

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/ALM101101.fst Tue Feb 1 11:09:05 2022

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Mus_musculus      MEPEDLPWPDELEEEEEEEEEEEGEEEGKKE-----VENASAAATEEALTSEESGRLEEFEE 56
Rattus_norvegicus MEPEDLPWPDELEEEEEEEEEEEGKEE-----AENASAAATEEARTSEETGRLEEEEE 51
Homo_sapiens      MEPEDLPWPGELEEEEEEEEEEEEEEEEE-----AAAAAANVDDVVV---VEEVE 47
Pan_troglodytes   MEPEDLPWPGELEEEEEEEEEEEEEEEEE-----AAAAAANVDDVVV---VEEVE 45
Macaca_mulatta    MEPEDLPWPGELEEEEEEEEEEEKEEATAAA-----AAAAAANLDDVVV---VEEVQ 49
Callithrix_jacchus MEPEDLPWPGELEEEEEEEEEEEEEEEEEEEEEEEEEEA AVVAATVEEEAANLDAVVVVE 60
Bos_taurus        MEPEDLPWPGELEEEEEEE-----EGAENLDEDE---VVMVEEME 36
Equus_caballus    MEPEDLPWPGELEEEEEAAAAA-----AEEAGNLQDE---VSVVEEAE 41
Felis_catus       MEPEDLPWPGELEEEEEEEQ-----AEEANQEEDVVEVVEVVEEVE 42
Canis_lupus_familiaris MEPEDLPWPGELEEEEEEEEEEEKEAEE-----PEEPANLSEK---VVMVEEVE 46
Pavo_muticus      -----
Pavo_cristatus    -----
Gallus_gallus     -----
Chelonia_mydas    -----
Rhinatrema_bivittatum -----
1.....10.....20.....30.....40.....50.....60

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Mus_musculus      EAGP----DLDFNYESQRQESSDE---EEDELAKAWLQAHDPDRPGSAFSLPPPTPPPPPP 109
Rattus_norvegicus LEGAGPEVDLDFNSESQLESTDE---EEDELAKAWLQAHDPDRPGQFSLTPPPTPPP-- 106
Homo_sapiens      EEAGR-ELSDSDSHYGPOHLESIDD---EEDEEAKAWLQAHDPGR---ILPPLS----- 92
Pan_troglodytes   EEAGR-ELDCDSHYGPOHLESIDD---EEDEEAKAWLQAHDPGR---ILPPPS----- 90
Macaca_mulatta    EEAGR-ELSDSDSHYGHQHLESTDDGEDEEEDAKAWLQAHDPGR---ILPLPS----- 97
Callithrix_jacchus EEAGR-ELNSDSHYEHQHVSTDD---EEDEEAKAWLQAHDPGR---ILPPPS----- 105
Bos_taurus        EEERR-EPEADFNYESQRRESTDE---EDDEEAKAWLQAHPGA---TLPQAS----- 81
Equus_caballus    EEAGR-ELDADY--ESQPRESTDD---EDDEEAKAWLQARPGA---TFPPPP----- 84
Felis_catus       EGAGR-ELSDSDFNYESQPRESTDD---EDDEEAKAWLQAHPSG---SLLSS----- 87
Canis_lupus_familiaris EEQRRRELDSDSNCSPPRESTDE---EDDEEAEAWLQAHDPAG---PLPPSS----- 92
Pavo_muticus      -----MEPGEEVEDEE---EER-VPPIATTPP----- 23
Pavo_cristatus    -----MEPGEEVEDEE---EER-VPPIATTPP----- 23
Gallus_gallus     -----MEPGEEVEDEE---EEQSVPIATTPP----- 24
Chelonia_mydas    -----MEPGEEEGTER---PGQ-APPIATTPP----- 23
Rhinatrema_bivittatum -----MERRQELAQEEGIGGSGSDSPPIATTPPP----- 30
.....70.....80.....90.....100.....110.....120

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Mus_musculus      PLSPLRLRYTPVEHLGKTEV-----VPLTCRVWQSSYQDNSRAQFNSSTMLL 157
Rattus_norvegicus --SSRHQYRPVEHWGKREVRGRAVAWIGAVVIPLTYRAWQOTSQYQDNRQAQFNSSTLLL 164
Homo_sapiens      --PPQHRYSEGEQTSLEKI-----VPLTCHVWQQIVYQGNSTQISDTNVVCL 138
Pan_troglodytes   --PPQHRYSEGEQTSLEKI-----VPLTCHVWQQIVYQGNSTQISDTNVVCL 136
Macaca_mulatta    --PPRHRYSEGEQTSLEKI-----VPLTCHVWQQIILYQGNSTQISDTNVVCL 143
Callithrix_jacchus --PSRHRYWEGERTSLEKI-----VPLTCHVWQQLLYQG-GRTOISDTN---V 147
Bos_taurus        --LPRHRYSESELTSPGKV-----VPLTCHLWQQPLYHNNSTQISDTNVASL 127
Equus_caballus    --LPKHRYLEGERTWPKEV-----VPLISHVWQQPLYQDDSGTQISDTNVVSL 130
Felis_catus       --RPSHRSLEDERTGPEKV-----VPLTCHVWQQSLYQDNSGTQISDANVVSV 133
Canis_lupus_familiaris --LSRHRSFSENQPGREQV-----VPLTHHVWQESSYQGNSTQISDTNVVVFV 138
Pavo_muticus      -----RRSWREEALSQSSS-----ETQASAVSGISL 49
Pavo_cristatus    -----RRSWREEALSQSSS-----ETQASAVSGISL 49
Gallus_gallus     -----RRSWREEALSQSSS-----ETQASAASGISL 50
Chelonia_mydas    -----HRGWKEELLSQSSS-----GTQISTASGISL 49
Rhinatrema_bivittatum -----SHVGRKEELLSQSSS-----PGSGTQVSSISRVSL 61
.....130.....140.....150.....160.....170.....180

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	* : * :	. *	.	:	*	
Mus_musculus	ETGVRWGSSEEDORTESWHCLPQERDSSQTILAMSQTEIGR-VEGTVPDLPSQEGGLPAQS					216
Rattus_norvegicus	EPEFQWDPEEFVORTESWHHLCPQERDSFQTLNISQTGIDR-VEGAEVKDLPSQEGGESVQA					223
Homo_sapiens	ETTAQRSGDDOKTESWHCLPQEMDSSQTLDTSTQTRFNVRTEDTEVTDFPSLEEGILTOS					198
Pan_troglodytes	ETTAQQGSGDDOKTESWHCLPQEMDSSQTLDTSTQTRFNLRTEDEVTFDFPSLEEGLITQS					196
Macaca_mulatta	ETTAQQGSGDDOKTESWHCLPQEMDPSTQLDTSTQTRFNVRREDTEVSDFPSLEEGLVTQS					203
Callithrix_jacchus	ETAQQGSGDDOKTESWYLYLSQEVDSSQTLDTSETRFNVRTEDEVTFDFPSLEEGILTQS					207
Bos_taurus	ENIAPWGSGDDORTESWHCLPQEMDSSCTILDTAQTGFNMREKGTEVTDFTSLEEGLITQS					187
Equus_caballus	G-----SGDDORTESWHCLPQEMASSHTLDTTQTRFNVEEEGTEVTDFPSLEEVLTOP					184
Felis_catus	KKTAQWDSGDDORTESWHCLPQEMDSSHLLDTTHTSFMREERTKVTFGPSLEEGLVTOP					193
Canis_lupus_familiaris	EKTAWWGCRNDORTESWHYPPQEMDSSHLLDTTQTRFNMRREGTEVTFDFPSVEEGILTQP					198
Pavo_muticus	GEAIRORTAAHQEMDSWYQLPAEVDASRLTAASETKLGLAADSNDLTEFPPTLEEGVLSAA					109
Pavo_cristatus	GEAIRORTAAHQEMDSWYQLPAEVDASRLTAASETKLGLAADSNDLTEFPPTLEEGVLSAA					109
Gallus_gallus	GEAIRORTAVNQEIDSWYQLPGVDASRLTAASETKLGASDRNDLTEFPPTLEEGVLPSPA					110
Chelonia_mydas	GEAIRORSAVNOGMESWYQLPAEMDVSHLAATSGMRLGLTGCGNDLTEFPPTLEEGLLTPT					109
Rhinatrema_bivittatum	GEAIROT--ANQGMESWYQLSAEDASCFVLG-----AEQELTPMEEGILSRA					108
190.....200.....210.....220.....230.....240					

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Mus_musculus	OCPGKKPKLNVLCSPLLVIQDNFAAPDLPLLTCLIQDQEVEEPDSLFOOSELEFAPLRGI	276										
Rattus_norvegicus	OCPPVKEPKLDLLCSPLLVIQDDFAAPDLPLLTCTMTQDQE-FEPDSLFOOSELEFAPLRGI	282										
Homo_sapiens	ENOVKEPNRDLFCSPLLVIQDSFASPDLPPLLTCITQDQE-FAPDSLHFQSSELSFAPLRGI	257										
Pan_troglodytes	ENOVKEPNRDLFCSPLLVIQDSFASPDLPPLLTCITQDQE-FAPDSLHFQSSELSFASLRGI	255										
Macaca_mulatta	ENOVKEPNRDLFCSPLLVIQDSFASPDLPPLLTCITQDQE-FASDSLHFQSSELSFAPLRGI	262										
Callithrix_jacchus	ENOVKELNRDLFCSPLLVIQDSFASPHLPPLLTCITQDQE-FTPDSLHFQSSELSFAPLREI	266										
Bos_taurus	ENOGKDPNRDLLCSPLLVLQDNFASPDLPPLLTCITQDQE-FGPDSLHFQSSELDFAPLRGI	246										
Equus_caballus	GNOVKEPNRDLFCSPLLVIQDSFASPYLPPLLTCIAQDQE-FGPDSLHFQSSELDFAPLRGI	243										
Felis_catus	ENOVKEPKRDLFCSPLLVIQDNFASPDLPPLLTCITQDQE-LGSDSLFQOSELDFAPLRGI	252										
Canis_lupus_familiaris	ENOVKKSRRDLLCSPLLVIQDNFASPDLPPLLTCITQDQE-FESDSLFPQSELEFVPLRGI	257										
Pavo_muticus	QTSRRQHPEDTVHGLLLDIQDSQFSPCLPILM-YSTPGORILDETLFQHSEERDFIHRLGV	168										
Pavo_cristatus	QTSRRQHPEDTVHGLLLDIQDSQFSPCLPILM-YSTPGORILDETLFQHSEERDFIHRLGV	168										
Gallus_gallus	ETSRRQHPEDTVHGLLLDIQDSQLSPCLPILM-YSTPGORILDETLFQOQSERDFIHRLGV	169										
Chelonia_mydas	EELGRQHTGDMAHTPLEIQDSRFSPCLPILMTYSVQGQKFLLDTLFOQTELDFAPLRG	169										
Rhinatrema_bivittatum	AEPEPRPALGTHSPLLEIQDSGLSPRLPLLIINITQGRFFEDTLFQOQSELEFAPLRGS	168										
	.....250.....260.....270.....280.....290.....300										

