

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CMYDA.fst Date: Tue Feb 1 11:44:09 2022

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

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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     VKPKLQYIMTNPSFSMVTVQSEDSGITWETSSSRCSTPWTSETSTTS DLYSMESSPVGSP 120
Chelonia_mydas    -----
.....70.....80.....90.....100.....110.....120

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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     PGKVIFIMDEGKIVRKRRKPSNRMPLPTHVIGGQGNKKRDFSGMORQEPRTVLGDVHGS 180
Chelonia_mydas    -----
.....130.....140.....150.....160.....170.....180

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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     VLNVEQMEAQDIDEDMLEDRDLENIAEQPVKRAPIRSIFRESRLRKVGPIILGGPVKSRI 240
Chelonia_mydas    .....190.....200.....210.....220.....230.....240
  
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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     QLFNSIFGGTGPLPETLEKGRIQRKSSVSGELECFLASVKERSHKFISETHTKSFORT 300
Chelonia_mydas    .....250.....260.....270.....280.....290.....300
  
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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     SRSFETPSERRRNQROQSTAQSNQSYSSVTPLEKQLSSKDVAFKNIKPVKTKDKPSKFSK 360
Chelonia_mydas    .....310.....320.....330.....340.....350.....360
  
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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     SGEETTFQHEERKDRQSQLENLNQVSGKSQKFSPPKEARKQQSYSYLPAANSAITTEELTT 420
Chelonia_mydas    -----
                  .....370.....380.....390.....400.....410.....420

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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     TALESDDKSEEQVPLPSKETANKKPKDKSLLTASDLLDEPKQEIQPSSTILPSVLADSVNK 480
Chelonia_mydas    -----
                  .....430.....440.....450.....460.....470.....480

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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     LDRQSTQPTVSAAEHLEKEVQKSAVQSYLPYAPSAKSSYSTPSETRQEDIIPKSSETAQS 540
Chelonia_mydas    -----
                  .....490.....500.....510.....520.....530.....540

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Mus_musculus      -----
Rattus_norvegicus -----
Canis_lupus_familiaris -----
Equus_caballus    -----
Bos_taurus        -----
Homo_sapiens      -----
Pan_troglodytes   -----
Macaca_mulatta    -----
Callithrix_jacchus -----
Heterocephalus_glaber -----
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     ESCHVLLPHSLDVTETEKQETECHLSATAQSETDHSGLLYSVKKKESQRTPLPEIQNICLEK 600
Chelonia_mydas    -----
                  .....550.....560.....570.....580.....590.....600

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Mus_musculus      -----MESGDSGLAAQGFLGWGAD 19
Rattus_norvegicus -----MASSDSGLAAQGLLGWGA 19
Canis_lupus_familiaris -----MASGGGADGADGADR---D 16
Equus_caballus    -----MASSDSTHAGESAFRSDAD 19
Bos_taurus        -----MASSDGSHAAESALG--AD 17
Homo_sapiens      -----MASRDSNHAGESFGLSDGD 19
Pan_troglodytes   -----MASRDSNHAGESFGLSDGD 19
Macaca_mulatta    -----MASRDSNHAGESFGLSDGD 19
Callithrix_jacchus -----MANSESNHAGESFGLSDGD 19
Heterocephalus_glaber -----MATWYG-HADGDPITAVWEV 18
Xenopus_tropicalis -----
Rhinatrema_bivittatum -----MESSCP 6
Pavo_muticus      -----NFSYSNEGEGETLIINTEVLYIDFS 25
Pavo_cristatus    -----NFSYSNEGEGETLIINTEVLYIDFS 25
Gallus_gallus     QTKSEQDLFFAQEAEEQVIKLSHTPEKMSKYFGISYPCVCTETQETRKKSVMKALDLD 660
Chelonia_mydas    -----
                  .....610.....620.....630.....640.....650.....660

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Mus_musculus      EEVAQELETEEESEGEDEE---TAAESEEPPDARLSDEDEEGKTKQECIVSDPSFSMV 75
Rattus_norvegicus EE---EPETEESEGEDEE---TAAESEEPPDARLSDEDEEGKIKQECIISDPSFSMV 72
Canis_lupus_familiaris EEAPRGPASLEGSEGEDEE---EESEE-EEPPDASLSDQDEEGKTKQKCIISDPSFSMV 72
Equus_caballus    EEAPRALETEEESEGEDEE---DTAAESEEPPDARLSQDEEGKTKQTCIISDPSFSMV 76
Bos_taurus        EEETRAPDAEEQSGGEDEESAVESESESESEPDAARLSQDEEGKTEKKCIISDPSFSMV 77
Homo_sapiens      EEATRELETEEESEGEDEE---TAAESEEPPDARLSQDEEGKIKQECIISDPSFSMV 75
Pan_troglodytes   EEATRELETEEESEGEDEE---TAAESEEPPDARLSQDEEGKIKQECIISDPSFSMV 75
Macaca_mulatta    EEATRELETEEESEGEDEE---TAAESEEPPDARLSQDEEGKIKQECIISDPSFSMV 75
Callithrix_jacchus EEATQELETEEESEGEDEE---TAAESEEPEARLSQDEEGKIKQECIISDPSFSMV 75
Heterocephalus_glaber EDAMEEAAEESAEGEETAEE--SGSESEPEPDTRLSDQDEEDKTRQECIMSDPAFSMV 76
Xenopus_tropicalis -----
Rhinatrema_bivittatum ADCDRASEVFSFIEDEAPEGVLEPQEAELASSLKDITQSEDVKPKLQICIMSNPSFSMV 66
Pavo_muticus      ---FKIDKNNQAESAQMEMEYPDFSYSNEESGESERPQTETHPDFSFSKVKVTEELES 82
Pavo_cristatus    ---FKIDKNNQAESAQMEMEYPDFSYSNEESGESERPQTETHPDFSFSKVKVTEELES 82
Gallus_gallus     RPFVFSVDKNNQAESAQMEMEYPDFSYSNEESGESEILQTEHPDFSFSKEVTQFESA 720
Chelonia_mydas    -----
                  .....670.....680.....690.....700.....710.....720

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Mus_musculus	VQREDSGITWETNSSRSSTPWASEESQTS	GICSL	EGSALT	SPPGSVSFIMDEVKRT	135
Rattus_norvegicus	VQREDSGITWETNSSRSSTPWASEESQTS	GICSL	EGSALT	SPPGSVSFIMDEVKRT	132
Canis_lupus_familiaris	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTLNSPPGNVSFIVDEVKVRKRA	132	
Equus_caballus	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTVNSPPGNVSFIVDEVKVRKRRRT	136	
Bos_taurus	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTLNSPPGNVSFIVDEVKVRKRRK	137	
Homo_sapiens	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTVNSPPGNVSFIVDEVKVRKRT	135	
Pan_troglodytes	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTVNSPPGNVSFIVDEVKVRKRT	135	
Macaca_mulatta	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTVNSPPGNVSFIVDEVKVRKRT	134	
Callithrix_jacchus	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTVNSPPGNVSFIVDEVKVRKRT	135	
Heterocephalus_glaber	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTVNSPPGNVSFIVDEVKVRKRT	136	
Xenopus_tropicalis	VQREDSGITWETNSSRSSTPWASEESQTS	GVCSL	EGSTVNSPPGNVSFIVDEVKVRKRT		
Rhinatrema_bivittatum	VQCEDSGIMWETSSSRCTPWASEASTSDVYSMES	SSVGS	PPGKVVFIMDEDKIRRKIV	126	
Pavo_muticus	LKTDDPHFSYSREETDKSRSSQGETE	QPDFSFS	REEVGESESAQLETVHPEFLFSKKDIK	142	
Pavo_cristatus	LKTDDPHFSYSREETDKSRSSQGETE	QPDFSFS	REEVGESESAQLETVHPEFLFSKKDIK	142	
Gallus_gallus	LKTDDPHFSYSREETDKSRSSQGETE	QPDFSFS	REEVGESESAQLETVHPEFLFSKKKEIE	780	
Chelonia_mydas	-----MEGYS	SGSECDR-----	VSEISFS-----LEDEVPEGLVEPQVE	34	
	.....730.....740.....750.....760.....770.....780			

Mus_musculus	QKSKRGSPSLRRKGSKKRNSLESQDVL	TNQEDGPS	ISESPVLNIE	NEKS-----	184
Rattus_norvegicus	QKSKRGSPSLRRKGSKKRNSLESQDVL	TNQEDGPS	ISESPVLNIE	NEKS-----	181
Canis_lupus_familiaris	PKSKRGSPSLRRKGSKKRNSLESQDVP	PANTKDN	SLISESOVLKTQ	KEKS-----	181
Equus_caballus	SKSKHGSPLRRKGNKKRNSLESQDVP	PANKKDN	PLISESOVLN	QKEKS-----	185
Bos_taurus	PKSKHGSPLRRKGNKKRNSLESQDVP	PANKTST	PLISESQELT	TQKDKS-----	186
Homo_sapiens	HKSKHGSPLRRKGNKKRNSLESQDVP	TNKKGS	SPLTSASQVLT	TTEKEKS-----	184
Pan_troglodytes	HKSKHGSPLRRKGNKKRNSLESQDVP	TNKKGS	SPLTSASQVLT	TTEKEKS-----	184
Macaca_mulatta	HKSKHGSPLRRKGNKKRNSLESQDVP	TNKKGS	SLLTSASQILT	TTEKEKS-----	183
Callithrix_jacchus	HKSKHGSPLRRKGNKKRNSLESQDVP	TNKKDS	SPLTSASQVLT	MEKEK-----	183
Heterocephalus_glaber	HKSKHGSPLRRKGSRRKNSLESQDVP	PANKKDS	FSISESQALNIE	KEKS-----	185
Xenopus_tropicalis	-----				
Rhinatrema_bivittatum	LKS-----				129
Pavo_muticus	KSESPHLETEYPDFSYSREEIMES	ESAQLEMEQ	-----		175
Pavo_cristatus	KSESPHLETEYPDFSYSREEIMES	ESAQLEMEQ	-----		175
Gallus_gallus	KSESPHLETEHPDFSYSREEMMES	KSAQLEMEQ	SDFSFREEIEDSESAQPKIEHPDFS	SY	840
Chelonia_mydas	ELTN-----				38
	.....790.....800.....810.....820.....830.....840				

Mus_musculus	-----SIGTYDKTRRKKTASNT	PPITGAIYKEHKPLVLR	PVYIGTVQYK	228
Rattus_norvegicus	-----SIGTYDKTRRKKTESNT	PPITGAIYKEHKPLVLR	PVYIGTVQYK	225
Canis_lupus_familiaris	-----STGIYDKMRKKKTTS	TPPITGAIYKEHKPLVLR	PVYIGTVQYK	225
Equus_caballus	-----STGIYDKTRRKKTAS	STPPITGAIYKEHKPLVLR	PVYIGTVQYK	229
Bos_taurus	-----STGAYDKMRKKKST	STPPITGAIYKEHKPLVLR	PVYIGTVQYK	230
Homo_sapiens	-----YTGIYDKARKKKTTS	NTPPITGAIYKEHKPLVLR	PVYIGTVQYK	228
Pan_troglodytes	-----YTGIYDKARKKKTTS	NTPPITGAIYKEHKPLVLR	PVYIGTVQYK	228
Macaca_mulatta	-----YTGVYDKARKKKT	TPNTPPITGAIYKEHKPLVLR	PVYIGTVQYK	227
Callithrix_jacchus	-----SGIYDKTRRKKTTS	NTPPITGAIYKEHKPLVLR	PVYIGTVQYK	226
Heterocephalus_glaber	-----SPGIYDKTRRKKTAS	NTPLITGAIYKEHKPLVLR	PVYIGTVQYK	229
Xenopus_tropicalis	-----			
Rhinatrema_bivittatum	-----SDRALLSSRVKGGL	SHREPEFS	DIKLEESKTADRTEDSGCTH	173
Pavo_muticus	-----PDFSFSRKEIEDSESAQPKIEHP	PDFSFSREEMVESEDAHMKME		218
Pavo_cristatus	-----PDFSFSRKEIEDSESAQPKIEHP	PDFSFSREEMVESEDAHMKME		218
Gallus_gallus	-----FREEMVESDDAHMKMEQ	PDFSFSREEIEDSESAQPKIEHP	PDFSFSREEMVESDYAHMKME	900
Chelonia_mydas	-----SLKDIIQ	INEDVKPKLQC-----	IMS	58
850.....860.....870.....880.....890.....900			

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Mus_musculus      IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRRGKDSISLEPDLNNGGSNIVPQ--RKL 286
Rattus_norvegicus IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRRGKESSISLEPDLNNGGSNIASQ--RKL 283
Canis_lupus_familiaris IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKDASISLEPDMNLDNINVSPTGKLV 285
Equus_caballus     IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKDASITLEPDLGNRDSNIVFKTGKLV 289
Bos_taurus        IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKEASISLEPESGNCDLKVVSKTGKSV 290
Homo_sapiens       IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKDASISLEPDLNNGSNTVSKTRKLV 288
Pan_troglodytes    IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKDASISLEPDLNNGSNTVSKTRKLV 288
Macaca_mulatta     IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKDASISLEPDLNSDSNTVSKTSQLV 287
Callithrix_jacchus IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKDASISLEPDLNSDSNTVSKTRKLV 286
Heterocephalus_glaber IKMFNSVKEELIPLQFYGTLPKGYVIKEIHYRKGKDASISLEPDLNHSNIVSKTSKLV 289
Xenopus_tropicalis -----
Rhinatrema_bivittatum TEKTVSESPEVPPHFIWKS GDDDDPVFSPQVKRDQEAEMQSSLNQSP----- 220
Pavo_muticus       QPDFSLPREETKELESTQLETKHPEFDFSKEDMQESESTQMETEYPDFSYSREEMVETES 278
Pavo_cristatus     QPDFSLPREETKELESTQLETKHPEFDFSKEDMQESESTQMETEYPDFSYSREEMVETES 278
Gallus_gallus      QPDISLTREETRELESTQLETKHPEFDFSKEDMQESESTQMETEHPDFSYSREKMKVTES 960
Chelonia_mydas     DPSFSMVTVQS----- 69
.....910.....920.....930.....940.....950.....960

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Mus_musculus      AQSPEEDKVVRELAPPWRGALSKG--SRTSLFSHEEQKKTYADSNLNVPSTEHAFPPSSAR 344
Rattus_norvegicus AQSPEEDRARELAPPWRGALSKG--SMTSLFSHEEQKKTYTDSLLNATSTEHITLPSYSR 341
Canis_lupus_familiaris AQSIEDDKVKELASPPWKAALSKGSESLTSIFSHEDKKKIYVDSPLKATSVTKHTVSSHAS 345
Equus_caballus     AQSIEDDREKELSSPPWRGALSKGSKSLTSLRQEDHKKIDVDSPLKAASATMHTASSYTS 349
Bos_taurus        AQSIEDVKVKELAPPWRDAFSGKSKSLTSLFSHEDQKKTYDDFPLRAASAAQHTASSHTS 350
Homo_sapiens       AQSIED-KVKEVFPPWRGALSKGSESLTLMFSHEDQKKIYADSPLNATSALEHTVPSYSS 347
Pan_troglodytes    AQSIED-KVKEVFPPWRGALSKGSESLTLMFSHEDQKKIYADSPLNATSALEHTVPSYSS 347
Macaca_mulatta     AQSIED-KVKEVAPPWRGSIKSGSESLTSMFSHEDQKKICADSPLNATSALEHTVPSYSS 346
Callithrix_jacchus AQSIED-KVKEVAPPWRGTLKSGSESLPSVFSHKDQKKLYADSPLNATSALEYTVPSYSS 345
Heterocephalus_glaber TQSTEDDKLRELGPWRGVLSKGSKSLSSLFHENQKKIDVESLKATSAAESIAHYLS 349
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 220
Pavo_muticus       TQLEQTDFFSFRKEREESESAQLETEHQDFSFSSRETEGQESIPFELEQPKSYSLEEAEQ 338
Pavo_cristatus     TQLEQTDFFSFRKEREESESAQLETEHQDFSFSSRETEGQESIPFELEQPKSYSLEEAEQ 338
Gallus_gallus      AQLEQTDFFSFRRETEESESAQLETKHRDFLFSRETEGQKSIPEFELEQPKSYSPEEAH 1020
Chelonia_mydas     -----EDSGITWETSSSRCSTPWASEASATSDLCSEV----- 101
.....970.....980.....990.....1000.....1010.....1020

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Mus_musculus      NDTADQEEENLSLPQMPPOQPADESKTHRMEPPS----IPATMVLERAKEELEQNAOGKES 400
Rattus_norvegicus NDTADQEEHLRPSQTVQOQPADESKTYRTEPPS----IPATMVPERAKEELEQNSOGMES 397
Canis_lupus_familiaris NDTAEQEVQLSPQSVPPQPGNEAKLLEMEPPSSPIPDSTTGFLTAKEEFEPDLQEIIVT 405
Equus_caballus     NDTAEQETELGPPQSVLQOPGPEAIPRERKASFLPPDASATAFLGAAGGEFEPDSQETVT 409
Bos_taurus        HAIAERESQLSPRVVPRLLVDEAKPREMKPSFLTPDTSVATFLETAKEESEADSQEIVI 410
Homo_sapiens       SGRAEQGIQLRHSQSVPPQPEDEAKPHEVEPPSVTPDTPATMFLRTTKEECELASPGTAA 407
Pan_troglodytes    SDRAEQGIQLRHSQSVPPQPEDEAKPHEVEPPSVTPDTPATMFLRTTKEECELASPGTAA 407
Macaca_mulatta     SDRAEQGIQLRHSQSVPPQPEDEAKPHEVEPPSVTPGTPATVFLRTAKEECELASPGTAA 406
Callithrix_jacchus SDRAEQELQLRPSQSVPPQPEDEAKPPEVEPP-----SPATAFLRTAKEECEVASQGTAA 400
Heterocephalus_glaber NNAAEQEVLLRPPQSVQ--PGDEAKAHEIKASSLLLKASQTVFQETAKEESEAEVERAIT 407
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 220
Pavo_muticus       ERTAQLELEPSDISSLMEEAEKENTTKLELVHTSVRDFITGRDRMQVGHKETRHS DLPYP 398
Pavo_cristatus     ERTAQLELEPSDISSLMEEAEKENTTKLELVHTSVRDFITGRDRMQVGHKETRHS DLPYP 398
Gallus_gallus      ERTAQLELEPSDISCMEEAEKENTTELELVHDPDISDFAGRDRMQHMGHKETRHS DLPYP 1080
Chelonia_mydas     --SSSVDSPPGKVIFLMDGK-----TVRKRMCCKSSDRTS----- 134
.....1030.....1040.....1050.....1060.....1070.....1080

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Mus_musculus      SEDDASVLTGSADDVQEEGLVSVNHSMPWEAEKESLETGPPRPAPAIQEKFEPMDEG--- 457
Rattus_norvegicus SED-ASGLSGLANDVEQEGMVSVNHSMSWEAEKESLKTGPSRPGPAIQEGFEPDMEE--- 453
Canis_lupus_familiaris SEHDFSILPPLVDEVKKEDVYSADHSISLEAEKDSLETGALGLAASIQEDFGIET---- 460
Equus_caballus     PTHDSSVSPPLMDEKKEDADSVDHISISLKTERTSLERASRSLSIASIQEGFGPERKELDL 469
Bos_taurus         AEPDSSASPPVLDEVKTEDMSSVDHSISLEAEKGSLES GAPGLTASIQEDFSPERDK--- 467
Homo_sapiens       SENDSSVSPSFANEVKKEDVYSAHHSISLEA-----SPGLAASTQDGLDPDQEQ--- 457
Pan_troglodytes    SENDSSVSPSFANEVKKEDVYSAHHSISLEAV-----SPGLAASTQDGLDPDQEQ--- 457
Macaca_mulatta     SENDSSVSPSFTINEVKKEDVCSAHHSISLEA-----LPDLAASTQDGLDPDQEQ--- 456
Callithrix_jacchus SANDSSVSPSFANEVKKEDVYSAHHSISLEAE-----SPGLAASTQEGGLGRDQEH--- 450
Heterocephalus_glaber LEMDSSVSALLDEAMKEVMDFTDCTMSLEAEKDLSETVSPGLSPSTEEGLEPGKEE--- 464
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 220
Pavo_muticus       MDETKHQDLAQVDTDKPLLSYFGDRGEQPPVQKDLQPGGKLYSLGKSVQEETNQLH--- 455
Pavo_cristatus     MDETKHQDLAQVDTDKPLLSYFGDRGEQPPVQKDLQPGGKLYSLGKSVQEETNQLH--- 455
Gallus_gallus      MDETKHQDLAQVDNNKPLLSYFDDRGEQPPVQKDLQPGGKLYSLGNSMQGETNQLH--- 1137
Chelonia_mydas     -----DLKGG----- 139
.....1090.....1100.....1110.....1120.....1130.....1140

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Mus_musculus      ----- 457
Rattus_norvegicus ----- 453
Canis_lupus_familiaris ----- 460
Equus_caballus     TSLERAGPVSEQLTPPHLDLTSLERAEQVSEKLTTPPHLDLTSLERAGPVSEQLIPPHLDL 529
Bos_taurus         ----- 467
Homo_sapiens       ----- 457
Pan_troglodytes    ----- 457
Macaca_mulatta     ----- 456
Callithrix_jacchus ----- 450
Heterocephalus_glaber ----- 464
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 220
Pavo_muticus       ----- 455
Pavo_cristatus     ----- 455
Gallus_gallus      ----- 1137
Chelonia_mydas     ----- 139
.....1150.....1160.....1170.....1180.....1190.....1200

