516 |
| Chelonia_mydas | ----- | 1341 |
| Mus_musculus | PAKLDVVNAYQKYSDRVLTGRIERPVSPLR-----DAEDVLGNAETVP-FVLDVKETYQET | 1795 |
| Rattus_norvegicus | PIRLEVINIYQKYSDRVLTGKMRPMSPLR-----DAEDVLGNSETVP-FVLDVKETYQET | 1791 |
| Mesocricetus_auratus | PITLEVGNIERDTDGVSQKTERLVLEMESTYQKDAEDVLRNAETVP-FLLDMKDTHHKA | 1781 |
| Homo_sapiens | PLALEVVNTYQKNAKGFTGNTEGSVLKMEATYRKTAEEVIKNTETVP-CVLKVKEAHEA | 1815 |
| Pan_troglodytes | PLALEVVNTYQKNAKGFTGNTEGSMLKMEATYQKTAEEVIKNTETVP-CVLKVKEAHEAA | 1816 |
| Macaca_mulatta | PIALEVVNTYQRNAEGFTGNTEGSMLKMEATCQKTAEEVIKNTETVP-CVLKVKEAHEAA | 1808 |
| Callithrix_jacchus | -IALEVADTYPKNAKGITSNTERPVLETEATYAKTAEEVVKNTEMVP-CVLKVKEAHKVT | 1779 |
| Bos_taurus | SLTLEVNVYRKDGEGITAKTEGPLLDLENTYQNGAEGVIRKTEMPPFVLEMKEAPQKA | 1744 |
| Equus_caballus | PIMLEVGNIIYQKDTGEGITGKTERPISEMENTYQKGAERVIRKTEVVP-FVLEVKEAHKKA | 1838 |
| Canis_lupus_familiaris | PIMLEVNNIYKEDVEDITGKTVRPVLEIP--YPEDAREGTRKTEMVE-----VEEAYKVA | 1809 |
| Rhinatrema_bivittatum | ----- | 1417 |
| Xenopus_tropicalis | EALKVDQATNELSSISQNNEMNQSANELLTQKPDEPPKVYQTKEDTN-----ELQNC | 1852 |
| Danio_rerio | ----- | 598 |
|1990.....2000.....2010.....2020.....2030.....2040 | | |

| | | |
|--------------------------------------------------------|--------------------------------------------------------------|------|
| Pavo_muticus | -----CSNTDMPMLLPSVNVNLS-FMPDEESISTQSEYKVKRSPQGSV | 1436 |
| Pavo_cristatus | -----CSNTDMPMLLPSVNVNLS-FMPDEESISTQSEYKVKRSPQGSV | 1436 |
| Gallus_gallus | -----CSNTDTPMLLPSVNVNLS-FMPDEESISTLSEYKVKRSPRGS | 1561 |
| Chelonia_mydas | -----CNNINMPEHISMPALTFNSPFLHDEEYTCISSKSKDESSLSGLD | 1386 |
| Mus_musculus | VYPPLDILEKRIQRDTEESNGTTEPVPSKIEMEVMAPEDSSGSTENRELLPMEVAMERTN | 1855 |
| Rattus_norvegicus | VHSPLDILEKRVQRDTEETNG-TTEPVSEINMEVMAPEDSSGSTKNPEVG-TEVAIESTN | 1849 |
| Mesocricetus_auratus | VHSSWDILEKRVQRDPEEFSGTTEVSPSKIEMEVTALGFSDRTENLEVSPPEVATEKTN | 1841 |
| Homo_sapiens | -PAPLEMEKA-CKRDVKETIGATVSTPSVIEMEKISPEDRGENIGKHVLPVAVVDIEKIH | 1873 |
| Pan_troglodytes | -PAPLEMEKA-CKRDVKETIGATVSTPSVIEMEKISPEDCGENIGKHVLPVAVVDIEKIH | 1874 |
| Macaca_mulatta | -PAPLEIEKA-CKRDVKDTIGATVSLPSVIEMEKISPEDCGENIGKHEVLPTVVDIEKIH | 1866 |
| Callithrix_jacchus | -PVPLEMEKA-CKRDVKETIGATVSIPIVIEMEKISPEDGGENTIEKHVLPVVDIEKIH | 1837 |
| Bos_taurus | VPASFEI---CKGDMKETSRTGLTSPSKREMESTFPEDSDGTIRKHIVFPVAVSSEKIP | 1800 |
| Equus_caballus | GPASLEIGKA-QORDAKETSGTLVPMLSVLEMERSTPEDSDGTIRKHVLPVAVVDIEKIH | 1897 |
| Canis_lupus_familiaris | VPDSSSEMGKS-RKREAKEMIGMIVSVSPREVERRSPEDSDEAIKKHRVSSSTVSIQKTC | 1868 |
| Rhinatrema_bivittatum | -----GLLHNSKVVMEWDPADISKDLLTREMITNQGN | 1450 |
| Xenopus_tropicalis | EKGDRFVASDIIIEVNHSSCDNNSQHATNSGPAVVSQENAFADELYQNDERIYPTSNDFV | 1912 |
| Danio_rerio | ----- | 598 |
|2050.....2060.....2070.....2080.....2090.....2100 | | |

| | | |
|--------------------------------------------------------|---------------------------------------------------------------|------|
| Pavo_muticus | ESSAEGNLDECSGREAAEMFSQVKAALDSKVGESKVERAKGTSEMTLVNIELNTQFTDS | 1496 |
| Pavo_cristatus | ESSAEGNLDECSGREAAEMFSQVKAALDSKVGESKVERAKGTSEMTLVNIELNTQFTDS | 1496 |
| Gallus_gallus | ESSAEGNLDEHSGREAAETLSQVIAALDSKVGESKEEVAKRTSETALVNIELNTQFIDS | 1621 |
| Chelonia_mydas | KSCAGKCPPELPGKEEVFVQEKANPKDSQANSEEGSGKTEANEIPQDKNRLNTQFIVS | 1446 |
| Mus_musculus | GTPPGVTIMQTDALGPAFENTKDPREYMEKSIGIEIEPPGVEVKKGLILHDDRASHFRGY | 1915 |
| Rattus_norvegicus | RTTPEVTITRMEAMGPVYESEMGPQOYMEKSIGIELEELSSEVKEGLILHDDRASHFRGY | 1909 |
| Mesocricetus_auratus | GTPPEVTISPMEAMHPILESEKGPQOYMEKSE-ETEEQPAEGKERLILHDDRASHFRGY | 1900 |
| Homo_sapiens | GTGLLTTKQGEAMLPAFESKTP-QEYAEGSVEETKEEPTIEKEGLIAHENRLPTYFRGY | 1932 |
| Pan_troglodytes | GTGLGLTTKQGEAMLPAFESKTP-QEYAEGSVEETKEEPTIEKEGLIAHENRLPTYFRGY | 1933 |
| Macaca_mulatta | GPGLGLTITQVEAMPPAFESKTL-QEYAEGSVGKTKEEPTIEKEGLIAHENRLATHFRGY | 1925 |
| Callithrix_jacchus | GTGLGLSITQVGAMPPAFESKT--REYAEGSVGDTEEPTIEG-LIAHGSRLASHFRGY | 1894 |
| Bos_taurus | GTGLLELPITQAEATSPIPEAEAEAYQEGADRSGGEVEKEPTETKTGWAGDTRLASYFRDY | 1860 |
| Equus_caballus | ETGLLELPITQAEAMPPIFEDEKASHEYTEVGVGKMEEEPTGIKEGLMVRDSRLTSYFRGY | 1957 |
| Canis_lupus_familiaris | GADLELPVTQAEAMPPIYKAEKKTQEPGGEGVGMEKDPPEGKEGLITCDNRLASYFRGY | 1928 |
| Rhinatrema_bivittatum | ESSLAISTARPETVLPLOEFNRIVTEKLQTLQTDLPDVNESKALSLIERDTDENVLAE | 1510 |
| Xenopus_tropicalis | SMANKIVSDTIFSAQNVISSMLQTSLNKNIDGKIQSETSNQAQVGTGTDNITITQSTQN | 1972 |
| Danio_rerio | -TEPQCSAVQPGSPPWVSVRAVCYSITDDQSPSPPEHLNPADAGMCVSALDSLNASIRS- | 656 |
|2110.....2120.....2130.....2140.....2150.....2160 | | |