		.	*	*	:	:	*	*	*																																													
Mus_musculus	PDK	S	E	D	S	E	W	L	A	R	P	S	E	V	S	E	A	L	I	Q	A	T	S	E	T	S	S	D	L	N	S	C	F	S	I	S	Q	H	P	L	T	-----	320																
Rattus_norvegicus	PDK	S	E	D	I	E	W	L	A	R	P	S	E	V	S	E	A	L	I	Q	A	T	S	E	S	S	D	L	V	N	S	C	F	S	I	S	Q	H	P	L	T	G	S	T	I	F	G	S	Q	R	S	L	S	L	F	E	Q	342	
Homo_sapiens	PDK	S	E	D	T	E	W	S	S	R	P	S	E	V	S	E	A	L	F	Q	A	T	A	E	V	A	S	D	L	A	S	S	R	F	S	V	S	Q	H	P	L	I	G	S	T	A	V	G	S	Q	C	P	F	L	P	S	E	Q	317
Pan_troglodytes	PDK	S	E	D	T	E	W	S	S	R	P	S	E	V	S	E	A	L	F	Q	A	T	A	E	V	A	S	D	L	A	S	S	R	F	S	V	S	Q	H	P	L	I	G	S	T	A	V	G	S	Q	C	P	F	L	P	S	E	Q	315
Macaca_mulatta	PDK	S	E	D	T	E	W	S	S	R	P	S	E	V	S	E	A	L	F	Q	A	T	A	E	V	A	S	D	L	A	S	S	R	F	S	V	S	Q	H	P	L	I	G	S	T	I	V	G	S	Q	C	P	F	L	P	S	E	Q	322
Callithrix_jacchus	PDK	S	E	D	T	E	W	F	S	Q	L	S	E	V	S	E	V	L	F	Q	A	T	A	E	V	A	S	D	L	A	S	S	C	F	S	I	S	Q	H	Q	L	I	D	S	T	A	G	G	S	Q	C	S	F	L	P	S	E	Q	326
Bos_taurus	PGK	S	E	D	T	E	W	F	S	R	P	S	E	V	S	E	A	L	F	Q	A	A	S	G	V	A	S	D	L	V	N	S	C	F	S	R	S	Q	H	P	L	I	G	S	T	A	V	K	S	Q	H	S	L	L	T	P	E	Q	306
Equus_caballus	PGK	S	E	D	T	E	W	F	F	R	P	S	E	V	S	E	A	L	F	Q	A	T	S	E	V	A	S	D	L	V	S	S	F	F	S	I	S	Q	H	P	L	I	G	S	T	A	V	E	S	Q	H	T	F	L	P	P	E	Q	303
Felis_catus	PGK	S	E	D	T	E	W	F	S	R	P	S	E	V	S	E	A	V	F	Q	A	A	S	E	V	A	S	D	L	V	N	S	C	I	S	V	S	Q	H	S	L	L	G	S	A	A	V	G	S	Q	R	S	F	L	R	P	E	Q	312
Canis_lupus_familiaris	PGK	S	E	D	T	E	W	F	S	R	P	S	E	V	S	E	A	L	F	Q	A	A	S	E	V	A	S	D	L	G	N	S	C	I	T	V	S	Q	H	S	L	I	A	S	T	A	V	E	S	Q	H	S	F	L	P	E	Q	317	
Pavo_muticus	PDV	S	G	A	S	E	Q	H	S	N	L	P	H	I	P	E	A	A	W	L	T	D	V	E	T	P	S	D	A	P	S	D	R	C	S	L	S	Q	H	P	L	S	F	R	Q	T	E	P	C	D	A	-----	221						
Pavo_cristatus	PDV	S	G	A	S	E	Q	H	S	N	L	P	H	I	P	E	A	A	W	L	T	D	V	E	T	P	S	D	A	P	S	D	R	C	S	L	S	Q	H	P	L	S	F	R	Q	T	E	P	C	D	A	-----	221						
Gallus_gallus	PDV	S	G	A	S	E	Q	H	S	N	R	L	H	V	A	E	A	W	L	T	D	V	E	T	P	S	D	A	P	S	D	C	Y	S	L	S	Q	H	P	L	S	F	R	Q	T	E	P	C	D</										

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Mus_musculus	-----	320
Rattus_norvegicus	ENNRETVP ³⁷⁰ CNAPDDLKSPDN ³⁸⁰ SYHYDAQYSYMSWLTEKDTQQ ³⁹⁰ PEGSLADKQDQASSTTISDI ⁴⁰⁰	402
Homo_sapiens	GNNEETIIS--VDELKIPKDCDRYDDLCSYMSWKTRKDTQWPENN ³⁷⁰ LADKQDQVSVATSF ³⁸⁰ DI	375
Pan_troglodytes	GNNEETIIS--VDELKIPKDCDRYDDLCSYMSWKTRKDTQWPENN ³⁷⁰ LADKQDQVSVATSSDI ³⁸⁰	373
Macaca_mulatta	GNNEETIIS--VDELKIPKDCD ³⁷⁰ SYDDLCSYMSWKTRKDTQQ ³⁸⁰ PETNLADKQDQVSVTSLSDI ³⁹⁰	380
Callithrix_jacchus	GNNEETILS--VDELKIPKDCD ³⁷⁰ SYDALCLYMSWKTDIDTQQ ³⁸⁰ PETNLADKQDQVSVLTSSDI ³⁹⁰	384
Bos_taurus	GTKEETASSNILD-LKTCEDSGNYDAVYSYMSWETQQVMEPATNLADKDHVSFSTIASDI ³⁷⁰	365
Equus_caballus	GTKEETIISSDTVDKLKTPKDS ³⁷⁰ SYDALCSYMPWKTDQVQVQEPETNLADKQDQVSVFSTSSDT ³⁸⁰	363
Felis_catus	GTKEETVSSDITDELQTS ³⁷⁰ EDFDS ³⁸⁰ CDALCSYVAWKTQEVQ-EPEASLAD ³⁹⁰ EGQVSVSASSDT ⁴⁰⁰	371
Canis_lupus_familiaris	GTKEETIISSDTVDELKTPKDFD ³⁷⁰ SYDALCSYMWKTDQEVQ-EPETSLTDEGQASVSTSSYT ³⁸⁰	376
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224
	.....370.....380.....390.....400.....410.....420	

Species	Sequence	Position
Mus_musculus	-----	320
Rattus_norvegicus	SDESITVKRSSALGISCSYSQYRKQEALKQTEASLASK-----	440
Homo_sapiens	TDENIATKRSDHFDAARSYGQYWTQEDSSKQAEITYLTK-----	413
Pan_troglodytes	TDENIATKRSDHFDAACSYGQYWTQEDSSKQAEITYLTK-----	411
Macaca_mulatta	TDENIATERNDHFDAAYSYGQYWKQEASPKQETETYLTK-----	418
Callithrix_jacchus	TDENIATKRSDHFDAACSYGRYWKQKASPKQGETYLT-----	422
Bos_taurus	SDEYINPRGSDNFDAASYLYAQYGNQG-TLQOSEKYLAS-----KDHSYSDSDD-----TI	415
Equus_caballus	TDEYITPKGSDSFEASCYSIQHWKQE-VLQOSEKYLTS-----KDHSYSDSDD-----TI	413
Felis_catus	SDEYMTSKERDSFDDSYSYVQYRKQK-ALQOSGKYLTS-----KDHSYSDSDD-----TI	421
Canis_lupus_familiaris	SDEYMTPEGSDSFDAASCYVQFWKQK-ALQOSEKYLTKGLQGAESGTYTLDDDTCCNL-----	435
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224
	.....430.....440.....450.....460.....470.....480	

Species	Sequence	Position
Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	DRNKIPKES-----DNF--SFSNMPWSKOGASHHPETIYVLSKD	451
Equus_caballus	DKNKIPKGS-----GSFGAPFSGMLWSKOGASHHPETCLISKD	451
Felis_catus	DKNKIPEG-----DNFSAPFS CMPWNKQETSHHPETYVISKD	459
Canis_lupus_familiaris	DENAVVCSTRVDDLQREICEQGLTSECIELASLKNVLDLLEVCDSSLDWESDLQLPSKE	495
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224