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Mus_musculus      -----LEPISTEKTEQASEYVTSSEPIV 480
Rattus_norvegicus -----LEPIREKMEPVSEPVTSSEPID 476
Canis_lupus_familiaris -----EDLTSPEAEAVSEQQTPPHLDV 483
Equus_caballus     TSLERAGLVSEQLTPPHLDLTSLERAGLVSEQLTPPHLDLTSLERAEVPSEQLSPPHLNV 589
Bos_taurus         -----LDLTSRERVEPVVDQLTPPHLII 490
Homo_sapiens       -----PDLTSIERAEVPVSAKLTPTHPSV 480
Pan_troglodytes    -----PDLTSIERAEVPVSAKLTPTHPSV 480
Macaca_mulatta     -----PDLTSLERAEVPVSAKLTPTHPSV 479
Callithrix_jacchus -----PDLTS-QRAEPVSAKLTAAPQPSV 472
Heterocephalus_glaber -----LELTSLERMEPASECMAPTHSSV 487
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 220
Pavo_muticus       -----SECPVLPYSAAKEQQHKEESDT 477
Pavo_cristatus     -----SECPVLPYSAAKEQQHKEESDT 477
Gallus_gallus      -----SECPVLPYSAAKEQQHKEESDT 1159
Chelonia_mydas     -----QGSKKSD- 146
.....1210.....1220.....1230.....1240.....1250.....1260

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	HREEEHAEPIVHREEEHAPEPIVHREEEHAPEPIVHREEEHAPEPIVHREEEHAPEPIVHREEEHAPEPIV	540
Rattus_norvegicus	HREEEHAEPIDHREEEHAPEPLVHREEEHAPEPLVHREEEHAPEPIVHREEEHAPEPIV	536
Canis_lupus_familiaris	KGMQ-----KENIPEPPIS-----LSEPPVLLEPRR-----	510
Equus_caballus	KGEK-----EENVPEPSIS-----LSEPLVSEKLEKA-----	616
Bos_taurus	KGGK-----GETVPEPSIS-----LFEPLVLEEPEKE-----	517
Homo_sapiens	KGEK-----EENMLEPSIS-----LSEPLMLEEPEKE-----	507
Pan_troglodytes	KGEK-----EENMLEPSIS-----LSEPLMLEEPEKE-----	507
Macaca_mulatta	KGEK-----EENVLEPSIS-----LSEPLMLEEPEKE-----	506
Callithrix_jacchus	KGEK-----EENVLEPSIS-----LSEPLTLEEPEEE-----	499
Heterocephalus_glaber	KGEK-----EEPPEPPIS-----LPEPLMFOEPEKE-----	514
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	220
Pavo_muticus	SYSTGKTDOEIFOPKVEHADFPYFHGEEAAQEAVQKDIGSPERS-----	520
Pavo_cristatus	SYSTGKTDOEIFOPKVEHADFPYFHGEEAAQEAVQKDIGSPERS-----	520
Gallus_gallus	SYLTGKTDOEIFOSKVEHADFPYFCGEAAQEAVQKDVGSPEWS-----	1202
Chelonia_mydas	-----	146
	.....1270.....1280.....1290.....1300.....1310.....1320	

Mus_musculus	QREEEHAPEPE\$IVHREEEHAPG-----PVPIVHREEEHVPE-----LESI	581
Rattus_norvegicus	HREEEHAPEP--IVHREEEHAPEPIDHREEHAPEPLVHREEEHAPEPLVHREEEHAPEPI	594
Canis_lupus_familiaris	-----	510
Equus_caballus	-----	616
Bos_taurus	-----	517
Homo_sapiens	-----	507
Pan_troglodytes	-----	507
Macaca_mulatta	-----	506
Callithrix_jacchus	-----	499
Heterocephalus_glaber	-----	514
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	220
Pavo_muticus	-----	520
Pavo_cristatus	-----	520
Gallus_gallus	-----	1202
Chelonia_mydas	-----	146
	.....1330.....1340.....1350.....1360.....1370.....1380	

Mus_musculus	VHRGEEHAEPIVHRDEGHAEPIVHREEEHVPEPIVHRDEGHAEPIVHREEEHVPE--	639
Rattus_norvegicus	VHREQEHAEPIVHR-EKHAEPIVHREEEHAEPIVRRREEHAEPIVHREEEHAEPL	653
Canis_lupus_familiaris	-----	510
Equus_caballus	-----	616
Bos_taurus	-----	517
Homo_sapiens	-----	507
Pan_troglodytes	-----	507
Macaca_mulatta	-----	506
Callithrix_jacchus	-----	499
Heterocephalus_glaber	-----	514
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	220
Pavo_muticus	-----	520
Pavo_cristatus	-----	520
Gallus_gallus	-----	1202
Chelonia_mydas	-----	146
1390.....1400.....1410.....1420.....1430.....1440	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus          -----PESIVHREEEHAPEPMVLR-----KAQLERGKETSTPITDITEPE 679
Rattus_norvegicus     VHREKHAPPIVHREEEHAPEPIVHREEEHAPEPLLSLASQEVESGAETSLPITDTIEPE 713
Canis_lupus_familiaris -----EVETSLPIAATPEPE 525
Equus_caballus        -----EIETSLPVAATHEPE 631
Bos_taurus            -----EIEMPLMAATPEPE 532
Homo_sapiens           -----EIETSLPIAITPEPE 522
Pan_troglodytes        -----EIETSLPIAITPEPE 522
Macaca_mulatta         -----EIDTSLPVAATPKPE 521
Callithrix_jacchus     -----EIETSLPMAATPEPE 514
Heterocephalus_glaber -----ELEASPPIAAIPEPE 529
Xenopus_tropicalis     -----
Rhinatrema_bivittatum ----- 220
Pavo_muticus           -----CFISEAKKSEIIQLASENG 539
Pavo_cristatus         -----CFISEAKKSEIIQLASENG 539
Gallus_gallus          -----SFTSETQQSEIIQLASENR 1221
Chelonia_mydas         -----LSGMMQELRDAPAKVO 163
.....1450.....1460.....1470.....1480.....1490.....1500

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Mus_musculus          DSS-LEEEIIELDYPESPLASKETSPSPLSPEVEHRKE-PILPTQMFTTPERITLSEER 737
Rattus_norvegicus     DSS-LEEEIIELDYPESPLVSEKDSPLPLSPEVEHRKE-PILPSQMFTTPEHITLSEER 771
Canis_lupus_familiaris DSNLVEEEIIELEYPESPSISEKPFPPYLAPVEEQEEKIFLPSLKTISPEHVASSEER 585
Equus_caballus        DANVVEEEIIELDYPESPSVSEKPLSPCLAPEVEQNKKEETILP-LLTPTPERVALSEEEG 690
Bos_taurus            DSNLVEEEIIELDYPESPSVSEEPFPPRLAPEVEEKEE-TPLPLLTISTPEHVTLSEER 591
Homo_sapiens           DSNLVEEEIIELDYPESPLVSEKPFPPHMSPEVEHKEEELILPLLAASSPEHVALSEER 582
Pan_troglodytes        DSNLVEEEIIELDYPESPLVSEMPFPPHMSREVEHKEEELILPLLAASSPEHVALSEER 582
Macaca_mulatta         DSNLVEEEIIELDYPESPLVSEKPFPPHMSPEVEHEEEALILPLLATSTPENAAALSEER 581
Callithrix_jacchus     DSDLVEEEIIELDYPESPLVSKKPFPPRASPEVEHKEEELILPLLTST-PEHVALSEER 573
Heterocephalus_glaber GSN-LEEEIIEKLDYPESPLVSKQFPFPQLSPEMWEKEE-PSPPLLTIVASDHVTLSEER 586
Xenopus_tropicalis     -----
Rhinatrema_bivittatum -SSPCLQPGHFDNEKDATISHTTQPDLINVENMSRHCTSPLDITARNALS-----Y 274
Pavo_muticus           DLSFSTGETVQEEEMKSGSLYSHSVDRPTHREMOVLEQEHLLPTYSTPDSQQEETTPDL 599
Pavo_cristatus         DLSFSTGETVQEEEMKSGSLYSHSVDRPTHREMOVLEQEHLLPTYSTPDSQQEETTPDL 599
Gallus_gallus          DLSFTTGEIVQEEEMKSGSSYSHSIDRPTHREMOVLEQEHLLPTYSTPDSQQEETTPDL 1281
Chelonia_mydas         DAKLNAAELEAQAMDAETSK-----DKEDLLDLTGEPVSR----- 198
.....1510.....1520.....1530.....1540.....1550.....1560

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Mus_musculus          EENESVSTDSAFVSEYSVLQDLNHTPEKLEVEAVSVSDVKSSNEPAVFSEDD-EERESYS 796
Rattus_norvegicus     EESESVSTDSAFVSEYSVLQDLNRKSEKLEVEAVSVSDVKSS-EPAVFSEDE-EERESYS 829
Canis_lupus_familiaris EENESVSTDSAFVSEYSVQDLNHELERQEVESVSPSTVKGVSEHATFSEENEFEFTL- 644
Equus_caballus        EENESVSTDSAFVSEYSVLQDLNHELEKQETEPVSPSNVKAASEPAVLSEENEFEFPYS 750
Bos_taurus            EENESVSTDSAFVSEYSAPQDWNYELEKQEAEPVSLPHVKAVSEHAVLSEEDDKFEPS- 650
Homo_sapiens           EEIASVSTGSAFVSEYSVQDLNHELEQEQEGEPVPPSNVEAIAEHAVLSEENEFEFAYS 642
Pan_troglodytes        EEIASVSTDSAFVSEYSVQDLNHELEQEQEGEPVPPSNVEAIAEHAVLSEENEFEFAYS 642
Macaca_mulatta         EEIASVSTDSAFVSEYSVQDLNHELEKRESEPVSPSNVEAIAEHAVLSEENEFEFAYS 641
Callithrix_jacchus     EEIASVSTDSAFVSEFSVQDLNHELEKREGEAVSLNVEAIAEHTVLSEENEFEFAYS 633
Heterocephalus_glaber EEIESVSTDSAFVSEHSVPQDLNHEREKQEVDPVSPSSAKAISECAVFSEENEFEFPCS 646
Xenopus_tropicalis     -----
Rhinatrema_bivittatum EASHLITEHSNAISSSVDEATKQEIHPLSPMSVNLVSEEAQTIPVVTGEATNQDIQACL 334
Pavo_muticus          POPDISYSTGKIEQENRVIRIGLEELVEIOPKATQKELDYSGLPENGGTAETQDMDQMNA 659
Pavo_cristatus         POPDISYSTGKIEQENRVIRIGLEELVEIOPKATQKELDYSGLPENGGTAETQDMDQMNA 659
Gallus_gallus          POPDISYSTGKVKQENRVIRIGQEEEMVEIQSEATQKELDYSGLTENWGKAETRDMDQMNA 1341
Chelonia_mydas         -APVASKSMGKEKKLKKRPALE-----GAVRAKIQKFSSISE----- 235
.....1570.....1580.....1590.....1600.....1610.....1620

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	PAMTSVSEQSLSPSTTEKTSIAIQSPLFSTVSP---VLS-----	831
Rattus_norvegicus	PAVTSVSEHSLSPSTTEKTSSTQSPLFSTVSPDNLVLS-----	867
Canis_lupus_familiaris	---ASVSESLSPSTTEQTFECQAPLFSTATLEQGVL-----	679
Equus_caballus	PASASASEHSLSLSTTEKTSSECQSPLFSAGASEHMLVLSSEEASESGHYTPDSTSPSEYSI	810
Bos_taurus	--SPTISASIFVSPSTTEKTLLECQSPLFSAVTPEPMILS-----	686
Homo_sapiens	PAAAPTSESSLSPSTTEKTSSENQSPLFSTVTPEYMLVLS-----	680
Pan_troglodytes	PAAAPASERSLSPSTTEKTSSENQSPLFSTVTPEHMLVLS-----	680
Macaca_mulatta	PAAASASERSLSPSTTEMTLESQSPLFSTVTPEHMLVLS-----	679
Callithrix_jacchus	PVVASASESSL-LFTTKTSESQSPLFSTVTDPHMLVLS-----	670
Heterocephalus_glaber	PAVASVSKCSLWPPTPEKPSEGLSQLFSAFPSENMLVLS-----	684
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	PASAKFSEESKPLLHPTDDIEKQEIAYAPVTTKFVPK-----	372
Pavo_muticus	QQETTEPELEHPPLPYSSSELVQKEKKMERAYPEQTFY-----	697
Pavo_cristatus	QQETTEPELEHPPLPYSCSELVQKEKKMERAYPEQTFY-----	697
Gallus_gallus	QQETTEPELEHPPLPYSFSELMQEEKEVESAYPEQTFY-----	1379
Chelonia_mydas	-----	235
	.....1630.....1640.....1650.....1660.....1670.....1680	

Mus_musculus	-----	831
Rattus_norvegicus	-----	867
Canis_lupus_familiaris	-----	679
Equus_caballus	PSQAAKESLRTSIDHTSPLKSEAVSDHVILSEEEKKGTGLYSPDVASDSEHSFLSYTTEM	870
Bos_taurus	-----	686
Homo_sapiens	-----	680
Pan_troglodytes	-----	680
Macaca_mulatta	-----	679
Callithrix_jacchus	-----	670
Heterocephalus_glaber	-----	684
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	372
Pavo_muticus	-----	697
Pavo_cristatus	-----	697
Gallus_gallus	-----	1379
Chelonia_mydas	-----	235
	.....1690.....1700.....1710.....1720.....1730.....1740	

Mus_musculus	-----	831
Rattus_norvegicus	-----	867
Canis_lupus_familiaris	-----	679
Equus_caballus	TSECQSPLLSATPSEHAVLSEGEDLGSEHLTPDATLTSQHAVPPNVTHESPKKVIDDVFP	930
Bos_taurus	-----	686
Homo_sapiens	-----	680
Pan_troglodytes	-----	680
Macaca_mulatta	-----	679
Callithrix_jacchus	-----	670
Heterocephalus_glaber	-----	684
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	372
Pavo_muticus	-----	697
Pavo_cristatus	-----	697
Gallus_gallus	-----	1379
Chelonia_mydas	-----	235
1750.....1760.....1770.....1780.....1790.....1800	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	-----	831
Rattus_norvegicus	-----	867
Canis_lupus_familiaris	-----	679
Equus_caballus	LKSKGVSEHMIFSEGEKEDTGLYSPDVASVSELTLLPFTTETTSECOSPPPSAATSEHAV	990
Bos_taurus	-----	686
Homo_sapiens	-----	680
Pan_troglodytes	-----	680
Macaca_mulatta	-----	679
Callithrix_jacchus	-----	670
Heterocephalus_glaber	-----	684
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	372
Pavo_muticus	-----	697
Pavo_cristatus	-----	697
Gallus_gallus	-----	1379
Chelonia_mydas	-----	235
	.....1810.....1820.....1830.....1840.....1850.....1860	

Mus_musculus	-GDEASESVCHSPESESAAYSV- AHAEILLKTGDHKLPLKSRVSEPIIQAEDEKED	889
Rattus_norvegicus	-GDEASETEAS--DSLSEATEYSGP-AHVQELLVRAGDPKLPKSKQHVSEPIIQTEDEKED	923
Canis_lupus_familiaris	-EVEDLGSEHFIPDSASTFQNAVPPSAVOEPSKKIIDDVSPLKSKGISEHMLSEEKED	738
Equus_caballus	LPEEDLGSEHLTPDATLTSQHAVPPNVTHELPKKIIDDVFPLKSKGASEHMIFSEGKKN	1050
Bos_taurus	-GEEASESGHYTPDSTSAEYLVPSQATEESPCKTVDLKSPKSGQVSEPLILSEENED	745
Homo_sapiens	-GDEASESGCYTPDSTSAEYSVPSLATKESLKKITDRKSPLILKGVSEYMIPSEEK-ED	738
Pan_troglodytes	-GDEASESGCYTPDSTSAEYSVPSQATKQSLKQITIDHKSPLISKGVSEYMIPSEEK-ED	738
Macaca_mulatta	-GDEASESGRYTPDSTSAEYSVLSQATKESLKKVIDHKSPLISKGVSEHMIPSEEK-ED	737
Callithrix_jacchus	-GDEASESGRYTPDSTSAEYSAAPSQATKESLKKIIDHKSPLISKDVSEHMIPSEEK-ED	728
Heterocephalus_glaber	-GDEASESGHYIPDSTSS-EYSVPSHEAQESLKKITIDHKSPLSKDVSEPVILSEEK--D	740
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----ESKPIVESLTKSNEHEMHLFPFMIADLELGN	405
Pavo_muticus	-ASIDMQEEVTQQKTKQPFLSCFTGKTEODEIMHPEQEQTFFVPPSGKEAPPEMEMGSEY	756
Pavo_cristatus	-ASIDMQEEVTQQKTKQPFLSCFTGKTEODEIMHPEQEQTFFVPPSGKEAPPEMEMGSEY	756
Gallus_gallus	-ASIDMKEKVTQQKTKQPFLSCFTGKKE-DEIMHPEQEQTFFVPPSGKEAPPEMEMGSEY	1437
Chelonia_mydas	-----EETPIILFR-----	243
	.....1870.....1880.....1890.....1900.....1910.....1920	

Mus_musculus	IGLLP-----PAALSQAVLSEDESIGSGSFASDSKLP	921
Rattus_norvegicus	IGLLSSAVDATSEYPHSPSLSEKASECHLPPL-ATTLRHAALSEDEGLSESGSFVSDSKLP	982
Canis_lupus_familiaris	TGLYSPDVASVSEHFLPPSTTEQTSECQAPLFSTATLEQGVLEVEDLGSKHFTPDSTST	798
Equus_caballus	TGLYSPDVASVSELTLLPFTTETTSECQSPLLSAATLEHAVLSE-EDLGSEHLTPDSTLT	1109
Bos_taurus	PGLCSPEVASLSERSVSPHTTEGTSEGOAPLLSAVTSEHAILSEENLNGEVIRDSALT	805
Homo_sapiens	TGSFTPAVAPASEPSLSPSTTEKTSECQSPLPSTATSEHVVPSEGEDLGSERFIPDSKLI	798
Pan_troglodytes	TGSFTPAVAPASEPSLSPSTTEKTSECQSPLPSTATSEHVVPSEGEDLGSERFIPDSKLI	798
Macaca_mulatta	TGSFTPAVTSAAEPSLSPSTTEKTSECQSPLPSTATSEHVVPSEGEDLGSECFIPDSKLI	797
Callithrix_jacchus	TGSFTPAVASASEPSLSPSTTEKTSECQSPLPSTATSEHVVPSEGEDLGGERFIPDSKLA	788
Heterocephalus_glaber	PESQDPAVASVSRSLSPPLIGKTPESQRLPSAAILQHMVLSEKEDLEGEHFTLNSKLT	800
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	ECIFSDS-----	412
Pavo_muticus	PDLSYSSHRPEQEKFRHPTLPFGSKEQETAPPVIEHPDFSCNTGELKPGNTIQKSEYPE	816
Pavo_cristatus	PDLSYSSHRPEQEKFRHPTLPFGSKEQETAPPVIEHPDFSCNTGELKPGNTIQKSEYPE	816
Gallus_gallus	PDVSYSSHRPEQEKFRHPTLPFGSKEQEAAPPVIEHPDFSYNTGELKPGDTIQQSEYPE	1497
Chelonia_mydas	-----KKGIKDPAMPSDIKRK-----	259
1930.....1940.....1950.....1960.....1970.....1980	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus          FKPSVSQNTATRESPOKTIIDMPQFKPRGLSDPATLLEEKEAIG----- 965
Rattus_norvegicus     FKPSVPQSATQEPPEKTGDDTPQFKPKGLAEPITILLEEEKEAT----- 1025
Canis_lupus_familiaris FQNAVPPSAVQEPSKKIIDDVSPKSKGISEHMILSEKKE----- 839
Equus_caballus        SQHTVPPNVTHESLKKIADGVSPKSKGVSEHMLSEEEERG----- 1150
Bos_taurus           FQNAVPPNVRQESPKNIIDDVSLKSEGVSEHKTIVLEEEKE----- 846
Homo_sapiens          SKYAAPLNATQESQKKIINEASQFKPKGISEHTVLSVDGKE----- 839
Pan_troglodytes       SKYAAPLNATQESQKKIINEASQFKPKGISEHTVLSVDGKE----- 839
Macaca_mulatta        SKYAAPLNATQEPQKKIIDEASQFKPKGISEHTVLSVEGKEDIGPASPDSVIASEYTVLS 857
Callithrix_jacchus    SKYAAPVNATQESHKKIIDEPSQFKPKSISECIILSKEGKE----- 829
Heterocephalus_glaber SKSEVPLNATQESQK-IIDEVPPQFKLKDIFQHTILSETETE----- 840
Xenopus_tropicalis    -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus          KSYSVEEMQQESEYLDSPETLGRAQDETVEVESEYPNVSCS----- 857
Pavo_cristatus        KSYSVEEMQQESEYLDSPETLGRAQDETVEVESEYPNVSCS----- 857
Gallus_gallus         KSYSMEEMQQESEYLDSPETLGRAQDETVEVESEYPNVSCS----- 1538
Chelonia_mydas        -----QKQQHEGFLN----- 269
.....1990.....2000.....2010.....2020.....2030.....2040

