

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/ZNF407.pst Tue Feb 14:58:02 2022

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Xenopus_tropicalis      MESKQECQDKSSADEPNFENRIDIEESSIIGDPVGE-KPLNSSSS-----ISSAK      49
Rhinatrema_bivittatum  MDEPKSDEDKNFPTFVSEDLKNSVPEENVDRDSLFEPKTIYLSGK-----ISESV      50
Pavo_muticus           -MLKMDEEDNQKRDDVDEILONKLREDSLRNASGDNTECDSLSQQGKRLISDEVFRNLEK      59
Pavo_cristatus         -MLKMDEEDNQKRDDVDEILONKLREDSLRNASGDNTECDSLSQQGKRLISDEVFRNLEK      59
Gallus_gallus          -MLKMDEEDNQKRDDADEILONKLRI DSLRNASGDNTECDSLSQQGTRLISDEAFRNLEK      59
Chelonia_mydas         ----MDAEENQKSDEVVGSLOTDLTDSMRNVSVENAECDLSLNQETRSLSDGVHRSLEK      56
Mus_musculus           ----MDSENKHDNDEDESVKGAK---DPRSVSRRDSSSEPVS-----DDMA      39
Rattus_norvegicus      ----MDSESRHENDEDGSV-KGA---DPRSVPSCDGSRGVPS-----DDRA      38
Homo_sapiens           ---MMDSENKPENDEDEKINKEAQ---DLTKLSSHNEDEGGVPS-----DVIA      41
Macaca_mulatta         ---MMDSENKPENDEDEKIDKEAQ---DLTKLSSHNEDEGGVPS-----DVTA      41
Callithrix_jacchus     ---MMDSENKPENDEDEMINKEAQ---DLTKLSSHNEDEHGRVS-----DVIA      41
Canis_lupus_familiaris ---MMDTEKKPENDEDEDENITKEAK---DLRNTSSHVDVDCGPVF-----DVIP      41
Equus_caballus         ---MMDTEKKPENDEDEKVKKEAK---DLENISSPDVDGGPIIS-----DLE-      40
Bos_taurus            ---MMDPGKKLGSDEGDHVNEEAE---HPSHSASHGVDRGPVS-----DETA      41
Danio_rerio            ----MDAPKRKLR-----SGKD      13
1.....10.....20.....30.....40.....50.....60

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Xenopus_tropicalis      KVSQTQCTKRRLIQGTHTSQKLEGGCAENEPFSKRPKIEEGTGDGSDTYINPNNKDS----      105
Rhinatrema_bivittatum  ENRKDICRNKRPFVLESASPNITEDGPEYECLSKRIKLTSSSEDEGSDVGTNSRNVITRPRI      110
Pavo_muticus           KRKENGITNKRVLGSGSPNSDTAAERPEN--ISRKRKL-MSSADEKDSDRKLHKVLAEEEE-      115
Pavo_cristatus         KRKENGITNKRVLGSGSPNSDTAAERPEN--ISRKRKL-MSSADEKDSDRKLHKVLAEEEE-      115
Gallus_gallus          KRKESGITNKRPLSGSPNLDTAERPEN--ISRKRKL-MSSADEKDSDRKLHKVLAEEEE-      115
Chelonia_mydas         KGEENGKKNRALLESTSLDVTEDGQLENEPISKRIKL-DFSKHTKGSEGGKSLKLTVROES      115
Mus_musculus           NVSENFTSKRVFSESSNSDGVAAEYRSEARSKRLRT--EALPETREOGACGLGTVEAN      97
Rattus_norvegicus      NASENFTSKRIFSESSNSDSIAMEEDRIERASKRLRT--EAVESETRGACGLGTAEVN      96
Homo_sapiens           SFPENSMGKRGFSESSNSDSVIGEDRNKHASKRRKL-DEAEPLKSGKGICRLETSESS      100
Macaca_mulatta         SFPENSMGKRGFSESSNFDSVVI-EDINKHASKRRRL-DEAEPLKSGKGQVCRLETSESS      99
Callithrix_jacchus     SLPENSTNKRGFSESLNFGSVVTGKDSNKHASKRRKL-DEAEPLKSGKQDVCRLLETSESS      100
Canis_lupus_familiaris NSSENPTSKRGFPESHFGSVTVVEDGNKHASKRMKLSAAEAHLEPEEOGIHRLETSASM      101
Equus_caballus         -SSENSTSKRGLSESSNFDSVVVEEDENKHASKRMKL-AAEAEPLKSAEQVVRGSETSEST      98
Bos_taurus            DSAENSTNKRGFSAESSDLDHIVEEDNGNKRASKRMKL-AAEAEPLGPGEPRTHGSGSPEGT      100
Danio_rerio            ISKDKGQSKRKASDTG-----TEDVSPAPKSAKTSDDSGYVCNEEE-----      54
.....70.....80.....90.....100.....110.....120

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Xenopus_tropicalis      -----TVKQVPLAN-----ITL      118
Rhinatrema_bivittatum  -----NEEEVGDNNSDLYQFKCSVLHCAFVAFDDTELQNHMENKHSOEILLP      158
Pavo_muticus           ----GSIEAGAVKIEGVTGCHDDNVCSNSMCPHCDFKCVDGAILKTHKETKHSQEVSA-      170
Pavo_cristatus         ----GSIEAGAVKIEGVTGCHDDNVCSNSMCPHCDFKCVDGAILKTHKETKHSQEVSA-      170
Gallus_gallus          ----GSIEAGAVKIEGLAGCHDDNVCSNSMCPHCDFKCADGAILKTHKETKHSQEVSA-      170
Chelonia_mydas         IAEITDNVIDGAIKKVAVSDCVSGDTLLSNSLCPQCDFAADTIPLKIHLSEKSDSQEVPS-      174
Mus_musculus           -----VHLAEMGKEAFPANCSEGGALPSVFPSCDFSTSNILPLKVDEVKKPAREMVS-      151
Rattus_norvegicus      -----VHLAEMEKEVFPAHNSSEGRALPNVSPSCDFSTSDTLPLKVDDVKKPAQEMVA-      150
Homo_sapiens           VTEGGIALDETGKETFLSDCTVGGTCLPNALSPSCNFSIDVVSLLKTDTEKTSQEMVS-      159
Macaca_mulatta         VTEEGIALDETGKETFLSDGTVGGTCLPNALSPSRNFSIDVVSLLKTDTEKTSQEMVS-      158
Callithrix_jacchus     ATEEGITVDAAGKAFLSDRTVGGTCLPNALSPSRDVSTVDVVSLLKTDIEQTSQEMIS-      159
Canis_lupus_familiaris VPECHIPLSETVRETLLNECPDGGTRLNPAFSPPCSLSTVDAVSPKIDTEKKSAQEMVS-      160
Equus_caballus         VSEVDIPLEEAVKESLLSDCLDGSTCLPNAFSPPLGSLSTVDSVSLKTDTEKKSAQEMVS-      157
Bos_taurus            GSGEGVALPGSEVEPLSSGR-DGSPGLPGHPSPG-----EMAAEKEPAQETTAF      148
Danio_rerio            -----      54
.....130.....140.....150.....160.....170.....180

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Xenopus_tropicalis      LPNNEK-VCDIQSIIPQE-GVLNAEENIDTVSSGDFNSKHAEN--LYSSNCALIEDNSCP 174
Rhinatrema_bivittatum  LPKNVS-SCHLEETSVKYAVRDAYGVFKCKNCQSLSSKSDLDRHILDSHKEOLENNSCP 217
Pavo_muticus           --AVPEKLPSSSEIISADCRVENMDKDLKGKTRDQFLPSCSDLEKHIOESHSHQCKEQTC 228
Pavo_cristatus         --AVPEKLPSSSEIISADCRVENMDKDLKGKTRDQFLPSCSDLEKHIOESHSHQCKEQTC 228
Gallus_gallus          --AVPETLPSSSEIISVDCRVENMDKDIKGKTHDQFLPSCSDLENHMQESHSHQCKEQRC 228
Chelonia_mydas         --AVPESTFQVEEISVCCITVGNIDKVLKCKTCDQFFSSYPDLEKHIOESHSHQCKEHC 232
Mus_musculus           LVPERHNPFPPPEERSISCSFGSVETGLRCGVCGCSFSSCSALEKHVECHVEGKERTCC 210
Rattus_norvegicus      LDPERHTPFPPPEEVSVCSSFGSVETGLRCGVCGCSFSSCSALEKHVECHVGGKDRSCC 209
Homo_sapiens           LDLERESPFPPKEISVSCITIGNVDTVLCSCICGHLFSSCSLEKHAES-HMQPKERTCC 218
Macaca_mulatta         LDLERESPFPLKEISVSCITIGSVDVFLKCSICGHLFSSCSLEKHAES-HVQSKERTCC 217
Callithrix_jacchus     LDLERESPFPLKEVNVSCITIGDVTDLKCGTCGHLFSSCSLEKHAES-HMQSKERTCC 218
Canis_lupus_familiaris LDPERESPFPLKEISVSCITIGNVDSVFKCSICGHLFSSCPDLEKHAEC-HTQSMERYTC 219
Equus_caballus         LHPEREPPFPLKEISVSCITIGNVETVFKCNECGHLFSSCSLEKHAEC-HLQSKERTCC 216
Bos_taurus            LDLGGEPPSPPKEMRGSALG-----GPCACSPVSCPHVEKHAVR-PSRPEDQACG 199
Danio_rerio            -----HEHGETDTVGDQTRSIQSKEDCS-----SETSNPLVCS 87
.....190.....200.....210.....220.....230.....240

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Xenopus_tropicalis      TKE-----KSVQIPVNSVSIQSKIYSCDICGFCQSKENLLHEQHNCQAQVLHENFGAPK 228
Rhinatrema_bivittatum  HCNNAEDSSALQAHIREKHRQELVFCCDLGFCQCATENLLHVHFLGKTHLRRONLAARG 277
Pavo_muticus           RCSCTTKCNSTLQTHAKQDHEKSKIFCCDLGFCQSAEENLLNSHFLGKTHLRRONLAARG 288
Pavo_cristatus         RCSCTTKCNSTLQTHAKQDHEKSKIFCCDLGFCQSAEENLLNSHFLGKTHLRRONLAARG 288
Gallus_gallus          RCSCTTKCNSTLQTHAKQDHEKSKIFCCDLGFCQSAEENLLNSHFLGKTHLRRONLAARG 288
Chelonia_mydas         QCSYKAEYSLALQTHIKQAHGQSIIFCCDLGFCQGEENLLSHFLGKTHLRRONLAARG 292
Mus_musculus           HCSHRAESSSSPHEHVRHTHGPOKVFSCDLGFCQCAEENLLNAHYLGKTHLRRONLAARG 270
Rattus_norvegicus      HCSHRAESSSSPHVHAKHSQGPQKVFSCDLGFCQCAEENLLDAHYLGKTHLRRONLAARG 269
Homo_sapiens           HCSHKAESSSSALHMHKQAHGPOKVFSCDLGFCQSEENLLNAHYLGKTHLRRONLAARG 278
Macaca_mulatta         HCSHKAESSSSALHMHKQAHGPOKVFSCDLGFCQCAEENLLNAHYLGKTHLRRONLAARG 277
Callithrix_jacchus     HCSHKAESSSSALHMHKQAHGPOKVFSCDLGFCQCAEENLLNAHYLGKTHLRRONLAARG 278
Canis_lupus_familiaris HCSHKAESSAALHVHVRQTHGPOQVFSCDLGFCQVEENLLNAHYLGKTHLRRONLAARG 279
Equus_caballus         HCSHKAESSAALHMHVRQTHGPOQVFSCDLGFCQVEENLLNAHYLGKTHLRRONLAARG 276
Bos_taurus            ---PAADGGLAFPGHTGQARGPPRAFSCDLGFCQCAEENLLNAHCLGKTHLRRONLAARG 256
Danio_rerio            VCSFVAKTQTALKIHSKRKHSQ-----LQEAEN-----QTHLSKVHLE--- 125
.....250.....260.....270.....280.....290.....300