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Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	HVSFPHEVAPHFNNKMPHSFWHCLLGSGGSEVPLMSDSHYFESVCLRAPVENEVKQKVD	511
Equus_caballus	CVFFPCEVAPHFNNKISYSFLRCSLERRGKGIPLMSDSHYFESVYLRAAENEVKQKMD	511
Felis_catus	RVSFPHEVAPRFNNKMSHSVLCCLLERRGEGISLTASSHFFDSVYLKAPAENEVKDMID	519
Canis_lupus_familiaris	ESDFEEPVG-HSNTDINQPFSSILPPFIPHEPARELEYHSSDLRMLRVSPDTVQKTL	554
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224
	.....550.....560.....570.....580.....590.....600	

Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	LES-----YKSNEEDLGKGLSQCFEVENRNTLVFSEVHP-----RSSEIQ	552
Equus_caballus	LEG-----CERNE-GLGKELSQCFELKENRNTLVFSEVRP-----RSSEIQ	551
Felis_catus	LEG-----CERNEEGQKELSQGFELKESRSTLVFSEVHP-----RSSEIQ	560
Canis_lupus_familiaris	AGDTSKGGIAEITQSSLKPGITTTRESDTGSLLSLFPEDFPOLALRSPQETIGQHS	614
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224
	.....610.....620.....630.....640.....650.....660	

Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	YIENVVVPDNSVEVSEAHILSRGLDSTMEISGGPLOTIKFNSNETSEQLYFO---EERN	609
Equus_caballus	CVENVIVLDNSVTISEAHILSRGHDTSQMEASGGPLOTIKSNLDETSEQLYFO---EERN	608
Felis_catus	SIESVVVPDNSIQVSEIHTHCRGPGTSKMEVSGGPLOTILKSNLDETSEQLYFO---GERD	617
Canis_lupus_familiaris	HQQELVGSHTKTEETPKALKVAAVPEPTDQKTSIPTVLPGSYSLGEKHCIFYPOTLPESH	674
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224
670.....680.....690.....700.....710.....720	

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Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	QEATSVFDGENVGAMKNVAFRAVIAS-----IEPSKKESTVNEIQTDINKSLTN	658
Equus_caballus	RKAASAFGGKNLDATKNIAFEAVIAS-----IEPSKKESTVSEIRTAINKSLTN	657
Felis_catus	OKATSAFSGKSVDAENVAFEAVIAS-----IEPSKKESTVNEIQTDINKSLIK	666
Canis_lupus_familiaris	TEEAVRVSAFSGGLADQKIDIPTVLPSSYSIREKHINIFYQQALPDSHLEEEAVRVSAVPGP	734
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224
	.....730.....740.....750.....760.....770.....780	

Species	Sequence	Position
Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	DSQESEPKSPDPSSLIN Y -DENLLFDKLRPRYOSTPGVFESGASK-SLYKKDDGDSSLYW	716
Equus_caballus	DREESEPKNADLSLLSYNDENSFFDKLSPPCCQSPPGVFEPAAASKPLFYKKDDDGSSLYR	717
Felis_catus	NSQESKPNPYLSLLINYNDESFFDKLSHPCYESTPRVFELAASKPLLLKKDNGDSSFYW	726
Canis_lupus_familiaris	ADQKTRIHIIVLPGSHSLGGEKHKIFCQALPNSHLKEILKVSAPVGPVPEOKSVIPIVLP	794
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224

.....790.....800.....810.....820.....830.....840

Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	HHNLNSIPASQEILIKPLSLSPCLKPSSSLSEKSLKQAVGLGRITWSTLFOY---GIDN	772
Equus_caballus	HPNLKSLPNVSEQEMFIKPLSLIPELKSSASLSEKSHSQAVGLCKTQSALFOC---DIDN	773
Felis_catus	HPNLKSLPSAPQEMFIKPLSLIPEWKSSASLCEKSHSQAVGLGKAQASALFOC---DIGN	782
Canis_lupus_familiaris	SYLLGEKRNIFHPPPLPESHLLTEAVRVSAAVPGSVDDKIGIPTVLPGSFSLGEKASIFH	854
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224
850.....860.....870.....880.....890.....900	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Species	Sequence	Position
Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	EQFLPLG-----KIKSVS-----ALDLAEKLGSSNIIYPMKVWTSDSLVSOD	814
Equus_caballus	EPFLPNG-----KIKSVS-----ALDLLEKVGSSNIIYPTKVSTSDSWVLQD	815
Felis_catus	EPFLPIG-----KIESVP-----VLDLTEKVGSSNIFYPLKVWTSDSLVLQD	824
Canis_lupus_familiaris	QQALPESHLTKEALRVSAVPGPIDQKTGIPTVLPGSYSLGENCNIFQPQTLDPDGHLTGEA	914
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224

Species	Sequence	Position
Mus_musculus	-----	320
Rattus_norvegicus	-----	440
Homo_sapiens	-----	413
Pan_troglodytes	-----	411
Macaca_mulatta	-----	418
Callithrix_jacchus	-----	422
Bos_taurus	LKQHSFEEADSSNCILGKIVNSSYIIIEGPSAAVGSGFSAANLVACDAKSGQALPVMSSNAPL	874
Equus_caballus	LKQQTFFEEVADS	827
Felis_catus	LKQQTLEEVADS	836
Canis_lupus_familiaris	VRVSTVPGPVDQKLTGIPITVLSSYSLGKRNIFHPQTLPG	954
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224

Species	Sequence	Position
Mus_musculus	-----	320
Rattus_norvegicus	-----DHASFSRQITSLPNKMSRSFL	461
Homo_sapiens	-----GLOGKVESDVITLDG---	428
Pan_troglodytes	-----GLOGKAESDVITLDG---	426
Macaca_mulatta	-----GLOGKAESDIITLDG---	433
Callithrix_jacchus	-----GLOGKAESDVITLDGDAE	440
Bos_taurus	IAVGQKTLKADTGQGEIPRPLGARSSFTIHTIMONDSYFVEGLOGKAESDICTLDDDTTE	934
Equus_caballus	-----SNYILEGLOGKAESDICTLDDDTTE	851
Felis_catus	-----SNYILEGLQVKAESDICTLDDDTTE	860
Canis_lupus_familiaris	-----IHLTEAQRVLAIVPGPADEKTIPTVLPG	983
Pavo_muticus	-----	221
Pavo_cristatus	-----	221
Gallus_gallus	-----	222
Chelonia_mydas	-----	225
Rhinatrema_bivittatum	-----	224

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Mus_musculus                ----- 320
Rattus_norvegicus          RCMLKRGEGLPLTSDNPPENVCLRTPAEDMSQKNDLSLEGYEGNEDLQKELSQYFKQKET 521
Homo_sapiens               ---LNENAVVCSERVA---ELQRKP----- 447
Pan_troglodytes            ---LNENAVVCSERVA---ELQRKP----- 445
Macaca_mulatta             ---LNENAVVCSERIT---ELQRKVG----- 453
Callithrix_jacchus         CCSLNEN-IVCSERIA---ELQRKVHDQCDLTGQYIELAALN--FHDDLEMNDSSLHWQ 494
Bos_taurus                 CCSVDENAVVCSK-----RQEICDQDGLTGECVELAGLEN-LLDDLEICDS-SLQWQ 984
Equus_caballus             CCSLDENAVVCSERVA---ELEREICDQDGLTGGERIELAGLEN-LFDDLEICDS-SLHWQ 906
Felis_catus                SCSLDENAVVRSTRVA---DLQREVCQDGLTGQYIELAGLKN-VLDDLEVCDS-FLHWQ 915
Canis_lupus_familiaris    SYSLGEKRNIFHPQTLPSIHLTEEAQORVLAVPGPADEKTGIPTGLAGSVSLGEKRNIFYP 1043
Pavo_muticus               ----- 221
Pavo_cristatus            ----- 221
Gallus_gallus              ----- 222
Chelonia_mydas             ----- 225
Rhinatrema_bivittatum     ----- 224
.....1090.....1100.....1110.....1120.....1130.....1140

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Mus_musculus                ----- 320
Rattus_norvegicus          RNTWASSRVHAKYPEIKSLGTVAIPESQKRVAE-----SYILCRGLDISKLDTSGC 572
Homo_sapiens               -----TRESEYHSSDL 458
Pan_troglodytes            -----TRESEYHSSDL 456
Macaca_mulatta             -----HSNLGINESFSFLLP-----SFVPHKLTRESEYHSSDL 486
Callithrix_jacchus         PTLQLPSKKESNIEKPVGHSTLGINESFSFLLP-----SFVPHKPTGESEYHSSDL 545
Bos_taurus                 STVRLPSKEDSSFEDSVCPSTNDINESFSSVLP-----PFVPHPTGDLEYHSSNL 1035
Equus_caballus             STLQLPSEEEESNFEEPVGHSNVDINQSFSSVLP-----PFVPHPEARELEYHSSDL 957
Felis_catus                SALQLSSKQESDFQELVDHSNTDINQSFSSVLP-----PFVPHELTRELEYHSSDL 966
Canis_lupus_familiaris    QTLPQSHLTEEALKVLVLAGPGPVDQKTGIPTILPGSYSLGERRNIFHPENLRDSSLHTEAL 1103
Pavo_muticus               ----- 221
Pavo_cristatus            ----- 221
Gallus_gallus              ----- 222
Chelonia_mydas             ----- 225
Rhinatrema_bivittatum     ----- 224
.....1150.....1160.....1170.....1180.....1190.....1200