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Mus_musculus          -----VGLSSSNEVSAVECALPPQTTELLSESHAPPPWAISSSEQVVSSEEGSRDQQRGS 1019
Rattus_norvegicus     -----ELSSSSEVPAAERTLPQTTELLSESQAPPSWPTSSEQEGLSSEERSGEGQQRGS 1078
Canis_lupus_familiaris -----DTGLYSPDVASVSEHSLPPTTEQTSSEQALPFAATSEHVLS-EETVEME-YT 892
Equus_caballus        -----DIGLYSPDVASVSELTLFPFTTEMTSECCSPILLSATPSEHAVLSEETVELERYT 1205
Bos_taurus           -----DAGFYTPEVASLPEGLPPTTEGTPECCVRLSVAPPDHVVLSSEETVEMERYT 901
Homo_sapiens          -----VIGPSSPDLVVASEHSFPHTTTEMTSECCAPPLSATPSEYVVLSDDEEAVELERYT 894
Pan_troglodytes       -----DIGPSSPDLVVASEHSFPHTTTEMTSECCAPPLSATPSEYVVLSDDEEAVELERYT 894
Macaca_mulatta        VEGKEDIGPSSPDVIASEHSFPHTTTEMTSECCAPPLSATPSEYVVLSDDEETVELERYT 917
Callithrix_jacchus    -----DIEPSSPDVATSKHSLPHTTERTSECCASPLSATPSERGVLSDEETVELEQYT 884
Heterocephalus_glaber -----DVGSCSPDVVPAPECSLPHTTTEMTSEYQAPPHAGTLSEHVLSSEETIETERYS 895
Xenopus_tropicalis    -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus          -----DGQKSQQETSQLVSKYPGTLFSFSNFNEQATQEFDSKHKDLPRVARKRA 906
Pavo_cristatus        -----DGQKSQQETSQLVSKYPGTLFSFSNFNEQATQEFDSKHKDLPRVARKRA 906
Gallus_gallus         -----DDQKSQQETSQLASKYPGTLFSFSDFKEQATQEFDSKHKDLPRVARKRA 1587
Chelonia_mydas        ----- 269
.....2050.....2060.....2070.....2080.....2090.....2100

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Mus_musculus          FSST-----PELGHTSPLLLKGASSPTGLSECGQEEEDNIGPLSPDPSAF 1062
Rattus_norvegicus     FSST-----PELVHTSPLLLKGASSPSALSEPQGEEDSIGPLSPDPSAF 1121
Canis_lupus_familiaris PSSTSTSEFSVPPYATPESQEEEIVHRSPLNLKGASSPTNFSEE--EQEDIGPFSPDPSAF 950
Equus_caballus        PSSTSASEFSVPPYATPESQEEEMVHRAPLNLKGASSPMNFSEE--EQEDIGPFSPDPSAF 1263
Bos_taurus           PSSTSASELSEPPYATPESQEEEIVHTSPLNLKGSSSPMIFSEE--EQEDIGPFSPDPSAF 959
Homo_sapiens          PSSTSASEFSVPPYATPEAQEEEIVHRS-LNLKGASSPMNLSEE--DQEDIGPFSPDPSAF 951
Pan_troglodytes       PSSTSASEFSVPPYATPEAQEEEIVHRS-LNLKGASSPMNLSEE--DQEDIGPFSPDPSAF 951
Macaca_mulatta        PSSTSASEFSVPPYATPEAQEEEIVHRS-LNLKGASSPTNLSEE--DQEDIGPFSPDPSAF 974
Callithrix_jacchus    PSFTSASEFSIPPYATPESQEEEIVHRS-LNLKDASSPMNLSE--DQEDIGPFSPDPSAF 940
Heterocephalus_glaber PSSTSTSEFSVPPYAMPESQEEEIVQRSPLHLKGASSPMNLSE--QEDIGPFSPDPSAF 951
Xenopus_tropicalis    -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus          LPGTAQVDSKYPDLTYSFGKAEPEIAQSEARHFDLSHSTRETNKQEAALLDQKHKRISV 966
Pavo_cristatus        LPGTAQVDSKYPDLTYSFGKAEPEIAQSEARHFDLSHSTRETNKQEAALLDQKHKRISV 966
Gallus_gallus         LPETAQIDSKYPDLTYSFGKAEPEISQSEARHSDLSHSTGETNK--SDLLDQKHKRISV 1645
Chelonia_mydas        ----- 269
.....2110.....2120.....2130.....2140.....2150.....2160

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Mus_musculus      ASEFSFSFYPTQELEKRELGRDSPCLTSPSEQTVLSDDEDTEEADLFSPDSASQVSIPPY 1122
Rattus_norvegicus ASEFSFSFYPTQELERRELGRDSPCLTSPSEHTVLSDDEDTEEAEFLSPDSASQVSIPPY 1181
Canis_lupus_familiaris VSEFSFSFYATQEAKEKREFECDSPICLTSPSEHTILSDDEDTEEIELFSPDSASQVSIPPY 1010
Equus_caballus     ASEFSFPPYATQETEKREFECDSPICLTSPSEHTILSDDEDTEEAEFLSPDSASQVSIPPY 1323
Bos_taurus        VSEFSFPPYATG--KREFECDSPICLTSPSEHTILSDDEDTEEELFSPDSASQASIPPY 1017
Homo_sapiens       VSEFSFPPYATQEAKEKREFECDSPICLTSPSEHTILSDDEDTEEAEFLSPDSASQVSIPPY 1011
Pan_troglodytes    VSEFSFPPYATQEAKEKREFECDSPICLTSPSEHTILSDDEDTEEVELFSPDSASQVSIPPY 1011
Macaca_mulatta     ASEFSFPPYATQEAKEKREFECDSPICLTSPSEHTILSDDEDTEEAEFLSPDSASQVSIPPY 1034
Callithrix_jacchus VSEFSFPPYATQEAKEKREFECDSPICLTSPSEHTIFSDDEDTEEAEFLSPDSASQVSIPPY 1000
Heterocephalus_glaber VSEFSFSFYSTQETEKREFECGSPVCLTSPSEHPVLSDEDTEGGFLFSPDSASQVSIPPY 1011
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus       DREKQQQTPEGQVEQEKFSYSSSKTEQLKYVEEGFEKQDLFSFIVRPDEKMALTEIEHAD 1026
Pavo_cristatus     DREKQQQTPEGQVEQEKFSYSSSKTEQLKYVEEGFEKQDLFSFIVRPDEKMALTEIEHAD 1026
Gallus_gallus      DREKQQQTPEGQVEQEKFSYSSSKTEQLKYAEEGFEKQDLFSFIVRPDEKMALTEIEHAD 1705
Chelonia_mydas     --QSLSSTPLEHLEKCDTGDDGSLHNIKQVETNIES--SFSNVG----- 311
.....2170.....2180.....2190.....2200.....2210.....2220

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Mus_musculus      RIAETEONKVEPDELLPRRSAPDPYFSEADEEEAGSSVVPVPEHSEPSQER--EESSPC 1181
Rattus_norvegicus RIAETERNKVEADELLPMSVPDPYFSGADEEETGSSVATPVPEHSAPSKERKEEPPFS 1241
Canis_lupus_familiaris RIPETKKNESEHDSLVTEISASGYFCSSEADEEDIVLTAATPVPEHLSSSQKQDKPSPS 1070
Equus_caballus     R-PETKKNEIEPDSLLTAISASGYSGFSEADEEEIATAATPVPEHLSSSEKQQSETSPS 1382
Bos_taurus        RIPEMNKKEIEPDSLLTAMASGYPRFSEADEEEIAPTTPPVPEHLSSSQKQKOR--AEPS 1075
Homo_sapiens       RISETEKNELEPDSLLTAVSASGYSCFSEADEEDIGSTAATPVSEQFSSSQKQKAEFPFL 1071
Pan_troglodytes    RISETEKNELEPDSLLTAVSASGYSCFSEADEEDIGSTAATPVSEQFSSSQKQKAEFPFL 1071
Macaca_mulatta     RISETEKNELEPDSLLTAVSASGYSCFSEVDEEDIGSTAATPVSEQFSSSQKQKSETFPFL 1094
Callithrix_jacchus RIPETEKNDLEPDSLLTAMSASGYSCFPRADEEDIGSTAATPVPELFSSSQKQKAEFPFS 1060
Heterocephalus_glaber RIPETEINESEPDLSLLPARSVSGFSYFSEADEEETGSTAATPIPEYFDSSEKQKAEFPFI 1071
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus       VIYPLEKAEVQQRVQLESQMDLTYPFKEAEQKMAQSEVERSHLAHSVGTAEIEEKAEPG 1086
Pavo_cristatus     VIYPLEKAEVQQRVQLESQMDLTYPFKEAEQKMAQSEVERSHLAHSVGTAEIEEKAEPG 1086
Gallus_gallus      VINPLEKAEVQQRVQLESEQMDLIRPFKEEQQKMAQPEAERSRLAHSVGTAEIEEIAEPA 1765
Chelonia_mydas     VIVPLDKERKE-----TRSSPAETLHIEIES 339
.....2230.....2240.....2250.....2260.....2270.....2280

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Mus_musculus      RVPFEDLSLLPSADKT--GQAEITMSDVPTISTSVSEYLILAQKQKQASLEPEAEDLVPP 1239
Rattus_norvegicus IPVFEDLSLLPSAVMTTGTGAEITKPDVPTVSTSVSEYLILAQKQKQASLEPEAEDLVPP 1301
Canis_lupus_familiaris MSAPEDLR--PSTNKR--EITGVQPDQOTTSTSVSEYLILAQKQKQASLEPEAEDLVPP 1126
Equus_caballus     VSVPEDLSPSTNKA--EEAEIKPDVQTTASVSKYIISAQKQIROASLEAEDLVPP 1440
Bos_taurus        VSAPEDLSQLPSTNEA--EKAEIKPDQTTASVSEYLILAQKQKQAYLEPESEDVPP 1133
Homo_sapiens       MSPLEDLSLPPSTDKS--EKAEIKPEIPTTSTSVSEYLILAQKQKQAYLEPESEDVPP 1129
Pan_troglodytes    MSPLEDLSLPPSTDKS--EKAEIKPEIPTTSTSVSEYLILAQKQKQAYLEPESEDVPP 1129
Macaca_mulatta     ISPLEDLSPSTNKA--EKAEIKPDIPPTTSTSVSEYLILAQKQKQAYLEPESEDVPP 1152
Callithrix_jacchus TSPLEDLSPSTNKA--QKAEIKPEIPATSVSEFLILAQKQKQASLESESEDVPP 1118
Heterocephalus_glaber MSTPEASSLPSSVDEA--DNAETRLDVQTFSTSVSEYLILAQKQKQASLEPESEDVPP 1129
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus       QRYPDLPYSVFKEGKLOSEELKPEHPSLACSFNKVQETTLQNLVLDADHDKTEKCPPAQLEL 1146
Pavo_cristatus     QRYPDLPYSVFKEGKLOSEELKPEHPSLACSFNKVQETTLQNLVLDADHDKTEKCPPAQLEL 1146
Gallus_gallus      QRYPDLPYSVFKEGKLOSEELKPEHPSLACSFNKVQETTLQNLVLDADHDKTEKCPPAQLEL 1825
Chelonia_mydas     -----LSFSSYLTEEEKQEIHTSSPMPITSISEWSMAEPSDLMDAAEKEEIQP----- 388
.....2290.....2300.....2310.....2320.....2330.....2340

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Mus_musculus      P-TSGWEKRDAKS SLPAVTIAASSALSSVVKEETTSVLPTSQPSVSPESTCVLKPEQEP 1298
Rattus_norvegicus PLTSGWEETDAKSSSTASTIAASASAVSSVVKEETASILSTSQFSVSPESARVPKTEREP 1361
Canis_lupus_familiaris YLTSETEKGEIQTSSSVVATPVSLPAQSLPVKEDTKPVLHSAQYSVSPDSVHALPKEQEA 1186
Equus_caballus     YLTNELEKGEIKTSLSVAATPSFPAQPSMAKDETKPVLPAQYSVAPDSVHVIKKEQEP 1500
Bos_taurus         SLTSDSERGETKSSSSLAAPAVKEVP--TVKEETKPVLPAQCSVSPDSVHAIKKEQEP 1191
Homo_sapiens       HLTSEVEKGEREASSSVAAIPALPAQSSIVKEETKPASP---HSVLPDSVPAIKKEQEP 1186
Pan_troglodytes    HLTSDVEKGEREASSSVAAIPALPAQSFIVKEETKPASP---HSVLPDSVPAIKKEQEP 1186
Macaca_mulatta     HLTSEVKKGEREASSSVTAIPASLLAQSSIVKEETKPASP---HSVLPDSVPAIKKEQEP 1209
Callithrix_jacchus HLTSEVEKGEREASSSVAAIPTSLLAQSSVVKEETKPASP---HSVSPDSVPAIKKEQEP 1175
Heterocephalus_glaber YLTNRTEQEEIKAKSSAATTHAASNVQSSLAKEETKPISPASQYSVLLDSVYATKKEQEP 1189
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus       GNEDLASPADKVRQQGMVHTALECPDESQSASRAEHPQPTKEKLGVPDTSRSRKKEEORG 1206
Pavo_cristatus     GNEDLASPADKVRQQGMVHTALECPDESQSASRAEHPQPTKEKLGVPDTSRSRKKEEORG 1206
Gallus_gallus      GNEDLASPADKIGQQGMVHTALECPDENQASRAQHPQPTKEKLEVPDISHSNGNEEORG 1885
Chelonia_mydas     ----- 388
.....2350.....2360.....2370.....2380.....2390.....2400

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Mus_musculus      TAPLTLTSADEQMALPRVG-REKAVLDSQEATAHKSQDQTPPEPRLPNVPGSGMKYSVLSD 1357
Rattus_norvegicus KASLTLTSAEEQMALPKVR-REEIVPDSQEATAHKSQDQTPPEPQPPNVPGSGMRYSVLSD 1420
Canis_lupus_familiaris KASLTPKAANEQMALLVKSKEEIVPDSQEATAHISRDQEMEPQPPNVLGSGMKYSVLSD 1246
Equus_caballus     KASLTAQAANEQMALLVKSKEEIVPDSQEAAVRVSQDQEMEPQPPNVPGSGMKYSVVPD 1560
Bos_taurus         QTSLTPKSADQMALLVKSKEEIVPDSQEATAHVLQDQEMEPQPPNVPGSGMKDSVLSD 1251
Homo_sapiens       TAALTTLKAADQMALSKVR-KEEIVPDSQEATAHVSQDQKMEPQPPNVPESEMKYSVLSD 1245
Pan_troglodytes    TAALTTLKAADQMALSKVR-KEEIVPDSQEATAHVSQDQKMEPQPPNVPESEMKYSVLSD 1245
Macaca_mulatta     TAALTTLKAADQMALSKVG-KEEIVADQSEATAHVSQDQKMEPQPPNIPGFEMKYSVLSD 1268
Callithrix_jacchus TAALTTLKAVDEQMALPKVR-KEEIVPDSQEATAHVSQDQKMEPQPPNVPGSETKYSILSD 1234
Heterocephalus_glaber KASLILKAADQMALSEVR-KEETVPDSQEATAHVSQDQKLEPQTPNVPGSGIKNSVLSD 1248
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 412
Pavo_muticus       TAKPVLKHPDLSYSIHGTQPKNTQLELGKPDLATWPGKTEQVQPAQKEQSGFLHSFNKE 1266
Pavo_cristatus     TAKPVLKHPDLSYSIHGTQPKNTQLELGKPDLATWPGKTEQVQPAQKEQSGFLHSFNKE 1266
Gallus_gallus      MAKPVLKHPDLSYSIHGTQPKNTQLELGKPDLATWPGKTEQVQPAQKEQSGFLHSFYKE 1945
Chelonia_mydas     -----FPPETANVTSEQPLSITPYLIDE-----GDYQETQPNSTLTITKISTDYIN 434
.....2410.....2420.....2430.....2440.....2450.....2460

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Mus_musculus      LGDEPKADVKLNLAAPTVTSELEQRLSKNEPEVAKPHSPPEETSISGPKVLSAVKTEVKQ 1417
Rattus_norvegicus MGDEPKADVKPDLAPAVTSELEQRLSKNEPEVVKPHSPPEETSISGRKVL SAVQKEVKQ 1480
Canis_lupus_familiaris SVDEPKKDVKNLAPNVTSELEPRMLSENEPEVIKPYSPDKTSLSGPEILSAVKMQAKH 1306
Equus_caballus     LVDEPKKDVKNLAPNVTSELEQRLSENEPEVIKPYSPDKTSLSAPEILSAVKTEVKH 1620
Bos_taurus         LADEPKKDVKNLAPNVTSELEQRLSEKEPEVTKPYSPDKTSLSRPEISSVVKTEVKL 1311
Homo_sapiens       MVDEPKKGVKPKLVNVTSELEQRLSKNEPEVIKPYSPDKTSLSGPEALSAVKMEMKH 1305
Pan_troglodytes    VVDEPKKGVKPKLVNVTSELEQRLSKNEPEVIKPYSPDKTSLSGPEVLSAVKMEMKH 1305
Macaca_mulatta     VVGEPKKGVKPKLVNVTSELEQRLSEKEPEVIKPCSPDKTSLSGPEVLSAAKMEMKH 1328
Callithrix_jacchus VVDEPKKGVKPKLVNVTSELEQRLSKNEPEVIKPYSPDKTSSSSGSEVLPAVKMEMKH 1294
Heterocephalus_glaber LVSEPKKDVNLAAPTVPSELEQSTLSKNEPKVVKAYSPPKERSISGPEVLSAVKTEVEH 1308
Xenopus_tropicalis -----
Rhinatrema_bivittatum --GEETQDIPFSLADIVTLMLERKKS-----VPSYHMDKAEIQDTRVLPVMTEFMPE 462
Pavo_muticus       EAQPEMGRSQLPYSVTETEQEI AHKESIHSALSAGRLEQHEFIQPEAEIMDLSCSVGKTQ 1326
Pavo_cristatus     EAQPEMGRSQLPYSVTETEQEI AHKESIHSALSAGRLEQHEFIQPEAEIMDLSCSVGKTQ 1326
Gallus_gallus      EAQPEMGRSQVSYSVSETEQEI AHKEESIHSDL SAGRLEQHEFIQPEAEIMDLSCLVGEPQ 2005
Chelonia_mydas     EPE---QATQPYVPPISTESVSEHSSSHTGKET-EKQEIQFYSPVATOLEP----- 482
.....2470.....2480.....2490.....2500.....2510.....2520

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Mus_musculus	ESKITRE---LPAASSGRERGAHSPAPPALP-ALMEEMGKDTEASSSATTPVPTKLDS	1473
Rattus_norvegicus	ESKITRE---LPAASSGIEREVEHHPPAPTALP-ALREETEREIKASVSATPVPTKLDS	1536
Canis_lupus_familiaris	DPKIADTSRALHSTPPRVQEETEPGPPAPEFS-----EERKEEIEPSCSITTTSVTQHDS	1361
Equus_caballus	DSEIIGTPKGLHSASPGVEKHIEHGPPAPEFSA--LSTEIKKEVEPSSSITTTSLTKHDS	1678
Bos_taurus	DSKVTGTPRVLRASAPGVEQVEHGGPPVPEFEFSALSEEIKKEIEPSSSITATSETKHDS	1371
Homo_sapiens	DSKITTTPIVLHSASSGVEKQVEHGPPALAFS--ALSEEIKKEIEPSSSITTTASVTKLDS	1363
Pan_troglodytes	DSKITTTPIVLHSASSGVEKQVEHGPPALAFS--ALSEEIKKEIEPSSSITTTASVTKLDS	1363
Macaca_mulatta	DSKITTTPTVLHSASSGVEKQVEHGPPALAFS--ALSEEIKKEMEPSSSITTTASVTKLDS	1386
Callithrix_jacchus	DSKITSTPSVLDASSGVDKQVEHGPPALAFS--ALSEEINKALEPSSSITTTASVTKLDS	1352
Heterocephalus_glaber	VSKITRG---LHSTSSGVEKEVEHGPPAPTFS--ALSEEIKKEMEPSSSITTT-VTKCDS	1362
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	ES-----	464
Pavo_muticus	QSQIDELDLLEYPDLSHSTPALQKQEEVQPELEEPSDFSSSLRKEQRENARMQAECSEFQW	1386
Pavo_cristatus	QSQIDELDLLEYPDLSHSTPALQKQEEVQPELEEPSDFSSSLRKEQRENARMQAECSEFQW	1386
Gallus_gallus	QSQIDELDLLEYPDLSHSTGALQKQEEVQPELEEPSDFSSSLRKEQGENARMQAECSEFQS	2065
Chelonia_mydas	-----KHSVLSSETKKRDIKPYPP-----	500
	.....2530.....2540.....2550.....2560.....2570.....2580	

Mus_musculus	NSTKLGR-----DEVLTDPSLASPVEH-PGLKGVGKSELGSG-----	1509
Rattus_norvegicus	NSAALGR-----DEILTDSSLAGPAEH-PGFKGVGERGLSGSEPSLTMSAADP	1583
Canis_lupus_familiaris	SLTKLAR-----EETPTDLSFTMPIEH-PVVEVEKSELGSGLPPLVTSIDED	1408
Equus_caballus	SLTKLAK-----EEILTGLSLSTPIEH-LILTEVGKNELESGLPPVVTSIDEH	1725
Bos_taurus	NLTKLAK-----EEIPKNLPLTTPIEH-QVLTKEKSELGSGLPPLVTSIDED	1414
Homo_sapiens	NLTRAVK-----EEIPTDSSLITPVDR-PVLTKVGKGELGSGLPPLVTSADDEH	1410
Pan_troglodytes	NLTRAVK-----EEIPTDSSLITPVDR-PVLTKVGKGELGSGLPPLVTSADDEH	1410
Macaca_mulatta	NLTKVVK-----EEISTDSSLVTPVGH-PVLTKVGKGELGSGLPPLVTSDEH	1433
Callithrix_jacchus	NLTKLGK-----KEIPTDSSLVTPVDR-PVLTQVGKGELGSGLPPLVTSADDEH	1399
Heterocephalus_glaber	ILTKLVKDI PMDSFPAKLLKDIPINS SPATPVEEHGPTKAGEGELGSDFPVLLKPVDEH	1422
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	464
Pavo_muticus	SVWKAER-----LQDPQVESECTDLSFSVTAEHETTQSVLKELDLLHSFVKTK	1436
Pavo_cristatus	SVWKAER-----LQDPQVESECTDLSFSVTAEHETTQSVLKELDLLHSFVKTK	1436
Gallus_gallus	SVWKAER-----LQDSQVESERTDLSFSVTIAESHETTQSVLKELDLLRSSVKTM	2115
Chelonia_mydas	-----ITAQSECEHPDLSYSIEEAKEQEIHP-----	526
	.....2590.....2600.....2610.....2620.....2630.....2640	