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Pavo_muticus      ELPVTEEHSEEGKNYFNLVYAQSEE-----VQMKDSDVQRNDQLEENGLDCSNDMSESADL 1551
Pavo_cristatus    ELPVTEEHNEGKNYFNLVYAQSEE-----VQMKDSDVQRNDQLEENGLDCSNDMSESADL 1551
Gallus_gallus     ELPVTEEHSEEGKNYFNSVYAQNKENLKE-VEMKDSDLQRYNHLEENGLDCTNDMKESADL 1680
Chelonia_mydas    ESSVTVKDIEGKICFGSDFANKDETLKS-TLMMDQDLQDNALGKKSLSNNNDTELTNL 1505
Mus_musculus      ESPTLSKDYEGYPASAIQPDVQEDTVV--RLKKIMSVF---VVYDKRRNLDCKREEKEESN 1970
Rattus_norvegicus ESPTLSRDYEGYPALAMPDFQEDTVV--RLNKIMSVF---AVDDKRRDMDYRGEKEESN 1964
Mesocricetus_auratus ESPTLSRDYEGYPALAMPEFKEEDTVV--RFNCKISVS---AVYDKRRDLQYVDEKEEAN 1955
Homo_sapiens      ESPTLSKDYEGYPAPAMPDFQPGDTTV--RLDKRMSLT---AIYDKRRETQDYS--DKGYN 1985
Pan_troglodytes   ESPTLSKDYEGYPAPAMPDFQPGDTTV--RLDKRMSLT---AIYDKRRETQDYS--DKGYN 1986
Macaca_mulatta    ESPTLSKDYEGYPAPAMPDFQPGDTTV--RLDKRMSLT---AIHDKRRETQDYS--KKGYN 1979
Callithrix_jacchus ESPTLSKDYEGYPAPAMPDFQPGDTTV--RLDKRMSLT---GIYDKRRETQDYS--GEKYN 1947
Bos_taurus        ESPTLSKDNEGHPALAVPDFQPEGTMG--RLDRKTSVT---TVYKKVRDLQYQDKKEEPN 1915
Equus_caballus    ESPTLSKDYEGYPSLAMPNFPQPEAIR--MLDKKTSVT---AVDDKTRDLHYNKEKEDSN 2011
Canis_lupus_familiaris ESPTLSKDYEGYPALAMPDVQPGGTVGG-KPPRRTSVT---AVASQIQDDNYSDEKEDSS 1984
Rhinatrema_bivittatum DVSHSTEMQEG-----QNC 1524
Xenopus_tropicalis SDPVISLCGVGKEYNITSELNTNTDGEQNYILNESKNTFEGTVHGRDIIITEMEKPTDSPH 2032
Danio_rerio       -----656
.....2170.....2180.....2190.....2200.....2210.....2220

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Pavo_muticus      LGFSPLEIQRE-NSSFTIVYEGALQTEENRSVSTGDI---QTSSLSPSDLPLDSIG-FLM 1605
Pavo_cristatus    LGFSPLEIQRE-NSSFTIVYEGALQTEENRSVSTGDI---QTSSLSPSDLPLDSIG-FLM 1605
Gallus_gallus     LGFSPLEIQRE-NSSFTIVYEGALQTEENRSVSTGDD---SSS-----DLPLDSVG-FLM 1729
Chelonia_mydas    SAFSPQGEQWESNSLFTILYEGSPQENQFVSTQDK---QAHSVSPPDLSLDNTEHLWM 1561
Mus_musculus      LAFVSQDEQDS--SSFTILYEEPLQEDRYTSAELR---GSQSLFPDTS--MP-GLA 2021
Rattus_norvegicus LAFVSQDEQDS--SSFTILYEEPLQEDKKISAEVR---GTRSLFPDTS--SGMP-GLA 2017
Mesocricetus_auratus LAFISQDEQEN--SSFTILYEEPLQEDKYARTEM---ETRSVLFPDTS--SSMP-GLA 2008
Homo_sapiens      LAFVSQDEQEN--SSFTILYEEPLQEDKYASAEAR---QTQSVLFHDT--SADSM-VLA 2038
Pan_troglodytes   LAFVSQDEQEN--SSFTILYEEPLQEDKYASAEAR---QTQSVLFHDT--SADSM-VLA 2039
Macaca_mulatta    LAFVSQDEQEN--SSFTILYEEPLQEDKYASAEAS---QTRSVWFPDTS--PDMP-VLA 2032
Callithrix_jacchus LAFVSQDEQEN--SSFTILYEEPLQEDTYASTEAR---RTQVLFPDTS--SLDIP-VLA 2000
Bos_taurus        LAFVSQEEQEN--SSFTILYEEPLQEDKYTTTEVR---RTHSLLPHT--APNSMP-VFA 1968
Equus_caballus    LAFVSQDEQEN--SSFTILYEEPLQEDKHATTEVR---RTHSLFSDTS--ADSM-VLA 2064
Canis_lupus_familiaris LAFISQDEQEN--SSFTILYEEPLQEDRYTTADV---RTHLLFPDTS--ADSM-VLA 2037
Rhinatrema_bivittatum LCFLSQDDCSNPNFSVALQHNGISEDEEQNVSEEM---VQRYRLFS--PPANGFQHYAA 1580
Xenopus_tropicalis LAWSLGTDEDS--HSYEGLNNTGILKNTEDPQTTVVNVLGLSGEVEEEAVNMGTTDFFNP 2090
Danio_rerio       -----679
.....2230.....2240.....2250.....2260.....2270.....2280