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Mus_musculus                ----- 320
Rattus_norvegicus          PLPTVKSNNFNETSEQLCFQEERNQKAATTFDEKNVDAIGNVAFEAIIASIESSNQEGSVS 632
Homo_sapiens               RMLRMSP-----DTVPKAPKHLKAGDTSKGGIAKVTQSNLKSIGITTPVDSDIGSHL 510
Pan_troglodytes            RMLRMSP-----DTVPKAPKHLKAGDTSKGGIAKVTQSNLKSIGITTPVDSDIGSHL 508
Macaca_mulatta             RMLRMSP-----DTVPKAPKHLKAGDASKGGIAKVTQSNLKSIGITTPVDSDIGSHL 538
Callithrix_jacchus         RMLRMSP-----DTVPKTPKHLAG-DTSKGSIAKVTQSTLKPDIITTPVDSDIGSHL 596
Bos_taurus                 RMLRVSP-----DTVSRTRVRLTG-DTSKGGIAEIPQSTFKPGITTFPESDITVSPL 1086
Equus_caballus             RMLRVSP-----DTVPKTLKHLAG-DTSKGGIAEITQSNLKPGITTPGDSDIGSHL 1008
Felis_catus                RMLRVSP-----DTVQKTLKHLAG-DTSKGGTAEITQSTLKPGR-----DSDIGSHF 1013
Canis_lupus_familiaris    RVSGVPSP-----ADQKTDIPAGLAG-SYSLGEKRNIFYP-QTLSQSHLIEAIRVSAF 1155
Pavo_muticus               ----- 221
Pavo_cristatus            ----- 221
Gallus_gallus              ----- 222
Chelonia_mydas             ----- 225
Rhinatrema_bivittatum     ----- 224
.....1210.....1220.....1230.....1240.....1250.....1260

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Mus_musculus          ----- 320
Rattus_norvegicus     ETQTDS SQLLADDS EEEKTLKPDLS PFSCKDEISFIDKLKYQQSTPAVFEPADSKPLLC 692
Homo_sapiens          SLLEDLSQLAVSSPLETTTGOHT-DTLNQKTLADTHLTEETLKVTAIPEPADOKTATPT 569
Pan_troglodytes       SLLEDLSQLAVSSLLETTTGOHTADTLNQKTLADTHLTEETLKVTAIPEPADOKTATPT 568
Macaca_mulatta        SLLEDLSQLTVSS-LETTTGOHT-STLNQRPLGDTHLTEETLKVTAIPEPAYOKTATPT 596
Callithrix_jacchus    SLLEDLSQLAVSSPLETTSGOHT-DTLNQKTLADTHLTEETLKVTAIPEPADOKTATPT 655
Bos_taurus            SLSPEDFPQLAGRSPQVKNIGEYT-DTVNQTLTDSRLTEETLKISAIPGLADOKTGIAA 1145
Equus_caballus        SLSPEDLPQLAVRSPQENTVGQHT-DSFNRLQALADSHLTEETLKVLAVSELANOKTEIST 1067
Felis_catus           SLFPEDFPQLALRFPQETTIGPHT-DILSQAL-DSHTTEKTLKVSTVHELADOKTGIST 1071
Canis_lupus_familiaris PGPADQKTGIPTGLAGSYSLGEC-NIVHSETLPDNLHTEGTQRLAVPGPVDOKTGIPT 1214
Pavo_muticus          -----TYLSQQASR-FSEHLLN---KEVCED---CKNDTNEKASIP 256
Pavo_cristatus        -----TYLSQQASR-FSEHLLN---KEVCED---CKNDTNEKASIP 256
Gallus_gallus         -----SYLSQQASR-FSERLLMN---KKA SED---CRNDTNEKSSIP 257
Chelonia_mydas        -----SYLSQHPIC-LSGQIPVERKEKAEQDN---CKLDIN-KSFIP 262
Rhinatrema_bivittatum -----CFLSQHPISPFSLRAEKGEGNQTDDRLLHCNPGGDKNFVVP 267
.....1270.....1280.....1290.....1300.....1310.....1320

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Mus_musculus          -----EGLQKKAESGVLTRCGDAKYSSLYENLGAQSERIA 355
Rattus_norvegicus     KEDDAGSLYHYPDLKHPINVPQSMLEGLQKAKSDVILFQDAKYASIIYENAGAHSERIT 752
Homo_sapiens          VLSSSHSHRGKPSIFYQQGLPDSHLTEEALKVSAAPGLADQTTGMSLTSTSYSHREKPG 629
Pan_troglodytes       VLSSSHSHRGKPSIFYQQGLPDSHLTEEALKVSAAPGLADQTTGMSLTSTSYSHREKPG 628
Macaca_mulatta        VLSSSHSHRGKPSILYQQGLPDSHLTEEALKVLAAPGPTDETTGIPTLTSTSYSHREKPG 656
Callithrix_jacchus    VLSSSYSKKGKPSIFYQQGLPDSHLTEEVKLSAAPGPADQTTGIPVTST---YREKPG 712
Bos_taurus            VSSSYSQRGKPNIFYPQALPDSHLTEEALKVGA VPGLDQKTGVSTVPPSSSYSLGEKHS 1205
Equus_caballus        VPSSSYSQRGKPNVFPQALPDGHLPEEALKVSAVPAPADQKTGISAVPPSSSYVEEKSG 1127
Felis_catus           VPSSSYSQRGKPGIFCLOYPDRHLTEEAPKVLAVLGPADQKTGIPVFPSSSYPLGEKHG 1131
Canis_lupus_familiaris GLAGSYSLGEKRNIFHPENLPESPLTEEALKVLAGPGPADQKTGIPIGLPGSYSLGEKHH 1274
Pavo_muticus          QLGDKAMN-----QMGASLAKQTCGTSTEDGCFACDNNVLAP-VLELSEKEK 302
Pavo_cristatus        QLGDKAMN-----QMGASLAKQTCGTSTEDGCFACDNNVLAP-VLELSEKEK 302
Gallus_gallus         HMGDKAMN-----QTEASLAKQTCGTSAEDACFTCNNVLAP-VFELSEKEK 303
Chelonia_mydas        NRDENLTDPNRMLLNEPETLQPPFVFAAKEATS GFVNNNFFLDSNVPAPLLLELLEKEI 322
Rhinatrema_bivittatum DTLMRISSQIG-----LQKHGISPADQANRIFPTGDVSFLNLSIPAPLLLDLLEKEV 319
.....1330.....1340.....1350.....1360.....1370.....1380

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Mus_musculus          :      *      :
VLQR-EVGC SNLGISQASPSLPSFVPQEP TSEPEYHSSN----- 394
Rattus_norvegicus     ELQR-EVDCSNLSITQAFPSLPSFVPQEP TIESEYHSSN----- 791
Homo_sapiens          TFYQQELPESNLTEEPLEVSAAPGPVEQKTGIPTVSSTSHSHVEDLLFFYRQTLDPDGHLT 689
Pan_troglodytes       TFYQQELPESNLTEEPLEVSAAPGPVEQKTGIPTVSSTSHSHGEDLLFFYRQTLDPDGHLT 688
Macaca_mulatta        IFYQQELPESNLTEEPKLSAAPGPVEQKTGIPTVSSTSHSHGEDLLFFYRQTLDPDGHLT 716
Callithrix_jacchus    VFDQQELPESNLIEEPLKVSATPSPVEQKTGIPTVSSTSHSHEENPLLFFYRQTLDPDGHLT 772
Bos_taurus            IFYQALPD SHQTEESRNVSVLPGLADQKTGKPIVPASSYSVGE----- 1250
Equus_caballus        VFYQVLPDSRQPEEAVKVS AVPGSADQKTIKKTIVASSSYSDRENVIFSQORLPGSSVT 1187
Felis_catus           IFYSQALPDSYVTEEALKVSAVPVSADQRT EKITVFPSTSYLQREKHNFSQQQSSD SHLT 1191
Canis_lupus_familiaris IFHSENLPDSHLTEEAVRVS AVPSPADQKTGIPTVLPGSYSLGEKCNIFHPENLPDSHLT 1334
Pavo_muticus          ELLRRDELSSSENSCKTALRKNSGT SEREMQMEKVMAE----- 342
Pavo_cristatus        ELLRRDELSSSENSCKTALRKNSGT SEREMQMEKVMAE----- 342
Gallus_gallus         ELLRRDEFSSSENSCKAALTKNSGK SEREMQMEKVMAE----- 343
Chelonia_mydas        GLSSHGGSSESSSCKSISARD PGKNKTMQRVGNIELSD----- 362
Rhinatrema_bivittatum GLSSSAGVSSRSNGSSSTSSSRDSEKEKTQQQVEDTDMQE----- 359
.....1390.....1400.....1410.....1420.....1430.....1440

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Mus_musculus          -----LRMLRVSPDTLLTHTH-----SAGS      415
Rattus_norvegicus     -----LRMLRVSPDTLLTHTQ-----TTGS      812
Homo_sapiens          DQALKVSAVSGPADQKTGTATVLSTPHSHREKPGIFYQQEFADSHQTEETLTKVSATPGP      749
Pan_troglodytes       DQALKVSAVSGPADQKTGTATVLSTPHSHREKPGIFYQQEFADSHQTEETLTKVSATPGP      748
Macaca_mulatta        DQALKVSAMSGPADQKTGTATVLSTPYSHREKPGIFYQQEFADSHQTEETL-KVSFTPGP      775
Callithrix_jacchus    DEALKVSAVSGPADQKTGTATVLSTPYSYREKPGIFYQQLPESHQTEETL-RDSATPGP      831
Bos_taurus            -----PGIFYHVLVLPDSQPPEAL-KVLASPRP    1277
Equus_caballus        EQALKVSVVPGPADQKSRIITIPSSSFYSLEEKPGIFYQQALPDSHLSEQAQ-KLSASPGP    1246
Felis_catus           EQALKVSVVSGPAGENTGIPILPSVSSSLGEKPSVFYQQALPDSHLSEQAQ-KVSAVPGP    1250
Canis_lupus_familiaris EEALKVLAVPGLADQKTGIPTVLPGSYSLSGEKHHIFHTKNLADNPLTEAI-RVSAFPGP    1393
Pavo_muticus          -----SESEGLRHP-ERLGKEK-APEL          363
Pavo_cristatus       -----SESEGLRHP-ERLGKEK-APEL          363
Gallus_gallus         -----SESEGLRHP-ERLEKEK-APEL          364
Chelonia_mydas        -----RESEFVRESHQKLEEEKRVPEL         385
Rhinatrema_bivittatum -----LES LG--QEFCQLSDGK-----      375
.....1450.....1460.....1470.....1480.....1490.....1500