Mus_musculus	-----LPLPS-----	1514
Rattus_norvegicus	TVLRAGEKEPIKEAAAVLDSSSFRGSAPWPAEAEKGRLESSLSLSSPSSELDWSKVETEVE	1643
Canis_lupus_familiaris	SLFKEEKKVARKT-TSPTETAASERPAPWSEAEKEIKFDSLTRISSLPEHS-LSNVETEVEV	1466
Equus_caballus	SLLKEEEKAAIKAGSSPTEMAAPKRPAGLEAEKESKFESSPSISSRSSEHFIFSKAESEEV	1785
Bos_taurus	SLFKED-KVAIKASPSPTETAASQYPAWSEVEKEIKFDLPASISSISEHSVLSEVETEDI	1473
Homo_sapiens	SVLAEEDKVAIKG-ASPIETSS-KHLAWSEAEKEIKFDSLPSVSSIAEHSVLSEVEAKEV	1468
Pan_troglodytes	SVLAEEDKVAIKG-ASPIETSS-KHLAWSEAEKEIKFDSLPSVSSIAEHSVLSEVEAKEV	1468
Macaca_mulatta	SVLAEEDKVAIKG-ASPNETSS-KHLAWSEAEKEIKFDSPPSVSSIAEHSVLSEVEAKEV	1491
Callithrix_jacchus	SVLVEDDKVAIKG-ASPIETSS-KHLAWSEAEKEIKFDSPPSVSSVAEHSVLSEAEAKGV	1457
Heterocephalus_glaber	SILIEEEKVVITSASSSIKASLSKGLAPSEVEETKMDSPPSVCSITSDHSILSKVDTEVE	1482
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	464
Pavo_muticus	QSWDSPEPGHLNVSNAMAKVPHPDFLSSSTSEEKQSAQVDFKQERESCALHTEETAKLKLE	1496
Pavo_cristatus	QSWDSPEPGHLNVSNAMAKVPHPDFLSSSTSEEKQSAQVDFKQERESCALHTEETAKLKLE	1496
Gallus_gallus	QSWDSPEPDHLNINAVAKVPHPDFLSSSTSEEKQSAQVDFKQERESCALHTEETAKLKLE	2175
Chelonia_mydas	-----	526
2650.....2660.....2670.....2680.....2690.....2700	

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Mus_musculus          -----MSTSEVLRPEPK 1526
Rattus_norvegicus    KRGWPGAKVPS----DVAAGTGVEDKRGISLSPAPESKESTSPQKKNLVSSEVLRPEPK 1699
Canis_lupus_familiaris KPGLPITKALSSQSDVSKDERVENEGLSFATVLNSEQLVLSQKKNSVSASEVSGPEHV 1526
Equus_caballus       KPGLPITKTLSSQHSDISKEARVEHEGLSFPTALDSEHLVLSQKKNSVSASEVSEPEHG 1845
Bos_taurus           KPGLAITKTLSSQHSQSDVSKEARVEDKDLSTFPTVLDSEYLDLSQKKISVSASEMSGPEHV 1533
Homo_sapiens         KAGLPVIKTSSSQHSQSDKSEEARVEDKDLLFSTVCDSERLVSSQKKSLMSTSEVLEPEHE 1528
Pan_troglodytes      KAGLPVIKTSSSQHSQSDKSEEARVEDKDLLFSTVCDSERLVSSQKKSLMSTSEVLEPEHE 1528
Macaca_mulatta       KAGLPVIKTSSSQHSQSDKSEEARVEDKGLSCSTVRDSEHLVSSQKKSLVSTSEVIGPEHE 1551
Callithrix_jacchus   KAGLPVIKTSSSQHSQSDKSEEARVEDKGLSCSTVRDSEHLVSSQKKSLVSTSEVIGPEHE 1515
Heterocephalus_glaber KPGLPVQDKVSSPQHSQSAVSEGAKEGDKGLSFSTVLDSEHLVSSQD-----TASEVSRPEPV 1538
Xenopus_tropicalis   -----
Rhinatrema_bivittatum ----- 464
Pavo_muticus         OPTLSSAHGTVEQPR-TSMGEFLDTLYLSGEKRENNKKEQDMSRQELEHS-TLSDSTVK 1554
Pavo_cristatus       OPTLSSAHGTVEQPR-TSMGEFLDTLYLSGEKRENNKKEQDMSRQELEHS-TLSDSTVK 1554
Gallus_gallus        OPTLSSAHGTVEQPRRTSMGEFLDTSRLSGEKRENNKKEQDMSRQELEHSLDLSLDTDK 2235
Chelonia_mydas       ----- 526
.....2710.....2720.....2730.....2740.....2750.....2760

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Mus_musculus          LPVNSGVEVEREDNEPPPLQ-VSPTSKPTVPNDKHEEITRS-PDSENVVSDDLAPTLLAL 1584
Rattus_norvegicus    LPIDLWSEVEREDTEPPPSQ-VSPTPKHTVPDDKPEEMTRS-PDSENLVSDDLAPTLLAL 1757
Canis_lupus_familiaris LLLNKGGEVKKKEIETLPSQNMSPVPKHIVLKDKNEMESSPELENLVSADLTSTP--- 1583
Equus_caballus       LLLNLGGEIKKKETELLSSQNMSPIPKHIVPRGKNEMASSPESLENLLSDDLAPMLPPL 1905
Bos_taurus           PLSLSLGGEIKKKETELPSSQNMSPAPKYIVPKGKDEVTASSVPELKHLSSEDLASTFLT 1593
Homo_sapiens         LPLSLWGEIKKKETELPSSQNVSPASKHIIPKGKDEETASSPPELENLASG-LAPTLLLL 1587
Pan_troglodytes      LLSLSLWGEIKKKETELPSSQNVSPASKHIIPKGKDEETASSPPELENLASG-LAPTLLLL 1587
Macaca_mulatta       LLSLSLWGEIKKKETELPSSQNVSPASKHIIPKGKDEETASSPPELENLASG-LAPTLLLL 1610
Callithrix_jacchus   LSCSLEGEVKKKEEAKLPSSQNVSPAPHTHTVPKGRDEETASSPPELENLASG-LDPTVLFL 1574
Heterocephalus_glaber LLSLSLESGIEKEETRLVLSHTVSPAPKHIVPGKNEDMTSSSPKFENLVSEDLVPTLLTL 1598
Xenopus_tropicalis   -----
Rhinatrema_bivittatum ----- 464
Pavo_muticus         TEQQETSQPESGQPDLSYSYGKKEQPQTQVQVEGEHQELLCFPGETQWQGTAEPEVELPDL 1614
Pavo_cristatus       TEQQETSQPESGQPDLSYSYGKKEQPQTQVQVEGEHQELLCFPGETQWQGTAEPEVELPDL 1614
Gallus_gallus        TQQQETTQPESRQSDLSYSYGKKEQPQTQVQVEGEHQELLRFPGETQWQGTAEPEVELPDL 2295
Chelonia_mydas       -YSPVTAQLESEQPDISYSTCETEKQETAQLESEHSEEQAIQPHIPIS--AQSESEHSDL 583
.....2770.....2780.....2790.....2800.....2810.....2820

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Mus_musculus          RHEMNRQAEETSSPVPGSFLSGEQE--LIKLPPEPEK---HKQLSEVP---TAGSELIDS 1636
Rattus_norvegicus    RDEMNGQAEETSSPVLGSLSGKEE--LVKLPPEPK---PKRFSEAP---TVGLELIDS 1809
Canis_lupus_familiaris RDDKNRQIVPEPSSAQGDFLSEKQDLSLAELSLEPEKKDRPHQVSELP---SAESEFTCS 1640
Equus_caballus       SDDRNKQAMEMSPAAQGGFLSEKQDRALAELSLEPEKKDKPHQVSELP---TAEAEFTSG 1962
Bos_taurus           SGDKREQAVETPSVIOGDFRSEKAGLALAQLSLEPEKRDKTHPVSEFPDGNAGSEFAGD 1653
Homo_sapiens         SDDKNKPAVEVSSTAQGDFFSEKQDVALAELSLEPEKKDKPHQPLELP---NAGSEFSSD 1644
Pan_troglodytes      SDDKNKLAVEVSSTAQGDFFSEKQDVALAELFLEPEKKDKPHQPLELP---NAGSEFSSD 1644
Macaca_mulatta       SDDKNKQAVEVSSTQGDFFSEKQDIALAELSLEPEKKDKPHQPLELP---NAGSEFASG 1667
Callithrix_jacchus   SEDKNEHAVEVSSAQGDFLSEKQDVALAQLSLEPEKKDKPHQPLELP---NAGSEFASG 1631
Heterocephalus_glaber GDGKNKQAGDITSPVHGDFLSEKQDLAMAELPLESEKKDKLHQLSKLP-----EFTGG 1651
Xenopus_tropicalis   -----
Rhinatrema_bivittatum ----- 464
Pavo_muticus         SYSTGKVEQPQATQWKSEQPVTPHHIGTTDQQGMAHAVQDLGQQDFMHDPEDKTDEIQTVQ 1674
Pavo_cristatus       SYSTGKVEQPQATQWKSEQPVTPHHIGTTDQQGMAHAVQDLGQQDFMHDPEDKTDEIQTVQ 1674
Gallus_gallus        SYSIGKVEQPQATQWKSEQPVPAPHHIGTTDQQGIAHSVQDLG-QDFIYDPGKTDEIQTVQ 2354
Chelonia_mydas       SYSIEEAEE-----QEIQSYS 599
.....2830.....2840.....2850.....2860.....2870.....2880

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Mus_musculus	RDR-DRSLGIEPVKPIGTEPGPSILEKGPALRRGKEEENRKLPVPASAP-----	1687
Rattus_norvegicus	RDR-DGSLGIEIVK-----PSVLEKGPTELRSAGKEEEHRGLPVPATSP-----	1853
Canis_lupus_familiaris	LGGQDGSIDTKQIKSPITETEDSVLEKGFAEFGGRGEGKEENREHHVPATVDPKISEVLS	1700
Equus_caballus	VGRQSGSIDTKQIKSPITETGDSVLEKGLAELRSREEGKEENRELHASTTVP-EISEVSS	2021
Bos_taurus	VNRQSGSIQTEHIKSPLPETENSALEKGLPELRSRGEGKEENRELHVSTTVP-KISEVSS	1712
Homo_sapiens	LGRQSGSIGTKQAKSPITETEDSVLEKGPALRSR-EGKEENRELCASTMP-AISELSS	1702
Pan_troglodytes	LGRQSGSIGTKQAKSPITETEDSVLEKGPALRSR-EGKEENRELYASTMP-AISELSS	1702
Macaca_mulatta	LGRQSGSIGTKQAKSPVTETGDSVLEKGPALRSR-EGKEENRELYASATMP-TTSELSS	1725
Callithrix_jacchus	LGRQSGSTGTQKEKSPITETGDSVLEKGLAKLRSR-EGKEENREFYASATVP-TTSELSS	1689
Heterocephalus_glaber	LGRQSGPIDTEPVTCLITDTESSVLEKGLVLELRSREKEKEENRELCVSAAEP-----	1703
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	464
Pavo_muticus	GELEHTALLYSSDKTEQEMVMSGLQHPQLSYSVRVIEEKTTHQKSENKDLSY-----	1726
Pavo_cristatus	GELEHTALLYSSDKTEQEMVMSGLQHPQLSYSVRVIEEKTTHQKSENKDLSY-----	1726
Gallus_gallus	GELEHTALLYSSDKTEQEMVMSELQHPQLSYSVRVIEEKTTHQKSDNKDLSY-----	2406
Chelonia_mydas	-----	599
	.....2890.....2900.....2910.....2920.....2930.....2940	

Mus_musculus	-----	1687
Rattus_norvegicus	-----	1853
Canis_lupus_familiaris	CLEEEFQIQEVKYFSPKVVSLGSKEALTPLVEGDSFKELQPHFTSLKGLSEKLNHLADIK	1760
Equus_caballus	YLREEPQSQEIKPFSKVVSLGSKEAFTSLVEGDNPEERQPHFTSLLEELSEELNHSADFK	2081
Bos_taurus	YLREEPQIQEMKSLSAKVVSLGSREAFTSQLEGDSLSEEFQSHTLSSKGLSEELNRSADFK	1772
Homo_sapiens	LLREESQNEEIKPFSPKIIISLESKEPPASVAEGGNPEEFQPFTHSLKGLSEEVSHPADFK	1762
Pan_troglodytes	LLREESQNEEIKPFSPKIVSLESKEPPASVAEGGNPEEFQPFTHSLKGLSEEVSHPADFK	1762
Macaca_mulatta	LLREESQNEEIKPFSPKIVSLELKEPPASVAEGDNPEEFQPFTHSLKGLSEEVSHPADFK	1785
Callithrix_jacchus	SLREESQNEEMKSFFPKIVSLESKETPASLAEGDNPEEFQPFTHSLKGLSEELSHSADFK	1749
Heterocephalus_glaber	-----	1703
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----	464
Pavo_muticus	-----	1726
Pavo_cristatus	-----	1726
Gallus_gallus	-----	2406
Chelonia_mydas	-----	599
	.....2950.....2960.....2970.....2980.....2990.....3000	

Mus_musculus	-----LETASFDLPIEQK	1700
Rattus_norvegicus	-----LETASFDLPKIK	1866
Canis_lupus_familiaris	SGEKQEISSLSTGIPKTQVIGDAEMKPSSEERDQPNLFRVPSIIEPSEVVSSDLLVEEQ	1820
Equus_caballus	KGEKQKISLLLPTGNLKAQMGDIVTKLNEETNQPHSIHVPSITEPSKIASTDLLVEEQ	2141
Bos_taurus	KEEKQEISSLQAGNLKAQETEDTVTKPNE--TDQPNSEFVLSITEPSNISSDLFVQQ--	1830
Homo_sapiens	KGGNQEIIGPLPPTGNLKAQVMGDILDKLSEETGHPNSSQVLQSITEPSKIAPSDLLVEQK	1822
Pan_troglodytes	KGGNQEIIGPLPPTGNLKAQVMGDILDKLSEETGHSNSSQVLQSITEPSKIAPSDLLVEQK	1822
Macaca_mulatta	KGGNQEIIGPLPPTGNLKAQVMGDIVAKLSEETGHPDSSQLQSVTEPSKIALSDLVEQ--	1843
Callithrix_jacchus	KGNQEIIGPLPSPENLRAQVMGDIVAKLSEETGHPDSSQVLQSVTEPSKIAPSDLLVEQK	1809
Heterocephalus_glaber	-----SKIASFDLSAEQK	1716
Xenopus_tropicalis	-----	
Rhinatrema_bivittatum	-----ECLSSYLTKKAK	476
Pavo_muticus	-----STCHQEHHNVVQSEMEEMDLSYPTD	1751
Pavo_cristatus	-----STCHQEHHNVVQSEMEEMDLSYPTD	1751
Gallus_gallus	-----STCHQEHHKTVQPEMEEMDLSYPTD	2431
Chelonia_mydas	-----PAVEQLEIENVVLSYPVD	617
3010.....3020.....3030.....3040.....3050.....3060	

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Mus_musculus      EPKRTLHEGQAVEVPDESSSADKPELGVKQLAEKKEN--LEQPKPFVTTTERASVTGSKV 1758
Rattus_norvegicus ELKKTLPEGQAVKVPDVGSSFAEKPDLGKQLAQRKEN--LEQPKPFMTAEPADVIGTEV 1924
Canis_lupus_familiaris KPGKALHSDQAVKLPDVSMFADKQDLGVK----- 1850
Equus_caballus     KPEKALHSDQTVKLPDVSRSFADKQDLGIKQFLFMEQNLTLLEESKSFMTTEPADVEETQM 2201
Bos_taurus        KPEEAFVSDQAAATLPEISRSFADKQDLGIKQVLFMKNLPLEESKLFMTTEPTNVRETHM 1890
Homo_sapiens       KTEKALHSDQTVKLPDVSTSSSEDKQDLGIKQFSLMRENLPLEQSKSFMTTKPADVKETKM 1882
Pan_troglodytes    KTEKALHSDQTVKLPDVSTSFEDKQDLGIKQFSLMRENLPLEQSKSFMTTKPVDVKETKM 1882
Macaca_mulatta     KTEKALHSDQTIKLPDVSTSFADKQDLGIKQFSLMKNLPLEQSKSFMTTKPADVKETKM 1903
Callithrix_jacchus KTEKALHSDQTIKLPDVSTSFAGKQDLGIKQFSLMKNLPLEQSKSFMTAKTVDVKETTR 1869
Heterocephalus_glaber KPEKLLYSDAQAVNLSDVSSSFEDKPDNLNIKQLPFMKNLPEEQSQSFITTEAEQLK---- 1772
Xenopus_tropicalis -----
Rhinatrema_bivittatum KLDTCIYSPVTAKMKSDQMDKANKQ----- 501
Pavo_muticus       TSELSQSAQIVLQKPGFLKSFGKLEEKGLAQPFLHSLGEEKQKPSQSDLMQPCLSHLL 1811
Pavo_cristatus     TSELSQSAQIVLQKPGFLKSFGKLEEKGLAQPFLHSLGEEKQKPSQSDLMQPCLSHLL 1811
Gallus_gallus      KSEHSQSAQIVLQKPGFLKSFGKLEEKGLAQPFLHSLGEEKQKPSSELDLMQPCLSHLL 2491
Chelonia_mydas     ETETQS----- 623
.....3070.....3080.....3090.....3100.....3110.....3120

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Mus_musculus      KESLISPKDNTWMLEKPD-GLVNQHEDRKPGTGQLESSESTDLMSKLGAAPLDTHTSF 1817
Rattus_norvegicus KETLISPKDNTRMLDKPD-GLVSOHEDRKPGPRQLESSESKDLMPEKLGAAPLDSDHTPG 1983
Canis_lupus_familiaris -----OLEAALLDKDHTCE 1864
Equus_caballus     KEALISSKDNENWMLEKPEALASHDDERAVGSVOLGSSGSSDLMTGOPKAAALLDKDQACE 2261
Bos_taurus        KEALISPKDENWMLKEPEGLDVSHHEERAMESVOLDHSGINDLMTGOLKPALPEKDHMP 1950
Homo_sapiens       EEFFISPKDENWMLGKPE-NVASQHEQRIAGSVOLDSSGNELRPGQLKAAVSSKDHTCE 1941
Pan_troglodytes    EEFFISPKDENWMLGKPE-NVASQHEQRIAGSVOLDSSGNELRPGQLKAAVSSKDHTCE 1941
Macaca_mulatta     EEFFISPKDENWMLGKPE-NVASQHEERAGSVOLDSSGNELRPEQLKAAVSSMDHIYE 1962
Callithrix_jacchus EEFFISPKDENWMLGKPE-HVARQHEERKAGSVPLDSSGNELRPGQLKAAVSSKDHTCE 1928
Heterocephalus_glaber -----SSRSDDPQIQQLQSAPSNEHDHTYE 1796
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 501
Pavo_muticus       DKAEQETAPEVFMSSDFSYSMRKADQLQTEQVKVYPGFSYSLDKAETHGVKPLDLLSS 1871
Pavo_cristatus     DKAEQETAPEVFMSSDFSYSMRKADQLQTEQVKVYPGFSYSLDKAETHGVKPLDLLSS 1871
Gallus_gallus      DKAEQETAPEVFMSSDFSYSMGKADQLQTEQVKVYPGFSYSLDKAETHGVKPLDLLSS 2551
Chelonia_mydas     ----- 623
.....3130.....3140.....3150.....3160.....3170.....3180

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Mus_musculus      TR----- 1819
Rattus_norvegicus IRKQ-----EPPHLPLOEQASILRVSSGKVEFTTKTY-----LSEETEAVVPVGKTD 2031
Canis_lupus_familiaris TGKQPLPHS-EEIPLSLQEPVSTLSVTSGDMEALSTKMYSSSEIKLAPKPKSLVPIGNVE 1923
Equus_caballus     VKKQVLADSAEESHLSLQEPVSTLDTSSGNVETLSTKTPSEEIKLAPKPKSLVLAGNVE 2321
Bos_taurus        IRKQILPPSAEEPHIAFQEPVSTLDTSRDNVETLATETYSSEDIKLPKPKSLVPAGNVE 2010
Homo_sapiens       VRKQVLPHSAEESHLSQEAVALDTSNGNTETLSSKSYSSSEEVKLAEEPKSLVLAGNVE 2001
Pan_troglodytes    VRKQVLPHSAEESHLSQEAVALDTSNGNVTLSKSYSSSEEVKLAEEPKSLVLAGNVE 2001
Macaca_mulatta     VRKQVLPHSAEESHLSQEAVALDTSNGNVTLSCKSYSSSEELKLAEEPKSLVLAGNVE 2022
Callithrix_jacchus VRKQVLPSDAEESHLSQEPGSTLATSGDVETLSSQSYSTEVEVKLDEEPKSLVLAGNVE 1988
Heterocephalus_glaber IGKQVLSQAVKESHLPLQTPASTPDAGSHTETLSTETYSFEEIKLVQEPKPLVPIGNLE 1856
Xenopus_tropicalis -----
Rhinatrema_bivittatum ----- 501
Pavo_muticus       YSKAEQTQTAHLEHPETSYFAGETEQRHGTHPELQCFNLPSSAVEAEQQETLVPVSYTSAS 1931
Pavo_cristatus     YSKAEQTQTAHLEHPETSYFAGETEQRHGTHPELQCFNLPSSAVEAEQQETLVPVSYTSAS 1931
Gallus_gallus      YSKAEQTQTAHLEHPETSYVAGRTEKKDGIHPELQCFNLPSSAVEVEQQETFSVSYTSAR 2611
Chelonia_mydas     -----QCY----- 626
.....3190.....3200.....3210.....3220.....3230.....3240