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Xenopus_tropicalis      G-----LSKKIHSVKKKSNKSKSVIKS--KFTANIEIN----- 261
Rhinatrema_bivittatum  GYVQMLTKNSFFKKQYTAVERKNERKSLVIKSAARFANSKESRNVSGSKPKVSKESIIAK 337
Pavo_muticus           GFVQILTKKSFKKTQSTATREKNARARPGSSKLKVRTADAKELNVCSA--LEDNSVSLSK 346
Pavo_cristatus         GFVQILTKKSFKKTQSTATREKNARARPGSSKLKVRTADAKELNVCSA--LEDNSVSLSK 346
Gallus_gallus          GFVQILTKKSFKKTQSTATREKNARARPGSSKLKARTADAKELNVCSA--LEDNSVSLSK 346
Chelonia_mydas         GFVQILTKRSFHKQYIAVNKKKVRKSGPYKSKTRTADSKELN-ASN--LKDSKVSFSK 349
Mus_musculus           GFVQILTKPSFPKKA-CVMGTKNVRTKPRASKPIAKTGDSRVVPSTGN-DFKDCRGAPSE 328
Rattus_norvegicus      GFVQILTKQSFPPKA-CVVGTKNVRTKPRASKPIARNGDSKGARNSGK-KSKDCRAAPSE 327
Homo_sapiens           GFVQILTKQFPFKKS-RTMATKNVHVKPRTSKSIKNSDSKGLRNVGS-TFKDFRGSISK 336
Macaca_mulatta         GFVQILTKQFPFKKS-CTVATKNVHVKPRTSKPIAKNSDSKGLRNVGS-KFKDFRGSISK 335
Callithrix_jacchus     GFVQILTKQFPFKKP-CTMATKNVRSKPRTSKPIAKNSDSKGLRNVGS-KFTDWTGSISE 336
Canis_lupus_familiaris GFVQILTKQFPFKKP-CAMGTKNVRSKPRTSKPIAKTGDSKGLRNVGS-KFKDFRGNISK 337
Equus_caballus         GFVQILTKQFPFKKP-CTMGTKNIHAKPRGSKPMKNSDSKGLRNVGS-KSQDFRGSISK 334
Bos_taurus            GFVQILTKQPLPKKP-SPVGAAGRTKPRASRPVARNGDSKALRSVGAGTFRDFRGSFSK 315
Danio_rerio            -----SSVSLSEEDKQSDCCVDENSVKVVGN-----S 153
.....310.....320.....330.....340.....350.....360

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Species	Sequence	Position
<i>Xenopus tropicalis</i>	SDMDGENKKANIGRKTMKQKISR-----LKNISKIILAIK-----	297
<i>Rhinatrema bivittatum</i>	NDEDGELCVETISSEKSLVGEQL-----RRNIITKICSPGKRGNC--RDQEKKLETSGIHED	392
<i>Pavo muticus</i>	QS-DGTELLAEMIPSTNIPAEKKDNVTG-KLLSSSVEGDNEVH--TEKLEIPGPSD-FLQ	401
<i>Pavo cristatus</i>	QS-DGTELLAEMIPSTNIPAEKKDNVTG-KLLSSSVEGDNEVH--TEKLEIPGPSD-FLQ	401
<i>Gallus gallus</i>	QN-DGTELLAEMIPSTNIPDEKTDKVMG-KLLSSSVEGDNEVH--TEKLEVPGPSD-FLQ	401
<i>Chelonia mydas</i>	QS-DGSELLVEMITSKNISTEKSTVTVEEKESFSVEGTRELO--TEKLEISGSSSENLN	406
<i>Mus musculus</i>	DSAGGSELLVEMVPSRKISSGKAH-VVEENV-SFGVAQNPENQ--NQQLGGLVSSEGLLN	384
<i>Rattus norvegicus</i>	GSAGSELLVEMVPSRRISSGKAG-VVEENV-SFGVAQNPENQ--NQQLGGLVSSDGLLS	383
<i>Homo sapiens</i>	QSGSSSELLVEMPSRNTLSQEVE-IVEEHVTSLGIAQNPENQ--SRKLDTLVTSEGLLE	393
<i>Macaca mulatta</i>	QSGSSSELLVEMPSRNTSSQEVE-IVEENVTSLGIAQNPENQ--SKKLDTLVTSEGLLE	392
<i>Callithrix jacchus</i>	QSGSSSELLVEMPSRNASSQEVE-IVEENVTSLGITQNPENQ--SKKLDTLVTSEGLLE	393
<i>Canis lupus familiaris</i>	QSGSSSELLVEMPSRNTSSQKVE-IIIEENVTSLGIARTENQDKNKKLGALVSSEGLLE	396
<i>Equus caballus</i>	QSGSSSELLVEMTPSRNTSSQKGE-IVEENITAPGMVQNPENQ--SKKLGALVTSEGLLD	391
<i>Bos taurus</i>	QSGHGSELVEMRPSRNTSPEKME-VVEENVTSHDAAGNPENQ--SRKLGMAVTSERLLD	372
<i>Danio rerio</i>	RSPTQMLLEIVEPTSCRSQTDGE-----	177

<i>Xenopus tropicalis</i>	-----AKRQKDRRAFER-----SHFFRRKYGFCHVR-----	323
<i>Rhinatrema bivittatum</i>	SLDKELDSTPRTRKTRATRRGDRLAIERNVLVVSNTFKRKTESEFKLKGRFKKQLHLIVRD	452
<i>Pavo muticus</i>	NSEFPPIITRKLIVSSILNVTKRFDRLHKKRNIIVLLRAPFGG-NRSFRLKROVKRRYNLLG--	458
<i>Pavo cristatus</i>	NSEFPPIITRKLIVSSILNVTKRFDRLHKKRNIIVLLRAPFGG-NRSFRLKROVKRRYNLLG--	458
<i>Gallus gallus</i>	NSEFPPIITRKLIVSSILNVTKRFDRLHKKRNIIVLLRAPFGG-NRSFRLKROVKRRYNLLG--	458
<i>Chelonia mydas</i>	KQEPTRSTQKITGSLNITRRSDRLGHKRNILSLRTSFRR-SGSFKLKQIKGRYSLLGVS	465
<i>Mus musculus</i>	KPESTKNALOMAHVSISTT--SRPRSERNLLVLGNSEFRRSGTFTLKGQAKKRFNLLGIN	442
<i>Rattus norvegicus</i>	KSEPTKIVLQTAHVSISTT--SRPRSERNLLMLGNSEFRRSGAFTLKGQAKKRFNLLGIN	441
<i>Homo sapiens</i>	KLESTKNITLQAAHNSVT--SRPRPERNIIVLGNSEFRRSGTFTLKGQAKKRFNLLGI-	449
<i>Macaca mulatta</i>	KLESTKNITLQAAHGIVST--SRPRPERNIIVLGNSEFRRSGTFTLKGQAKKRFNLLGI-	449
<i>Callithrix jacchus</i>	KLESTKNITLQAAHSISVI--SRPRPERNIIVLGNSEFRRSGTFTLKGQAKKRFNLLGI-	449
<i>Canis lupus familiaris</i>	KFESTKNITLQAAHSVSVS--SRPRPERNIIILGSSFFRRRTGTFTLKGQAKKRFNLLGIS	453
<i>Equus caballus</i>	TLESTKNITLQSAHGVSTA--LRPRPERSVMLGHSEFRRSGTFTLKGQAKKRFNLLGIN	448
<i>Bos taurus</i>	RLESSRNITACAAPGLSTA--SRPRAERGFLVLGSGFFRRRAGAFALKGOVKKRCGLLGVS	429
<i>Danio rerio</i>	-----	177
430.....440.....450.....460.....470.....480	

<i>Xenopus tropicalis</i>	--KKLHMRRRIIKKGQARLKPLAIPSEMLHT-----EYT	354
<i>Rhinatrema bivittatum</i>	KSRRVHIGHTFRKHTKPKELKSIPAEQLKTATPCSVV-----QDINQHEES	498
<i>Pavo muticus</i>	KRSKSEIRRAYMKRISSTOLKPSDSSPTSHKLELTND----KSHCNTASEIQDLTGKPN	514
<i>Pavo cristatus</i>	KRSKSEIRRAYMKRISSTOLKPSDSSPTSHKLELTND----KSLCNTASEIQDLTGKPN	514
<i>Gallus gallus</i>	KRSKSEIRRAYVKHISSTOLKPSDSSPTSHGLELTND----KSHCNTASEIQDLTGKPN	514
<i>Chelonia mydas</i>	KRGKPKSHQTVKHNFRTQRPKPSLMPKLPRELEMDDDDDVNSQCKATSEIQALSQDRTN	525
<i>Mus musculus</i>	KRGTNETQRMVMKHFR--TOMKTN--AQPVLEQVEMSKD---VQSLCVTTSDNPEVMDKTA	497
<i>Rattus norvegicus</i>	KRGTNETQRLVYVKHLR--TOMKAN--AQPVLEQVMQMKD---VQSLCVTTSDNPEVMDKTA	496
<i>Homo sapiens</i>	KRGTSETQRMVMKHLR--TOMKTHDAESVLKHLEACSS---VQRVCVTTSETQEAEGGGS	505
<i>Macaca mulatta</i>	KRGTSETQRMVMKHLR--TOMKTHDAESVLKHLEACSS---VQRLCVTTSETQEAEGGRGS	505
<i>Callithrix jacchus</i>	KRGTSETQRMFMFKHFR--TQIKTHDAESVSKHLEACSS---VQRLCVTTSETQEAEGGRGS	505
<i>Canis lupus familiaris</i>	KRAANDTQRMVMKHFR--TQVKTSEAESVAKHVETSGS---VDSVCVASSESADLKQDQRS	509
<i>Equus caballus</i>	KRGTNETQRMVMKHFR--TOMKASDAESTSKHVETSGS---IHILCVTTSLETQDPKQDKRI	504
<i>Bos taurus</i>	KRGANEVQRLYSKHLR--APIKMSDAESAPLHGDP-----LIPPETQAPKQDRTN	478
<i>Danio rerio</i>	-----	177
490.....500.....510.....520.....530.....540	