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Mus_musculus          ADQKIG-AAVVSSAYSQEIKPGSFHQEELPDRHLNEEIRKVSAPALRTAGQKPEMLPVQSS      474
Rattus_norvegicus     VDQKIG-AAAISSPYSHGVQPGSFHQEELPDRHLTEEIRKVSAPAPRPAGQKPEMPTVPSS      871
Homo_sapiens          ADQKTEIPAVQSSSYSQREKPSILYPODLADSHLPEEGLKVSAVAGPADQKTGLPTVPSS      809
Pan_troglodytes       ADQKTEIPAVQSSSYSQREKPSILYPOELADSHLPEEGLKVSIAAGPADQKTGLPTVPSS      808
Macaca_mulatta        ADQKTEIPAVQSSSYSQREKPSILSSQVLADSHLPEEGLNVSAGVAGPADQKTGLPTVPSSN    835
Callithrix_jacchus    ADQNTTEIPAVQSSSYSQREKPSILYPOVLADSHLPEEGLDISAVSGPADQKTGLPTVPSS      891
Bos_taurus            VDQKSGLPTPSST-YSYGEKPHIFYQQTLPDTHPSEQTLKVSAAAPGLAEQKTGVPAVTS      1336
Equus_caballus        AEQKPGTPTVTSTPYLHGEKPHIFYQQTLPDSHLTHEAQKVSAPVPGFAEQKTGTPTLTST      1306
Felis_catus           VDQKTRIPAASSTYYSYGERPQIFYQQTLPESHLPQALKFSAAPGSYEQKTGTIPTVTST      1310
Canis_lupus_familiaris VDQKTDIPTGFPGSYSLEEKSNIVHPEIILLDSLTEEAVRVLAVPGDDQKADVPTGLPG      1453
Pavo_muticus          GSSKALPDDLKKDSGESSGAQDVFSAKTSEIAREPKHEVRDLNDFGSMKFVAVTNELQGA      423
Pavo_cristatus       GSSKALPDDLKKDSGESSGAQDVFSAKTSEIAREPKHEVRDLNDFGSMKFVAVTNELQGA      423
Gallus_gallus         GSSKALSDDLKKDSCKNSGAQGMFSAKTSEITRESKECRVGLNDFGSMKFVAVTNELQGA      424
Chelonia_mydas        DSSNMFSDVLRRESFKNSNAPDVFSAKFSEMFMLSKGHSSNLNDSGRLWFSGVIMEPLGT      445
Rhinatrema_bivittatum --SLLEFDLLLRDSTEAN----FATKSSKMSLTVAEGVDLNNFPQSLSGITIHGPNR      428
.....1510.....1520.....1530.....1540.....1550.....1560

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Mus_musculus          SYSKGMKS-IFYQHPSVSHGHQKEPLSVSAVCGSAGN-----KA          512
Rattus_norvegicus     SYSKGIKS-VFYRYPMSYSPQKEPPNVSSVSGSAENALPLTVTSVS----QPQRETAKA      926
Homo_sapiens          AYSHREKLLVIFYQALLDHLPEEALKVSAVSGPADGKTGTPAVTSTSSASSSLGEKPSA      869
Pan_troglodytes       AYSHREKLLVIFYQALLDHLPEEALKVSAVSGPADRKTGTPVTSTSSASSSLGEKPSA      868
Macaca_mulatta        AYSHREKLRIFYQALLDQLPEEVLKNSAVSGPADRKTGTPVTSTSSVSSSLGEKPGA      895
Callithrix_jacchus    AYSHREKFLISYQEAALLDHLPEALKISAVSGLADEKTGASTVTSTYSMSS-LAEKPGA      950
Bos_taurus            SYPHKEKPSIFYQPELPNRRLIQEAHQVSAAPVLVEQKAGISIVPST---SYSHREKPRV    1393
Equus_caballus        PYLHGEKPHIFYQQTLPDSSLTEQAQKVSAPVPGFAEQKPGTPTVTST---SYSHREKPS      1362
Felis_catus           PYSHREKLNLFQOQELPDSSLTEQAQKVSAPVTGSAEQKTGIPTLTSA---SHSHREKPNL    1367
Canis_lupus_familiaris SYSLGEKCNIVQPETLPDSSLTEEAVRVSAVPGPVDQKTGIPTGLPG---SYSLGEKHSI    1510
Pavo_muticus          FLACE-----KQGLREEE-LSPIVPSTSD-GAPKQVVTIN-----TESPPS         462
Pavo_cristatus       FLACE-----KQGLREEE-LSPIVPSTSD-GAPKQVVTIN-----TESPPS         462
Gallus_gallus         FLDREA-----KQGVREEE-LSPIVPSSSD-SAPKQLAVIN-----VESP-S         463
Chelonia_mydas        ILDEQOK-----QLFSKMSGKREEEPLSAMSKTSVKNSISDQPVITAS-----VESGGT    493
Rhinatrema_bivittatum QFSSSSKDELVKHVGSEILHRHQEKEASDSTRNSVSQISFQPAIVS-----ADSTEQ      481
.....1570.....1580.....1590.....1600.....1610.....1620

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Mus_musculus	FHQLS	TLSDSLLTETWVSVIPGLNQKTPLPSEFSLSYSHRGKN-----LP	560
Rattus_norvegicus	FYQQ	-TLSDSLLTAEITLPSVIPESGDKTHLLSGFSLSYSHRGD-----LP	973
Homo_sapiens	FYQQ	-TLPNSHLTEALKVSIIVPGPDQKTGIPSAPSSFYSHREKPIIFSQOTLPDFLFP	928
Pan_troglodytes	FYQQ	-TLPNSHLTEALKVSVVPGPDQKTGIPSAPSSFYSHREKPIIFSQOTLPDFLFP	927
Macaca_mulatta	FYQQ	-TLPNSHLTEALKVSVVPGPDQKTGIPSAPSSFYSHREKPVIFSQOTLPDFLFP	954
Callithrix_jacchus	FYQQ	-TLPNSHLTEALKVSIIVPGDDQKTGLPSTPSSFYQTPTPIIFSQHTLPDILFP	1009
Bos_taurus	VYQQ	-ELPESHLIQEVEQVSAAPGLAEQKTGIPTVPSTSFSHREKPSIVYOQELSDSQLI	1452
Equus_caballus	IYQQ	-ELPDShLTEAQKVSVFVPGFAEQKPGTPIVTSTPYLHGEEKPHIFYOQTLPNLLT	1421
Felis_catus	FCQQ	-ELPDSLSLTEAQKVSVPVGPAAEQKTGIPTLSTSYSLGKEKPSLFYQELPDNPLT	1426
Canis_lupus_familiaris	FHPE	-ILPDNLHTEEA VRVLTVPGPPDQKIDRPTGHGPGSYSPREKHNIFFPQTLPESPRT	1569
Pavo_muticus	CSES	-ARVEAEPGVGKAELTIISD-VSIERGHKVIDISP SLNFIVDDGSFFRHFSHPsiQS	520
Pavo_cristatus	CSES	-ARVEAEPGVGKAELTIISD-VSIERGHKVIDISP SLNFIVDDGSFFRHFSHPsiQS	520
Gallus_gallus	CTEN	-AQVEVQPQVRKAELTIISD-VSIERGHKVIDISP SLNFTVDDGSFFRHFSHPsiQS	521
Chelonia_mydas	CSEKNT	VVEIPSGVNRSLETLSD-FTIETGHKNTGISPLFNLPVDDGSFFGHLAQPIQS	552
Rhinatrema_bivittatum	VIKKKS	AIEVQPGDIRAELTASSCSIERGHKYTDISSVNPMPMDSTFCVRLVGPIQS	541
	.....1630.....1640.....1650.....1660.....1670.....1680		

Species	Sequence	Position
Mus_musculus	EDVVKVSTDSGSAHK-----	575
Rattus_norvegicus	EDVVKVSTDSGSVDK-----	988
Homo_sapiens	EEALKVSAVSVLAAC-----	943
Pan_troglodytes	EEALKVSAVSVLAAC-----	942
Macaca_mulatta	EEALKVSAVSVLAAC-----	969
Callithrix_jacchus	EEALKVSAVSVLAAC-----	1024
Bos_taurus	EQSQKVSVPPGLAEQ-----	1467
Equus_caballus	EQAQKVSAVPGFAEQ-----	1436
Felis_catus	EQAQKVLAIAPGPDONTGISIGSSRPYSLGEQPNIFSQQVLPDShLTETILKASSAPRPG	1486
Canis_lupus_familiaris	EEALRVSAVPGPVDQ-----	1584
Pavo_muticus	TPGILLNKNVKTELG-----	535
Pavo_cristatus	TPGILLNKNVKTELG-----	535
Gallus_gallus	TPGIILL-KNVKTDPG-----	535
Chelonia_mydas	TPGIFVSRSEKQEVPGK-----	569
Rhinatrema_bivittatum	TPGIFMNSTKEEVLGK-----	558