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Mus_musculus                      ----- 1819
Rattus_norvegicus                 RGRAEERQNSSFMESENSVSEKTNAEFPKPKCKEDVQMECLKPLGRTIQKSGTGPSVEQAT 2091
Canis_lupus_familiaris           INEAEQKQIFSFIRSESMILEKVNTESRPCKEVSQEEIKLPSEIRIFQKPSGPSMEEIK 1983
Equus_caballus                   RKEAEVRHILSFVGSERLVSEKANTEFSRPCKEESQEEIKLPSEIILQEPGSGSSVEHVK 2381
Bos_taurus                       RSEAEGKQTLFVGGESLVVEKANTEISRPCKEESQEEIKTPYEGGLQKPVSGPSVEQVK 2070
Homo_sapiens                     RNIAEGKEIHSLMESESLLEKANTELSWPSKEDSQEKIKLPPERFFQKPVSGLSVEQVK 2061
Pan_troglodytes                 RNIAEGKEIHSLMESESLLEKANTELSWPSKEDSQEKIKLPPERFFQKPVSGLSVEQVK 2061
Macaca_mulatta                  RNIAEKKESHSLMESESLLEKANTEFSWPSKEDSQEKIKLPPERFLOKPVSGLSVEQVK 2082
Callithrix_jacchus              RNVPE-KESHSMFMESESLLEKANTEFSCPSKEDSQEKIKPPPERFLOKSVSGPSVEQVK 2047
Heterocephalus_glaber           R-NTEKGQIHSMFMESESFIFEKANIDFSSLSKESIWEVKLPPETPTQKPVSGPSAGQMK 1915
Xenopus_tropicalis              -----
Rhinatrema_bivittatum           ----- 501
Pavo_muticus                     TEEQQTAELEKSEQSDLLNSTEKVEKREIAVLRAHSENNWTGIISLITLLETEQG---S 1988
Pavo_cristatus                  TEEQQTAELEKSEQSDLLNSTEKVEKREIAVLRAHSENNWTGIISLITLLETEQG---S 1988
Gallus_gallus                   TEEQQTAELEKSEQSDLLNSTEKVEKGEIAESRAGHSEKWNWTGIISLITLLETEQDLSFS 2671
Chelonia_mydas                  --SQVTAEPESSELSDDLSTGETEKC----- 650
.....3250.....3260.....3270.....3280.....3290.....3300

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Mus_musculus                      -----NQETSKAPVSGEKLSEPRRVQSKAVDDSEEG 1851
Rattus_norvegicus               ----PIPASSAHFLAEVVEPTV-----GKNQEASIAPVSGEKPSEPRTRVQSKAVGDAEEG 2143
Canis_lupus_familiaris          SETIPSSAKAAHFLAEDAELAS--GNEKEAHRISISPLPGEKPLEEAKMIQSKAVDDVNES 2041
Equus_caballus                  SETILSPAKEAHFLAEDAHAALGKEKAAHRISISPLPGEKPLEESKMVGSKVDDDSKR 2441
Bos_taurus                      SETPPSLVKAARALAEAEAPAL--GVEKEAHRISISPLPGEKPLEESNVVQPKVADDANER 2128
Homo_sapiens                    SETISSSVKTAHFPAEGVEPAL--GNEKEAHRISISPLPGEKPLEESKMVGSKVIDDADEG 2119
Pan_troglodytes                 SETISSSVKTAHFPAEGVEPAL--GNEKEAHRISISPLPGEKPLEESKMVGSKVIDDADEG 2119
Macaca_mulatta                  SETIPSSSVKTHFLAEGVEPAL--GNEKEAHRISISPLPGEKPLEESKMVLKVIDDADEE 2140
Callithrix_jacchus              SETIPSSSVKTAHFPAEGVEPAL--GSEKEAHRISISPLPGEKPLEESKMVGSKVIDDADEG 2105
Heterocephalus_glaber          LEITSFPVKASHFLVEAVEPAL--GSEKEARRISIPPLEEKPREESKMVLTKIIDEATEG 1973
Xenopus_tropicalis              -----
Rhinatrema_bivittatum           ----- 501
Pavo_muticus                     TKEATSQKTQPCSSLPEKSVSV-----PLSVSHSETKMERNPKSLPVTGGLSSEHL 2039
Pavo_cristatus                  TKEATSQKTQPCSSLPEKSVSV-----PLSVSHSETKMERNPKSLPVTGGLSSEHL 2039
Gallus_gallus                   TKEATSQKTQPFSSLPEKSVSV-----PLGVSHSETKVERNPKSLPVTGSLSSEHL 2722
Chelonia_mydas                  -----AAQLGCEHR 659
.....3310.....3320.....3330.....3340.....3350.....3360

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Mus_musculus                      RKLASGNVEVLTSKSVPAVKAKATPOPPETPEVTQKPKSEKSLVTEQGLPAEKGGKGISS 1911
Rattus_norvegicus               RKLAP-----DVQVPVAVKANVAPOPPETPGVTQKPKSEKSLVAEQCLPAEKGGKGISS 2195
Canis_lupus_familiaris          GKPAS-EVKIPTPIKPLSSIQDSEEPQTEPEPEVTQKLPEQPKAVEPVLSEEKGGKGISS 2100
Equus_caballus                  GKPAS-EVKIPTQIKPLSSIQENEHOPPESEVSPKPPKQPKDTEPALAEKGGKRISS 2500
Bos_taurus                      GKPPS-EVKAPTQIKPLSSTQENEHOPPESEVSPKPPKQKAVEPSISSEKGGKGISS 2187
Homo_sapiens                    KKPSP-EVKIPTQKPISSIHA-REPOSPESPEVTQNPPTQPKVAKPDLPEEKGGKGISS 2177
Pan_troglodytes                 KKPAP-EVKIPTQKPISSIHA-REPOSPESPEVTQNPPTQPKVAKPDLPEEKGGKGISS 2177
Macaca_mulatta                  KKPAP-EVKIPTQKPISSLHS-KEPOSPESPEVTQNPPTQPKVAKPDLPEEKGGKGISS 2198
Callithrix_jacchus              KKPEP-EVKIAAQKPISSIDT-KEPOPPESPEVTQNPPTQPKVAKPDLPEEKGGKGLSS 2163
Heterocephalus_glaber          RKPVL-EVKIPIQTKPIPSIQANEHOPPEPEVTQQLHEKPKMTEQRLPEEKGGKGLSS 2032
Xenopus_tropicalis              -----MAALYAECSLCASAG----- 15
Rhinatrema_bivittatum           -----ESIVYLPVTSEFMPESECLSSYLTTAKKLDTHL 536
Pavo_muticus                     DLSYSQCKTEPSETAQPESGFFFTTRKKAGNTRTHLHLPMAAQSEAEHVILPETEREQIPH 2099
Pavo_cristatus                  DLSYSQCKTEPSETAQPESGFFFTTRKKAGNTRTHLHLPMAAQSEAEHVILPETEREQIPH 2099
Gallus_gallus                   DLSYSRCKTEPSETAQPVSGFFSTRKEAENTRIHLHLPMSAQSEAEHVILPETEREQIPH 2782
Chelonia_mydas                  ILSHS-----IEEAENEIQQPYLLVPAEFESHLVSETESSEEIEH 700
.....3370.....3380.....3390.....3400.....3410.....3420

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Mus_musculus          FKSWMSSLLFGSSIPDSKVSDNEDLETRPGPSVEKAVPAIEPKGTVPAEVNIAEKPAVHS 1971
Rattus_norvegicus     FKSWMSSLLFGSSSTPDNKVADNKDLETQSPSPLEKALTAVEPKGAVPAEVTVAEKPVGVS 2255
Canis_lupus_familiaris FTSWMSSLLFFGSSTSDDKKVAEK-DLETQSPSPVDKAVPMAESEGAAADFNATKKPADHL 2159
Equus_caballus        FTSWMSRWFFGSSTSNDQVTEKEDLETQSPSPVEESGAVTEPKGVASADLNATEKPADRL 2560
Bos_taurus            FTSWVSSFFFRSSTLDNEVAEKEDLEAQSPSEEKTVTVIDSEGPAPADVHGTEKPVSHL 2247
Homo_sapiens          FKSWMSSLLFFGSSTPDNKVAEQEDLETQSPSPVEKAVTVIDPEGTIPTNFNVAEKPADHS 2237
Pan_troglodytes       FKSWMSSLLFFGSSTPDNKVAEQEDLETQSPSPVEKAVTVIDPEGTIPTNFNVAEKPADHS 2237
Macaca_mulatta        FKSWMSSLLFFGSSTPDRKVAEQEDLETLPSPSPVEKAVTVIEPEGTIPTNFNVAEKQADHS 2258
Callithrix_jacchus    FKSWMSSLLFFGSSTPDNKVAEQEDLETQSPSPVEKAVTVIEPEGTIPPNNLVAEKPADCS 2223
Heterocephalus_glaber FKSWMSSLLFGSSSTSDDKVPEKEELSTQPSHVSVEKAVTMIEPKGKSPADFNATKKPGDHS 2092
Xenopus_tropicalis    -----YFGTPLSQG-----NRSHTRCSLLLRCSLRDTQGTAPR-----GEKP----- 53
Rhinatrema_bivittatum YSPVTAKLISDRSKSISMFMDEAEKASQSTSPMTILASEKSCDHIYELGKQEIQHYSS 596
Pavo_muticus          YFHHTTPQLESEQLNTSYCIDKTETLESQEYLTAQSKLETESAPFYSVDETHQOEIPPPYS 2159
Pavo_cristatus        YFHHTTPQLESEQLNTSYCIDKTETLESQEYLTAQSKLETESAPFYSVDETHQOEIPPPYS 2159
Gallus_gallus         YFHHTTPQLESEKLSTTYCIDKAETLEGEYLTAQSKLETESAPFYSVDETHQOEILPPYS 2842
Chelonia_mydas        YSSITPQLESGLHILSYPIEDTETQENQCYSHGPAGLEPEHSLSYVSDVDVIPQEIQSYS 760
.....3430.....3440.....3450.....3460.....3470.....3480

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Mus_musculus          LPEVTVKLAEKPKGVSVKSSISQDLKEKLTFLSNEDVLKQPKS-----NSENYGQKELPGF 2027
Rattus_norvegicus     LPEVTVKLGEPRGG-----EKLTFLPNTDVLKQPAS-----NSENYGKKGLPGF 2300
Canis_lupus_familiaris LPEAKLKPAEKSRGTLVKSGEGRDSEKPTFLSNVEVLQPKSIFEVSSEEDYGKKKIRDY 2219
Equus_caballus        LPEAKLETAEKSRDALVKSGEGQDFKEKPTFLSNVEVLQPKSIFEVSSEEDYGKKKILDY 2620
Bos_taurus            FLEAKRETASESAGSLVKSGEHQDFKEKPAALLSDVEVSPQPKSNFEASSDDYGKKKEVL DY 2307
Homo_sapiens          LSEVKLKTADPRGTLVKSGDGQNVKEKSMILSNVEDLQPKFISEVSRREDYGKKKEISGD 2297
Pan_troglodytes       LSEVKLKTADPRGTLVKSGDGQNVKEKSMILSNVEDLQPKFISEVSRREDYGKKKEISGD 2297
Macaca_mulatta        LSEVKLKTADPRGTLVKSGEGQNVKEKSIILSNVEDLQPKSISEVSRREDYGKKKEISDN 2318
Callithrix_jacchus    LPEVKCKTADKSRGTSVKFDEGQNVKEKSTILSNLEDLQPKSISEVSRREDYGKKKEISGD 2283
Heterocephalus_glaber LP-----EVSSEEDYGKNKTPDS 2109
Xenopus_tropicalis    ----- 53
Rhinatrema_bivittatum RMAN----- 600
Pavo_muticus          ----- 2159
Pavo_cristatus        ----- 2159
Gallus_gallus         ----- 2842
Chelonia_mydas        PVTA----- 764
.....3490.....3500.....3510.....3520.....3530.....3540

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Mus_musculus          SEGMGES--LATSVDKHPGIHPCSPMGEKVGMEEAQNMAPLHITESORROKPEVSSPSM 2085
Rattus_norvegicus     SEGMGEN--LATSAGDEHPGIHPRSPMGEKVGMEEAQNAPLHVITESORHOKPEIAPPSM 2358
Canis_lupus_familiaris SEEMDLNLVAASGDGEEHHEIQSYSPMGEKSNADDEVQNAVPLHITDSKKAQKPEISAPSK 2279
Equus_caballus        SEEGDLNSGVTSAGSKEHLGIQSYSPMGEKSIMEEAKSAVPLHVTD SKRAQKPEISPPSK 2680
Bos_taurus            SGEMDLTSVVTSADGEGHLRIQSDSPMGEKSIMEEAKNAVPLHVTD SKRLQKPEISPRSK 2367
Homo_sapiens          SEEMNINSVVTSADGE-NLEIQSYSLIGEKLVMEEAKTIVPPHVTD SKRVQKPAIAPPSK 2356
Pan_troglodytes       SEEMNINSVVTSADGE-NLEIQSYSLIGEKLVMEEAKTIVPPHVTD SKRVQKPAIAPPSK 2356
Macaca_mulatta        SEEVNINSVVTSADGEKHLGIQPSYSLIGEKLIMEEAKTIVPLHVTDNKRQKPAIAPPSK 2378
Callithrix_jacchus    SEEMSVNSVVTSADGEKHLGIQPSYSLIGEKLVMEEAKTIVPLHVTDHSGVQKPAISPPSK 2343
Heterocephalus_glaber SEKMSID-LITSADSEEHFGVQP----DKKLVMEEETKN-VPSHVTESKRYQKPAIAPLSN 2163
Xenopus_tropicalis    -----RKGORFGIMES-- 64
Rhinatrema_bivittatum ----- 600
Pavo_muticus          ----- 2159
Pavo_cristatus        ----- 2159
Gallus_gallus         ----- 2842
Chelonia_mydas        ----- 764
.....3550.....3560.....3570.....3580.....3590.....3600

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Mus_musculus      WNISARKEEPS SDHKETWLS SSSDVDRMP QPKSAQSAFTR----MNSEEPAS MILPVE- 2140
Rattus_norvegicus WSISVLKEEPS SGHKEAQLL SSSDVDRTP QRPESLTSAFAR----MDSEKQAPVSLPVE- 2413
Canis_lupus_familiaris WNISILREEPRSD QKEKLLFS FDAVDKVP QPKSASSSFTSKNITKESEKPE TIILPVEE 2339
Equus_caballus    WNISIFKEEPRSD RKEKLLS SFDAAVKVP QPKPASSSFAENITKESEKPE SIILPVEE 2740
Bos_taurus        WNISILKEEPRSD QKEKTLFLV DATDKVP QPESGSSSFASKDITEESEKLES IILPGE 2427
Homo_sapiens      WNISIFKEEPRSD QKQKSL SFDVVDKVP QPKSASSNFASKNITKESEKPE SIILPVEE 2416
Pan_troglodytes   WNISIFKEEPRSD QNKSL SFDVVDKVP QPKSASSNFASKNITKESEKPE SIILPVEE 2416
Macaca_mulatta    WNISIFKEEPRSD QKEKSL SFDVVDKVP QPKSASSNFASKNITKESEKPE SIILPVEE 2438
Callithrix_jacchus WNISIFKEEPRSD QKEKSL SFDVVDKVP QPKPASSNFASKNVTKESEEPES IILPVEE 2403
Heterocephalus_glaber WNISILKEELSGD QKEK-SFS FDTVDMKMS QQLKSDSFTFTSKNIMKESEKPEPI IILPVEE 2222
Xenopus_tropicalis -----LCPPDI 70
Rhinatrema_bivittatum -----SLIDKPGIL 609
Pavo_muticus      -----KPASENLFTKYPLAEQEQSMKLVIPQSAQSECKY 2194
Pavo_cristatus    -----KPASENLFTKYPLAEQEQSMKLVIPQSAQSECKY 2194
Gallus_gallus     -----KPASENLFAEYSLAEQEQSMKLVIPQSAQSECKH 2877
Chelonia_mydas    -----QSVPEHLVGSHSIDEEKQDIQPYRPEPAKSKCHS 799
.....3610.....3620.....3630.....3640.....3650.....3660

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Mus_musculus      SKGSLSDLGEDRLRQEMP KPTSLEHCEEFVER----PTEEKDGWETR SFSLAGKRGLAEK 2196
Rattus_norvegicus SEDSLIDLGEDRLRQEMP KPTSLERHEEFVER----PAVEKDGWETR SFSLAGEKGLAEK 2469
Canis_lupus_familiaris SKCSLIDLGEDRLKKEML KPTSLKISEEETKLRSVSPTEEKGDLETRS YSLAERKVLAEK 2399
Equus_caballus    SKGSLIDLLENRLKKEMQ KPTTLKISEEEIKFRSVSPTEEKENLETRS YSLAEKKVLAEK 2800
Bos_taurus        PKGSLIDLGEDRLGKEMPK PVSLKISEEEVKLRSVSPAEEKGNLGMRS YSLAEKKVLAEK 2487
Homo_sapiens      SKGSLIDFSEDRLKKEMQ NP TSLKISEEETKLRSVSPTEKKDNLENRS YTLAEKKVLAEK 2476
Pan_troglodytes   SKGSLIDFSEDRLKKEMQ NP TSLKISEEETKLRSVSPTEKKDNLENRS YTLAEKKVLAEK 2476
Macaca_mulatta    SKGSLVDLSEDRLKKEMQ NP TSLKISEEETKLRSVSPTEKDNLENRS YTLAEKKVLAEK 2498
Callithrix_jacchus SKGSLIDLSEDRLKKEMR KPTSLKISEEETKLRSISPTEKKDNLENRS YTLAEKKVMAEK 2463
Heterocephalus_glaber SKSSLIDFGE DRLKKEIPK P TSLKHSEEEVKLGPVSLTEDKDNLETRS YTLAEKNDLADK 2282
Xenopus_tropicalis ERASTVSLG---LEDEGP PDITVLD TGEAEFLTQSLKEIVQ AEDVKPRLQCLMASSSFS-- 125
Rhinatrema_bivittatum SSNNCHEAQIHKINVS VPDLPLIPSLGSSQSNNVQNELINDGSEQT ISSVSDKAVCNP 669
Pavo_muticus      VIP--PHDEAELQKDQ LYS PKPASLKTEOFENKTI VHTKERDQDL-----TESLPLEQ 2246
Pavo_cristatus    VIP--PHDEAELQKDQ LYS PKPASLKTEOFENKTI VHTKERDQDL-----TESLPLEQ 2246
Gallus_gallus     VTP--PHDEAELQKNQ VSPK PASLKTEOFENKTI VHTKERDEQDL-----TECLSLQ 2929
Chelonia_mydas    LVSSYDTDETEMREI Q LHS PKIENLMSEQLVTMSLMHTDDGDGQELQAYSLGTEYMLSEQ 859
.....3670.....3680.....3690.....3700.....3710.....3720

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Mus_musculus      QEIM-APLELRENEAVGEL QMPESRPFKLEESKAAERLEQRISPTEKIMEKPSKTLAL- 2254
Rattus_norvegicus QEIM-APLEVGENKAVGKL QMPESRPFKSEGSKAAERLEQRISPTEELMEKPSKTLAS- 2527
Canis_lupus_familiaris QETV-VPLEFRDN-KIGKAQ IAHGSSPIKLEESKAAAVLQQ-VSQNEDHKERYTIMK--- 2453
Equus_caballus    QETVGTPL ELRDNNEIGK P QITQESSPIKLEEWKAAAVLQE-VHONEDHKKRHQITE--- 2856
Bos_taurus        QEIA-APLEHRDINEIEKAK I IHGSPVKLEEPKAA TVLQQ-VYONEDHKERYKIIE--- 2542
Homo_sapiens      QNSV-APLELRDSNEIGKT QITLGRSSTELKESKADAMPQH-FYQNEDYNERPKIIVGSE 2534
Pan_troglodytes   QNSV-APLELRDSNEIGKT QITHGRSSTELKESKADAMPQH-FYQNEDYSERP KIIIVGSE 2534
Macaca_mulatta    QDSV-APLELRDSNEIGKT QITHGRSSTELKESKANAMPQH-FYQNEDYSERP KIIIVGSE 2556
Callithrix_jacchus QDSV-VPLELRDSNEIGKT QITRGRSSTEPEESKVNAMLQH-FQONEDYGERPQIIVGSE 2521
Heterocephalus_glaber QEVV-PPLELRNKKVVK S QMTHEYRLVELEESKVAARLEH-IYPNEEHKERAKIIVCSE 2340
Xenopus_tropicalis ----MVTVQCEDSGIHWETS SRCS TPWASEASTTSDVFSL----- 162
Rhinatrema_bivittatum FSEN-IQIONVDEITKPK EMLNPKPKPNIGQLQEPGKILEG----- 709
Pavo_muticus      LSS--PKLSARRDKQEVQ PDVQKVPELVSTESKVTAVADQQ-----SVSSDTHVVPF 2295
Pavo_cristatus    LSS--PKLSARRDKQEVQ PDVQKVPELVSTESKVTAVADQQ-----SVSSDTHVVPF 2295
Gallus_gallus     LSS--PKLSVKWDKQEVQ PDVQKVPQLVSAESKATAVADQQ-----SVSSDPFVVPF 2978
Chelonia_mydas    LTAPSPTFIAESDKQEI QPD AHEVVDLVSEVLNFSAGS----- 897
.....3730.....3740.....3750.....3760.....3770.....3780