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Pavo_muticus      CERAKNKNEPTCFYGKDNKLNKA-----TEGNSSESFLSVEAKRCRIYPFSLSPIYEDDS 1660
Pavo_cristatus    CERAKNKNEPTCFYGKDNKLNKA-----TEGNSSESFLSVEAKRCRIYPFSLSPIYEDDS 1660
Gallus_gallus     CERPKNKNDPTCFYGKNNLNKA-----TEGNSSESFLCVEAKRYRVYPLSLSPIYEDDS 1784
Chelonia_mydas    CETAKSKYEPVNTYKDNKLNKNET-----LDNCNSESFMTVEAKRFKIYPFALSPIYEDDS 1616
Mus_musculus      CERSESRTDLVHHFEKEGKLGEA-----FDGDNSEMFSLSVEAKRYKIYPLALSPIYEDDS 2076
Rattus_norvegicus CERSESRTDLVHHFEKEGKLGEA-----FDGDNSEMFSLSVEAKRYKIYPLALSPIYEDDS 2072
Mesocricetus_auratus CERSESRTDLVHHFEKEGKLGEA-----FDGDNSEMFSLSVEAKRYKIYPLALSPIYEDDS 2063
Homo_sapiens      CERSESRTDLVHHFEKGTKLGET-----FSDSDSEMFLSVEAKRYKIYPLALSPIYEDDS 2093
Pan_troglodytes   CERSESRTDLVHHFEKGTKLGET-----FSDSDSEMFLSVEAKRYKIYPLALSPIYEDDS 2094
Macaca_mulatta    CERSESRTDLVHHFEKGTKLGET-----FSDSDSEMFLSVEAKRYKIYPLALSPIYEDDS 2087
Callithrix_jacchus CERSESRTDLVHHFEKGTKLGET-----FSDSDSEMFLSVEAKRYKIYPLALSPIYEDDS 2055
Bos_taurus        CERSESRTDLVHHFEKEAKLGDA-----FSDSDSETFLSVEAKRYKIYPLALSPIYEDDS 2023
Equus_caballus    CERSESRTDLVHHFEKDKTKLGET-----FGSDSSEVFLSVEAKRYKIYPLALSPIYEDDS 2119
Canis_lupus_familiaris CERSESRTDLVHHFEKDAKLAET-----FSDSDSESFLSVEAKRYKIYPLALSPIYEDDS 2092
Rhinatrema_bivittatum SEVMAREDDPDCRYRETEELPDN-----PDS-----FLAIQAKRFRIYPFSLSPIYEDS 1630
Xenopus_tropicalis FQFSIHQANIIIEISENDEQDNNECYVCDESSDSYVVVQARRRRFYFSLSPIYEDS 2150
Danio_rerio       -----716
.....2290.....2300.....2310.....2320.....2330.....2340

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      .  :*
Pavo_muticus      SHEDLLSADMSPEGHPNGVSKDNSDHTS--VLSLLQSVSEHLQLTTQFSKEEDEEGME-- 1716
Pavo_cristatus    SHEDLLSADMSPEGHPNGVSKDNSDHTS--VLSLLQSVSEHLQLTTQFSKEEDEEGME-- 1716
Gallus_gallus     SHEDLLSADMSPEGHPNGVSKDNFDHTS--VLSLLQSVSERLQLTTQFSKEENEEMEGME-- 1840
Chelonia_mydas    PQEDQLSTDVSPGGHSIGKSKDNANHSSS--ILSLLQSVSERLKFNNQFS----- 1664
Mus_musculus      SQEDVLSSEVSPGHHGSSKSRSEANQPSS--VLSLLQSVSERLQRFNFDGDD---RQEAEE-- 2130
Rattus_norvegicus SQEDVLSNEVSPGHHGSTKSRESANQPSS--VLSLLQSVSERLQRFNFDGDDGDDRQVAE-- 2129
Mesocricetus_auratus SQEDVLSSEVSPGHHGSTKSRESANQPSS--VLSLLQSVSERLQRFNFDGDD---RQVAE-- 2117
Homo_sapiens      SQEDILSSEVSPGHHGPRKSRSENQSSS--VLSLLQSVSERLKMNFDEDD---REAAD-- 2147
Pan_troglodytes   SQEDILSSEVSPGHHGPRKSRSENQSSS--VLSLLQSVSERLKMNFDEDD---REAAD-- 2148
Macaca_mulatta    SQEDILSSEVSPGHHGPRKSRSENQPS--VLSLLQSVSERLKMNFDEDD---REAAD-- 2141
Callithrix_jacchus SQEDILSSEVSPGHQGPGRKSRSENQSSS--VLSLLQSVSERLKMNFDEDD---REGAE-- 2109
Bos_taurus        SQEDILSSEVSPGRHGASKSRSEANQPSS--VLSLLQSVSERLKMNFDEDD---RQEGG-- 2077
Equus_caballus    SQEDILSSEVSPGHHSSSTKSRESAYQPSS--VLSLLQSVSERLKMNFDEDD---RQEVGGE 2175
Canis_lupus_familiaris SQEDILSSEVSPGHHGSTKSRESANQPSS--VLSLLQSVSERLKMNFDEDD---RQGG-- 2144
Rhinatrema_bivittatum SQEDFISSSGSPGYPSSEKSTLDNEKQSSFSVLSLLQSVSDRLKHSRELNE----- 1680
Xenopus_tropicalis SSSEDILSTSASPKHTEADQSDCNS-----ILTLLQSVSARLKQTNALDKEEVFHEECHS 2204
Danio_rerio       VR-----EEAPGPQEPQEEQSVQPAAILLSLLQSVSEKLQSSMDRGS----- 760
      .....2350.....2360.....2370.....2380.....2390.....2400

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      .  :
Pavo_muticus      -----DEDEEESLYEGNVLDVQRGEECLSSQWTRNLTTTV----- 1752
Pavo_cristatus    -----DEDEEESLYEGNVLDVQRGEECLSSQWTRNLTTTV----- 1752
Gallus_gallus     -----DEDEEESLYEGNVLDVQRGEECLSSQWTRNLTTTV----- 1876
Chelonia_mydas    -----EEDEEES--YEENMVDVQK--EDSITTSQWAGSSNMVL----- 1697
Mus_musculus      -----EEEEEE--AVASGKDWRTKREHVTFHLPDPSITFY----- 2163
Rattus_norvegicus -----EEEEEEAAVAASGKGLRTERREVTFHLPDPSITFY----- 2165
Mesocricetus_auratus -----DEEEEE--AAAASGKGLRAERKERVTFHLPDPSITFY----- 2151
Homo_sapiens      -----EEEEEEEA AVLHKGDLRAGSGERVTFQLPDPSITFY----- 2183
Pan_troglodytes   -----EEEEEEEA AVLCKGDLRAGSGEHVTFQLPDPSITFY----- 2184
Macaca_mulatta    -----EEEEEE--AAVLHK--DLRAGSGEHVTFQLPDPSITFY----- 2175
Callithrix_jacchus -----EEEEEE--AAALDKGDLRAGRREHVTFRLPDPSITFF----- 2144
Bos_taurus        -----EEEEEEDEEEPLHKGSLRAQRQETVTFKQPDSSSLTFC----- 2114
Equus_caballus    REEEEEEEEEEEELHKGSLRARRREAITFKLPDPSITFY----- 2216
Canis_lupus_familiaris --EEDEEEDEEEELHKGSLRARRRE--TFKQPDPSITFY----- 2181
Rhinatrema_bivittatum -----DEEKSSEKTPFQDEVPTTSESTDHVNDRPMSAE----- 1714
Xenopus_tropicalis ----LADKSSCILHEHSNMDDAAEKLEDTSKAQVVDQPIILLPPQIPTRSSLFITKTMPRIK 2260
Danio_rerio       ----GETWRMEHCTRSPOQHQEDVRVLLNHHIHQEDTEAL----- 796
      .....2410.....2420.....2430.....2440.....2450.....2460