Species	Sequence	Position
Mus_musculus	--KADILTASRRTYQHKMKP-----	593
Rattus_norvegicus	--KADIPTVSSSTYQHKTKP-----	1006
Homo_sapiens	--KTGTPTVSSNSHSHSEKS-----	961
Pan_troglodytes	--KTGTPTVSSNSHSHSEKS-----	960
Macaca_mulatta	--KTGTPTVSSNSHSHNEKS-----	987
Callithrix_jacchus	--KTGTPTVSSNSPSHREKS-----	1042
Bos_taurus	--KTGIPTVPSTSYSHREKS-----	1485
Equus_caballus	--KPGTPTVTSTSYSHGEKP-----	1454
Felis_catus	DAKTGVPTVPSSSYSPREKSGIFYQQVLPGCHLSEALKVSVATVPARIKSGPLPSEASNF	1546
Canis_lupus_familiaris	--KTGRPTVLPGSYSPGEKHHILHPETLPDSHLTEESLKISTVVPVPTDORTEKIIVPSAS	1642
Pavo_muticus	--AHVSKSGVQASPLCLNENS-----	554
Pavo_cristatus	--AHVSKSGVQASPLCLNENS-----	554
Gallus_gallus	--AHVKSVDVHAPPLCLNEDN-----	554
Chelonia_mydas	--PLPIKSNLQASLTCLNEET-----	588
Rhinatrema_bivittatum	--LSTIKSSIQASHLSLSEEH-----	577

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Species	Sequence	Position
Mus_musculus	-----ANIHQQLPDSRVPIGTRKVFESGPAGQKSG-----VSHPYGEMPSVIFYQ	639
Rattus_norvegicus	-----GIIFYQEFPDSDHVPIGTRKVVSQSGAAG-----	1034
Homo_sapiens	-----SVFYQQQLPDSLDLPRESLKMSAIPGLTDQKIVPTIPTVPSGSFSHREKPSIFYQ	1014
Pan_troglodytes	-----SVFYQQQLPDSLDLPRESLKMSAIPGLTDQKIVPTIPTVPSGSFSHREKPSIFYQ	1013
Macaca_mulatta	-----SIFYQQQLPDSLDLPRESLKMSAIPGLTDQKIVPTIPTVPSGSFSHREKPSIFYQ	1040
Callithrix_jacchus	-----SIFYQQQLPNSDLHRESLKMS TIPGLTDQKITG-IPTVPSGFFSLGEKPSIFSQ	1094
Bos_taurus	-----SIFYQQQLPDSHLTQEVQQVSTAAGPLEQKITG-IPTVPSITSYSHREKPHIFYQ	1537
Equus_caballus	-----SIY-QQQLPNSHLTECAQKVSFVPGFAEQKPG-TPTVTSTPYLHGKPHIFYQ	1505
Felis_catus	YTEREKTSIFYQQQLPDSHLTEQLRKLSVPVGPADQKITG-IPTLTSTSYSLGEKPSLFYQ	1605
Canis_lupus_familiaris	LSQREKHVIFSQQQLSDGDLTAQVLKASVAPGPADQKITG-LPTLSSSSSYSLGEKHCICYQ	1701
Pavo_muticus	-----SGNSSTNTPAS-VEKQRS LQRAQKENS K-----	581
Pavo_cristatus	-----SGNSSTNTPAS-VEKQRS LQRAQKENS K-----	581
Gallus_gallus	-----SGNSLSSTPTS-GEKQRS LQCAQKENNK-----	581
Chelonia_mydas	-----SRNSSTNTLVSSAEKHAFQSQQFINSE-----	616
Rhinatrema_bivittatum	-----SSRSSESLTAPAFQRMQSDQSGHEANFE-----	605

Mus_musculus	QGLPDRHS AKSPTKTFI-PGPADQKITDLSPVPPTS SSHA E-KPVSPYQLTLPGSHLPEDV	697
Rattus_norvegicus	-----QKITDLSAVPSTSSSQAE-KPVPPSLLTLLGSHLPEDV	1070
Homo_sapiens	QEWPD SYATEKALKVSTGPGPADQKTEIPAVQSSSY PQRE-KPSVLYPQVLSDSHLPEES	1073
Pan_troglodytes	QELPD SYATEKALKVSTGPGPADQKTEIPAVQSSSY PQREEKPSVLYPQVLSDSHLPEES	1073
Macaca_mulatta	QELPD SHPTEKAVKVSTGPGPADQKTEIPTIQSSSY PQRE-KPSVFYPQVLSDSHLPEES	1099
Callithrix_jacchus	QELPD SHPTEKALKVSTGPVPADQKTKIPAVRNSYSQRE-KPSVLYPQVLDPDShlPEEG	1153
Bos_taurus	QELPESH L TEQAHKVSSVPGLAEQKTIGISTVASTSYSHRE-KPSILYQQELPDihviHEV	1596
Equus_caballus	QTLPD SHLTEQAQKVS AIPGRITDNTGIQTAPSSSYSHLE-APIIFYQQELPDShlTEKV	1564
Felis_catus	QELPDSSLTEQAQKVLAIPGDDQNTGISIGSSRPYLGE-QPNFISQQVLPDShlTEET	1664
Canis_lupus_familiaris	QALLDSHLIEQAQKVA VPRPADQKITRIPLASSTSYLQGE-RPHIFCQOTLPESDLTEQA	1760
Pavo_muticus	-----HFDSLKLKYPHTGRIQS LPSLNFM EKVG TWNMSOP-	616
Pavo_cristatus	-----HFDSLKLKYPHTGRIQS LPSLNFM EKVG TWNMSOP-	616
Gallus_gallus	-----HFDSLKLKYPHTGRIQS LPSLYFM EKVD TWNMSOP-	616
Chelonia_mydas	-----SCESLRIVY PRTGRIQS LPTLFNM EKVGAWN NPM	652
Rhinatrema_bivittatum	-----SSESLRGSSP-TGRIGSLPTLSY IEKIGAWN MNRSS	640
	.....1870.....1880.....1890.....1900.....1910.....1920	

Mus_musculus	FKASVVCSSDELSGITALTSASYSYKGRP-----	727
Rattus_norvegicus	FKASYVCKSSSEEPSGITALTSVSYSYKGRP-----	1100
Homo_sapiens	LKVSAFFPGPADQMTDTPAVPSTFYSQREKP-----	1103
Pan_troglodytes	LKVSAFFPGPADQMTDTPAVPSTFYSQREKP-----	1103
Macaca_mulatta	LKVSAFFPGPADQTIDTPAVPSTFYSQREKP-----	1129
Callithrix_jacchus	LKVSAFFPGPADQTIDTPAAPSTFYSQREKP-----	1183
Bos_taurus	PEVSVSPGLAEQKARIPVIPSTIFYSHREKP-----	1626
Equus_caballus	QKVSAFFPGPADQNTGIPTGSSRSYSFGEKP-----	1594
Felis_catus	LKASSAPRPGDAKTGVPTVPSSSYSPREKSGIFYQQVLPGCHLSEALKVSVATVPAAIK-----	1724
Canis_lupus_familiaris	LKYS-APGSAAEQKITGIPTLTSTYSYHREKSSISNQQLPDSPLAEQAPKVPVAVPGPAEKK-----	1819
Pavo_muticus	ENVSDALPSCDQGVISHRKAYS SAVASSAS-----	646
Pavo_cristatus	ENVSDALPSCDQGVISHRKAYS SAVASSAS-----	646
Gallus_gallus	ENMS-DALASRDQSVISHRKAYSV VARSAN-----	646
Chelonia_mydas	EKIP-DTLALCGLSGVSPRKKAYSATADSLN-----	682
Rhinatrema_bivittatum	EKISFDTLALHGLTGLSPKKKAYS AVADSLN-----	671
1930.....1940.....1950.....1960.....1970.....1980	

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Mus_musculus      -----NSSYQOKFPD.SHLN.EEAQKILGTTGTVDQKTVTPIMSSS--FL      768
Rattus_norvegicus -----NISHQEKFPDSYLIEEAQKILGSTVTVDQKTVT-----      1133
Homo_sapiens      -----GIFYQOTLPESHLPKEALKISVAPGLADQKTGTPTVTSTSYSQ      1146
Pan_troglodytes   -----GIFYQOTLPESHLPKEALKISVAPGLADQKTGTPTVTSTSYSQ      1146
Macaca_mulatta    -----GIFYQOTLPESHLPKEALKISVAPGPADQKTGTPTVTSTSYSQ      1172
Callithrix_jacchus -----GIFYQOTLPD.SHLPKEALN.ILVAPRPADLKAGTPIPTSTYFSQ      1226
Bos_taurus        -----SILYQQELPD.SHL.TEQVQKASAAPGPAEQKTGIPITTSASYSY      1669
Equus_caballus     -----NILYQQKLPD.SL.LTEQAQKVS.AVPGDAEQKTGTPTLTSTPYLH      1637
Felis_catus       SGLPSEASN.FYTEREKT.SIFYQQELPD.SHL.TEQAQKVSPVTGPAEQKTGIPILTSASHSH      1784
Canis_lupus_familiaris SGLSEASN.FSSRREKHS.IFYQQEFLGSS.LIEPAQKVSPVPGPTDQKPEIPTVTST-YSH      1878
Pavo_muticus      -----NILSMQNS.SR-NPKDYVAAPS.GEAHSLENIHFHNKIS      682
Pavo_cristatus    -----NILSMQNS.SR-NPKDYVAAPS.GEAHSLENIHFHNKIS      682
Gallus_gallus     -----NILSMQNS.SR-NPEVHVAAPS.GETHSLENIHFHDKIS      682
Chelonia_mydas    -----CILSKQS.SSGNLKSGLAAPFGGTGSM.TLHS.CDKKS      719
Rhinatrema_bivittatum -----RMLSKHISYS-NPKKVLAATFVGAS.SLTGLHSE.DQRP      707
.....1990.....2000.....2010.....2020.....2030.....2040