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Mus_musculus      --DRREKEVEQEWVFSEGEKQ----EYPPAAMPVPG-----ASAVSLDKAOPHLLAKPTPV 2303
Rattus_norvegicus --ERREKEAQERVFPPEGEKEGGLSSSPAAAMPVPG-----ASATSWDKAOPPSPVKPPP 2580
Canis_lupus_familiaris QEK-EEKQKLSQVFSSEGGKQOEIQPYSVNVVRSVPESNISLCPSLDETQPFSLVKTVSV 2512
Equus_caballus     EEKGEEDEKQSHVFSSEGGKQOEIQPYSVSVVRSLPESDISLSHSLGETQPFSLIKTTISI 2916
Bos_taurus        EEKGEEKEERSHAFSEGR-EQEIQPYSISIAGHPPESDISFHLTLGETQPFSLVKITEA 2601
Homo_sapiens       KEKGEEKENQVYVLSSEGGKQOEIQPYSVNVAESMSRESDISLGHSLGETQSFSLVKATSV 2594
Pan_troglodytes   KEKGEEKENQVYVLSSEGGKQOEIQPYSVNVAESMSRESDISLGHSLGETQSFSLVKATSV 2594
Macaca_mulatta    KEKGEEKENQVYVLSSEGGKQOEIQPYSVNVAESMIKESNISLGHSLGETQSFSLVKATSV 2616
Callithrix_jacchus KEKGEEKENHVYVLSSEGGKQOEIQPYSVNVAESMTEKSDISLG----ETQSFSLVKATSL 2577
Heterocephalus_glaber EENREEKEKQSQVFLEGGKQOENQPDLSNVARSMPEEPVISLHSLGETQPFSLIKTPSI 2400
Xenopus_tropicalis ESSGSVPGKVIFIMDEGKFSRKKHRSSSSGLPRH-----SSH LKRNADPSKRVPTENV 216
Rhinatrema_bivittatum ---ANDPESQTNVFSIVSEGYEILNILAPPQISVDOEECKHMQDKLEYLEENPIFKAKL 766
Pavo_muticus      HALSEKTVCVAFIDDEEKQNI PSSLPNIVCIPENQTNIVSGSYTKEEDRHEMEPYFTGQK 2355
Pavo_cristatus    HALSEKTVCVAFIDDEEKQNI PSSLPNIVCIPENQTNIVSGSYTKEEDRHEMEPYFTGQK 2355
Gallus_gallus     HAVSEKTVSVSFTDDKEKQNI PSSLPNIVCIPENQTNIVSGSYTKEEDRHGMQPYFTGQK 3038
Chelonia_mydas    -----INEEERHDIDSSLP-----DTE 914
.....3790.....3800.....3810.....3820.....3830.....3840

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Mus_musculus      VEKPEHIVTEVYPEIRERKAAETQPHPQEEGKTLVEKTKVSR-VESPHGEEIDGHSLTOE 2362
Rattus_norvegicus IEKPEHIFTEVYPEIGERKAAETKPHPQEEGKTLVEKTKASR-VEPPHGEEVDGHSLTOE 2639
Canis_lupus_familiaris TEKSGTVLLEAHPEIRETRAVGTQPHSREESKVLVEKTKTFLPVDLPYDERDGHSLPOE 2572
Equus_caballus     TEKSETRISEAHPEIRETKAAESPPHPLEESFVLVEKSKTFLPVDLPYRGERDGHSLPKE 2976
Bos_taurus        AETLETTISEAYSEIRETKAVGSQPHPLEEREVLVEETKAFPLVDLPYHDEINEPSLPKE 2661
Homo_sapiens       TEKSEAMLAEAHPEIREAKAVGTQPHPLEESKVLVEKTKTFLPVALSCRDEIENHSLSOE 2654
Pan_troglodytes   TEKSEAMLAEAHPEIREAKAVGTQPHPLEESKVLVEKTKTFLPVTLSRDEIENHSLSOE 2654
Macaca_mulatta    TEKSDAVLSDAHPEIREAKAVATQPHPLEESKVLVEKTKTFLPAALPCRDEIENHSLSOE 2676
Callithrix_jacchus TEKSEAMLSEAYSEIRETKAVGTQSHSLEESKVLVEKTKTFLPVDLSCHDEIKHSLSOE 2637
Heterocephalus_glaber TEKPESVLSSEAHLEIKERQVVESQPHPLEESKSFVKTKTLCPVDLPYRDEIDKHPFPQE 2460
Xenopus_tropicalis GEAFKQALEKAKDVTNTIKSPNLRNGNPGSRSSSLKNRATEMHPLLEDTMD-----SAPTE 271
Rhinatrema_bivittatum LRSAGDTVSNHSEVNALDKKKDDTEQKEPLKENDTENKEVIPAEINCKILKSQKSSNDM 826
Pavo_muticus      HSSLEQPRSVSSDLVYDAVAHKTQHYSCQGTLYSMESKSVFPS-SNEKQNPDIIPSPGLD 2414
Pavo_cristatus    HSSLEQPRSVSSDLVYDAVAHKTQHYSCQGTLYSMESKSVFPS-SNEKQNPDIIPSPGLD 2414
Gallus_gallus     HSSLEQPRSVSSDLVCDTVAHKTRHYSCEQGTLYSMESKPIFPS-SNEKQNPDIIPSPGLA 3097
Chelonia_mydas    YTSSEQSMASVSSDFVDETVMQENQSYSAEVDSPSTQTKTLVKPFNETETPEIQAYAFE 974
.....3850.....3860.....3870.....3880.....3890.....3900

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Mus_musculus      GNLELEKSGESRVDLKEERRRFVMP----- 2387
Rattus_norvegicus GNLELEKSRRESRVDLKEERRRFVMP----- 2664
Canis_lupus_familiaris GNLTLKSSSRDTASHNEEKQDQTV----- 2597
Equus_caballus     GNLVLEKSSSRDRVSHSEKGOVTV----- 3001
Bos_taurus        GNLVLEKSSSRDVTTHSEKGOVIV----- 2686
Homo_sapiens       GNLVLEKSSSRDMPDHSEKQFRESLSKGGSVDTITKEIVKQGFQEKAVGTQPPRPLEESK 2714
Pan_troglodytes   GNLVLEKSSSRDMPDHSEKQFRESLSKGGSVDTITKEIVKQGFQEKAVGTQPPRPLEESK 2714
Macaca_mulatta    GNLVLEKSSSRDMPDHRSEKQFRES----- 2701
Callithrix_jacchus GNLVLEKSSSRDMPDHNEEKQFKES----- 2662
Heterocephalus_glaber ENMVLEKSSRYLAGDREEKGQLTLS----- 2485
Xenopus_tropicalis QNFNPAGKKEDILQIPVSKENISVS----- 296
Rhinatrema_bivittatum DYFEKYTLIDNVPTETSIKKFPAG----- 851
Pavo_muticus      S--CLAEEMKAHSINPIHAKGVDK----- 2436
Pavo_cristatus    S--CLAEEMKAHSINPIHAKGVDK----- 2436
Gallus_gallus     S--WLAEEVKAHSINPIPAKGVDK----- 3119
Chelonia_mydas    ETDLLSEESKTSADPTNSNEADKQEI----- 1001
.....3910.....3920.....3930.....3940.....3950.....3960

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Mus_musculus	-----	ELSLGAS	2394
Rattus_norvegicus	-----	ELSLAAS	2671
Canis_lupus_familiaris	-----	EPSEGSS	2604
Equus_caballus	-----	ELSKAGS	3008
Bos_taurus	-----	ELPKAGS	2693
Homo_sapiens	VLVEKTKTFLPVVLSCHDEIENHSLSQEGNLVLEKSSRDMPDHSEEKEQFKES	ELWKGGG	2774
Pan_troglodytes	VLVEKTKTFLPVVLSCHDEIENHSLSQEGNLVLEKSSRDMPDHSEEKEQFKES	ELWKGGG	2774
Macaca_mulatta	-----	ELIKGGG	2708
Callithrix_jacchus	-----	ELKGGG	2669
Heterocephalus_glaber	-----	QLSTGGG	2492
Xenopus_tropicalis	-----	PMGAE	301
Rhinatrema_bivittatum	-----	QDLVSV	857
Pavo_muticus	-----	LSPNGA	2442
Pavo_cristatus	-----	LSPNGA	2442
Gallus_gallus	-----	LSPNEA	3125
Chelonia_mydas	-----	QSFPNEA	1008
.....3970.....3980.....3990.....4000.....4010.....4020			

Mus_musculus	VAAEDGSVQPRPLSKDAARVS-DMTDETKHLGTPPTQPSAVEPQTLVLGTSVEHTVKKQ-	2452
Rattus_norvegicus	VAAEDGHAQPRPLSRAAERTAGHITDETNNLGPP-----TLETSLEQTAKKQ-	2718
Canis_lupus_familiaris	IDITKESMKQGSPSKESERILDHPFDETKSLETPPYLLSSVKSQTLVSGTSPETSTVKKQ-	2664
Equus_caballus	IDITKESMKQGSPSKESERILDRPFDETKSLETPPYLLSSSGRPQTLVSGASPEISTVKKQ	3068
Bos_taurus	VGTTEESK-QGSPSKESERILDRPFGETKSLETPSYLLSSVVKPQTLTSEASPEVSPEKKQ	2752
Homo_sapiens	VDITKESMKEGFPSKESERTLARPFDETKSSETPPYLLSPVKPQTLASGASPEINAVKKK	2834
Pan_troglodytes	VDITKESMKEGFPSKESERTLARPFDETKSSETPPYLLSPVKPQTLASGASPEINAVKKK	2834
Macaca_mulatta	VAITKESMKQGFPTKESERTLAYPFDETKSSETPPYLLSSVVKPQTLVSGASPEINAMKKQ	2768
Callithrix_jacchus	VDITKESMKQGFSLKESERTLAHPFDETRSETPPYLLSSVVKPQTLASRASPEINAVKKQ	2729
Heterocephalus_glaber	VATTKESTRGSPSLIPGSTVDHPSDDTKSLEMPLYLLSSVVKPQTLVPEVCPEVNIKKQ	2552
Xenopus_tropicalis	NSIPSSSKNQSSMTGPS-----	318
Rhinatrema_bivittatum	LNENPEKKTEECISLTDSPDFSMLEADYYN-----	887
Pavo_muticus	SDFGSKQFPNGNFTFVTFHGTIDNKDDTFIVSDSET-----	2478
Pavo_cristatus	SDFGSKQFPNGNFTFVTFHGTIDNKDDTFIVSDSET-----	2478
Gallus_gallus	SDLGSKQFPAGNFTFVAVHGTIDNKGDIFRVSDSET-----	3161
Chelonia_mydas	EYFESKQFPGRRLRTARTAQSTNENKSAMTMVSDFVSN-----	1045
	.....4030.....4040.....4050.....4060.....4070.....4080	

Mus_musculus	-----ETWSDRPTVHTFQTSKDYTEMLKQSVLISKHHLEAVEDV--HR-NEPPSSAASN	2504
Rattus_norvegicus	-----ETRSRPTVHTIQTSKDHPEEMPQKQSVLISKRHLEAMEDV--HR-NEPLSSAASS	2770
Canis_lupus_familiaris	EMSLSELTPEGHTVHTLQTSKDLTSEMFKQSVLVSKHHMEAEENA--HV-SEPSSAASN	2721
Equus_caballus	EMPWSELTPDRPTVHTIQTSKDQTSSEISKQSVLISKHCLEAVEDA--HV-KEPRSSAASN	3125
Bos_taurus	ELPWSEVTPHRPTVHTTQTSKDQTSSEMFQSVLVSKHHLEAVEDS--QV-YEPCPSAASN	2809
Homo_sapiens	EMPRSELTPERHTVHTIQTSKDDTSDVPKQSVLVSKHHLEAAEDT--RV-KEPLSSAKSN	2891
Pan_troglodytes	EMPRSELTPERHTVHTIQTSKDDTSDVPKQSVLVSKHHLEAAEDT--RV-KEPLSSAKSN	2891
Macaca_mulatta	EMPQSELTPERHTVHTIQTSKDDTFDVPKQSVLVSKHHLEAVEDT--HV-KEPLSSAKSN	2825
Callithrix_jacchus	EMPRSELAPERHTVRTIQTSKDHTSDVPKQSVLVSKHQLTVEDT--GV-EEPVSSAKSN	2786
Heterocephalus_glaber	EIPWTELTPGHPTGQTIQTSKEDHSSEMLKQSVLISKHPLENVEDA--HI-NELSSAAGSN	2609
Xenopus_tropicalis	-----STSLNTSPEKAVDLALNNSVISRRSRRLERMNNE--VVRKPLNSISEN	365
Rhinatrema_bivittatum	-----FEEAFYGTTKENDLPSPISSRKVLRGQKSFNSETKT--DITIPKNVKVPLG	936
Pavo_muticus	-----EFSYGLSSETGHRITGRHDLSPGVGNPVGPGKGPE-----GETGFGN	2519
Pavo_cristatus	-----EFSYGLSSETGHRITGRHDLSPGVGNPVGPGKGPE-----GETGFGN	2519
Gallus_gallus	-----EISCGLSSEAGHRAGRHDLPSPRADNPGSDKGPE-----SETRFGN	3202
Chelonia_mydas	-----EASRNLLSEPINEIHTNLVSSLPNGNPVSDKNLNNV-----TVTSIGD	1088
.....4090.....4100.....4110.....4120.....4130.....4140		

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Mus_musculus      YTQFMLSASEISADGVPPMGGTAQEPGTSVKDEEFVTSKPAGLSEDQKSAFSIIISEGC 2564
Rattus_norvegicus YTQFMLSASAVSADGAPPVGGTPQEPEGTSVGKEEFVTSKPAGLSEEQKSAFSIIISEGC 2830
Canis_lupus_familiaris YAQFIKNASAINAGRMAPPREISEKPGDTYAKDEDFAVTSKPAGLSEDQKSAFSIIISEGC 2781
Equus_caballus    YAQFITSASAIADKVVSAREISKKPEDTYVKDEEFTVTSKPAGLSEDQKSAFSIIISEGC 3185
Bos_taurus        YAQFITNASTISADEVVS-----KEPEDTSVRDEEFTVTSKPAGLSEEQKSAFSIIISEGC 2864
Homo_sapiens      YAQFISNTSASNADKMVSNKEMPKEPEDTYAKGEDFTVTSKPAGLSEDQKTAFSIIISEGC 2951
Pan_troglodytes   YAQFISNTSASNADKMVSNKEMPKEPEDTYAKGEDFTVTSKPAGLSEDQKTAFSIIISEGC 2951
Macaca_mulatta    YAQFIYSASASNADKMVSNKEMSKEPEDTYAKDEDFVTSKPAGLSEDQKTAFSIIISEGC 2885
Callithrix_jacchus YAQFISNASASNADKIVSTKEISKEPEDTYAKDEDFVTSKPAGLSEDQKTAFSIIISEGC 2846
Heterocephalus_glaber YAQFIISASKSKADEMTSAKEMFKEPEYAHAKKVESVTGKPTDLSQDQKSAFSIIISEGC 2669
Xenopus_tropicalis IGNNLFPEG-----E-KALANSELENSIDEPP---DTQSHVFSIVSDGS 405
Rhinatrema_bivittatum TPLFSTEEGVLSRSMFFPINIKVINPELLEPPALAFLYKDLVEDATGDTKKKDSEQSD 996
Pavo_muticus      PTKRKAAQHLK-ADKKSEVPEHYLRREEE-MKHMSTVEDSQHVPEPIEQKDLFNIISEGY 2577
Pavo_cristatus    PTKRKAAQHLK-ADKKSEVPEHYLRREEE-MKHMSTVEDSQHVPEPIEQKDLFNIISEGY 2577
Gallus_gallus     PTKRKAAQHLE-EDKMSEVSEHYLRREEEEMKHMSTVEDSQHAPEPIEQKDLFNIISEGY 3261
Chelonia_mydas    LSTAEIIGHFSNIEAGSKEPEHYLPTEEKLTEHVNSAEESKYTPEPDEQKDMFNIISEGY 1148
.....4150.....4160.....4170.....4180.....4190.....4200

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Mus_musculus      EILNIHAPAFIPISVDQEESEQMDKLOYLEEKASFKSISVHDEKK-----AAASHK 2615
Rattus_norvegicus EILNIHAPAFIPISVDQEESEQMDNLOYLEEKSSFKSISVCDERK-----AVASHK 2881
Canis_lupus_familiaris EILNIHAFISSVDQEESEQMDKLEYLEEKASFKTIVSLHDRSE-----AVSCHK 2832
Equus_caballus    EILNIHAPAFISSVDQEESEQMDKLEYLEEKASFKTISLPDDSE-----VVASPK 3236
Bos_taurus        EILNIHAPAFISSVDQEESEQMDKLEYLEEKISFKPILLRDESE-----EVACHK 2915
Homo_sapiens      EILNIHAPAFISSIDQEESEQMDKLEYLEEKASFKTIPLPDDSE-----TVACHK 3002
Pan_troglodytes   EILNIHAPAFISSIDQEESEQMDKLEYLEEKASFKTIPLPDDSE-----TVACHK 3002
Macaca_mulatta    EILNIHAPAFISSIDQEESEQMDKLEYLEEKASFKTIVPLRDDSE-----TVACHK 2936
Callithrix_jacchus EILNIHAPAFISSIDQEESEQMDKLEYLEEKASFKTIPDNSE-----AVACHE 2897
Heterocephalus_glaber EILNIHAPAFIPISVDEEESQMKDTLEYLEDKTSFKTISLHDDSE-----AVVCHK 2720
Xenopus_tropicalis EILNIPDLISSVDLEASNQMEDKLEYLDENPMLIPKQVCEEAD-----ILDDNE 456
Rhinatrema_bivittatum ESMDSETSLPNRSSDITDDGTGIYFEKYILKDEIPFDVTESKQIVK-----DMSDQQ 1047
Pavo_muticus      EILNIHAPTHISSIDQEESEKHMPDKLEYLETNPSLKKKLAHEGHC--ASVSETTEISGIS 2635
Pavo_cristatus    EILNIHAPTHISSIDQEESEKHMPDKLEYLETNPSLKKKLAHEGHC--ASVSETTEISGIS 2635
Gallus_gallus     EILNIHAPTHISSIDQEESEKHMPDKLEYLETNPSFKKKIAHERHE--ASASETTEISGIS 3319
Chelonia_mydas    EILNIHVVPLISSVDEEESKHMPDKLEYLETNPLIKTKLFDCGDQEVSAHGTA TEISENS 1208
.....4210.....4220.....4230.....4240.....4250.....4260

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Mus_musculus      TQKSKLEVDPDRKITSLENKETHKTKKEEIAIDSGMGDFTPIQPTVSG-EEDYFEKYTL 2674
Rattus_norvegicus TQKSELEVDPDRKITSPTENEPKESYQTKKEETATGSRSGDFTSIQPGVSG-EEDYFEKYTL 2940
Canis_lupus_familiaris SLKTTLEDSDQ-VTSLQEDKQKESLTGKEIPTDSETDDFTLNQPTVPS-EEDYFEKYTL 2890
Equus_caballus    TLQSKLEDSDEKVTSLKESKQKETHNTKEEISTDSETDDLGFNOPTTPS-EEDYFEKYTL 3295
Bos_taurus        TLQSKLEDSDIKVISLKEDQKKEIHTTKKEEIPDSETGDLAFNOPTSPD-EEDYFEKYTL 2974
Homo_sapiens      TLKSRLED--EKVTPLKENKQKETHKTKKEEISTDSET-DLSFIQPTIPS-EEDYFEKYTL 3058
Pan_troglodytes   TLKSRLED--EKVTPLKENKQKETHKTKKEEISTDSET-DLSFIQPTIPS-EEDYFEKYTL 3058
Macaca_mulatta    TLKSRLEDSDKVTSLKESKQKETHKTKKEEISTDSET-DLSFIQSTIPS-EEDYFEKYTL 2994
Callithrix_jacchus TLKSRLEDSDKVTPLKENKQKETHKTKKEEISTDSETGDLFIQPTIPS-EEDYFEKYTL 2956
Heterocephalus_glaber MLQSKLEDSEKVTSLK-NEGKEAHVTKEIAMSDTGDLAFIQPTIPS-EEDYFEKYTL 2778
Xenopus_tropicalis EPK-----VQQVLKNNHNENLKSVEETVKPLN-----SDKGTI-EVDYFEKFTL 500
Rhinatrema_bivittatum DDPVQLKATEVLSEELPDTVSKGITDLHKENEQ-----QSLRAQ-EERTVRGQKV 1096
Pavo_muticus      VLGMS--ESHEVKELVKTDGGETEELLEENPVLSESKSHAVLSDNGISEIDYFEKYTL 2693
Pavo_cristatus    VLGMS--ESHEVKELVKTDGGETEELLEENPVLSESKSHAVLSDNGISEIDYFEKYTL 2693
Gallus_gallus     VLGMS--ESHEVKELVKTDAGETEEIQEENPVLSESKSHAVLDPDNGISEIDYFEKYTL 3377
Chelonia_mydas    VTDTRGKDMQKELVEEVDAAQEIFETEEIISTVSENKGGEVLNPNKSTTEVDYFEKYTL 1268
.....4270.....4280.....4290.....4300.....4310.....4320