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      .
Pavo_muticus      ----LSNDQNTYPLPERSPFLSKEQ-----LDSKEQIEEFQ 1784
Pavo_cristatus    ----LSNDQNTYPLPERSPFLSKEQ-----LDSKEQIEEFQ 1784
Gallus_gallus     ----LSNDQNTYPLPEQSPFLSKEQ-----LGSKEQTGFQFQ 1908
Chelonia_mydas    ----LENDQERAPLSKQSLIYSKEP-----LSPKKQSEFPF 1729
Mus_musculus      ----PEDNQEHAGIFK--SYVEFSEP-----TTSLSLQHGRLW 2194
Rattus_norvegicus ----PDDQESAGISK--SYVEFSEP-----TTSLSLQHSGLWP 2196
Mesocricetus_auratus ----PDDQESTGISK--PYEERSEP-----TTSNLQLSLWP 2182
Homo_sapiens      ----PDDQESVIGISKNSYVMPNEP-----TTSNLQVGLWP 2214
Pan_troglodytes   ----PDDQESIGISKNSYVMPNEP-----TTSNLQVGLWP 2215
Macaca_mulatta    ----PDDQESIGISKNSYVMPSEP-----TTSNLQVGLWP 2206
Callithrix_jacchus ----PDDQESIQISKNSYVMPNDP-----TTSNLQVGLWP 2175
Bos_taurus        ----SDDDRRESTGVSKNSYVMSNEP-----TTSNLQIGLWP 2146
Equus_caballus    ----PDDQERTGLSKNAYVMSNEP-----TTSNLQIGLWP 2248
Canis_lupus_familiaris ----PDDQERTGMSKNSYVMSSEP-----TTSNLQVGLWP 2213
Rhinatrema_bivittatum ----PEPAPSSNTVLSSADPTLPN-----LQGETSPAVAL 1746
Xenopus_tropicalis SLTGAGRQSIQLTKKPFVLNSKPSGEALSPTAPEECPAFOKIENSVIKSNFSTESAP 2320
Danio_rerio       ----LSHQLCQEDTGAPLILQVLP-----EPIADPSD 824
      .....2470.....2480.....2490.....2500.....2510.....2520

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| | | |
|------------------------|-----------------------------------------------------------------------------|------|
| Pavo_muticus | -----MTKLGDLPVNLVDRA [.] SLAYNPRPG | 1874 |
| Pavo_cristatus | -----MTKLGDLPVNLVDRA [*] SLAYNPRPG | 1874 |
| Gallus_gallus | -----MPKLGELPVNLVDRA ^{*.*.*.} SLTYNPRPG | 1998 |
| Chelonia_mydas | -----WPESGAFFPNLIDRKRLECNP [.] RPNG | 1821 |
| Mus_musculus | -----HAGRLSPYVENVDKQTLKCNP [.] RPNG | 2275 |
| Rattus_norvegicus | -----HAGRLSAYMENVDRLTLCNP [.] RPNG | 2277 |
| Mesocricetus_auratus | -----HAGRMSPYVENVDQAALRCNP [.] RPNG | 2263 |
| Homo_sapiens | -----SPGRLSPFIENVDKQTLRCNP [.] RPNG | 2295 |
| Pan_troglodytes | -----NPGRLSPFIENVDKQTLRCNP [.] RPNG | 2296 |
| Macaca_mulatta | -----NPGRLSPFIENVDKETILRYNP [.] RPNG | 2287 |
| Callithrix_jacchus | -----NPGRLSPFTENVDKEILRCNP [.] RPNG | 2252 |
| Bos_taurus | -----TPGRLSPFTENVDKQTLKCNP [.] RPNG | 2227 |
| Equus_caballus | -----NSGRLSPFTENVDROTLKCNP [.] RPNG | 2329 |
| Canis_lupus_familiaris | -----ISGRLSPFTENINKQILRCNP [.] RPNG | 2294 |
| Rhinatrema_bivittatum | -----DFLKTAALLVNPIDREGLKYNSR [.] PG | 1828 |
| Xenopus_tropicalis | PIQIPDMEHKSOHTMLONYSSPSETGE [.] GDFOKLGSSQONTQAPLMASAVHGDTVKHNPRPG | 2500 |
| Danio_rerio | -----VTRENRVLGKINPRPA | 891 |
| |2650.....2660.....2670.....2680.....2690.....2700 | |

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      ::::: : : : : * : . . * : : : **** :* : . :* :****:
Pavo_muticus      KIIIIYDIHGDKSKQEIHS DVLDATSWIFPIGALLRIIRGCWIFYEKPKEFHGOKYILEEGE 1934
Pavo_cristatus    KIIIIYDIHGDKSKQEIHS DVLDATSWIFPIGALLRIIRGCWIFYEKPKEFHGOKYILEEGE 1934
Gallus_gallus     KIIIIYDIHGDKSKQEIHS DVLDATSWIFPIGALLRIIRGCWIFYEKPKEFHGOKYVLEEGE 2058
Chelonia_mydas    KMIIYDIHGEKSKREIYHDLDPATSWIFPIGTLRLVVRGCWILYEKPKEFHGOKYVLEEGE 1881
Mus_musculus      KMIIYDLHGSKYKQEVYCNIPDATTSWFPNGALIKVVRGCWILYEKPKEFHGOKCVLEEGE 2335
Rattus_norvegicus KMIIYDLHGSKYKQEVYCNIPDATTSWFPNGALIKVVRGCWILYEKPKEFHGOKCVLEEGE 2337
Mesocricetus_auratus KMIIYDLHGSKYKQEVYGNVSDATTSWFPNGALIKVVRGCWILYEKPKEFHGOKCVLEEGE 2323
Homo_sapiens      KMVIYDLHESITYKQEVYCNIPDATTSWFPNGVLIKVVRGCWILYEKPKEFHGOKCVLEEGE 2355
Pan_troglodytes   KMVIYDLHESITYKQEVYCNIPDATTSWFPNGVLIKVVRGCWILYEKPKEFHGOKCVLEEGE 2356
Macaca_mulatta    KMVIYDLHESITYKQEVYCNIPDATTSWFPNGVLIKVVRGCWILYEKPKEFHGOKCVLEEGE 2347
Callithrix_jacchus KMVIYDLRERKYKQEVYCNIPDATSWAFPNGLIKVVRGCWILYEKPKEFHGOKCVLEEGE 2312
Bos_taurus        KMVIYDLHRRKYKQEIYCNIPDATTSWYPNGVLIKVVRGCWILYEKPKEFHGOKCVLEEGE 2287
Equus_caballus    KMOVYDLQGSRDKQEIYCNIPDATTSWFPNGVLIKVVRGCWILYEKPKEFHGOKCVLEEGE 2389
Canis_lupus_familiaris KMVIYDLHGSKYKQEIYCNIPDATTSWFPNGVLIKVVRGCWILYEKPKEFHGOKCVLEEGE 2354
Rhinatrema_bivittatum KMVIYNVPGSRNKLEIYSDVPDATPWTFRGTLLIRVVRGCWILYNKPMFQGTIVLEEGE 1888
Xenopus_tropicalis KVVISDILDHENKTEVNADIIDASSWIFPNGVNIRVIRGCWILYEKPNFEGLAHVLEEGE 2560
Danio_rerio       AVLIYDGGGERRR--ICRDVEDTRTELTAAGATLHALRGWLLYEDWCYQGLCVLLEEGQ 949
      .....2710.....2720.....2730.....2740.....2750.....2760