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Xenopus_tropicalis      NCTQMLDDRNSTAMFEDVSKTSTLHTCVNCKELFPENALEAHVKKQHNEETQFYCQSCG 414
Rhinatrema_bivittatum  TCSVSTTKSEDELQPDVSDRKILRTCAYCDHVFQNRKGLEIHKRRHTKEMQFHCQPCG 558
Pavo_muticus           TLSSSTTSTKNSEVELTADPS-VHHTCIDCGHVFQNKESLEIHVVNFHTKSVOFHCQTCS 573
Pavo_cristatus         TLSSSTTSTKNSEVELTADPS-VHHTCIDCGHVFQNKESLEIHVVNFHTKSVOFHCQTCS 573
Gallus_gallus          TLSSSTTNIKNSSEVELTADPS-VHHTCIDCGHVFQNKESLEIHVVNFHTKSIQFLCQTCS 573
Chelonia_mydas         TSSPSTTKTEDSQIKPVADNK-VLHTCIYCGIVFQNRNGLEIHVIRHHTKGMQFHCQTCS 584
Mus_musculus           FCLSGSTRLGSLPVKPADHQLSVQCTCTECGOIAANKTDFEVHVKQCHGREMQFHCQTCD 557
Rattus_norvegicus      SGLSGFTIRLGSLEVKPADHQLSVQCPCTECGOITANKTDLDIHVQKCHVREVQFHCQTCD 556
Homo_sapiens           ARPPDSG-LHSLTVKPASGSQ-TLCACTDCGOVATNRTDLEIHVKRCHAREMKFYCRTCD 563
Macaca_mulatta         ARPPDSG-LDSPTVKPASDSQ-TLCACTDCGOVATNRTDLEIHVKRCHAREMKFYCHTCD 563
Callithrix_jacchus     TCTRGSR-LDSLTVPKASDPQ-TLCACTDCGOVATNRTDLEIHVKRCHARETKLYCHTCD 563
Canis_lupus_familiaris SHRACS--FSSMVVRPAADRQ-MWT-CTDRGOEATNRTTELKTHGERAPPGVEVKLHCQACD 565
Equus_caballus         SHIPCS--FDSLTVRPASDHQ-MLCTCADCGQIATNRAELEIHKRCHAREMKFYCQTCDD 561
Bos_taurus             AHLPGS--SDSLARRPAPDHQ-VACTCSACGHTATSRAELEIHVTRCHVGEIRFHCQTCCG 535
Danio_rerio            -----GTNEAN 183
.....550.....560.....570.....580.....590.....600

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Xenopus_tropicalis      FFCINRRNFETHCDSNCSPTVKCNLECHICSAVAADIMIFENHMSVNHNLRFHCDVCKLY 474
Rhinatrema_bivittatum  YSCVTRGDFEKKHCHTNRHQMGVFNFAHLCSFITTEERNLKSHMGDEHNMLFGCTVCKLY 618
Pavo_muticus           YSCGVKEDLQQHCQNTKHMGCISFNCQLCSFTSLTVTNFQSHMSEVHNMSHSCPTCVLF 633
Pavo_cristatus         YSCGVKEDLQQHCQNTKHMGCISFNCQLCSFTSLTVTNFQSHMSEVHNMSHSCPTCVLF 633
Gallus_gallus          YSCGAKEDLQQHCQNTKHMGCISFNCQLCSFTSLNVNINFSHMTFVHNMSHSCPTCVLF 633
Chelonia_mydas         YSCAIRGDFEQHCQSNKHOMGGYSFNCHLCSFICLNDISLGTHMSEEHSMHLNCCIICNLY 644
Mus_musculus           FSSPSRRDLLEEHVHSNQHQHMTVPVLSGCCSFISLNETGLRDHMKHKGGMFFCTSCNLF 617
Rattus_norvegicus      FSSPSRRDLLEEHLSNQHQQTTPVLSGCCSFISLSETSLRVHMKHKGGMFFCTSCNLF 616
Homo_sapiens           FSSMSRRDLDEHLHSNQHQQTASVLSGCCSFISLDEINLRDHMKHKNMHFLCTPCNLF 623
Macaca_mulatta         FSSMSRRDLDEHLHSNQHQQTASVLSGCCSFISLDEINLRDHMKHKNMHFLCTPCNLF 623
Callithrix_jacchus     FSSTSRRDLDEHSHSPQHQQTASALSQCCSFISLDEINLRDHMKHKNMAFLCTPCNLF 623
Canis_lupus_familiaris FSSTLRDLDRHSHDSQHQAAGLRCCSFISEDELSLRDHMKHKNMGFLCAPCNLF 625
Equus_caballus         FSSISRRDLDEHLHNNQHQQTASALSQCCSFISLNEINLRDHMKHKNMGFLCTPCNLF 621
Bos_taurus             FSSTSRRDVEEHAHSHQHQQTASGLRCQCLFTSPNEVDLRDHMKHKNMGFLCPPCHLF 595
Danio_rerio            IGGVTNDGMDENDKSKQKSTSNTPQTLAVG-----HSTDSHRKETNCDSEECMTS--- 233
.....610.....620.....630.....640.....650.....660

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Xenopus_tropicalis      FRLRELLHHEKTOHHLQILISG-----DKIALQMSDPRSIOS-QIEIDNIAITTEVA 526
Rhinatrema_bivittatum  FPAEEDLVHHEKTEEHISLVAKQNTSGSDKNNLTLETVAFNSESHHNTENIVNEIEVK 678
Pavo_muticus           FQTQEEELINHQBKDEKHDSSLFQQAATPLSNS-GLTLQVVSYGDSVSNSSQKLAK-EIKVS 690
Pavo_cristatus         FQTQEEELINHQBKDEKHDSSLFQQAATPLSNS-GLTLQVVSYGDSVSNSSQKLAK-EIKVS 690
Gallus_gallus          FQTQEEELINHQBKDEKHDSSLFQQAATPLSNS-GLTLQVVSYGDSVSNSSQKLAK-ETKIS 690
Chelonia_mydas         FLTEEELIDHKTTEKHISLLAQNTSSISISTDLSLQTAAYTTLESNNLQKIVD-EIEVT 703
Mus_musculus           LS-EKDVEEHRATEHNSLVVQPKTASSLSGD---SVLPFSTVESEN-PADSRE-DSGKA 671
Rattus_norvegicus      LS-ERDVEEHRATEAHNSLVVQPKTASSLSRD---SVLPPLSTLESDN-MADSRE-DSGKA 670
Homo_sapiens           FLSEKDVEEHKATEKHINSLVQPKTLOSSNSDLVLQTLPLSTLESEN-AKESMD-DSGKA 681
Macaca_mulatta         FLSEKDVEEHKATEKHLSSLVQPKTLOSSNSDLVLQTLPLSTLESEN-SKESMD-DSGKA 681
Callithrix_jacchus     FLSEKDMEEHKTEKHISLVQPKTSQSSNSDLVLQTLPLSTLESEN-AKESMD-DSGKV 681
Canis_lupus_familiaris FLSEKDLEEHAMAETHVCLLVQPKTSQSFNSDLALQTLPLSTLESEN-MKDQMS-ESGKA 683
Equus_caballus         FLSEKDMEEHKTEKHVRLLVQPKTSQSFNNDLVQTLPLSTLESEN-TKDSMS-ESGKA 679
Bos_taurus             FSSEKDMEEHRATEKHIHLLGQTKSSQSFNGDSALQTFPLSTLESEN-AKVSVS-EAGKS 653
Danio_rerio            -KSSKKMLGNQHSKLTALLKRSTG----- 257
.....670.....680.....690.....700.....710.....720

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      . * * . : * ** : . : . * . : : * * * * : * . * **
Xenopus_tropicalis  TEENHVKKGAENVS----HFETGKQFQCKKCFYKTRSSVLTTRHIKLRHAHDYYFLCKA  582
Rhinatrema_bivittatum IQEDSLQASKPNNSDEEKHCFQSKAQFRCKKCFYKTRSSVLTTRHIKLRHTRDFHFLCKA  738
Pavo_muticus        MKTKPPDSSIVNQKNEKHSILSKTQFQCKKCFYKTRSSVLTTRHIKLRHAQYEHFLCKA  750
Pavo_cristatus      MKTKPPDSSIVNQKNEKHSVLSKTQFQCKKCFYKTRSSVLTTRHIKLRHAQYEHFLCKA  750
Gallus_gallus       MKTKPLDSSIVNQKNEKHSVLSKTQFQCKKCFYKTRSSVLTTRHIKLRHAQYEHFLCKA  750
Chelonia_mydas      MEDEPPKPCMINHGNEKHSVLNKTQFQCKKCFYKTRSSVLTTRHIKLRHAQYEHFLCKA  763
Mus_musculus        AQEGPAES--RASHGTEARHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  728
Rattus_norvegicus   SQEPPAES--RASHGTEARHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  727
Homo_sapiens        SQEPLPS--RVSHGNEVRHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  738
Macaca_mulatta      SQEPPVKS--RVSHGNEVRHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  738
Callithrix_jacchus  AQEPPVKS--RVSHGNEVRHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  738
Canis_lupus_familiaris AQEEAGKP--RVSHGHEVRHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  740
Equus_caballus      AQEPPAKP--RVSHGNEVRHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  736
Bos_taurus          AQEPPAKS--RVSHGNEARHS--SKPQFQCKKCFYKTRSSVLTTRHIKLRHGQDYHFLCKA  710
Danio_rerio         -----GKSHQCGKCTFTADNSVMLAQHIKTHHPVEHRFHCKI  295
      .....730.....740.....750.....760.....770.....780

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Xenopus_tropicalis  CNIYSMCKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVWFDG-----ISDPNIAEDRA  637
Rhinatrema_bivittatum CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCADIGDVKETKDPATSGNEI  798
Pavo_muticus        CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  810
Pavo_cristatus      CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  810
Gallus_gallus       CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  810
Chelonia_mydas      CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  823
Mus_musculus        CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  788
Rattus_norvegicus   CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  787
Homo_sapiens        CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  798
Macaca_mulatta      CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  798
Callithrix_jacchus  CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  798
Canis_lupus_familiaris CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  800
Equus_caballus      CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  796
Bos_taurus          CNLYSLSKEGMEKHIKRSKHLENARKNNIGLRFEECIEKVCVGVGGIKTVMDPSISGNEN  770
Danio_rerio         CHYYTTTTEAMEAHLTEEVHQVAKESLSLFLKDCVEKVLVIQSDQREDEDMNDSDTQC  355
      .....790.....800.....810.....820.....830.....840