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      * .                .:                :. *
Mus_musculus      IDYNLSPGSGKQKSTVE-----ESSEATKTLTSFPESAEQALDHEYNLV--KLDESFY 2727
Rattus_norvegicus IDYNLSPGSERQKSTVE-----GSSEATETLTSFPESAEQTLDEHYDLV--KLDESFY 2993
Canis_lupus_familiaris IDYNISPDPEKQKAPWKSINVEVELPKAVTEETVSFPESSEESALEHEYDLV--KLDESFY 2948
Equus_caballus      IDYNISPDPEKQKAPWKLTVAEALSKEVTEETVSFPESSEESALEHEYDLV--KLDESFY 3353
Bos_taurus          IDYNIFPDPEKQKAPWK--LEAGLSKEVPEETVSFPESSEEGALEHEYDLV--KLDESFY 3030
Homo_sapiens         IDYNISPDPEKQKAPQKLNVEEKLSKEVTEETISFPVSSVESALEHEYDLV--KLDESFY 3116
Pan_troglodytes      IDYNISPDPEKQKAPQKLNVEEKLSKEVTEETISFPVSSVESALEHEYDLV--KLDESFY 3116
Macaca_mulatta       IDYNISPDPEKQKAPQKLNVEDKLSEEVTEETISFPVSSVESALEHEYDLV--KLDESFY 3052
Callithrix_jacchus   IDYNISPDPEKQKALQKLNVEEKLSKEVTEETISFPVSSVESTLEHEYDLV--KLDESFY 3014
Heterocephalus_glaber IDYNISPDPEKQKAPWKLTMKEEISKEATEETLTFPESQGSVLEQYDLV--KLDESFY 2836
Xenopus_tropicalis   IDDRVPIEPDSVKPDLK-----LETGHATVTTCTGPYSENEVAVEDELYLYG--HLDSEFY 553
Rhinatrema_bivittatum SDLQTEENISLSVRSKLCADQVEVITYETHVSGKDELTDGPGNDIPEHR--LEESNFT 1155
Pavo_muticus         IDDKSSLKPHFERPSSSFVKEDLNPEVQAIAS--KETTEEDTLEEEFGLLE--DLDEVFY 2751
Pavo_cristatus       IDDKSSLKPHFERPSSSFVKEDLNPEVQAIAS--KETTEEDTLEEEFGLLE--DLDEVFY 2751
Gallus_gallus        IDDKSPIKPHFERPSSSFVKEDLNPEVQATSS--KETAEEDTLEEEFALLE--DLDEVFY 3435
Chelonia_mydas       IDDKSPTELSVQGLSPFVAVMANPKKHTEEAISS--TGSSDVNTLEDEFTLLDNLDLDEAFY 1327
.....4330.....4340.....4350.....4360.....4370.....4380

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      . .                :                :. :
Mus_musculus      GPEKDDS--KLSHAEMQKSLAIQKPPDRNAPKGISRDVDSRSPGMPLFDVEEGVLSKRQIF 2786
Rattus_norvegicus GPEKNGS--KSSHAEMPKSLVIQKPPSEENAPKGVGDVDSRSPGMPLFDVEEGVLSRRQIF 3052
Canis_lupus_familiaris GMEKDYS--KLSPETQKPLDTRQADKAASINRDVDLKSFGMPLFGAEEGVLSRTQIF 3007
Equus_caballus      GMEKDYS--KLSPETQKSLDIQKSADRDAPK SINRDADLKSFGMPLFGAEEGVLSRTQIF 3412
Bos_taurus          GLEKDYS--KLSDPETQKSLVIQKLTDRDAPKSTDRDVGSKSPGMPLFDVEEGVLSRTQIF 3089
Homo_sapiens         GPEKGHN--ILSPETQS----QNSADRNVS KDTRDVS SKSPGMPLFEAEEGVLSRTQIF 3171
Pan_troglodytes      GPEKGHD--ILSPETQS----QNSADRNVS KDTRDVS SKSPGMPLFEAEEGVLSRTQIF 3171
Macaca_mulatta       GPEKDHD--ILSPETQKSLGIQKSADRNVS KDVRDVS SKSLGMPLFEAEEGVLSRTQIF 3111
Callithrix_jacchus   GPEKDHD--MLSHQETQKFLGIQKSPDRNVSKDIKRDVDSKSLGMPLFEAEEGVLSRTQIF 3073
Heterocephalus_glaber GLEKDHS--KLSQPEMQKSLVTQKSADRNASK SINRDVDSRSLGMPLFDLEEGVLSRTQIF 2895
Xenopus_tropicalis   GVSKEG--FEEQ-----EFNGNNSNGIQEERTQDIQSPKISLFNEEEGTLEKSLF 603
Rhinatrema_bivittatum EEERESS--VQTTCPDSNQVLDHKVITYREQEFGRQTYRQD-----KSDDIICSQEI 1206
Pavo_muticus         GTAKGESKMLS YVGAPEPFPLQKSIDISSKKATSVEDEQKSPGTPLFDSEEGVLSRLSLLF 2811
Pavo_cristatus       GTAKGESKMLS YVGAPEPFPLQKSIDISSKKATSVEDEQKSPGTPLFDSEEGVLSRLSLLF 2811
Gallus_gallus        GTVKGESKMES YAGASEPFPLQKSIDISSKKTTSEDEQKSPGTPLFDSEEGVLSRLSLLF 3495
Chelonia_mydas       GMIEQESQMOTSADAQKFLTMQKSIDCS--KKVINIEDEQKLAGTPLFDTEEGVLSRLSMLF 1386
.....4390.....4400.....4410.....4420.....4430.....4440

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      :* .: . : : : : . . : : : *
Mus_musculus      PTTPKAVNPELLEEPPALFFYKDL YEGAGGEKN--EGETASEGDSVDSETSFPRRHSMT 2844
Rattus_norvegicus PTTPKAVNPELLEEPPALFFYKDL YEGALGEKN--EGETASEGDSVDSETSFPRRHSMT 3110
Canis_lupus_familiaris PTTTKAINPELLEEPPALAFFYEDLYE QAVGEKKN--EEETASEGDSVKSEASFPSRNSDT 3066
Equus_caballus      PTTAKAINPELLEEPPALAFLYKDL YEEAVGEKKK--EGETASEGDSVNSEASFPSRNSDT 3471
Bos_taurus          PTTAKAINPELLEEPPALAFLYKDL YEEAVGEKKK--EGETASEGDSVNSEASFPSRNSDT 3148
Homo_sapiens         PTTIKVIDPEFLEEPPALAFLYKDL YEEAVGEKKK--EEETASEGDSVNSEASFPSRNSDT 3230
Pan_troglodytes      PTTIKVIDPEFLEEPPALAFLYKDL YEEAVGEKKK--EEETASEGDSVNSEASFPSRNSDT 3230
Macaca_mulatta       PTTIKAINPELLEEPPALAFLYKDL YEEAVGEKKN--EEETASEGDSVNSEASFPSRNSDT 3170
Callithrix_jacchus   PTTVKAINPELLEEPPALAYLYKDL YEEAVGEKKK--EEETVSEGDSVNSEASFPSRNSDT 3132
Heterocephalus_glaber PNTVKAVNPELLEEPPALFPLYKDL YEEAVGEKKK--EGETASEGDSVNSEASFPSRNSDT 2954
Xenopus_tropicalis   P--TSYPINPELLEEPPALAFLYKDL YEQAGVKNK--DDYDQSDVESTTSVAIFHSRISD- 660
Rhinatrema_bivittatum KKDSKQCEPFKTS DKLQDSVTFVFPFRRISSDINKD--IQYADNGLEKDLTGPILOQMSEI 1265
Pavo_muticus         PTTVAAVNPELLEEPPALFPLYKDL YAEAVGEKTK--DETPSDEESGNSNASFPSRNSDT 2869
Pavo_cristatus       PTTVAAVNPELLEEPPALFPLYKDL YAEAVGEKTK--DETPSDEESGNSNASFPSRNSDT 2869
Gallus_gallus        PTTVAAVNPELLEEPPALFPLYKDL YAEAVGEKTK--DETPSDEESGNSNASFPSRNSDT 3553
Chelonia_mydas       PTSVSAINPELLEEPPALAFLYKDL YAEAVGENAKGENEPPSDEESGNSNASFPR--RNSDT 1445
.....4450.....4460.....4470.....4480.....4490.....4500

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	:: . . * . : . . : :		
Mus_musculus	DDGPGMYFEKYILKDDILHDETVTQEDQGOGLEE	-----	2878
Rattus_norvegicus	DDGTGMYFEKYVLKDDILHDES VNQEDQGSLEE	-----	3144
Canis_lupus_familiaris	DDGTGIYFEKYILKDDILHDTSVTQKDQGOGLEE	-----	3100
Equus_caballus	DDGTGIYFEKYILKDDILHDTSVTQKDQGOGLEE	-----	3505
Bos_taurus	DDGTGIYFEKYILKDDILHDT CVTEKDDQGOGLEE	-----	3182
Homo_sapiens	DDGTGIYFEKYILKDDILHDTSLTQKDQGOGLEE	-----	3264
Pan_troglodytes	DDGTGIYFEKYILKDDILHDTSLTQKDQGOGLEE	-----	3264
Macaca_mulatta	DDGTGIYFEKYILKDDILHDTSLTQKDQGOGLEE	-----	3204
Callithrix_jacchus	DDGTGIYFEKYILKDDILHDTSVTQKDQGOGLEE	-----	3166
Heterocephalus_glaber	DDGTGMYFEKYTLRDDILHDTSVTQKDQGOGLEE	-----	2988
Xenopus_tropicalis	DDGTGIYFEKYNLKDEIPVSDITKYCKINYDLPEVSDDLQPNRHVTPDIDVYNTTSLDND	-----	720
Rhinatrema_bivittatum	EKDAISKFSQPEKNESLEAGGVNLDQEVCESTDG	-----	1300
Pavo_muticus	DDGTGIYFEKYILKDEIPGKVLEPKDQIPEDSFSGGIS	-----	2909
Pavo_cristatus	DDGTGIYFEKYILKDEIPGKVLEPKDQIPEDSFSGGIS	-----	2909
Gallus_gallus	DDGTGIYFEKYILKDEIPGKVLEPKDQIPEDSFSGGIS	-----	3593
Chelonia_mydas	DDETGIYFEKYILKDDIPCNVAGSQKDQVSKACSINKDVSGQ	-----	1487
	.....4510.....4520.....4530.....4540.....4550.....4560		

		:	
Mus_musculus	KPVGEE-----DSQQLRVAEREIRRKPETSFWEKNLEECHKVVGREGEPTGHM	2926	
Rattus_norvegicus	KPVGEN-----GSQQLRIAEESEIGRKPGTSFWERNLEECHKVIDREGEPPVSH	3192	
Canis_lupus_familiaris	KTFGKD-----DSYQSIAVEGDIWGRSGTILGEKSLEEKOKATYGEGESVGLL	3148	
Equus_caballus	KPVGED-----DSYQPIAAEGEIIWGRFGTILEETSLEKEOKAAYREGESEGPV	3553	
Bos_taurus	KPIDKD-----DSYQPIAAEGEIIWGRFGTIGREESLEEKOKAAYREGESEVGHM	3230	
Homo_sapiens	KRVGKD-----DSYQPIAAEGEIIWGRFGTICREKSLEE-QKGVYGEGESVDHV	3311	
Pan_troglodytes	KRVGKD-----DSYQPIAAEGEIIWGRFGTICREKSLEE-QKGVYGEGESVDHV	3311	
Macaca_mulatta	KRVGRD-----DSYQPIAAEGEIIWGRFGTICREKSLEE-QKGVYGEGESVGHV	3251	
Callithrix_jacchus	KRVGKD-----DSYQPIAAEGEIIWGRFGTIR-EKSLEE-QKAVYGEGESAGHV	3212	
Heterocephalus_glaber	KPVGKS-----DSYQPIAAEGEIIWGRSGIVLWEKSLEE-QKVVYGEGEAIGHV	3035	
Xenopus_tropicalis	KPLGSEEFDTDIQTRSMIESITYEVMPHYNELPDSTEQENIAPELLNSEIAVTDADRGSIPE	780	
Rhinatrema_bivittatum	-----KMIVAEHFQKVEDAKKRDDENVAGSQSV	1329	
Pavo_muticus	VSTSEEEKYK-----QRSADVLSVG---TDILPEREIVE---KVHSDIKATVCK	2951	
Pavo_cristatus	VSTSEEEKYK-----QRSADVLSVG---TDILPEREIVE---KVHSDIKATVCK	2951	
Gallus_gallus	VPSSEEEKYK-----QTSADALSVR---TETVPEREIVE---KVHSDIKATICK	3635	
Chelonia_mydas	LRLSGDKHKHDF--YEVIEKEQSVHILAEESTKTEILSEGEIMAGERIPFISYIKVTICQ	1545	
	.....4570.....4580.....4590.....4600.....4610.....4620	

	:	
Mus_musculus	ETLDEAAMQOKAPITEQVRAVTQKMSYAVPFQDTRCVLE--SEPSSQSGNEAGNASPDVNL	2984
Rattus_norvegicus	ETLNEVATQOKAPVTEQVTAITQEMS YAVPFQDTHRVRT--SEPSSQGHGHEAGNASPEVNL	3250
Canis_lupus_familiaris	ETLDNEALQOKTPISEEVTVVTQMVSYAVPFEDTHHVLERAGETSSQNNNEAASASPEVNL	3208
Equus_caballus	ETLDKVAVQKKAPVTEEVVVVTQKISYAVPFEDTHHVLERVEEMSGQSGNEAADASPEVNL	3613
Bos_taurus	ETLDNVAMQOKAPITEEVVVVTQKISYAVPFEDTHHVLERVDETSQTNEAANANPEVSL	3290
Homo_sapiens	ETVGNVAMQOKKAPITEDVRVATQKISYAVPFEDTHHVLERADEAGSHGNEVGNASPEVNL	3371
Pan_troglodytes	ETIGNVAMQOKKAPITEDVRVATQKISYAVPFEDNHHVLERADEAGSQGNEVGNASPEVNL	3371
Macaca_mulatta	ETLGNIAMQOKKAPIREDIRVATQKISYAVPFEDTHHVLEHADEAGSQGNEVENASPDVNL	3311
Callithrix_jacchus	EILGNIAMQOKKALITEEVVVVTQKISYAVPFEDTRHVLERTEDEAGSQGNEVGNANPEVSL	3272
Heterocephalus_glaber	ETSNDTAEQKKAPITEEVVVVTQKISYAVPFQDSRHVLESVAEVSSQDNEAGNISQEVSSQ	3095
Xenopus_tropicalis	ISPNDLMRDKGEEIKGQDETALISEATVSPAENNVEIHKPQKEEVVSGIQVEKKLPTIVC	840
Rhinatrema_bivittatum	QLKKSADKSTQSPDFFEKEQMVTMNNMYRLDATKLITEDEALRNVLKKNKSEFSTLEIQS	1389
Pavo_muticus	PTHAIPFGGRLIVSGARSDVPEOREE-NVPVETTEELPEQTSQDYSQIVNSPGAHHQES	3010
Pavo_cristatus	PTHAIPFGGRLIVSGARSDVPEOREE-NVPVETTEELPEQTSQDYSQIVNSPGAHHQES	3010
Gallus_gallus	PTHAIPFGGRLIVSGARSDVTEOREE-NVPVETTEELPEQTSQDYSQIVDSLGAHHRES	3694
Chelonia_mydas	PTQAIPFGSKLNVSDARNDPTSQREEENAPAATHQELSEQMSHEESQVLDSEVITNQKE	1605
4630.....4640.....4650.....4660.....4670.....4680	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Species	Sequence	Position
Mus_musculus	N-----VPVQESFPEEEESAAGATYAPEVLQER-----LVP	3014
Rattus_norvegicus	N-----VPVQVSFPEEEESTAGATYAPEVLSQEE-----LVP	3280
Canis_lupus_familiaris	N-----VPVQVSFPEEEFASGITCVOETLQEEPK-----IMVP	3241
Equus_caballus	N-----VPVQVSFPEEEFISGATYVOETLQEEPK-----IMVP	3646
Bos_taurus	N-----VPVQVSFPEEEFASGATCMQEILQEEPO-----IMVP	3323
Homo_sapiens	N-----VPVQVSFPEEEFASGATHVOETSLPEPK-----ILVP	3404
Pan_troglodytes	N-----VPVQVSFPEEEFASGATHVOETSLPEPK-----ILVP	3404
Macaca_mulatta	N-----VPVQVSFPEEEFASGATHVOETPLPEPK-----ILVP	3344
Callithrix_jacchus	N-----VPVQVSFPEEEFASGATHVOETPQEGPK-----VLVP	3305
Heterocephalus_glaber	N-----VPTQVSFPEEEFVSGATINIPETPQEEPK-----ILVP	3128
Xenopus_tropicalis	DTSKPT-----LDTSQEKKVLAKASVNDKEKQILKIDFEETGEEKFVN-----EETA	887
Rhinatrema_bivittatum	N-----NTIDNLDNSACDMGDLQEQLETKKEQ-----DFTY	1422
Pavo_muticus	INKEE-----EHHEITAVPQVEKYVPYTRIPVEDSEDDOYT-----QEILS	3051
Pavo_cristatus	INKQE-----EHHEITAVPQVEKYVPYTRIPVEDSEDDOYT-----QEILS	3051
Gallus_gallus	INKQE-----EHREITAAPQVEQYVPYNRTIPVEDSEDDOYT-----QEIVS	3735
Chelonia_mydas	ASVQDKSKPVITPLTDEQKERHEITAAVNKMDNYVPHGRIPVDESESNOYVHTPOQPEQLIS	1665

Mus_musculus	SVSREER-----	3021
Rattus_norvegicus	CVSREER-----	3287
Canis_lupus_familiaris	PEPSEDR-----	3248
Equus_caballus	PEPSEDR-----	3653
Bos_taurus	PEPSEDW-----	3330
Homo_sapiens	PEPSEER-----	3411
Pan_troglodytes	PEPSEER-----	3411
Macaca_mulatta	PEPSEER-----	3351
Callithrix_jacchus	PEPSEER-----	3312
Heterocephalus_glaber	PEPSEER-----	3135
Xenopus_tropicalis	PESAKEA-----	894
Rhinatrema_bivittatum	GEKNCYL-----	1429
Pavo_muticus	HVPTVQ-----REK	3061
Pavo_cristatus	HVPTVQ-----REK	3061
Gallus_gallus	HVPTIQ-----REK	3745
Chelonia_mydas	YLNNHLPMTKEPYDLDRMNKKISREKYLIDTDEQTNKTVRENIADDIAKHNLVAK	1725

Species	Sequence	Position
Mus_musculus	-----LHNTIPVQDEYDFVGS-----	3037
Rattus_norvegicus	-----LHNTIPVQDEYDFVDSL-----	3303
Canis_lupus_familiaris	-----LHSSPVQDEYEFAPSP-----	3264
Equus_caballus	-----LRNSPVQDEYDFAASL-----	3669
Bos_taurus	-----VRSSPVQDEYEFAPSL-----	3346
Homo_sapiens	-----LRNSPVQDEYEFTESL-----	3427
Pan_troglodytes	-----LRNSPVQDEYEFTESL-----	3427
Macaca_mulatta	-----LRNSPVQDEYEFAPSL-----	3367
Callithrix_jacchus	-----LRNSPVQDEYEFAPSL-----	3328
Heterocephalus_glaber	-----LRNSPVQDEYEFAPSL-----	3151
Xenopus_tropicalis	-----KGLSEIQGEAEFVGEETKLAQLTLE-----	920
Rhinatrema_bivittatum	-----LVSN-----	1433
Pavo_muticus	-----TDFORKEQHPRVYEDFVES-----	3080
Pavo_cristatus	-----TDFORKEQHPRVYEDFVES-----	3080
Gallus_gallus	-----PDFOREEQHPHYEDFAES-----	3764
Chelonia_mydas	TGLPEPGVKFDKASGDLDLQPRHDFDNFPSDSTREEQCFETDEHLAES-----	1774

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      :
Mus_musculus      -----NQEAASQAILPEEPGSESSPK-EVLSQGSSEFEHIREQ--ELTSEGEPRMS 3085
Rattus_norvegicus -----NQEIVSQGILPGEPYSEAPPK-EVLPGGTESLSHAGER--ELMSEGEPRKS 3351
Canis_lupus_familiaris -----NYEMVAQDTLSEELYSEPTPE-DVLSQGKESFEHVSEN--EFVSEVEQSMS 3312
Equus_caballus     -----NYEVVTQDTLSEELYSESTPE-DVFSQGKESFEHISEN--EFVGEVEQSMS 3717
Bos_taurus        -----NYEVVTQDTLSEELYSESTPE-DVLSQGKESFEHVSEN--ELVTEAEQRKS 3394
Homo_sapiens       -----HNEVVPQDILSEELSSESTPE-DVLSQGKESFEHISEN--EFASEAEQSTP 3475
Pan_troglodytes    -----HNEVLPQDILSEELSSESTPE-DVLSQGKESFEHISEN--EFASEAEQSTS 3475
Macaca_mulatta     -----HYEVLPPQDILSEELSSESRPE-DVLSQGKESFEHISEN--EFVSETEQSTS 3415
Callithrix_jacchus -----HYEVVPQGILS-ELSSESTPE-DILSQGKESFEHISGN--EFEGEAEQSTS 3375
Heterocephalus_glaber -----NYEVVSQDTLSDEVYSESAPV-VVLPQGKESVEHIRKC--ELLTEVEQNTS 3199
Xenopus_tropicalis KEEEDLCLQNIETAEASLDYVMVNQDDLPHHEIICKDSQLLEQSESEKEYDLITDLEQDAQ 980
Rhinatrema_bivittatum -----VITHDELLQDEMLSDCTQDGFVLSSEDRERASEGYEFVSDAELHVS 1482
Pavo_muticus       -----MDYDVITQEEELLQDEISSELTHEELLFEDRDSFEHIGDS--YELFNEPEQRTP 3131
Pavo_cristatus     -----MDYDVITQEEELLQDEISSELTHEELLFEDRDSFEHIGDS--YELFNEPEQRTP 3131
Gallus_gallus      -----MDYDVITQEEELLQDEISSELTHEELLFEDRDSFEHIGDS--YEFFNEPEQRTP 3815
Chelonia_mydas     -----MDYEVITQEEELLQDELSELAHEDLLSEDRSFEQISYS--YEFVNEAEQDTP 1825
.....4870.....4880.....4890.....4900.....4910.....4920