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      . * * : : * * * : : : :
Pavo_muticus      TVLD---HLWDLPGVKHHRNLTVG---SIKHVTKDCSVPEIEFSVGANTEGLPICIQSA 1988
Pavo_cristatus    TVLD---HLWDLPGVKHHRNLTVG---SIKHVTKDCSVPEIEFSVGANTEGLPICIQSA 1988
Gallus_gallus     TVLD---HLWDLPGVKHHRNLTVG---SIKHVTKDCSVPEIEFSVGANTEGLPICIQSA 2112
Chelonia_mydas    MVLN---RLWDLRDMKHHPRNLAVG---SIKHVTKDCSVPEIEFCPOAGTERFPVCIQSA 1935
Mus_musculus      RVLN---RDWLLQNRKHPERNFVLG---SIKRVLKDCSIPVIELCPKIDPGCSPIYIHR 2389
Rattus_norvegicus KVLN---RDWLLQNRKHPERNFVLG---SIKRVLKDCSIPVIELRPKSDPGWCPIYIHR 2391
Mesocricetus_auratus KVLN---RDWLLQNRKHPERNFVLG---SIKRVLKDCSVPEIELCPQSDPGCCPIYIHR 2377
Homo_sapiens      KVLN---RDWILQNRHHPQRNFILG---SLKRVLKDCSIPVIELFPQSDPACCPVYIQR 2409
Pan_troglodytes   KVLN---CDWILQNRHHPQRNFILG---SLKHVLKDCSIPVIELFPQSDPACCPVYIQR 2410
Macaca_mulatta    KVLN---RDWILQNRHHPQRNFALG---SIKRVLKDCSIPVIELFPQSDPACCPVYIQR 2401
Callithrix_jacchus KVLN---RDWILQNRHHPQRNFVLG---SIKRVLKDCSIPVIELCPQSDPACRPYIYIQR 2366
Bos_taurus        KVLN---RDWLLQNRKHPQRNFVLG---SIKRVLKDCSIPVIELCPQSDPACCPYIYIQR 2341
Equus_caballus    KVLN---NDWALQNRHHPQRNFVFG---SVKRVLKDCSIPVIELCPQSDPACCPVYIQR 2443
Canis_lupus_familiaris KVLN---RDWILQNRKHPQRDFVLG---SIKRVLKDCSIPVIELCPQSDPACCPYIYIQR 2408
Rhinatrema_bivittatum TALP---DLWDFHS-----SIVIG---SIRRVLKDSEVPEVEIFPOTGSKDAPIFVQTE 1936
Xenopus_tropicalis AELT---YLWEVPQSTSEPNITIKIG---SIKRIVKDY-IPEIILLPQYPIITGSSIHLLTE 2613
Danio_rerio       SVRISAVVQQLKGSRCAGRTDAVGRVGSVRTLLKDESAPDLHLHLS--SQ---CLRLCSS 1006
      .....2770.....2780.....2790.....2800.....2810.....2820

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      . * : * * : * . * : * : : :
Pavo_muticus      VANLEELDVEKNPYIHVKSGLWLAYS DLNKGEMKILEEC----SEPSGIPSADVRSVRP 2044
Pavo_cristatus    VANLEELDVEKNPYIHVKSGLWLAYS DLNKGEMKILEEC----SEPSGIPSADVRSVRP 2044
Gallus_gallus     VANLEELDVEKNPYIHVKSGLWLAYS DLNKGEMKILEEC----SELSEIPSADVRSVRP 2168
Chelonia_mydas    VANLEELDVESTFYIIVKSGVWIAYS DLNKGEMIVLEEG----TSPSEISAADVKSILRP 1991
Mus_musculus      VPVNEELNIPKSTSVTVKSGVWLAYPDINFKGQATILEED----QGLFEISAAEMKSLHP 2445
Rattus_norvegicus IPNLEELNIPKSSTFTVKSGVWLAYPDVNFKGQATVLEED----QGLFEISAAEMKSLQT 2447
Mesocricetus_auratus VPVNEELNIPKSASFVTVKSGVWLAYPDINFKGQATILEED----QGLFEISAAEMKSLHP 2433
Homo_sapiens      VPVNEELNISKSVSFTVKSGVWLAYPDINFKGQATVLEED----HGLFEISTAEMKSLHP 2465
Pan_troglodytes   VPVNEELNISKSVSFTVKSGVWLAYPDINFKGQATVLEED----HGLFEISTAEMKSLHP 2466
Macaca_mulatta    VPVNEELNISKSMSFTVKSGVWLAYPDINFKGQATVLEED----HGLFEISTAEMKSLHP 2457
Callithrix_jacchus VPVNEELNVSRVSFTVKSGVWLAYPDINFKGQATVLEED----HGLFEISTAEMKSLHP 2422
Bos_taurus        VPVNEELNIPKSVSFTVKSGVWLAYPDINFKGQATVLEED----HGLFEISAAEIKSLHP 2397
Equus_caballus    VPVNEELNIPKSVSFTVKSGVWLAYPDINFKGQATVLEED----CGLFEISAAEMKSLHP 2499
Canis_lupus_familiaris VPVNEELNIPKSVSFTVKSGVWLAYPDINFKGQATVLEED----HGLFEISATAMKSLHP 2464
Rhinatrema_bivittatum IAQLTDSQIN-----VKGGLWLAYSDFQHKGTVRVLEAR----QAPSLGTETDVKSLRP 1986
Xenopus_tropicalis VPTIESLTYYHMHSLVVKSGVWLAYSQPFQSGSVTVLEEG----SEIPKIQEYGIKSVRP 2669
Danio_rerio       AELTEQGGFPVCLSDICVRS GCWL VY---ELSGASAVLEAGGRVTPVLRDS--LSRIRSLRP 1063
      .....2830.....2840.....2850.....2860.....2870.....2880

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CRYO-162.fst Tue Feb 1 11:52:34 2022

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| | *::** :* | * : .::: : * | : : * | : * | | | |
|------------------------|----------------|--------------|-----------|--------------------|--------------------|-------------|------|
| Pavo_muticus | LKMGG | LKVQMPN | VVKII | EYKTHFGGWSKEFSENIS | SVLALFGNEEDFQEIGS | IRVIGGV | 2104 |
| Pavo_cristatus | LKMGG | LKVQMPN | VVKII | EYKTHFGGWSKEFSENIS | SVLALFGNEEDFQEIGS | IRVIGGV | 2104 |
| Gallus_gallus | LKMGG | LKVQMPN | VVKII | EYKTHFGGWSKEFSENIS | SVLALFGNEEDFQEIGS | IRVIGGV | 2228 |
| Chelonia_mydas | LKMGG | LKVQMPN | VVKIL | YEREHFGWAKELSGNID | VPALFRSDEDFQIRIGS | IRVIGGV | 2051 |
| Mus_musculus | LQMGGL | KVEMPM | NLKVIL | EYKPHFLGHTKEFSEHID | SVPTFLKSDKDFHIGS | IRVIGGV | 2505 |
| Rattus_norvegicus | LQMGGL | KVEMPM | NLKVII | EYKPHFRGHAKFSEHIES | VPKFLKSDKDFRGIGS | IRVIGGV | 2507 |
| Mesocricetus_auratus | LQMGGL | KVEMPM | NLKVIL | EYKPHFHGHTKEFSEHID | SVKFLKSDKDFHIGS | IRVIGGV | 2493 |
| Homo_sapiens | LQMGGL | KVEMPM | NLKVII | EYKPHFHGQAKFSEHID | SVPNFLKNGDFHRIGS | IRVIGGV | 2525 |
| Pan_troglodytes | LQMGGL | KVEMPM | NLKVII | EYKPHFHGQAKFSEHID | SVPNFLKNGDFHRIGS | IRVIGGV | 2526 |
| Macaca_mulatta | LQMGGL | KVEMPM | NLKVII | EYKPHFHGQAKFSEHID | SVPNFLKNGDFHRIGS | IRVIGGV | 2517 |
| Callithrix_jacchus | LQMGGL | KVEMPM | NLKVII | EYKPHFHGQAKFSEHID | SVPNFLKNGDFHRIGS | IRVIGGV | 2482 |
| Bos_taurus | LQMGGL | KVEMPM | NLKVII | EYKPHFHGQAKFSEHID | SVPNFLKNDVDFHIGS | IRVIGGV | 2457 |
| Equus_caballus | LQMGGL | KVEMPM | NLKVII | EYKPHFHGQAKFSEHID | SVPNFLKDDGDFHIGS | IRVIGGV | 2559 |
| Canis_lupus_familiaris | LKMGG | LKVQMPN | VVKII | EYKPHFHGQAKFSEHID | SVKFLKNGDFHIGS | IRVIGGV | 2524 |
| Rhinatrema_bivittatum | LKMGG | LKVQMP | TDPHMI | EYKANFGGWAQELTDHLY | ALSDDLPGIERDFHIGS | IRVIGGV | 2046 |
| Xenopus_tropicalis | LKMGG | LKVQMP | SDPKI | ILYGQPCFQGSRELTEHI | YSIKSLLS-DGDEQEIGS | SVRVLGGI | 2728 |
| Danio_rerio | LKLGG | PRVTRPLD | PEVLLF | ARPLLEGQCR | AVLEHACLEAPGSLRV | TAGXXXXX--X | 1121 |
| |2890..... | 2900..... | 2910..... | 2920..... | 2930..... | 2940 | |