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      :
      * : * : . * . * * : . . . * : * . : . : . * : : * : * :
Xenopus_tropicalis  KDSQFPFVLQNRALPSADG---NLFSQDSGSGTD--VLRNERKKGSKSGSMSRLCNYCG  691
Rhinatrema_bivittatum SESDKESVQMQSSSPAENLSAIKELPLSDTNDNKS--VLASALKRGRSKGNVSRCTHCG  856
Pavo_muticus        TEFDKEIVHVPSSAAENILRN-KEFVPVDQRIGENELVLNAPKGRPKGTISRTCAHCG  869
Pavo_cristatus      TEFDKEIVHVPSSAAENILRN-KEFVPVDQRIGENELVLNAPKGRPKGTISRTCAHCG  869
Gallus_gallus       TEFDKEIVHVPSSAAENILRN-KEFVSVQDKIGENELVLNAPKGRPKGTISRTCTHCG  869
Chelonia_mydas      TELDKESIQTPTSSTVDNTSTN-KELIPSGEITKDSQVLNAPKGRPKGTISRTCTHCG  882
Mus_musculus        GHVG-VQSQEHSQREQSMLTP-KELPQSGVITKEDELGLATTPKGRPKGSGISRTCSHCG  846
Rattus_norvegicus   GHIG-VRLQEHSHCEQSMLTP-KELPQSGVITKEDELGLATTPKGRPKGSGISRTCSHCG  845
Homo_sapiens        GHIG-VQLQEHSSYLEKGMLAS-EELSQSGGSKDDELASTTTPKGRPKGNISRTCSHCG  856
Macaca_mulatta      GHVG-VQLQEHSSYLEKGMLAP-KELSQSGGSKDDELASTTAPKGRPKGNISRTCSHCG  856
Callithrix_jacchus  GHVG-VQLQEHSSYLEKGMLMP-KELSQSGDSTKDELALTTTPKGRPKGNISRTCSHCG  856
Canis_lupus_familiaris GHMEGVQLQESSCLEKSVLTS-KEVPOPGVTAREGEVALTATSKRGRPKGNISRTCSHCG  859
Equus_caballus      GHVEGVQLQEHSSCLEKSMITT-KELSQSGIITKEDALALT-TAKRGRPKGNISRTCSHCG  854
Bos_taurus          GHGEGVQIQEQSCLDQSILPP-QELSLSGVITKEGELAPPPTPKGRPKGNISRTCSHCG  829
Danio_rerio         SNEAVEVQGTENLLQEPADGMKDSPO-----KRKGRPKTENGTVCSHCG  401
      .....850.....860.....870.....880.....890.....900

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	*:*** **::*****:*** **::**.*:* *****.*** **	
Xenopus_tropicalis	LVASSVTNLSVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCTTKKHNRVGVENNGPHK	751
Rhinatrema_bivittatum	LLASSVTNLSVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCTTKKHKS RVEMEDHRKQK	916
Pavo_muticus	LLASSVTNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKSRVEIEGHGKQK	929
Pavo_cristatus	LLASSVTNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKSRVEIEGHGKQK	929
Gallus_gallus	LLASSVTNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKSRVEIEGRGKQK	929
Chelonia_mydas	LLASSVTNLTVHIRRKHSQYSYLCKLCNYYTVTKGDMERHCATKKHKGRVEMEANGKQK	942
Mus_musculus	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVEIEANGKQS	906
Rattus_norvegicus	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVEIEANGKHS	905
Homo_sapiens	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVEIEASGKHS	916
Macaca_mulatta	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVETASGKHS	916
Callithrix_jacchus	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVEIEASGKHS	916
Canis_lupus_familiaris	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVEIEANGKQS	919
Equus_caballus	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVEIEANGKQS	914
Bos_taurus	LLASSITNLTVHIRRKHSQYSYLCKVCNYYTVTKGDMERHCATKKHKGRVEIEASGKQS	889
Danio_rerio	LVASSATNLSVHIRRRHSRLYSFVKFCNYYCVTKGDMDRHCETKKHISRMAAGTG---	458
910.....920.....930.....940.....950.....960	
	:: . :: .	
Xenopus_tropicalis	IDVIVTSDGRHFE SRAKKET---LSPSPLDNG-HTNSVT---EKPVNTSDTLFVQQVS	804
Rhinatrema_bivittatum	TENLLAPDGANIEPNSKKTSSSICVLNEHVGYG-KQTEFEVS SLEEHIEENRNSKDVEMK	975
Pavo_muticus	SEIIVSPEGGNFESTSKKVN S PIPALCEHVEDGSKTLDLGN S IIRQEI EQGN-AEENAE	988
Pavo_cristatus	SEIIVSPEGGNFESTSKKVN S PIPALCEHVEDGSKTLDLGN S IIRQEI EQGN-AEENAE	988
Gallus_gallus	SEIIVSPGGENSESTSKKVN S PIPALCEHVEDGSKTLDLGN S IIRQEI EQGN-AEENVE	988
Chelonia_mydas	TEVVVCPEGGNLESISKKIN S PMDILNEHVEDDSQS S DLT S VLENQEEDQGN S IEVEVD	1002
Mus_musculus	SDIVVGPEGGNLEACKDSTSLAVTVSDAQAS---KPAKSDITRILETPGVGIGNAGDAEAG	963
Rattus_norvegicus	SDIIVGPEGGNLEACKKST-LALTVSDEQAN---KSAKSDASTLDKPVVGNQD TGDADAG	961
Homo_sapiens	SDIIVGPEGGSLEAGKKNAGSAVTMSDEHAN---KPAESPTSVLEKP---DRGNSIEAEVE	971
Macaca_mulatta	SDVIVGPEGGSLEAGKKNAGSAVTMSDEHVN---KPAESPTSVLQKP---DHGNSVEAEVE	971
Callithrix_jacchus	SDIIVGPEGGGL EAGKKNAGS AMTMSDEHAN---KPAESHAS---QKA---DHGNSVEAKVE	969
Canis_lupus_familiaris	SDIIVGPEGGNLEACRRNAISAG--SDELAN---KSAESDTCTSEKPGAEGHNPTEVEVE	974
Equus_caballus	SDIIVGPEVSNLEACRKN TNSAMTISEEHAN---KSAADLT S IPEKPVVEHGN S IEVEVE	971
Bos_taurus	SDIVVGPEGGNLDASRKN T---SVADEPAN---PPVEADTSVSEQPPLEQGS PVEVEVE	942
Danio_rerio	SGVVLLSAEQSSQSKANEAE TVDKVADIEMS-----VDEVD	494
970.....980.....990.....1000.....1010.....1020	
	
Xenopus_tropicalis	NPIC SINLPEDSPVFEVRVTVAETNATS---ENDI IKKDSLKTGNKKN T L S-----	852
Rhinatrema_bivittatum	NVLASNHECTQNSTYKTOHVLKEPGSISPERESDPCLOGMPTGGNSN KCIHCE FVAYSFS	1035
Pavo_muticus	NACRLPDL-EHARN S L N I K Q-AFLES AKDAQDGP C I QRRIVGANDN KCIHCDFTAHSSS	1046
Pavo_cristatus	NASRLPDL-EHARN S L N I K Q-AFLES AKDAQDGP C I QRRIVGANDN KCIHCDFTAHSSS	1046
Gallus_gallus	NASRLPDL-EHARN S L N I K H-AFPELAKDAQDGPWFQRRVMGANDN KCIHCDFTAHSSS	1046
Chelonia_mydas	NVSQLPDL-QYTKN P I N I K Q H I L M E P S N V T Q D G D P C F Q R R V T G A N D N K C V H C E F V A H S S S	1061
Mus_musculus	SVFPSGDG-ELSSQLSDKKGQLSLETEDLLQDDACSQRDVAGSSDNKCLQCEFS SAHSA A	1022
Rattus_norvegicus	SALQSV DG-EVSSQLADKKGQIALETEDLQCHDDACSQRDVAGSSDNKCLHCEFS SAHSA A	1020
Homo_sapiens	NVFHSLDG-EVNSHLLDKKEQISSEPEDFAQPGDVYSQRDVTGTGENKCLHCEFS SAHSA A	1030
Macaca_mulatta	NVFHSLDG-EVNSHLLDKKEQISLEPEDFAQQGDVYSQRDVTGTGENKCVHCEFS SAHSA LA	1030
Callithrix_jacchus	NVFHSLDG-EVNRHLLDKKEQISLEPEDLVQQGDVYSQRDVTGTGENKCMHCEFN A H S S A	1028
Canis_lupus_familiaris	NVFHSTDG-EVNSHLTDKKEQMSLEPEDPPOQGDACSQRDVGVTGDNKCVHCDFN A H S S A	1033
Equus_caballus	NVFHAIDG-EVNSHLTDKKEQISLEPEDLVQQGDHSSQTDVMDTSDNKCTHCEFN A H S S A	1030
Bos_taurus	NVFHPEDR-ETGSHLIEKKEQTSVDPED--LQGDTCPOKDDASTDENRCTHCEFK A H S S T	999
Danio_rerio	N-----TDSSV VACKKIKYDSGN NCSQCDFVAHSAQ	525
1030.....1040.....1050.....1060.....1070.....1080	