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      . :
Mus_musculus      ASQEEV--WDR---TEDQSARESVTAKT-QKEPKKTQAESYCYTCKSLVSEMDKALDIHKD 3139
Rattus_norvegicus ASQEE--WDRG--GEDQSARESVTTKT-QKEQKKAQVDSYCYTCKSLVSEMDKVLDIHKH 3406
Canis_lupus_familiaris AEQKE--LVREKTEQQLSSELATEKE-QKELKKSQIDTYCYTCKSPISAVDQMFQGMHKD 3369
Equus_caballus     AEEEE--LGREKTEQDQLSSELETEKE-QKELKKPQIDTYCYTCKSPISAVDKILGIHDD 3774
Bos_taurus        AEQKE--LDIEMAEQDQLSELVTEKE-QKEMKTSQIDTYCYTCKSPISAVDKMLGTHKD 3451
Homo_sapiens       AEQKE--LGSRKEEDQLSSEVVTEKA-QKELKKSQIDTYCYTCKCPISATDKVFGTHKD 3532
Pan_troglodytes    AEQKE--LGSRKEEDQLSSEVVTEKA-QKELKKSQIDTYCYTCKCPISATDKVFGTHKD 3532
Macaca_mulatta     AEQKE--LGSEWKEENQLSELVTEKA-QKELKKSQIDTYCYTCKCPISATDKVFGTHKD 3472
Callithrix_jacchus AEQKE--LGSKRKEQDQLSSEFVTEKA-QKEPKRSQIDTYCYTCKCPISTTDKAFGTHKD 3432
Heterocephalus_glaber TDQNK--LARGKTEQDQLSELVTEKA-QKEPKKSQIDTYCYTCKSPISTMDKVFGTHKD 3256
Xenopus_tropicalis KELED--LGFEVIEHEKSPADLSEETL-QWDAKKTQDRTYCYTCKSAILSIDKIFGDHKD 1037
Rhinatrema_bivittatum ADQEQENSDFEIIDPEMVTTELSDDKYSEKELKKPHVNTYCYTCKCPISAIKIFGVHKD 1542
Pavo_muticus       VELED--SGFVVMYPEKSAANIPEIESPRRELKKAQTDYCYHCKCPISAIKIFGEHKD 3189
Pavo_cristatus     VELED--SGFVVMYPEKSAANIPEIESPRRELKKAQTDYCYHCKCPISAIKIFGEHKD 3189
Gallus_gallus      VELED--SGFVVMYPEKSAANIPEIESPQRELKKAQTDYCYHCKCPISAIKIFGEHKD 3873
Chelonia_mydas     IEHED--SGFVMMNSEKSLGISSESESPQKEIKKAHVDTYCCQCRCPISAIKIFGEHEG 1883
.....4930.....4940.....4950.....4960.....4970.....4980

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      *:: .** . : : * ::* *:: * : ** : ** ** :*:: : : ** :
Mus_musculus      HEVSALDTAISAVKVQLGEFLENLQEKSLRIEAFVSEIESFFNTIEEKCCKNEKRLEMON 3199
Rattus_norvegicus HEVSALDTAISAVKVQLGEFLENLQEKSLRIEAFVSEIESFFNTIEEKCCKNEKRLEMON 3466
Canis_lupus_familiaris HEVATLDTAISAVKVQLAEFLDNLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3429
Equus_caballus     HEVSSLDTAISAVKVQLAEFLENLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3834
Bos_taurus        HEISTLDTAISAVKVQLADFLDLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3511
Homo_sapiens       HEVSTLDTAISAVKVQLAEFLENLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3592
Pan_troglodytes    HEVSTLDTAISAVKVQLAEFLENLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3592
Macaca_mulatta     HEVSTLDTAISAVKVQLAEFLENLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3532
Callithrix_jacchus HEVSTLDTAISAVKVQLAEFLENLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3492
Heterocephalus_glaber HEVSTLDTAICAVKVQLAEFLENLQEKSLRIEAFVSEIESFFNTIEENCCKNEKRLEEON 3316
Xenopus_tropicalis HDVTALDDVINEMTNHLEDLLERLKESMKTEDFVSRVESMFNDVERNHTENEKFLEEN 1097
Rhinatrema_bivittatum HDVIPLDSSAVAEMTSQLEEFLERLQESSLKAEFFVSEIESLFDNVEENCAKIEQLLEKN 1602
Pavo_muticus       HEVTTLDAAATKMKDQLGELLIALEKSKMKIEEFVSDIESLFNSVEENCKKNAELLEKON 3249
Pavo_cristatus     HEVTTLDAAATKMKDQLGELLIALEKSKMKIEEFVSDIESLFNSVEENCKKNAELLEKON 3249
Gallus_gallus      HEVTTLDAAATKMKDHLGELLIALEKSKMKIEEFVSDIESLFNSVEENCKKNAELLEKON 3933
Chelonia_mydas     HDVTTLDTAVMMDMKDQLNEFLGELQORSVKFEELVSEIESRFNSVEENSKKKEQFLEDON 1943
.....4990.....5000.....5010.....5020.....5030.....5040

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::: : ** * :.***: :.***: * . * : .: ** : : ** :
Mus_musculus      EEMMKRVLAQYDEKAQSFEEVKKKKMEFLHDQMVHFLQSMDTAKDTLETIVREAEELDET 3259
Rattus_norvegicus EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHDQMVHFLQSMDTAKDTLETIVREAEELDET 3526
Canis_lupus_familiaris EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHDQMVHFLQSMDTAKDTLESIVREAEELDET 3489
Equus_caballus     EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHDQMVHFLQSMDTAKDTLETIVREAEELDET 3894
Bos_taurus         EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHDQMVHFLQSMDTAKDTLETIVREAEELDET 3571
Homo_sapiens       EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHEQMVFHFLQSMDTAKDTLETIVREAEELDEA 3652
Pan_troglodytes    EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHEQMVFHFLQSMDTAKDTLETIVREAEELDEA 3652
Macaca_mulatta     EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHEQMVFHFLQSMDTAKDTLETIVREAEELDEA 3592
Callithrix_jacchus EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHEQMVFHFLQSMDTAKDTLETIVREAEELDEA 3552
Heterocephalus_glaber EEMMKKVLAQYDEKAQSFEEVKKKKMEFLHDQMVHFLQSMDTAKDTLEAIVREAEELDET 3376
Xenopus_tropicalis EKMIQKVTAQRTAKRESFEELKKMKMDYLYDQMVSFQQNVDTAREILEKASKETEEQDLI 1157
Rhinatrema_bivittatum KEMVQKVVAQHTKESQSFEEVKKMKLEYLYELMAGFQQRIETAKEILEKIGKDTLEELDIV 1662
Pavo_muticus       EEMLKMMVAQYDEKSENFEFVKRMKMEYLYEQMVNFQQTVDSAKETLETIVKEMEELNGF 3309
Pavo_cristatus     EEMLKMMVAQYDEKSENFEFVKRMKMEYLYEQMVNFQQTVDSAKETLETIVKEMEELNGF 3309
Gallus_gallus      EEMLKMMVAQYDEKSENFEFVKRMKMEYLYEQMVNFQQTVDSAKETLETIVKEMEELNGF 3993
Chelonia_mydas     EELVKTIVIAQYDEKSONFEFVKMKMEYLYEQMVNFQQSIVEVKETLEMTVKETEELDDV 2003
.....5050.....5060.....5070.....5080.....5090.....5100

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Mus_musculus      VFLASFEEINERLLSAMESTASLENMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3318
Rattus_norvegicus VFLASFEEINERLLSAMESTASLENMPAAFSLFHEYDDSSARGDQ-MLKQVAVPQPPRLE 3585
Canis_lupus_familiaris VFLTSFEEINERLLSAMESTASLEKMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3548
Equus_caballus     VFLASFEEINERLLSAMESTASLEKMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3953
Bos_taurus         VFLTSFEEINERLLSAMENTASLEKMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3630
Homo_sapiens       VFLTSFEEINERLLSAMESTASLEKMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3711
Pan_troglodytes    VFLTSFEEINERLLSAMESTASLEKMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3711
Macaca_mulatta     VFLTSFEEINERLLSAMESTASLEKMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3651
Callithrix_jacchus VFLTSFEEINERLLSAMESTASLEKMPAAFSLFHEYDDSSARSDQ-MLKQVAVPQPPRLE 3611
Heterocephalus_glaber VFLMSFEEINDRLLSAMASTASLEHMPAAFSLFHEYDDTSAGSDQ-MLKQVAVPQPPRLE 3435
Xenopus_tropicalis LFLTSHDETNRLLSATESTLSLDKMPSAFSLFEHHAGNSPQDQ-KQRHVPVPQTPDLK 1216
Rhinatrema_bivittatum ILLSSFKEMNARLFSAMENAI SLEKIP SALSHEHYAESVKSQDKMLKRGITVPQTPKLQ 1722
Pavo_muticus       VFLNSSKELNKRLLCSAMDATLSLEKVPSTFSLFEHYVDS PGKSNQNSLKHVAVPQTPTLI 3369
Pavo_cristatus     VFLNSSKELNKRLLCSAMDATLSLEKVPSTFSLFEHYVDS PGKSNQNSLKHVAVPQTPTLI 3369
Gallus_gallus      AFLNSSKELNKRLLCSAMDATLSLEKVPSTFSLFEHYVDS PGKSNQNSLKHVAVPQTPTLI 4053
Chelonia_mydas     LFLNLSKEMNKRLLSAMDNSLSLEKMPSAFSLFDHYADSSVRSQDKTLKCVAVPQTPKLL 2063
.....5110.....5120.....5130.....5140.....5150.....5160

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Mus_musculus      PQEPSSATSTTIAVYWSVNKEDVDSFOVYCVVEPQDDQEIINELVEEYRLTVKESCCIFE 3378
Rattus_norvegicus PQEPNSATSTTIAVYWSVNKEDVDSFOVYCVVEPQDDQEIINELVEEYRLTVKESCCIFE 3645
Canis_lupus_familiaris PQEPNSATGTTIAVYWSMNKEDVIDSFQVYCMEEPQDDQEVNDLVEEYRLTVKESYCIFE 3608
Equus_caballus     PQEPNSATSTTIAVYWSMNKEDVDSFOVYCMEEPQDDQEVNDELVEEYRVTVKESYCVFE 4013
Bos_taurus         PQEPNSATSTTIAVYWSMNKEDVIDSFQVYCMEEPQDDQEVNDLVEEYRVTVKESYCVFE 3690
Homo_sapiens       PQEPNSATSTTIAVYWSMNKEDVIDSFQVYCMEEPQDDQEVNDELVEEYRLTVKESYCIFE 3771
Pan_troglodytes    PQEPNSATSTTIAVYWSMNKEDVIDSFQVYCMEEPQDDQEVNDELVEEYRLTVKESYCIFE 3771
Macaca_mulatta     PQEPNSATSTTIAVYWSMNKDDVIDSFQVYCMEEPQDDQEVNDELVEEYRLTVKESYCIFE 3711
Callithrix_jacchus PQEPNSATSTTITVYWSMNKEDVIDSFQVYCMEEPQDDQEVNDELVEEYRLTVKESYCIFE 3671
Heterocephalus_glaber PQEPNSATSTTIAVYWSMNKEDVIDSFQVYCMEEPQDDQEVNDELVEEYRLTVKESYCIFE 3495
Xenopus_tropicalis PQEPNSATSTTITIYWTMNOEDVIDCFQVYCMEEPQGNRDENALLEEYRVTVKESFLILE 1276
Rhinatrema_bivittatum AQESNSATSTSIAYWTVSEEDVDCFOVYCLEEPQNRNEQNGLVEEYRVTVKESYCILE 1782
Pavo_muticus       PQEPNSATSTSIAYWTVNEGDAIDCFQVYCMEELOASKDEGALVEEYRVTVKESHCIILE 3429
Pavo_cristatus     PQEPNSATSTSIAYWTVNEGDAIDCFQVYCMEELOASKDEGALVEEYRVTVKESHCIILE 3429
Gallus_gallus      PQEPNSATSTSIAYWTVNEGDAIDCFQVYCMEELOASKDEGALVEEYRVTVKESHCIILE 4113
Chelonia_mydas     PQEPNSATSTSIAYWTVSEGDVIDCFQVYCMEEPQPNKDQSALVEEYRVTVKESYCILE 2123
.....5170.....5180.....5190.....5200.....5210.....5220

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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*****: * ***** *****.: *:*** . : *:*****: * :** .
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTAVIHVEDCTVCWNTATVRWRPANPE 3438
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPFTPIVHVEDCTVCWNTATVRWRPANPE 3705
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTPVIHAEDCTVCWNTATIRWRPANPE 3668
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTPVICAEDCTVCWNTATIRWRPANPE 4073
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTPVIRAEDCTVCWNTATIRWRPASPE 3750
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTPVIRAEDCTVCWNTATIRWRPTTPE 3831
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTPVIRAEDCTVCWNTATIRWRPTTPE 3831
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTPVIRAEDCTVCWNTATIRWRPTTPE 3771
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPCTPMIRAEDCTVCWNTATIRWRPTTPE 3731
DLEPDRCYQVWVMAVNFTGCSLPSERAIFRTAPSTPVFRAEDCTVCWNVATIRWRPVLNLE 3555
DLEPDKCYSVWVMAVNYTGCSLPSDKALFRTAPSSPVKAEECTVCWDTAIVRWNTAHPE 1336
DLEPDKCYNVWVMAVNDTGCSLPSDKAIFRTAPSMPLIKAEECTVCWDTAIIRWSTANQE 1842
DLEPDRCYSVWVMAVNCTGCSLPSSEKSIFKTAPAIPTIKAEDCTVCWDTATIRWQVAS-A 3488
DLEPDRCYSVWVMAVNCTGCSLPSSEKSIFKTAPAIPTIKAEDCTVCWDTATIRWQVAS-A 3488
DLEPDRCYSVWVMAVNCTGCSLPSSEKSIFKTAPAIPTIKAEDCTVCWDTATIRWQVAS-A 4172
DLEPDRYYGVWVMAVNYTGCSLPSHKSTFRTAPSTPLLKAEDCTVCWDTAIVRWSTANPE 2183
.....5230.....5240.....5250.....5260.....5270.....5280

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[illegible]

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****.*** :: **** *. :. * : : * : : * **** **: * **** .*
LISTRGTRFLLLRETAHPALQISSANGTVISFSERRRLTEIPSVLGEELPACGQHYWETTV 3558
LISTRGTRFLLLRETAHPALQISSNGTVISFSERRRLTEIPSVLGEELPACGQHYWETTV 3825
LISTRGTRFLLLRETAHPALQISSNGTVISFTERRRLTEIPSVLGEELPACGQHYWETTV 3788
LISTRGTRFLLLRETAHPALQISSDGTVISFAERRRLTEIPSVLGEELPACGQHYWETTV 4193
LISTRGTRFLLLRETAHPALQISSNGTVISFAERRRLTEIPSVLGEELPACGQHYWETTV 3870
LISTRGTRFLLLRETAHPALHISSSGTVISFGERRRLTEIPSVLGEELPSCGQHYWETTV 3951
LISTRGTRFLLLRETAHPALHISSSGTVISFGERRRLTEIPSVLGEELPSCGQHYWETTV 3951
LISTRGTRFLLLRETAHPALHISSSGTVISFAERRRLTEIPSVLGEELPSCGQHYWETTV 3891
LISTRGTRFLLLRETAHPALHISSDGTVISFAERRRLTEIPSVLGEELPSCGQHYWETTV 3851
LISTRGTRFLLLRETAHPALQISSDGTVINFTERRRLTEIPSVLGEELPACGQHYWETTV 3675
LISTKGTRFHLLRDTAHPVLELSPDGTDISISEQSEIIGIPLVLGEVLPASGCHYWEMTV 1456
LISTKGTRFHLMRETAHPPLQISPDGTSVSITEKSKITGIPAVLGELLPARGRHYWETTV 1962
LISTKGTRFHILSDTAHPALQISPDETVICLPEKATFTGFPSVLGEPLPARGCHYWETTV 3608
LISTKGTRFHILSDTAHPALQISPDETVICLPEKATFTGFPSVLGEPLPARGCHYWETTV 3608
LISTKGTRFHILSDTAHPALQISDGTIICLPEKATFTGFPSVLGELLPARGCHYWETTV 4292
LISTKGTRFHVMSDTAHPALQVSSDGTVICLPERTKFTGIPSVLGEPLPARGHYWETTV 2303
.....5350.....5360.....5370.....5380.....5390.....5400

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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: . : :* . : .:::* : * .. *:: : .:: * *
Mus_musculus      ADSPAYRLGICTSSAVRAGALGOGETSWYMHCSERPQ---YTFYSGIVSEVHATERPAR 3615
Rattus_norvegicus TDSPAYRLGICSSSAVRAGALGOGESSWYMHCSERPQ---YTFYSGIVSEVHATERPAR 3882
Canis_lupus_familiaris TDCPAYRLGICSHSAVQAATLGQGETSWYMHCSERPQ---YTFYSGIVSDVHVTERPTR 3845
Equus_caballus    TDCPAYRLGICSSSAVQAGALGOGETTWYMHCSERPQ---YTFYSGIVSDVHVTERPAR 4250
Bos_taurus       TDCPAYRLGVCSSSAVQAGALGOGETSWYMHCSERPQ---YTFYSGIVSDVHVTERPAR 3927
Homo_sapiens     TDCPAYRLGICSSSAVQAGALGOGETSWYMHCSERPQ---YTFYSGIVSDVHVTERPAR 4008
Pan_troglodytes  TDCPAYRLGICSSSAVQAGALGOGETSWYMHCSERPQ---YTFYSGIVSDVHVTERPAR 4008
Macaca_mulatta   TDCPAYRLGICSSSAMRAGALGOGETSWYMHCSERPQ---YTFYSGIVSDVHVTERPAR 3948
Callithrix_jacchus TDCPAYRLGICSSSAMRAGTLGOGETSWYMHCSERPQ---YTFYSGIVSDVHVTERPAR 3908
Heterocephalus_glaber TDCPAYRLGICSSSAVGARALGOGETSWYMHCSERPQ---YMFYSGIVSDVHVTERPAR 3732
Xenopus_tropicalis AGCKGYSIGATFQPSQEEYDLEQDSTSWCMQCCSTSTSYSKFLHNEVFSEVRLTEPPDR 1516
Rhinatrema_bivittatum TGCRIFRIGACYSAPGNWVLGENNTSWCMYCCSTSEKSFSCRFLHAGVASDVLVTERPAR 2022
Pavo_muticus     TACRSYRIGICYETTPQSGVVGLSDTSWCMHCFPTQTSFLYRFFHTDVMSDVHVTEQLAR 3668
Pavo_cristatus   TACRSYRIGICYETTPQSGVVGLSDTSWCMHCFPTQTSFLYRFFHTDVMSDVHVTEQLAR 3668
Gallus_gallus    TACRSYRIGICYETTPQSSDVGGLSDTSWCMHCCPTQTSFLYRFFHMDVMSDVHVTEQLAR 4352
Chelonia_mydas   TGCKGYRIGISYNSTPRGSILGQDDTSWCICCCSTQTSFIYKFFHHDVMDNIYVMEQPAR 2363
.....5410.....5420.....5430.....5440.....5450.....5460

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Mus_musculus      VGILLDYTNQRLLFINAESGOLLFIVRHRFNEGVPAPFALEKPGKCTLHLGLEPPDSVRH 3675
Rattus_norvegicus VGILLDYTNQRLLFVNAESGOLLFTVRHRFNEGVPAPFALEKPGKCTLHLGLEPPDSVRH 3942
Canis_lupus_familiaris VGILLDYNQRLLFINAESGOLLFIIRHKFNEGVPAPFALEKPGKCTLHLGMEPPDSARH 3905
Equus_caballus    VGILLDYTNQRLLFINAESGOLLFIIRHRFNEGVPAPFALEKPGKCTLHLGIEPPDSARH 4310
Bos_taurus       VGILLDYTTQRLLFINAETGOMLFIIIRHRFNEGVPAPFALEKPGKCTLHLGIEPPDSARQ 3987
Homo_sapiens     VGILLDYNQRLIFINAESGOLLFIIRHRFNEGVPAPFALEKPGKCTLHLGIEPPDSVRH 4068
Pan_troglodytes  VGILLDYNQRLIFINAESGOLLFIVRHRFNEGVPAPFALEKPGKCTLHLGIEPPDSVRH 4068
Macaca_mulatta   VGILLDYSNQLRIFINAESGOLLFLIRHRFNEGVPAPFALEKPGKCTLHLGIEPPDSVRH 4008
Callithrix_jacchus VGILLDYNQRLVFINAESGOLLFVIRHRFNEGVPAPFALEKPGKCTLHLGIEPPDSVRH 3968
Heterocephalus_glaber VGILLDYANQRLLFINAESGOLLFIVRHRFNEGVPAPFALEKPGKCTLHLGIEPPDSVRH 3792
Xenopus_tropicalis IGILLDYRTGRLSFYNVPKROVLVYTFNRNRFQEAHPTFALETGPNLYLHTGIELPPFAKQ 1576
Rhinatrema_bivittatum VGTLLDYNGGRISFFSVHKGRLLFSIRHRLSEAAHPAFLLLETPGELHLHTGIEMPEFKHS 2082
Pavo_muticus     IGILLDYNNGRLLFFNAERGLVLFTIRHKFTDAVYPAPFALEKAGMLTLHTGMELPEFVKH 3728
Pavo_cristatus   IGILLDYNNGRLLFFNAERGLVLFTIRHKFTDAVYPAPFALEKAGMLTLHTGMELPEFVKH 3728
Gallus_gallus    IGILLDYNNGRLLFFNAERGLVLFTIRHKFTDAVYPAPALDKAGMLTLHTGMDLPEFVKH 4412
Chelonia_mydas   VGILLDYNAGRLSFFNAERGLVLFTIRHRFTNAAHAPAFVLEKAGVLNLHTGMELPEFVKH 2423
.....5470.....5480.....5490.....5500.....5510.....5520

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Mus_musculus	K	3676
Rattus_norvegicus	K	3943
Canis_lupus_familiaris	K	3906
Equus_caballus	K	4311
Bos_taurus	K	3988
Homo_sapiens	K	4069
Pan_troglodytes	K	4069
Macaca_mulatta	K	4009
Callithrix_jacchus	K	3969
Heterocephalus_glaber	K	3793
Xenopus_tropicalis	S	1577
Rhinatrema_bivittatum	-	2082
Pavo_muticus	S	3729
Pavo_cristatus	S	3729
Gallus_gallus	S	4413
Chelonia_mydas	S	2424