| | | | | |
|------------------------|--------------------------------------------------------|-------------------------------------|------|------|
| | ** . : :*: * :****:: * | . . : *:*****:*.* : | . | |
| Pavo_muticus | WVAYDKERYKGROYLLEEGDYEDTH- | TQGETGSVLLSFRFLQADFIESSVALFQS- | DDED | 2162 |
| Pavo_cristatus | WVAYDKERYKGROYLLEEGDYEDTH- | TQGETGSVLLSFRFLQADFIESSVALFQS- | DDED | 2162 |
| Gallus_gallus | WVAYDKERYKGROYLLEEGDYEDMH- | TWGGTGSVLLSFRFLQADFIESSVALFQS- | DDED | 2286 |
| Chelonia_mydas | WVAYEKEERYKGROYLLEEGDYEDVH- | SYGGISALLSFRFLQADFIESSVMLFES- | DEED | 2109 |
| Mus_musculus | WVAYEKEHFKGQOFLLEEGDFEDSS- | ACGALSGPIMSFYRLQANFIESSITLFESHLES | | 2564 |
| Rattus_norvegicus | WVAYEKEHFKGQOFLLEEGDFEDSS- | ACGALSGPIMSFYRLQANFIESSITLFES- | DLES | 2565 |
| Mesocricetus_auratus | WVAYEKEHFKGQOFLLEEGDFEDSN- | ACGALSGPIMSFYRLQANFIESAITLFES- | DLES | 2551 |
| Homo_sapiens | WVAYEKEHFKGQOFLLEEGDFEDSN- | ACGALSSPILSFYRLQANFIESSVITLFES- | DLES | 2583 |
| Pan_troglodytes | WVAYEKEHFKGQOFLLEEGDFEDSN- | ACGALSSPILSFYRLQANFIESSVITLFES- | DLES | 2584 |
| Macaca_mulatta | WVAYEKEHFKGQOFLLEEGDFEDSN- | ACGALSGPILSFYRLQANFIESSVITLFES- | DLES | 2575 |
| Callithrix_jacchus | WVAYEKEHFKGQOFLLEEGDFEDSH- | ACGALNGPILSFYRLQANFIESSVITLFES- | DLES | 2540 |
| Bos_taurus | WVAYEKEHFKGQOFLLEEGDFEDSN- | AFGALSGSILSFYRLQANFIESSITLFES- | DLES | 2515 |
| Equus_caballus | WVAYEKEHFKGQOFLLEEGDFEDSN- | ACGALSGPILSFYRLQANFIESSIMLFES- | DLES | 2617 |
| Canis_lupus_familiaris | WVAYEKEHFKGQOFLLEEGDFEDSN- | ACGALSGPILSFRFLQANFIESSITLFES- | DLEN | 2582 |
| Rhinatrema_bivittatum | WVAYEREHYKGROYLLEEGEYEDWQ- | TWDSAGSTLGSRFYRQADFLEPSVKLLES--- | DT | 2102 |
| Xenopus_tropicalis | WVGDMERFKGROYLLEEGEYPDWQ- | SWGGINSSLQSMRYLQADFMEASVTLYES- | DRED | 2786 |
| Danio_rerio | WVVFSAAGRGHGCVLEEGDYSDC | TRLFSRLDLIRSIRLRLNTDFLEPSVCVKIC---- | | 1176 |
| |2950.....2960.....2970.....2980.....2990.....3000 | | | |

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|------------------------|----------------------------------------------------------------|---------------------------------------|------|---|---|---|----|----|------|----|---|---|---|---|-------|----|----|
| | . | : | : | . | * | : | *: | .* | ***: | :. | : | * | : | * | ****: | .. | ** |
| Pavo_muticus | GKALDIVNEEIPDLEQAGFGPETGSILVKS | GVWVAYOQKHFCGEQYVLEKGKYKCFFDWG | 2222 | | | | | | | | | | | | | | |
| Pavo_cristatus | GKALDIVNEEIPDLEQAGFGPETGSILVKS | GVWVAYOQKHFCGEQYVLEKGKYKCFFDWG | 2222 | | | | | | | | | | | | | | |
| Gallus_gallus | GKALDIVNEEIPDLEQTGFGPETKSILVKS | GVWVAYOQKHFCGEQYVLEKGKYKCFFDWG | 2346 | | | | | | | | | | | | | | |
| Chelonia_mydas | GK--VMVNQDIPDLEQAGFGQEMRSIHVKS | GVWVAYROKYFCGEQYILEKGKYKCFLDWG | 2167 | | | | | | | | | | | | | | |
| Mus_musculus | GKFIDITNQEISDLEEIGFSGETRSHVKS | GVWVAYHOKFFCGDOYLEKGKYKCFFDWG | 2624 | | | | | | | | | | | | | | |
| Rattus_norvegicus | GKFIDITNQEISDLEEIGFGRETRSHVKS | GAWWAYHOKFFCGDOYLEKGKYKCFFDWG | 2625 | | | | | | | | | | | | | | |
| Mesocricetus_auratus | GKFIDITNQEITDLEEIGFGRETRSHVKS | GVWVAYHOKFFCGDOYLEKGKYKCFFDWG | 2611 | | | | | | | | | | | | | | |
| Homo_sapiens | GKFIDITNQEISDLEEIGFGSKTRSHVKS | GVWVAYOQKFFCGEQYILEKGKYKCFFDWG | 2643 | | | | | | | | | | | | | | |
| Pan_troglodytes | GKFIDITNQEISDLEEIGFGSKTRSHVKS | GVWVAYOQKFFCGEQYILEKGKYKCFFDWG | 2644 | | | | | | | | | | | | | | |
| Macaca_mulatta | GKFIDITNQEISDLEEIGFGSKTRSHVKS | GVWVAYOQKFFCGEQYILEKGKYKCFFDWG | 2635 | | | | | | | | | | | | | | |
| Callithrix_jacchus | GKFIDITNQEISDLEEIGFGSKTRSHVKS | GVWVAYOQKFFCGEQYILEKGKYKCFFDWG | 2600 | | | | | | | | | | | | | | |
| Bos_taurus | GKFIDITNQEISDLEEIGFSGETRSHVKS | GVWVAYOQKFFCGEQYILEKGKYKCFFDWG | 2575 | | | | | | | | | | | | | | |
| Equus caballus | GKFIDITNQEIVSDLEEIGFGSETRSHVKS | GVWVAYOQKFFCGEQYILEKGKYKCFFDWG | 2677 | | | | | | | | | | | | | | |
| Canis_lupus_familiaris | GKFIDITNQEISDLEEIVFGSETRSHVKS | GVWVAYOQKFFCGEQYILEKGKYKCFFDWG | 2642 | | | | | | | | | | | | | | |
| Rhinatrema_bivittatum | DVKMVEFNQDIPDLEEAGFGIEMRSIQVQNGMWVAYOQKHYNAGEQYVLEKGGRYKSCLDWG | 2162 | | | | | | | | | | | | | | | |
| Xenopus_tropicalis | MKQLEAINLGIPDVEQAGYGPEQS | SIHVKKGMWVAYEQKHFCGOQYILEKGGRYKSCADWG | 2846 | | | | | | | | | | | | | | |
| Danio_rerio | -----GQELVCVEMPDMQDVESICVKS | GVWVAFSSENFSGECVLEKGRYTGLQWG | 1229 | | | | | | | | | | | | | | |
| |3010.....3020.....3030.....3040.....3050.....3060 | | | | | | | | | | | | | | | | |