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1090.....1100.....1110.....1120.....1130.....1140	
<i>Xenopus_tropicalis</i>	----LVEKQHTTEEFQYYCMACEHYTVTHSEMMGHVITEKHKINYQAYKSQSS---SVLDV	905
<i>Rhinatrema_bivittatum</i>	SLELHVKKRKHTEKEFEYYCMACEYYAVTRREMTRHAATEKHKIKRQSHLHSSSEEEVNGAES	1095
<i>Pavo_muticus</i>	SLELHVKKRKHTEKEFEYYCMACDYAVTRREMIRHAATEKHKIRRESHVCLS-VEEVNTAH	1105
<i>Pavo_cristatus</i>	SLELHVKKRKHTEKEFEYYCMACDYAVTRREMIRHAATEKHKIRRESHVCLS-VEEVNAAH	1105
<i>Gallus_gallus</i>	SLELHVKKRKHTEKEFEYYCMACDYAVTRREMIRHAATEKHKLRRESQVCLS-VEEVNTAH	1105
<i>Chelonia_mydas</i>	SLELHVKKRKHTEKEFEYYCMACDYAVTRREMTRHAATEKHKIKRQSYVCSPPGEKADITG	1121
<i>Mus_musculus</i>	SLELHVKKRKHTEKEFYCMACDYAVTRREMTRHAATEKHHRMKRQSYLSAS-SVEAGSSE	1081
<i>Rattus_norvegicus</i>	SLELHVKKRKHTEKEFEYCMACDYAVTRREMTRHAATEKHKMKRQSYLSSS-NVEAGSSE	1079
<i>Homo_sapiens</i>	SLELHVKKRKHTEKEFEYCMACDYAVTRREMTRHAATEKHKMKRQSYLNSA-NVEAGSAD	1089
<i>Macaca_mulatta</i>	SLELHVKKRKHTEKEFEYCMACDYAVTRREMTRHAATEKHKMKRQSYLNSA-NVEAGSAD	1089
<i>Callithrix_jacchus</i>	SLELHVKKRKHTEKEFEYCMACDYAVTRREMTRHAATEKHKMKRLSYLNSA-HVEAGSAD	1087
<i>Canis_lupus_familiaris</i>	SLELHIKRKHTEKEFAFYCMACDYAVTRREMTRHAATEKHKMKRQSYLTSS-DIEASSAD	1092
<i>Equus_caballus</i>	SLELHIKRKHTEKEFAFYCMACDYAVTRREMTRHAATEKHKIKRQSYLNS-NVEASSAE	1089
<i>Bos_taurus</i>	SLELHVKKRKHTEKEFAFYCMACDYAVTRREMTRHAATEKHKMKRQSYLNST-NVOASSSE	1058
<i>Danio_rerio</i>	SLALHVRRKHTEKEFEVCLACSYYTVTRREMFRHMAATEKHKQRECYLKQ-----SND	579

<i>Xenopus_tropicalis</i>	TTDNVQKSSDDLSPVQGNNECLTA-----ITHNPKLNVEIDS	944
<i>Rhinatrema_bivittatum</i>	TKETTISVSQEQNGPKKPKILAN-----KVHDTDLKKSQST	1134
<i>Pavo_muticus</i>	IAKEGSALSQEEHHHSAGELKTVLGEMKCAS-DAAESDHTCKSLTECTALDENAFPEMPK	1164
<i>Pavo_cristatus</i>	IAKEGSALSQEEHHHSAGELKTVLGEMKCAS-DAAESDHTCKSLTECTALDENAFPEMPK	1164
<i>Gallus_gallus</i>	IAKEGSALSQEEHHHSAGELKTVLGEMKCAS-DAPESDRTCKSLTECTSLDENAFPEMPK	1164
<i>Chelonia_mydas</i>	IAKETSVMSPKDHQONTTEEFQIVSDETKVYNSGKAQDDQLTKSLADSTVLGDNTSSEISK	1181
<i>Mus_musculus</i>	ISKNIITPIEEEHSHNSEEFQIHPHQ-----SSG-TLQCRNPADCSILDDNTNLGMSK	1132
<i>Rattus_norvegicus</i>	ISKSIITPIEEEHSONSEEFQISPHQ-----SSG-TLQSRHPADCSILYDNTNLDMSK	1130
<i>Homo_sapiens</i>	MSKNIIMPEEEHQNSEEFQIISGQ-----PSD-TLKSRNAADCSILNENTNLDMSK	1140
<i>Macaca_mulatta</i>	MSKNIIMPEEEHQNSEEFQIISDQ-----PSD-TLKSRNAADCSILNENTNLDMSK	1140
<i>Callithrix_jacchus</i>	TSKKIIVPEEEHQNSEEFQIISDQ-----SSD-TLKARNAADCSILNENTNLDMSK	1138
<i>Canis_lupus_familiaris</i>	VSKNIIIPEEQHQSSEEFQIISDQ-----SSEETILRSKNADVCVLDEDTSLDVSK	1144
<i>Equus_caballus</i>	MSKNIIIIAEEQQNSEEFQIISDQ-----PSE-ILKSRNTAG-SILDENTNLDMSK	1139
<i>Bos_taurus</i>	VSKTIIPQGGQNSEEFQIISDQ-----PSE-TLKSRNAADCSILDENTSLDMSK	1109
<i>Danio_rerio</i>	PSDEDPEVITVLASASP-----TTKADLSADLSE	608
1150.....1160.....1170.....1180.....1190.....1200	

<i>Xenopus tropicalis</i>	-----HVSASEQGEKVALN-----VPETTTAYLKESTEINT-----	975
<i>Rhinatrema bivittatum</i>	TDCSA-FGDVERLNTSGNGEDVNVCSGFHQATSKTDVSAKSDTVSLKQGTGKSNLGKNEHE	1193
<i>Pavo muticus</i>	EGSSQNTVERVVVEETKNGGGENILCEGFGAPQKDNAGKPDDEETPIKEAGTYELQRS	1224
<i>Pavo cristatus</i>	EGSSQNTVERVVVEETKNGGGENILCEGFGAPQKDNAGKPDDEETPIKEAGTYELQRS	1224
<i>Gallus gallus</i>	ESGSQNTVESVVKKEETKNGGGENILCEGFGAPQKDNADPEGIPKEAGACELQKSGHG	1224
<i>Chelonia mydas</i>	QDGAHNAVGV-VEEETESNEGENPLYEVFQOTSQKD-EVKLSEITPLKEGVVICDLQKNQ-	1238
<i>Mus musculus</i>	VLCAPDSVTVVTEQESNFSEGHSCFETLQOPLVKDKSMKPREIVSPNTPSNLSLPGCLQS	1192
<i>Rattus norvegicus</i>	VLCAPDSVAVVAEQESNFNEDHSFCETLHQPLAKDRS IKPREIVSLNTPSNRSSPGCLQS	1190
<i>Homo sapiens</i>	VLCAADSVEVETEEESNFNEDHSFCETFOQAPVKDKVRKPEEMMSLTMSNNYGSPSRFON	1200
<i>Macaca mulatta</i>	VLCAADSVEVETEEESNFNEDRSFCETFOQAPVKD TVRKPEEMMSLTISSNYGSPSRFON	1200
<i>Callithrix jacchus</i>	VLCAADSVEVETEEESNFNEDHSFCGTFQAPVKDKVRKPEEMMSFTTISLNHDSPSRFON	1198
<i>Canis lupus familiaris</i>	ILRAPNSVEIETEEESNLSEDHSFCGNFOQPLAKDKALKPEEMVSFNISSNCGSPSRFON	1204
<i>Equus caballus</i>	VLCAPDSVEIETEEDSNLSEDHSFCETFOQPLAKDKVMKPDIVSLNISSNYDSPRKFON	1199
<i>Bos taurus</i>	VFCASDSVETETEEDSNLSEDSFCETFOQPLAKDKVIKPEEMVPLSISNCGSPSKFON	1169
<i>Danio rerio</i>	ENCNNENGEKQSEQS-----	624
1210.....1220.....1230.....1240.....1250.....1260	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Xenopus_tropicalis      -NCEQKSLDHKVSTEK---GOENG---IEROHIVSSVGVNDKVKIVKYKDDSVVEMIQLK 1028
Rhinatrema_bivittatum  KNVDESGLLCMTAKERENVAMDPG---SNDQDMNFFLENENQVLKQYKETEFVLAGVQPT 1250
Pavo_muticus           QELLNS---GDCSAENENRSGDT---NLNSGKGKENLEANREKPEAGGRNTDIIIEISLK 1278
Pavo_cristatus         QELLNS---GDCSAENENRSGDT---NLNSGKGKENLEANREKPEAGGRNTDIIIEISLK 1278
Gallus_gallus          QELLNS---GDCLAEIENRSGGT---NLNSGKGKENLDANREKPEAEGRNTDIIIEISLK 1278
Chelonia_mydas         DPINSN---FHCSVENQNVSNMDNAPNLDSSKSGKTLEENGENLENEYKHTFVLEEELLT 1295
Mus_musculus           ENLASSAVDCETAKKNRDVLDVAGDRSTPCDEEGGSVDDSEEKILDKSPCPGDPDGGHSA 1252
Rattus_norvegicus      GNLASSAVDSETAKNRHNLDDVGDTSAHCEDEGGSLDGSEEKVLDKSPCPGDLDDGGHSA 1250
Homo_sapiens           ENSGSSALNCETAKKNHEISNDAGELRVHCEGEGGNAGDGGGVVPHRHLCPTVLDGERSA 1260
Macaca_mulatta         ANSGSSALNCEVAKKNHEVSNDTGELRVHCEGEGGSAGDGGGVVPHRHLCPTVLDGERSA 1260
Callithrix_jacchus     ENSGSSASNCETAKKNHELLKDAGELRIHCESEGGSVGDSEGDVPHRHLCPTVLDGERSA 1258
Canis_lupus_familiaris ENSGSSALDYEAVERARGVLNDTGDPSIPSERDVGEAGENAEGKLSR----PGVGGRRHLA 1260
Equus_caballus         ENLGSSPFNYETVKKNHSLNLDIVDPNIHCESDGGNVGGDADKVFSSKHVCAGVLGGQSA 1259
Bos_taurus            ENSGSSALNHETAKKRHSMNLNDISSPNTHGESDGGNAEDKADKVLGKRGCLRAVDGEHPA 1229
Danio_rerio            -----TSKDNEESDPTVSDVIQSIKMEDMVENEMD 655
.....1270.....1280.....1290.....1300.....1310.....1320

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Xenopus_tropicalis      NG-----ESISNAHS-----DEITILEADNE 1048
Rhinatrema_bivittatum  GSSKNTNISLLGKGNIDKQSNLEENVTVANKKPRYSEDYRGTEGDSSV--EALIHAAQHE 1308
Pavo_muticus           EDNPLM-LSLPETKSAAWQSNFAGNIGEMVQNMHSLGDRSFKKNPTGEEEEALMEAAQHE 1337
Pavo_cristatus         EDNPLM-LSLPETKSAAWQSNFAGNIGEMVQNMHSLGDRSFKKNPTGEEEEALMEAAQHE 1337
Gallus_gallus          EDNPLL-LSLPETKSAAWQSNFAGNIGEMVQNMHSLGDRSFKKNPTGEEEEALMEAAQHE 1337
Chelonia_mydas         ERTPHV-PGLSETCNVAEQSNLDENIRNTVQNVHSLGDRSFRKDPVTEEEALTDAAQHE 1354
Mus_musculus           ES-----TSSVVMKIPREQLDLDDGGGQSKVGCEQTSIDLKDVQANPILNKEILINSQHE 1307
Rattus_norvegicus      ES-----ISPVVVKIPREQLDLDDGGGQSKVGCEQTSIDLKDVQANSNLESKEILMNSQHE 1305
Homo_sapiens           ES-----PVLVVTIRITREQGNLESQGNRVARHGLEDLKGVOEDPVLGNKEILMNSQHE 1315
Macaca_mulatta         ES-----PALVVTRITREQGNLESQGNKVTGRHGLEDLKDVOEDPTLENKDILMNSQDE 1315
Callithrix_jacchus     ES-----PTPVVTRITREQGNLESQGNKVSCHGLEDLKRVOEDPILKKEILMNSQHE 1313
Canis_lupus_familiaris ES-----TMPVVMGTGTREQLDLESSGQNEVGSQNPEDLKDSGEGPVMENKEILMNSQHE 1315
Equus_caballus         DS-----TIPVVMGMTREQLNLESSGQSKVGSVQSEGLKDRQEDPVLENKEILMNSQHE 1314
Bos_taurus            KS-----AMLTAP---RDLNLGSSDQDRAGSMQSSGDLKDVPGDPVLESKEILMNSRHE 1281
Danio_rerio            ED-----FIADSGDEGQST 669
.....1330.....1340.....1350.....1360.....1370.....1380