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Mus_musculus      QKEKPSIFYQOTLPDGG.LS.EEDLQVS.AVPWPADONIAIPTVTSAAFSQREKPRIFYQOTL      828
Rattus_norvegicus AKEKPSVFYQQALPEGGLSAEDLQV-----DONIAIPMVTSAFSQREKPPQVFYQ.EAL      1186
Homo_sapiens      HREKPSIFHQQALPGTHIPEEAQKVS.AVTGPNGKTWIPRVLSTFY.SQREKPGIFYQOTL      1206
Pan_troglodytes   HREKPSIFHQQALPGTHIPEEAQKVS.AVTGPNGKTWIPRVLSTFY.SQREKPGIFYQOTL      1206
Macaca_mulatta    YREKPSIFHQQALPGTHIPEEAQKVS.AVTGLDQKTWIPGV.LSTFY.SQREKPGIFYQOTL      1232
Callithrix_jacchus HREKPSIFHQQALPGTYVPEEARNASAITGPGDQKTWIPRVLSTFY.SQTEKPGIFYQ.KT.L      1286
Bos_taurus        RE-KPIIFYQODLPD.SHL.TEQAQKVPTVSGLAHQKSGIPIVPPAFYSHGGKTS.SLFYQ.QEL      1728
Equus_caballus     GE-KPHIFYQQTAPDSRLTEQAQKVSTFGFAEQKTGIPTVASPSYPHGKPHIFYQOTL      1696
Felis_catus       RE-KPNLFCQQELPD.SSLTEQAQKVSPVPGPAEQKTGIP.TLTSTSYSLGEKPSLFYQ.QEL      1843
Canis_lupus_familiaris VE-KPFIIFYPQGLPD.SPLPEEALKVTA.VSEPTDQQTGTPVVPSSSYSPGEKPIIFYPQGL      1937
Pavo_muticus      ERVHLLPRS.QSDNSVN.VASKNNFQTD.AVQPVN-TEAMQPLE-----GKSHVSGVPENR--      734
Pavo_cristatus    ERVHLLPRS.QSDNSVN.VASKNNFQTD.AVQPVN-TEAMQPLE-----GKSHVSGVPENR--      734
Gallus_gallus     ERVHPLTRS.QSDNSVH.VASKNNSQID.VVQPVN-REAMQPLE-----GKSNVSGVPENR--      734
Chelonia_mydas    ADASPLLR.SQSDNSVH.VISREASQIEVVQATN.DEVVQ.PT.E-----DKSRVSGMPEIRES      774
Rhinatrema_bivittatum MCTLPLTRS.QSDNIVN.VSKDNLQAEDLQAKILKET.AQALKEDD-INKSSNTGMLDGKEK      766
.....2050.....2060.....2070.....2080.....2090.....2100

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Mus_musculus      SVDRLPGEPLNVLTSGPPDQNTGAPT.VT.TPSSYFPGEESIFYQAGFP.GN.ILSAMSFKVP      888
Rattus_norvegicus SGGHLPGEPP-----GPPDQNT.EAPT.IS.SSYFPGEESIFYQAGFP.GN.ILSVVPFKVS      1240
Homo_sapiens      PGSHIPEEAQKVSPVLGPADQKTGTPT.TSASYSHTEKPGIFYQ.QVLPDNHPT.EEALKIS      1266
Pan_troglodytes   PGSHIPEEAQKVSPVLGPADQKTGTPT.TSASYSHTEKPGIFYQ.QVLPDNHPT.EEALKIS      1266
Macaca_mulatta    PGSHIPEEAQKGVTPGPADQKTGTPT.TSASYSHTEKPGIFYQ.QVLPDNHPT.EEALKIS      1292
Callithrix_jacchus PGSHIPEETQKVS.AVPGQADQ-TGTPT.TSASYSHTEKPGIFYQ.QVLPD.SHPAEEALKIS      1345
Bos_taurus        PDSHLSDQTQKISAIPGVDQNTGIQTAPSSSYREKPIAFYQ.QELPGRLLTE.EV.LKVS      1788
Equus_caballus     PDSHLTEQAQKVS.AVPGFAEQKTILPTGSSRAYSFGEKPHILYHQA.LPD.SL.LTEEALKVS      1756
Felis_catus       PDNPLTEQAQKVLAIPGDDQNTGISIGSSRPYSLGEQPSIFSQQVLPD.SHL.TEETLKAS      1903
Canis_lupus_familiaris TDVYLTK.EALKVSAISGSADWKTGIPTVSS.TSY.SNREKPIIFYPQGLTDSQLPQ.EALNVS      1997
Pavo_muticus      ---LGGSLIHRLTTEIASGSVDEGAE---SGSMGQSSYPDAFISNERVAHLVKEDGNSPT      788
Pavo_cristatus    ---LGGSLIHRLTTEIASGSVDEGAE---SGSMGQSSYPDAFISNERVAHLVKEDGNSPT      788
Gallus_gallus     ---LGGSLIHKL.TTEIASLSVDKGAE---GSSVGQSSYPNASIPSERVAHLIKEDGNSPT      788
Chelonia_mydas    GAQLGDSTTPQFTAVLV.TESSGGGDDDDNNSIGQNSDQNVFISSERVAQLLREEECYPS      834
Rhinatrema_bivittatum HANLTKSREKH.IKASLDTKGSMHDYD---FKGSNK.LEENMNSNEKVPKLVKENACDRL      823
.....2110.....2120.....2130.....2140.....2150.....2160

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Mus_musculus      RISGSTEQ-TNVTTGSSSSYSV----- 909
Rattus_norvegicus RISELAEQKTINITTGPSGSYSV----- 1262
Homo_sapiens      VASEPVDQTTGTPTAVTSTSYSQYREKPSIFYQQSLPSSHLTEEAKNVS AVPGPADQKTVI 1326
Pan_troglodytes   VASEPVDQTTGTPTAVTSTSYSQYREKPSIFYQQSLPSSHLTEEAKNVS AVPGPADQKTVI 1326
Macaca_mulatta    VAYEPVDQTTGTPTATSTSYSQHREKPSIFYQQSLPSSHLTEEARKVSVVPGPADQKTGI 1352
Callithrix_jacchus VAPEPVEQITGTPTVTSTPSYLQHREKPRIFYQPLLPSSPLTEEAKNISVVPGQADQKTEI 1405
Bos_taurus        ALPRTTDQNTGIITGSSQSYLF-GEKP----- 1814
Equus_caballus    SVPRASDQKTGVVIVPSSSYSP-REKPSIFYQQALPGSYLPEEALKVSVAPGPTTEKKSGL 1815
Felis_catus       SAPRPGDAKTGVPTVPSNSYSP-REKSGIFYQQVLPGLCHLSEEALKVSVATVPAEIKSGL 1962
Canis_lupus_familiaris AIPGPADQKTGLPSEPSSSYSL-REKPIIFYPODLTNSQVPAALKVSAIPGPADQKTGL 2056
Pavo_muticus      DDQKKCDGLEDQRLPHH----- 805
Pavo_cristatus    DDQKKCDGLEDQRLPHH----- 805
Gallus_gallus     DDQKRCDGLENPRLPHN----- 805
Chelonia_mydas    DGQEKHNGLENNTRQSHG----- 852
Rhinatrema_bivittatum EKFSIPKQPPDAICSTS----- 840
.....2170.....2180.....2190.....2200.....2210.....2220

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Mus_musculus      -----GEKSIIFYHQALPDGRLPQEAS-----PAPADLNTGEPPMYLASCS----- 950
Rattus_norvegicus -----GEKSIIFYHQALPDGHLKSKEAS-----PAPADLKTGEPPVYSASCS----- 1303
Homo_sapiens      PILPSTFYSHTEKPGVFYQQVLPDHPTEEALKISVASEPVDQTTGTPTVTSTSYSQHTE 1386
Pan_troglodytes   PILPSTFYSHTEKSGVFYQQVLPDHPTEEALKISVAPEPVDQTTGTPTVTSTSYSQHRE 1386
Macaca_mulatta    PTLPSTFYSYTEKPGVFYQQVLPDHPTEEALKISVAYEPVDQTTGTPTATSTSYSQHRE 1412
Callithrix_jacchus PTLPSTFYSHTEKPGIFYQQVLPDHPTEEALKISVAPGPVDQTTGTPTVTSTSPSN----- 1460
Bos_taurus        -----SGLFYQHVLDPDGLTEEALKVSPASRPDQKTGVLLLPASSYSHREK 1861
Equus_caballus    PSEASSFYYSQREKSNIFYQQELPDHSLTEQVQKVS SVSGPADQRTGIPVTSTSPSYSHREK 1875
Felis_catus       PSEASSFYTEREKTSIFYQQELPDHSLTEQAQKLSLVPGPADQKTEISTVTSTASYSHIEK 2022
Canis_lupus_familiaris PLEDSSSYSPREKPIIFYPOGLTDSQLPQAALKLSAIPGPADQKTRLSEPSSSYSFREK 2116
Pavo_muticus      -----LDIGHVSMDSFGDVPHDS-LNLPARPGESSRGALGSPGCS SVLTRHFFT----- 853
Pavo_cristatus    -----LDIGHVSMDSFGDVPHDS-LNLPARPGESSRGALGSPGCS SVLTRHFFT----- 853
Gallus_gallus     -----LDIGHVSVDNVDISPDS-LNLPA CSGESSHGALGSP-----VITRHFFT----- 849
Chelonia_mydas    -----PELSTTQIGMDHFNDISPDS-LNLVASSQASSHVYLTSASSSSVVARDFCT----- 902
Rhinatrema_bivittatum -----KISLDQFSDVSDIDAVNMLYNSQSNHVEQIVIGSTGVVSDHSLT----- 885
.....2230.....2240.....2250.....2260.....2270.....2280

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Mus_musculus      ----- 950
Rattus_norvegicus ----- 1303
Homo_sapiens      KP----- 1388
Pan_troglodytes   KP----- 1388
Macaca_mulatta    KPSIFYQQLLPSSHLTEEARKVSVVPGPADQKTGTPTSTSTFYSHTEKPGVFYQQVLPDN 1472
Callithrix_jacchus ----- 1460
Bos_taurus        PG----- 1863
Equus_caballus    PF----- 1877
Felis_catus       PF----- 2024
Canis_lupus_familiaris PI----- 2118
Pavo_muticus      ----- 853
Pavo_cristatus    ----- 853
Gallus_gallus     ----- 849
Chelonia_mydas    ----- 902
Rhinatrema_bivittatum ----- 885
.....2290.....2300.....2310.....2320.....2330.....2340