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CRYD63.fst Tue Feb 1 11:52:34 2022

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      .  *:::  *      :*:  .*:  ::  :  *      :      *      *:::
Pavo_muticus      GSSEVIMSIRPIKLEPLGTNEPPHLLKAFSNTHFQACIDFTAEVSDFTS-FIPCSFKVL 2281
Pavo_cristatus    GSSEVIMSIRPIKLEPLGTNEPPHLLKAFSNTHFQACIDFTAEVSDFTS-FIPCSFKVL 2281
Gallus_gallus     GSSKIIMSIRPIKLEPLGTNEPPHLLKAFSNTHFQACIDFTAEVSDFTS-FIPCSFKVL 2405
Chelonia_mydas    GSSETIMSIRPIKLEPLGKNEPPHLLKAFSNTHFQACVDTAEVSDFTS-FIPCSFKVL 2226
Mus_musculus      GSSNTILSIRPIQLEPLGINEPPHLLKAFSKAGFQGECIDFVKECADLTS-FIPASFKVL 2683
Rattus_norvegicus GSSNIILSIRPIQLEPLGINEPPHLLKAFSKAGFQGECIDFIKECADLTS-FIPASFKVL 2684
Mesocricetus_auratus GSSNTILSIRPIQLEPLGINEPPHLLKAFSKAGFQGECIDFIKECADLTS-FLPSSFKVL 2670
Homo_sapiens      GSNNIIMSIRPIQLEPLGINEPPHLLKAFSKPGFQGECIDFTEETSDLTS-LMPCSFVKVL 2702
Pan_troglodytes   GSNNIIMSIRPIQLEPLGINEPPHLLKAFSKPGFQGECIDFTEETSDLTS-LMPCSFVKVL 2703
Macaca_mulatta    GSSNIIMSIRPIQLEPLGINEPPHLLKVFSKPGFQGECIDLTEETSDLTS-LIPCSFKVL 2694
Callithrix_jacchus GSNNIIMSIRPIQLEPLGINEPPHLLKAFSKPGFQGECLDFTEETADLTS-LMPYSFKVL 2659
Bos_taurus        GSNNTIMSIRPIQLEPLGINEPPHLLKAFSKPGFQGECIDFTKEVLDLTS-FMPCSFVKVL 2635
Equus_caballus    GSNNTIMSIRPIQLEPLGINEPPHLLKAFSKPSFQGECIDFTKEISDLTS-FIPCSFKVL 2736
Canis_lupus_familiaris GSNNIIMSIRPIQLEPLGINEPPHLLKAFSKPGFQGEVDFTTEETSDLTP-FIPCSFKVL 2701
Rhinatrema_bivittatum ASSNTILSIRPVMLEPLGRQEPVHLLKAYSQENFQACVAFVTAEVSDLAS---PGSIKVL 2219
Xenopus_tropicalis GHNNTIMSLRPVLLPEYGSNDPKHLIKAYSGLNFQGESVDLTQEVTDFA-FTPSSFKVL 2905
Danio_rerio       DRWSSPRSLRPIHREVCETEEOFLIRLYTELQYGGEGREFTSAAADCGA-AHLLSLRVI 1288
.....3070.....3080.....3090.....3100.....3110.....3120

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Pavo_muticus      RGCWLL-YYQGETDDNHCVLEEGLYMDLSACGCPATAIKSLKPIEVVFAEPLSLFALAE 2340
Pavo_cristatus    RGCWLL-YYQGETDDNHCVLEEGLYMDLSACGCPATAIKSLKPIEVVFAEPLSLFALAE 2340
Gallus_gallus     RGCWLL-YYQGETDDNHCVLEEGLYIDLPSGCGPTAAIKSLKPIEVVFAEPLSLFALES 2464
Chelonia_mydas    RGCWLL-FYQGEIADNHCVLEEGLYIDLTS CGCPTVTLKSFKPVEYVFAEPLSLFALAE 2285
Mus_musculus      RGCWLL-YYQEDGFYHQCVCLEEGLYVDLTS CGCPSARIRALQPIDYVFEEPSISLFALEH 2743
Rattus_norvegicus RGCWLL-YYQEDGFYHQCVCLEEGLYIDLTS CGCPSARVRALKPIDYVFEEPSISLFALEH 2743
Mesocricetus_auratus RGCWLL-YYQEDVIFYHQCVCLEEGLYIDLAS CGCPSARVRALKPIDYVFEEPSISLFALEH 2729
Homo_sapiens      RGCWLL-YYQEDMFVNHCVLEEGLYADLTS CGCPASKVKSLKPIDYVFEEPSISLFALEH 2761
Pan_troglodytes   RGCWLL-YYQEDVFNHCVLEEGLYADLTS CGCPASKVKSLKPIDYVFEEPSISLFALEH 2762
Macaca_mulatta    RGCWLL-YYQEDVFNHCVLEEGLYADLTS CGCPASKVKSLKPIDYVFEEPSISLFALEH 2753
Callithrix_jacchus RGCWLL-YYQEDMFVNHCVLEEGLYADLTS CGCPASTVKSLKPIDYVFEEPSISLFALEH 2718
Bos_taurus        RGCWLL-YYQEGVSTNQVCLEEGLYADLTS CGCPTSRVKSILKPIDYVFEEPSISLFALEH 2694
Equus_caballus    RGCWLL-YYQEDFSNNQCVCLEEGLYADLTS CGCPTSRVKSILKPIDYVFEEPSISLFALEH 2795
Canis_lupus_familiaris RGCWIL-YYQEDNSCNQCVCLEEGLYADLTS CGCPTSRVKSILKPIDYVFEEPSISLFALEH 2760
Rhinatrema_bivittatum RGCWLL-RYEWERAVHYCVLEEGHYPNLAS CGCPTVDIKSLQPVHEVFAEPLSLFALDS 2278
Xenopus_tropicalis RGCWLL-CYQGDMSDNLVCLEEGHFPDMAS CGCPAAVIKFIQPIDYVFAEPLSLFALDS 2964
Danio_rerio       RGSWLL-FDDYGFSGNQYILSEGLYPDLTS CGCPATAIRSLQPIPHSFSEPCVSVFSLSG 1347
.....3130.....3140.....3150.....3160.....3170.....3180