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Xenopus_tropicalis      MEVCSVEDTVGLDRSSGD-----IAVELSTASGTYSADQSFREFDSSIVKLH----- 1095
Rhinatrema_bivittatum  AEAALSDSIWEADDSSAEGLOENNSKASVTIISVDDKVKALYIFEQFDSSIVRLKGHYED 1368
Pavo_muticus           AEVTINNSIWEADGSTAEGMQESSNEALGTVTSTDDKRKAMQNFQKFDSSIVRLKSSODG 1397
Pavo_cristatus         AEVTINNSIWEADGSTAEGMQESSNEALGTVTSTDDKRKAMQNFQKFDSSIVRLKSSODG 1397
Gallus_gallus          AEVTINNSIWEADGSTAEGMQESSNEALGTVTSTDDKRKAMQNFQKFDSSIVRLKSSODG 1397
Chelonia_mydas         AEVTINNSIWEADGSTAEGMQETSNEALGTVISTDDKGKAMQNFQGFASIVRLKSHQDG 1414
Mus_musculus           AEVILE-----EDAPASIGTAE-SNDVYETIISIDDKGQTMYSFGRFDSSIIIRIKT-EDG 1360
Rattus_norvegicus      PEVILE-----EDAPASIGTAE-SNDVYETIISIDDKGQTMYSFGRFDSSIIIRIKT-EDG 1358
Homo_sapiens           TEFILE-----EDGPASDSTVE-SNDVYETIISIDDKGQAMYSFGRFDSSIIIRIKNPEDG 1369
Macaca_mulatta         TEIILE-----EDGPASDSTVE-SNDVYETIISIDDKGQAMYSFGRFDSSIIIRIKNPEDG 1369
Callithrix_jacchus     TEIILE-----EDGPASDSTVE-SNDVYETIISIDDKGQAVYSFGRFDSSIIIRIKNPEDG 1367
Canis_lupus_familiaris TKIILE-----EDGPASDSTVE-SNDVYETIISIDDRGQAMYSFGRFDSSIIIRIKNPEDG 1369
Equus_caballus         TKIILE-----EDGPASDSTVE-SNDVYETIISIDDKGQATYRFRFDSSIIIRIKNPEDG 1368
Bos_taurus            TKVILE-----EDGPASDSTID-SNDVYETIISIDDKGQAVYSFGRFDSSIIIRIKNPEDG 1335
Danio_rerio            EK-----HLRLTQLDSCIYPLKTIAEH 691
.....1390.....1400.....1410.....1420.....1430.....1440

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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1450.....1460.....1470.....1480.....1490.....1500	
Xenopus_tropicalis	-----KWQVEAGAVPLKRKKKGCCKSKQKGSRRIRCDCCGFLADGLS	1136
Rhinatrema_bivittatum	ESTINQSDDEGQPASGKKIEFHLKMDSSSSQSAKRKRSEGNHGETPRIRCDCCGFLADGLS	1428
Pavo_muticus	EPTDHSDEGQVPGGVRTGEFAVKADASPSGGKKKKSEGISLGLLTRIRCDCCGFLADGLS	1457
Pavo_cristatus	EPTDHSDEGQVPGGVRTGEFAVKADASPSGGKKKKSEGISLGLLTRIRCDCCGFLADGLS	1457
Gallus_gallus	EPIDHSDEGQVPGGVRTGEFAVKADASPSGGKKKKSEGISLGLLTRIRCDCCGFLADGLS	1457
Chelonia_mydas	ESTDHSDEGQMSGGMKVSEVTVKIDSSQSGGKKKKSEGNPLGESTRIRCDCCGFLADGLS	1474
Mus_musculus	ELVEQPEEGLIATGGRVSELPLKDD--CAQGLKKKKVEGGSFGESTRIRCDCCGFLADGLS	1418
Rattus_norvegicus	ELVEQPEEGLMVTGGKVSELPLKDD--CAQGLKKKKVEGGSFGESTRIRCDCCGFLADGLS	1416
Homo_sapiens	ELIDQSEGLIATGVRISSELPLKDD--CAQGVKKKKSEGSSIGESTRIRCDCCGFLADGLS	1427
Macaca_mulatta	ELIDQSEGLIATGVRISSELPLKDD--CAQGVKKKKSEGSSIGESTRIRCDCCGFLADGLS	1427
Callithrix_jacchus	ELIDQSEGLIATGVRISSELPLKDD--CAQGVKKKRSEGNCLGESTRIRCDCCGFLADGLS	1425
Canis_lupus_familiaris	ELLDQSEGLIATGVRISSELPLKDD--CAQGMKKKSDGGSFGESTRIRCDCCGFLADGLS	1427
Equus_caballus	ELIDQSEDGLIATGVRISSELPLKDD--CAQGVKKKKSEGSSFGESTRIRCDCCGFLADGLS	1426
Bos_taurus	ELFDQSQEGLVAAGVRMSELPLKDD--CAQGVKKKKADSSSFVESTIRCDCCGFLADGLS	1393
Danio_rerio	KQASLTGDAIAGGVNKK-----QSIRKPKTLDAKNAKSIPRIRCEDCGFLADGIS	740

	*****:*** :***:*****:::***:***.*.:***: *.****.*****:**	
Xenopus_tropicalis	GLNVHIAMKHLTKEKHFHCLLCGKSFFSESNLHQHLSVGHIRNEQESFEELPEGGATFK	1196
Rhinatrema_bivittatum	GLNVHIAMKHPSKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1488
Pavo_muticus	GLNVHIAMKHPSKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1517
Pavo_cristatus	GLNVHIAMKHPSKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1517
Gallus_gallus	GLNVHIAMKHPSKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1517
Chelonia_mydas	GLNVHIAMKHPSKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1534
Mus_musculus	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1478
Rattus_norvegicus	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1476
Homo_sapiens	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1487
Macaca_mulatta	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1487
Callithrix_jacchus	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1485
Canis_lupus_familiaris	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1487
Equus_caballus	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1486
Bos_taurus	GLNVHIAMKHPTKEKHFHCLLCGKSFYTESNLHQHLASAGHMRNEQASVEELPEGGATFK	1453
Danio_rerio	GLNVHISMKHPSEKKNFHCCLLCGKSFYTDNLQHLGSAAHMRNENGSIIEELAEAGGASF	800
1510.....1520.....1530.....1540.....1550.....1560	

	:*.* :*:.*** :*****:*****:***:*. :*:***** *:	
Xenopus_tropicalis	CVKCTEHFDSEQSLFLHIKEKHEELLREVNKYTEEDTEQINKEREENKGNVCKYCGKKCK	1256
Rhinatrema_bivittatum	CVKCTEPFDSEQNLFLHIKEQHEELLREVNKYIVEDTEQINREREETIQGNVCKYCGKMCK	1548
Pavo_muticus	CVKCTEPFDSEQNLFLHIKEQHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1577
Pavo_cristatus	CVKCTEPFDSEQNLFLHIKEQHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1577
Gallus_gallus	CVKCTEPFDSEQNLFLHIKEQHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1577
Chelonia_mydas	CVKCTEPFDSEQNLFLHIKEQHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1594
Mus_musculus	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1538
Rattus_norvegicus	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1536
Homo_sapiens	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1547
Macaca_mulatta	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1547
Callithrix_jacchus	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNICKYCGKMCR	1545
Canis_lupus_familiaris	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1547
Equus_caballus	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1546
Bos_taurus	CVKCTEPFDSEQNLFLHIKGOHEELLREVNKYIVEDTEQINREREENQGNVCKYCGKMCR	1513
Danio_rerio	CVRCNEPCQTEQELFVHIKEKHEELLREVNVLEDTEQINREROENQGSVCKYCGKVCK	860
1570.....1580.....1590.....1600.....1610.....1620	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*****:*****:*****:*:*****:*****:*****:*****
Xenopus_tropicalis SSNSMAFLAHIRHTHTGSKPFFCKICHFAAAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1316
Rhinatrema_bivittatum SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1608
Pavo_muticus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1637
Pavo_cristatus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1637
Gallus_gallus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1637
Chelonia_mydas SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1654
Mus_musculus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1598
Rattus_norvegicus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1596
Homo_sapiens SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1607
Macaca_mulatta SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1607
Callithrix_jacchus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1605
Canis_lupus_familiaris SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1607
Equus_caballus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1606
Bos_taurus SSNSMAFLAHIRHTHTGSKPFFCKICHFATAQLGDARNHVKRHLGMREYKCHVCGVAFVMK 1573
Danio_rerio SSNSMAFLAHVTRHTHTGSKPFRCKICNFSTAQLGDARNHVKRHLGMREYKCHICGWAFVMK 920
.....1630.....1640.....1650.....1660.....1670.....1680

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*****:* **** * * * *****:* * *****:*****:***** *
Xenopus_tropicalis KHLNTHLLGKHGLGTPKER-----KFTCNLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1369
Rhinatrema_bivittatum KHLNTHLLGKHGVGTPKER-----KFTCNLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1661
Pavo_muticus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1690
Pavo_cristatus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1690
Gallus_gallus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1690
Chelonia_mydas KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1707
Mus_musculus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1651
Rattus_norvegicus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1649
Homo_sapiens KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1660
Macaca_mulatta KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1660
Callithrix_jacchus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1658
Canis_lupus_familiaris KHLNTHLLGKHGVGTPKERGIDTCFWKFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1667
Equus_caballus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCNW 1659
Bos_taurus KHLNTHLLGKHGVGTPKER-----KFTCHLCDSRFTEKRWALNNHMKLHTGEKPFKCTW 1626
Danio_rerio KHLNTHLLGKHGLGQPKER-----KFECELCDRTFSEKRWALNNHMKLHTGDKPFKCAW 973
.....1690.....1700.....1710.....1720.....1730.....1740