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Pavo_muticus      CKGRELHFSEPVNSILNEDLHFYTQSVWVRSGLWIAYEGCNFLGKQILLEPGEISNWNEY 2400
Pavo_cristatus    CKGRELHFSEPVNSILNEDLHFYTQSVWVRSGLWIAYEGCNFLGKQILLEPGEISNWNEY 2400
Gallus_gallus     CKGRELHFSEPVNSVLNEDLHFYAQSVWVRSGLWIAYEGCNFLGKQILLEPGEISNWNEY 2524
Chelonia_mydas    CEGRELHFKEAVSSVLNKNLHFTYQSVWVRSGLWIAYEGGNFSGKQILLEPSKISNWTEF 2345
Mus_musculus      CEGRELHLEDAVNSVLNKNLHFTYQSVWIKSGLWIAYEGSNFLGRQILLTPKEIPNWIAF 2803
Rattus_norvegicus CEGRELHLEDAVNSVLNKNLHFTYQSVWIKSGLWIAYEGSNFLGRQILLVPNEIPNWIAF 2803
Mesocricetus_auratus CEGRELHLEDAVNSVLNKNLHFTYQSVWIKSGLWIAYEGSNFLGKQILLVPNEIPNWIAF 2789
Homo_sapiens      CEGRELHLEEAVNSVLNKNLHFTYQSVWVKSGLWIAYEGSNFLGRQILLRPNEIPNWIAF 2821
Pan_troglodytes   CEGRELHLEEAVNSVLNKNLHFTYQSVWVKSGLWIAYEGSNFLGRQILLRPNEIPNWIAF 2822
Macaca_mulatta    CEGRELHLEEAVNSVLNKNLHFTYQSVWVKSGLWIAYEGSNFLGRQILLRPNEIPNWIAF 2813
Callithrix_jacchus CEGRELHLEEAVNSVLNKNLHFTYQSVWVKSGLWIAYEGSNFLGRQILLRPNEIPNWIAF 2778
Bos_taurus        CEGRELHLEEAVNSVLNKNLHFTYQSVWVKSGLWIAYEGPNFLGRQILLEPNEIPNWIAF 2754
Equus_caballus    CEGRELHLEEAVNSVLNKNLHFTYQSVWVKSGLWIAYEGSNFLGRQILLEPNEIPNWIAF 2855
Canis_lupus_familiaris CEGRELHLEEAVNSVLNKNLHFTYQSVWVKSGLWIAYEGSNFLGRQILLEPNEIPNWIAF 2820
Rhinatrema_bivittatum CEGRELQFEEAAHSILNQDLYFYTQSVRVESGLWIMYEGANFLGRQALLEPCEIPSWMEF 2338
Xenopus_tropicalis CEGRELHFEEAVNSVLSRDLHFTYQSVWVRSGLWIAYEANFLGRQILLEAKKILNWAEF 3024
Danio_rerio       FEGLQETWRSVAV-----ENTHFISQSVRVTTGGQWVAYEFPLFRGRQVLLGPGECAEWAE 1402
.....3190.....3200.....3210.....3220.....3230.....3240

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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* * .:***:***:*** *.:***:*** ** . * . * : .. ** *
Pavo_muticus      SGWKVIGSLRPVKQPAVYLIRIRNRAQKYLTVAGSLADVRATSVCVSPYNG-KDTQIWHY 2459
Pavo_cristatus    SGWKVIGSLRPVKQPAVYLIRIRNRAQKYLTVAGSLADVRATSVCVSPYNG-KDTQIWHY 2459
Gallus_gallus     SGWKVIGSLRPVKQPAVYLIRIRNRAQKYLTVAGSLADVRATSVCVSPYSG-RDTQIWHY 2583
Chelonia_mydas    SGWSVIGSLRPMKQPAVYFRIKRNRAQDKYLTVTGNLSDARATSVCVSPYNG-KNTQIWHY 2404
Mus_musculus      SGWKTIGSVRPMKQPAVYIRIRNRAQDEYLTVTGNPADARTMSVCISPYSG-KDTQIWHY 2862
Rattus_norvegicus SGWKTIGSVRPMKQPAVYIRIRNRAQDEYLTVTGNPADARTMSVCISPYSG-KDTQIWHY 2862
Mesocricetus_auratus SGWKTIGSVRPMKQPAVYIRIRNRAQDEYLTVTGNLADTRATMSVCISPYSG-KDTQIWHY 2848
Homo_sapiens      SRWKTIGSLRPMKQPAVYIRIKNRAQGEYLTVTGSLADTRATSVVCISPYSG-KNTQIWYY 2880
Pan_troglodytes   SRWKTIGSLRPMKQPAVYIRIKNRAQGEYLTVTGSLADTRATSVVCISPYSG-KNTQIWYY 2881
Macaca_mulatta    SRWKTIGSLRPMKQPAVYIRIKNRAQDEYLTVTGNLADTRATSVVCISPYSG-KDTQIWHY 2872
Callithrix_jacchus SRWKTIGSLRPMKQPAVYIRIKNRAQDEYLTVTGNLADTRATSVCLSPYSG-KNTQIWHY 2837
Bos_taurus        SGWKTIGSLRPVKQPSVYIRIRNRAQDGYLTVTGNVADTRATSVVCISPYSG-KNTQIWHY 2813
Equus_caballus    SGWKTIGSLRPMKQPAVYIRIKNRAQDEYLTVTGNVADTRATSVVCISPYSG-KNTQIWYY 2914
Canis_lupus_familiaris SGWKTIGSLRPMKQPAVYIRIKNRAQDEYLTVTGNVADTRATSVVCISPYSG-KTTQIWHY 2879
Rhinatrema_bivittatum SGWKAIGSLRPLKQPTVYFQIKHQAEKYLTVGKVIDTRGTSVCLSAWNG-KDTQIWYY 2397
Xenopus_tropicalis SGWKAIGSLRPLKQPAVYVRIKRNHNKYLTVTGKLAADTRAMSVCVSPRNG-QYTQIWHF 3083
Danio_rerio       SSWGTLGSIIRPLOQPRGYLQLRNRLGLVLTEDRRMDPYRPNYCCARQNXLHTQRWIL 1462
.....3250.....3260.....3270.....3280.....3290.....3300

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Pavo_muticus      CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2519
Pavo_cristatus    CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2519
Gallus_gallus     CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2643
Chelonia_mydas    CHGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2464
Mus_musculus      CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2922
Rattus_norvegicus CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2922
Mesocricetus_auratus CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2908
Homo_sapiens      CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2940
Pan_troglodytes   CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2941
Macaca_mulatta    CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2932
Callithrix_jacchus GRGIFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2897
Bos_taurus        CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2873
Equus_caballus    CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2974
Canis_lupus_familiaris CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2939
Rhinatrema_bivittatum RRGLIKSKITGACLDVIGGRDAPGSKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 2457
Xenopus_tropicalis CRGLFYSKVNDACLDVIGGRDVPAGKVALWTEHGKERQKWLNEGTISSYLSDELVLVDI 3143
Danio_rerio       RDGLLKNKTKMGCLSVIGAKACAGAPVALWEEHGRINQRWSITEDGHIHHLHSLVLDL 1522
.....3310.....3320.....3330.....3340.....3350.....3360

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Pavo_muticus      KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2549
Pavo_cristatus    KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2549
Gallus_gallus     KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2673
Chelonia_mydas    KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2494
Mus_musculus      KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2952
Rattus_norvegicus KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2952
Mesocricetus_auratus KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2938
Homo_sapiens      KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2970
Pan_troglodytes   KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2971
Macaca_mulatta    KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2962
Callithrix_jacchus KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2927
Bos_taurus        KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2903
Equus_caballus    KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 3004
Canis_lupus_familiaris KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2969
Rhinatrema_bivittatum KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 2487
Xenopus_tropicalis KGGNYDKNHIIMNEPEDDKRSQKWDIEIL 3173
Danio_rerio       TG----EGQRLVLSPAEDQCSSQTWDIHL 1548
.....3370.....3380.....3390

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