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*:***:*** ***** *****:*****:*****:*****:*****
Xenopus_tropicalis PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1429
Rhinatrema_bivittatum PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1721
Pavo_muticus PTCHYSFLTASAMKDHIRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1750
Pavo_cristatus PTCHYSFLTASAMKDHIRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1750
Gallus_gallus PTCHYSFLTASAMKDHIRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1750
Chelonia_mydas PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1767
Mus_musculus PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1711
Rattus_norvegicus PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1709
Homo_sapiens PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1720
Macaca_mulatta PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1720
Callithrix_jacchus PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1718
Canis_lupus_familiaris PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1727
Equus_caballus PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1719
Bos_taurus PTCHYSFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGEKPFKCDEN 1686
Danio_rerio PSCHYAFLTASAMKDHYRHTHTGEKSFLCDLCGFAGGTRHALTKHRRQHTGERPFKCKLCN 1033
.....1750.....1760.....1770.....1780.....1790.....1800

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*****:*****:*****:*****.*
Xenopus_tropicalis FASTTQSHLTRHKRVHTGEKPYRCPWCEYRSNCAENVRKHILHTGKHEGVKMYNCPKCDY 1489
Rhinatrema_bivittatum FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1781
Pavo_muticus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1810
Pavo_cristatus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1810
Gallus_gallus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1810
Chelonia_mydas FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1827
Mus_musculus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1771
Rattus_norvegicus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1769
Homo_sapiens FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1780
Macaca_mulatta FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1780
Callithrix_jacchus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1778
Canis_lupus_familiaris FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1787
Equus_caballus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1779
Bos_taurus FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1746
Danio_rerio FASTTQSHLTRHKRVHTGEKPYRCPWCDYRSNCAENIRKHILHTGKHEGVKMYNCPKCDY 1093
.....1810.....1820.....1830.....1840.....1850.....1860

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Xenopus_tropicalis ATNVPVEFRNHLKEQHVDIENPDLAYLHAG-----IVSKSFECRIKGGANFVE 1538
Rhinatrema_bivittatum GTNIPVEFRNHLKETHLDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1830
Pavo_muticus GTNIPVEFRNHLKELHPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1859
Pavo_cristatus GTNIPVEFRNHLKELHPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1859
Gallus_gallus GTNIPVEFRNHLKELHPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1859
Chelonia_mydas GTNVPVEFRNHLKELHPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1876
Mus_musculus GTNVPVEFRNHLKEQHDPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1820
Rattus_norvegicus GTNVPVEFRNHLKEQHDPDIENPDLAYLHAGKQAE LPSDVQGI VSKSYECRLKGOGATFVE 1829
Homo_sapiens GTNVPVEFRNHLKEQHDPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1829
Macaca_mulatta GTNVPVEFRNHLKEQHDPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1829
Callithrix_jacchus GTNVPVEFRNHLKEQHDPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1827
Canis_lupus_familiaris GTNVPVEFRNHLKEQHDPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1836
Equus_caballus GTNVPVEFRNHLKEQHDPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1828
Bos_taurus GTNIPVEFRNHLKEQHDPDIENPDLAYLHAG-----IVSKSYECRLKGOGATFVE 1795
Danio_rerio ATNAPMDFRNHLKETHPDIENPDLAYLHAG-----IVSKSYECRLKGOGASFVQ 1142
.....1870.....1880.....1890.....1900.....1910.....1920

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Xenopus_tropicalis TTSPTASSTIETSPLEKETTSTRROSPATEQVQVVIIGFSEEYDGDFTIDASVEET 1598
Rhinatrema_bivittatum TTAPFTAAPSPEPSPVKEKTLRNCRKLG-SSEQVQVVIIFEGFDEYDGDGFSVDASVEET 1889
Pavo_muticus TASPFTAALGEVSPVKEKVFRGSRROQPSPEQVQVVIIG----YDGDFAFDVSAEET 1915
Pavo_cristatus TASPFTAALGEVSPVKEKVFRGSRROQPSPEQVQVVIIG----YDGDFAFDVSAEET 1915
Gallus_gallus TASPFTAALGEVSPVKEKVFRGSRROQPSPEQVQVVIIG----YDGDFAFDVSAEET 1915
Chelonia_mydas TTSPTAALGEVSPVKEKVLRSNRROQSAEQVQVVIIG----YDGDFAIDASVEET 1932
Mus_musculus TDSPTAATLAEEESPVKERSLRSSKROAASPEQVQVVIIG----YDGEFALDASVEET 1876
Rattus_norvegicus TDSPTAATLAEEESPVKEKSLRSSKROAASPEQVQVVIIG----YDGEFALDASVEET 1885
Homo_sapiens TDSPTAALAEELPVKEKPLRSSRRPAPPPEQVQVVIIFQ----YDGEFALDPSVEET 1885
Macaca_mulatta TDSPTAALAEELPVKEKPLRSSRRPAPPPEQVQVVIIFQ----YDGEFALDPSVEET 1885
Callithrix_jacchus TDSPTAALAEELPVKEKPLRSSRRPAPPPEQVQVVIIFQ----YDGEFALDASVEET 1883
Canis_lupus_familiaris TDSPTAATLAEEASPVKERPLRSGRRQAAPEQVQVVIIG----YDGEFALDASVEET 1892
Equus_caballus TDSPTAALAEESPVKERPLRGRR--PAAPEQVQVVIIG----YDGDFAFDASVEET 1883
Bos_taurus TDSPTAALAEESPVKDRPLRSSRRPAPPPEQVQVVIIG----YEGEFALDASVEET 1851
Danio_rerio AETVFSPEES-----ELGSEAVQVVIIG----YSGGEVAIDQALEQS 1182
.....1930.....1940.....1950.....1960.....1970.....1980

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*****:::.*:.*:****.*:.*: * : . *:
Xenopus_tropicalis AAATLQTLAMAGQVARVVHITEDGOVIATDQ-AAHMNSIIPGEILREQLQDGATQVVVVE 1657
Rhinatrema_bivittatum AAATLQTLAMAGQVARVVHITEDGOVIATSONTSHVNNIVPRQILTEQLADGVTQVVVVE 1949
Pavo_muticus AAATLQTLAMAGQMARVVHITEDGOVIATEQNGSDVSSMVPQGILTEQLADGATQVVVVE 1975
Pavo_cristatus AAATLQTLAMAGQMARVVHITEDGOVIATEQNGSDVSSMVPQGILTEQLADGATQVVVVE 1975
Gallus_gallus AAATLQTLAMAGQMARVVHITEDGOVIATDQNGSDVSSVVPQGILTEQLADGATQVVVVE 1975
Chelonia_mydas AAATLQTLAMAGQVARVVHITEDGOVIATSONGSHVSGLVPGQILTEQLSSGATQVVVVE 1992
Mus_musculus AAATLQTLAMAGQVARVVHITEHGQVIATSONGSHVGSVVPGPILPEQLADGTTQVVVMG 1936
Rattus_norvegicus AAATLQTLAMAGQVARVVHITEHGQVIATSONGSHVGSVVPGPILPEQLADGATQVVVMG 1945
Homo_sapiens AAATLQTLAMAGQVARVVHITEDGOVIATSCSGAHVGSVVPGPILPEQLADGATQVVVVG 1945
Macaca_mulatta AAATLQTLAMAGQVARVVHITEDGOVIATSCSGAHVGSVVPGPILPEQLADGATQVVVVG 1945
Callithrix_jacchus AAATLQTLAMAGQVARVVHITEDGOVIATSCSGAHVGSVVPGPILPEQLADGATQVVVVG 1943
Canis_lupus_familiaris AAATLQTLALAGQVARVVHITEDGOVITAASSAHVGGVAPGPFVLPEQ-----VVVVG 1945
Equus_caballus AAATLQTLALAGQVARVVHITEDGOVIAASCSGAHVGGVAPGTVLPEQLADGATQVVVVG 1943
Bos_taurus AAATLQTLALAGQVARVVHITEDGOVIAAGCSGAQGGSGAPSPGLPEPLADGATQVVVVG 1911
Danio_rerio AAATLQTLAMSSQLAEVLHITEDGOLITSGEVSTGG-----QTQVVLVE 1228
.....1990.....2000.....2010.....2020.....2030.....2040

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Xenopus_tropicalis GPVEETEVAESVSIETVTDSTGNVVOQVMAQGILDPSQTMHAADS-SSALDALLCAVTEL 1716
Rhinatrema_bivittatum GPVEETDVTESVAIETV-DSSGTVVQOMMTRGILDGSQLTHPPD-SSALDALLCAVTEL 2007
Pavo_muticus GSVTGTDMEEAVPIDAVPDSSGAVLQOIMQOEVLSESEATVHPPDSSSALDALLCAVTEL 2035
Pavo_cristatus GSVTGTDMEEAVPIDAVPDSSGAVLQOIMQOEVLSESEATVHPPDSSSALDALLCAVTEL 2035
Gallus_gallus GSVTGTDMEEAVPIDAVPDSSGAVLQOIMQOEVLSESEATVHPPDSSSALDALLCAVTEL 2035
Chelonia_mydas GSVEGTDMEEAVIDAVSNSSSAVVQOIMRODILTSEATVHPPESSSALDALLCAVTEL 2052
Mus_musculus GSMESHVDEALSP-----GAAVIQOVTKQEVLSLSEAGVPPSDNSSALDALLCAVTEL 1990
Rattus_norvegicus GSMETHSVDEALSP-----GAAVIQOVTKQELLSLSEAGVPPSDNSSALDALLCAVTEL 1999
Homo_sapiens GSMEGHGMDESLS-----GGAVIQOVTKQEILNLSEAGVAPPEASSALDALLCAVTEL 1999
Macaca_mulatta GSMEGHGMDESLS-----GGTVIQOVTKQEILNLSEAGVAPPEASSALDALLCAVTEL 1999
Callithrix_jacchus GSVEGHGMDESLS-----GGAMIQOVTKQEILKLSEAGVAPPEASSALDALLCAVTEL 1997
Canis_lupus_familiaris GPVDSHAGDEPLSP-----GGTVIQOVTKQELLDLAEAGVPPPDAAASALDALLCAVTEL 1999
Equus_caballus GSMEGHGVDEPLSP-----GGAMIQOVTKQEILDLAEASVPPPDAAASALDALLCAVTEL 1997
Bos_taurus GSMEGHGMDEPLSP-----SGAVIQOVTKQEILGLAEAGVPPPDAAASALDALLCAVTEL 1965
Danio_rerio SSGETVGEGR-----PEVEAGHNASESSSALDALLCAVTEL 1264
.....2050.....2060.....2070.....2080.....2090.....2100

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Xenopus_tropicalis GNVDEGNAQQRDRTERTVEESVVRITSNQECSN----PSAGEIQMYHEVHDAPQSTIEPIEV 1772
Rhinatrema_bivittatum GEVQNKNEHQNRVSSSQEES-VRMSIQKAPSI----PNEAEVSVFHEDQENREDVQSM EV 2062
Pavo_muticus GEVENKSGLPDRSRSGHK-DFLOMPNPEVPSV-PSDVGRQEIOMFHEVOETQEDTKPMEV 2093
Pavo_cristatus GEVENKSGLPDRSRSGHK-DFLOMPNPEVPSV-PSDVGRQEIOMFHEVOETQEDTKPMEV 2093
Gallus_gallus GEVENKSGLPDRSRSGHK-DFLOMPNPEVPSV-PSDAGRQEIQLFHEVOETQEDTKPMEV 2093
Chelonia_mydas GEVENKTGLLDRTTRPSHK-ELLOMPNQELSN-PNDTETQEIOMFHEVOGTQEDIEPMEV 2110
Mus_musculus GEVEGRVGHEEKGRPSHKDVLIQLPSQEEAQA-HAKAEATEQLFQDVEE---SPASMEV 2046
Rattus_norvegicus GEVEGRAGHEDKGRPGHKDVLIQLPSQEEAHD-HAKMEATEQLFQDQGE---SPAAMEV 2055
Homo_sapiens GEVEGRAGLEEQGRPGAKDVLIQLPGQEVSHV-AADPEAPEIQMFPOAQE---SPAAVEV 2055
Macaca_mulatta GEVEGRAGPEEQGRPGPKDVLIQLPGQEVSHV-AADPEAPEIQMFPOAQE---SPAAVEV 2055
Callithrix_jacchus GEVEGRAGLEEQGRPGPKDVLIQLPGQEVSRV-AANPESPEIQMFPEQOE---SPATMEV 2053
Canis_lupus_familiaris GGADGRAGPDDKGRPSPEDALGRLPGQEVPAATAAQPGAPEPHVFPDPRE-AAVAEAMGA 2058
Equus_caballus GGAEGRAGPEEKVRSGHKDVLIQLPSQEVSHA-AAPPEAPEIHMFDIQESPTAMEPVEV 2056
Bos_taurus GGAEGPAAAEKGRAGPRDLVLVQLPGQE-----AATPAAPEIHFVFDGPDGAAATEPVEV 2020
Danio_rerio GQACAAEAGEISTTAAVSESHPKVTTSQAQS-----QNDGQVYEERTE-----VGM 1311
.....2110.....2120.....2130.....2140.....2150.....2160

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Xenopus_tropicalis VRQVMHSSSILTSQESAQVAFKKNMVGVLQFAVCDSDSADQLG---VTQVIVNDEGTVH 1829
Rhinatrema_bivittatum VTQVMHPSALIEPQESTQVAFKKMVQGVLFQFTVCDTAAANQLMKEGVTQVIVNDEGTVH 2122
Pavo_muticus VTQVMHPSAIIASQERAQAFAFKKMVGVLHFAVCDTAAADQLIKEGVTQVIVNDEGTVH 2153
Pavo_cristatus VTQVMHPSAIIASQERAQAFAFKKMVGVLHFAVCDTAAADQLIKEGVTQVIVNDEGTVH 2153
Gallus_gallus VTQVMHPSAIIASQERAQAFAFKKMVGVLHFAVCDTAAADQLIKEGVTQVIVNDEGTVH 2153
Chelonia_mydas VTQVIHPSTLIASQERAQAFAFKKMVGVLQFAVCDTAAADQLMKEGVTQVIVNDEGTVH 2170
Mus_musculus LTQVVRPSTIIITSQERAQVAFKKMVQGVLFQFAVCDTAAASQLIKDGVVTQVIVNDEGTVH 2106
Rattus_norvegicus LTQVVRPSAIIITSQERAQVAFKKMVQGVLFQFAVCDTAAASQLIKDGVVTQVIVNDEGTVH 2115
Homo_sapiens LTQVVHPSAAMASQERAQVAFKKMVQGVLFQFAVCDTAAAGQLVKDGVVTQVVVSEEGAVH 2115
Macaca_mulatta LTQVVHPSAAMASQERAQVAFKKMVQGVLFQFAVCDTAAAGQLVKDGVVTQVVVSEEGAVH 2115
Callithrix_jacchus LTQVVRPSVAVASQERAQVAFKKMVQGVLFQFAVCDTAAAGQLVKDGVVTQVVVSEEGAVH 2113
Canis_lupus_familiaris LPRALGPSG--APQERAQLAFKKVVGVLQFAVCDFAAAGQLMKEGVTQVIVNDEGTVH 2116
Equus_caballus LTQVVRPSAVIASQERAQVAFKKVVGVLQFAVCDFAAAGQLMKEGVTQVIVNDEGTVH 2116
Bos_taurus LTQLVRPAAVIASQERAQVAFKKVVGMLQFAVCDFAAAGQLMKDGVVTQVIVNDEGTVH 2080
Danio_rerio VAQVVGSTHEQPSSE-----MDEVLFQFAAS-----QLMMKEGLTQVIVNDEGTVH 1353
.....2170.....2180.....2190.....2200.....2210.....2220

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Xenopus_tropicalis VSSEGPRIIMHNAESHTLNLPEQNVLDVESDEEISQIIVTEELARAMVQNVSSFTDGT 1889
Rhinatrema_bivittatum VAREGSRIIMQDTGGHELRLQSEHMDLVESEGEISQIIVTEELIAQAMVQNVSSFTDGT 2182
Pavo_muticus VAGEGSQIIMQEAQSHALSVQSEHMDLVDSDGEISQIIVTEELIAQAMVQSDGNFSEGT 2213
Pavo_cristatus VAGEGSQIIMQEAQSHALSVQSEHMDLVDSDGEISQIIVTEELIAQAMVQSDGNFSEGT 2213
Gallus_gallus VAGEGSQIIMQEAQSHALSVQSEHMDLVDSDGEISQIIVTEELIAQAMVQSDGNFSEGT 2213
Chelonia_mydas VAGEGSQIIMQEAQSHALSVQSEHMDLVDSDGEISQIIVTEELIAQAMVRDSDGNFSEGT 2230
Mus_musculus VAGEGSQFIMQEAETHGLRVP AEHMDLVESEGEISQIIVTEELVQAMVRESNSSFSEGT 2166
Rattus_norvegicus VAGEGSQFIMQEAETHGLRVP AEHMDLVESEGEISQIIVTEELVQAMVRESNSSFSEGT 2175
Homo_sapiens VAGEGAQIIMQEAQG-----EHMDLVDSDGEISQIIVTEELVQAMVQESSGGFSEGT 2168
Macaca_mulatta VAGEGAQIIMQEAQG-----EHMDLVDSDGEISQIIVTEELVQAMVQESSGGFSEGT 2168
Callithrix_jacchus VAGEGAQIIMQEAQG-----EHMDLVDSDGEISQIIVTEELVQAMVQESSGGFSEGT 2166
Canis_lupus_familiaris LAREGSQIIMQEAQAH-----GHVGLAEADGEISQIIVTEELVQAMVQESSGGFSEGT 2171
Equus_caballus LAREGSQIIMQEAQAH-----GHVGLAEADGEISQIIVTEELVQAMVQESSGGFSEGT 2171
Bos_taurus LAREGSQIIMQEAQAH-----GHVGLAEADGEISQIIVTEELVQAMVQESSGGFSEGT 2135
Danio_rerio -----T----- 1354
.....2230.....2240.....2250.....2260.....2270.....2280

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Xenopus_tropicalis HYIVTELQPDAMQKESGVFSHAVIQTDESGLIHAETTLG-TEIPCEATSDELTSMTVYT 1948
Rhinatrema_bivittatum HYIVTELPEEAMQDESQMYSHTVIEASASGEIWOAGNIPDATSISTDQAGDQLTMMVYA 2242
Pavo_muticus HYIVTELQPD-VQSEPGVYSHAVIETAGSQEILQAGTALKPE--SPDRAGEQLTSMVIYT 2270
Pavo_cristatus HYIVTELQPD-VQSEPGVYSHAVIETAGSQEILQAGTALKPE--SPDRAGEQLTSMVIYT 2270
Gallus_gallus HYIVTELQPD-VQSEPGVYSHAVIETAGSQEILQAGTALKPE--SPDRAGEQLTSMVIYT 2270
Chelonia_mydas HYIVTELQPD-IQDETGVYSHTVIEAAESQEILEAGTAINTEATSPDGTGEQLTSMVIYT 2289
Mus_musculus HYIVTELPPG-VQEDTGVYSHTVIEATASSPEILQAGAALSAEAVGSSST-EQLTSMVIYT 2224
Rattus_norvegicus HYIVTELPPG-VQEDTGVYSHTVIEATASSPEILQAGAALSAEAVGSSST-EQLTSMVIYT 2233
Homo_sapiens HYILTELPPG-VQDEPGLYSHTVLEATDSQELLQAGATLGTEAGAPSGA-EQLASVVIYT 2226
Macaca_mulatta HYIVTELPPG-VQDEPGLYSHTVLEATDSQELLQAGATLGTEAGAPSGA-EQLASVVIYT 2226
Callithrix_jacchus HYIVTELPPG-VEDETGVYSHTVLEATDSQELLQAGATLGTEAGAPSGA-EQLASVVIYT 2224
Canis_lupus_familiaris HYIVTELPPG-VQDDAGLYSHTVIEAADSQELLQAGAALGAEAMVPNGT-EQLTSMVIYT 2229
Equus_caballus HYIVTELPPG-VQDETGMYSHTVIEATDSQELLQAGAALSAEAMVPNGT-EQLTSMVIYT 2229
Bos_taurus HYIVTELPPG-VQDEPAVYSHTVIEAAGSQELLQAG-----AVVPSGA-EQLTSMVIYT 2187
Danio_rerio HYIVTQLDDS-----TLHVEGTVEDPSGE-----ETIVYS 1384
.....2290.....2300.....2310.....2320.....2330.....2340

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Xenopus_tropicalis  ECSSQD-IHEANQKEAIEEQVQV  1970
Rhinatrema_bivittatum DSGSQA-EVIQDLKEGDELOET-  2263
Pavo_muticus        EGGSQ---VIEGQRDDNEVQEA-  2289
Pavo_cristatus      EGGSQ---VIEGQRDDNEVQEA-  2289
Gallus_gallus       EGGSQ---VIEGQRDDNEVQEA-  2289
Chelonia_mydas      ESGSQAT-VIQGGDSNELQEA-  2310
Mus_musculus        QDGSPAATVIQSQRENSELQEA-  2246
Rattus_norvegicus   QDGSPAATVIQSQRENSELQEA-  2255
Homo_sapiens        QEGSSAAAAIQSQRESSELQEA-  2248
Macaca_mulatta      QEGSPAAAAIQSQRESSELQEA-  2248
Callithrix_jacchus  QEGSPATAAIQSQRESSELQEA-  2246
Canis_lupus_familiaris QEGSPAATVIQSQRESNELREA-  2251
Equus_caballus      QDGSPAATVIQSQRESNELQEA-  2251
Bos_taurus          QEGSPAAAVIQSQRDSSEVHEA-  2209
Danio_rerio         EISPE-----  1389
.....2350.....2360...

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