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Species	Sequence	Position
Mus_musculus	-----	950
Rattus_norvegicus	-----	1303
Homo_sapiens	-----SIFYQQLSLPGSHLTEEAKNVSAV	1411
Pan_troglodytes	-----SIFYQQLSLPGSHLTEEAKNVSAV	1411
Macaca_mulatta	HPTEEALNISVAYEPVDQTGTPTATSTSYSHREKPSIFIFYQQLSLPSSHLTEEAKNVSAV	1532
Callithrix_jacchus	-----	1460
Bos_taurus	-----IFYPQALPSSHLSEETLKDSAV	1885
Equus_caballus	-----IFYPQGLPDSHLPEEALKVTAV	1899
Felis_catus	-----IFYPQDLPDSHLSQESLKVTAV	2046
Canis_lupus_familiaris	-----IFYPQGLTDSQLPQEAALNVSAI	2140
Pavo_muticus	-----	853
Pavo_cristatus	-----	853
Gallus_gallus	-----	849
Chelonia_mydas	-----	902
Rhinatrema_bivittatum	-----	885

.....2350.....2360.....2370.....2380.....2390.....2400

Species	Sequence	Position
Mus_musculus	-----	950
Rattus_norvegicus	-----	1303
Homo_sapiens	PGPGDRKTGIPITLPSTFYSHTEKPGSFYQQVLPHSHLP EEAEVSVAPG	1460
Pan_troglodytes	PGPADQKTGIPITLPSTFYSHTEKPGSFYQQVLPHSHLP EEAEVSVAPG	1460
Macaca_mulatta	PGPADQKTGIPITLPSTFYSHTEKPGVFYQQVLPHSHLP EEALKVSVAPG	1581
Callithrix_jacchus	-----SFG EKPIVIYKQAFPDGHLPEESLKVSVAPG	1491
Bos_taurus	LGPADQKTGT-----	1895
Equus_caballus	SRPADQKPGIPTVPSPSYSHREKHVFFSPQALPDSHFLEEALKISAVS	1947
Felis_catus	SEPVDKKTGIPVVPSTSYSQREKPIIFYPQAIPTDIHLTEEALKVSAISGSADWKTGIPTV	2106
Canis_lupus_familiaris	PEPADQKTETLPSEPSTSYSPREKPSIFYPQDLTDSQLPQEP LNISAIPG	2189
Pavo_muticus	-----	853
Pavo_cristatus	-----	853
Gallus_gallus	-----	849
Chelonia_mydas	-----	902
Rhinatrema_bivittatum	-----	885

Species	Length
Mus_musculus	950
Rattus_norvegicus	1303
Homo_sapiens	1460
Pan_troglodytes	1460
Macaca_mulatta	1581
Callithrix_jacchus	1491
Bos_taurus	1895
Equus_caballus	1947
Felis_catus	2166
Canis_lupus_familiaris	2213
Pavo_muticus	853
Pavo_cristatus	853
Gallus_gallus	849
Chelonia_mydas	902
Rhinatrema_bivittatum	885

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Mus_musculus	-----	950
Rattus_norvegicus	-----	1303
Homo_sapiens	-----	1460
Pan_troglodytes	-----	1460
Macaca_mulatta	-----	1581
Callithrix_jacchus	-----	1491
Bos_taurus	-----	1895
Equus_caballus	-----	1947
Felis_catus	FYPQGLTDSQVPOETLEVSAPVGPAAQKTGLPSEPSSCDSHKEKPIIFCLOGLTDSQVPO	2226
Canis_lupus_familiaris	FYSQGLIDGOVPOVALKVSATP-----	2235
Pavo_muticus	-----	853
Pavo_cristatus	-----	853
Gallus_gallus	-----	849
Chelonia_mydas	-----	902
Rhinatrema_bivittatum	-----	885
	.....2530.....2540.....2550.....2560.....2570.....2580	

Mus_musculus	-----	950
Rattus_norvegicus	-----	1303
Homo_sapiens	-----PVDQTIGTPTVTSPSSS	1477
Pan_troglodytes	-----PVDQTIGTPTVTSPSSS	1477
Macaca_mulatta	-----PVDQTIGTPTVTSPSSS	1598
Callithrix_jacchus	-----PVDQTTGTPTVTSPSNS	1508
Bos_taurus	-----	1895
Equus_caballus	-----GPPDQKTGLPSELSSSYS	1965
Felis_catus	EALKVSTVPGRADQKTGLPSELSSSYSHREKPLSSTHKSAVRGPADQKTGLPSESSSPYS	2286
Canis_lupus_familiaris	-----GLADQKTGLPSEPSSSYS	2253
Pavo_muticus	-----	853
Pavo_cristatus	-----	853
Gallus_gallus	-----	849
Chelonia_mydas	-----	902
Rhinatrema_bivittatum	-----	885
	.....2590.....2600.....2610.....2620.....2630.....2640	

Mus_musculus	-----VGVKPIIFYQQP	962
Rattus_norvegicus	-----VEVKPIIFYQQP	1315
Homo_sapiens	FGEKPIVIYKQAFPEGHLPEESLKVSAPGPVGQTTGAPTITSPSYSQHRAKSGSFYQLA	1537
Pan_troglodytes	FGEKPIVIYKQAFPDGHLPEESLKVSAPGPVGQTTGAPTITSPSYSQHRAKSGSFYQLA	1537
Macaca_mulatta	FGEKPIVIYKQAFPDGHLPEESLKVSAPGPVDQTTGSPITVTSPSYSQHRAKPGSFYQPA	1658
Callithrix_jacchus	FGEKPIVIYKQAFPDGHLPEESLKVSAPGPVDQTTGTPTVTSPFYSQRRVKPSSFYQLP	1568
Bos_taurus	-----SEPSGSYS-HREKSSIFYQQE	1915
Equus_caballus	NIGKPIIFYPODLTDSHIPEEALKVSAVPGPADQKTRLPSEPSSSYS-HREKSSIFYQQE	2024
Felis_catus	HREKPIIFYSQGLTGSQVPLEALKASAVPGPADQKTGLPSEPSSSYS-HREKPIIFYPOD	2345
Canis_lupus_familiaris	PREKPIIFYPOGLTDSQLPQEALKVSAIPGPGDQKTGLPSEPSSSY-----KPSIFYPOD	2308
Pavo_muticus	-----	853
Pavo_cristatus	-----	853
Gallus_gallus	-----	849
Chelonia_mydas	-----	902
Rhinatrema_bivittatum	-----	885
2650.....2660.....2670.....2680.....2690.....2700	

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Mus_musculus	MSDSQR-----TKGHKE	974
Rattus_norvegicus	LSDSPL-----TKGHNV	1327
Homo_sapiens	LLGSQIPPEEALRVSSAPGPADQTTGIPTITSTSYSFGEKPIVNYKQAFPDGHLPEEALKV	1597
Pan_troglodytes	LLGSQIPPEEALRVSSAPGPADQTTGIPTITSTSYSFGEKPIVNYKQAFPDGHLPEEALKV	1597
Macaca_mulatta	LLGSQIPPEEALRVSSAPGPADQTTGIPTITSTSYSLGEKPIIIVKQAFADGHLPEEALKV	1718
Callithrix_jacchus	LLDSQIPPEEALRVSSASGPADHTTGIPITITSPSYSFGEKPIVIHKQAFPDGPIPEEALKV	1628
Bos_taurus	L-----PDSHITGEALKI	1928
Equus_caballus	PDS-HLTEEALTVSAPVGPADQKTRLPSEPSSSYSHREKSSIFYQQ-EPDSHLTEEALT	2082
Felis_catus	LTDSQVPEEALKVSAVRGPADQKTGLPSEHSSSYSHREKPIIFSSQGLTDSQIPPEEALKV	2405
Canis_lupus_familiaris	LTDSQVPEEALKVSAVRGPADQKTGLPSEHSSSYSPREKPIIFYSQGLIDQVPOVALKV	2368
Pavo_muticus	-----SA	855
Pavo_cristatus	-----SA	855
Gallus_gallus	-----SA	851
Chelonia_mydas	-----SL	904
Rhinatrema_bivittatum	-----SL	887
	.....2710.....2720.....2730.....2740.....2750.....2760	

Mus_musculus	SDVPGPTDQKTGIATVHSTSQSYIGRRRTVSQKEFP-----	1010
Rattus_norvegicus	SVVPGPTDQKTGIPAVPSTSQSYIERRSVSYQKEFP-----	1363
Homo_sapiens	SIVSGPTEKKTIDIPAGPLGSSALGEKPIITFYRQALLDSPLNKEVVKVSAAPGPADQKTET	1657
Pan_troglodytes	SIVSGPTEKKTIDIPAGPLGSSALGEKPIITFYRQALLDSPLNKEVVKVSAAPGPADQKTET	1657
Macaca_mulatta	SIVSGPTEKKTIEIPTGPLGSSALGEKPIITFYRQALLDSPLNKEVVKVSAAPGPVADQKTET	1778
Callithrix_jacchus	SVVSGLIEQKTEIPTGPLASSALGEKPIITFYRQALLDSPLNEEVVKVSAATPGPGDQKTET	1688
Bos_taurus	SGVSGTGDQKTGIPIVTSPPSYSQREKPIVIFYQQ-----	1961
Equus_caballus	SAVPGPADQKTRLPSEPSSSYSHREKSSIFYQQEPD-SHLTEEALTVSAPVGPADQKTRL	2141
Felis_catus	SAVRGPADQKTGLPSESSSPYSHREKPIIFYSQGLTGSQVPLEALKASAVPGPADQKTGL	2465
Canis_lupus_familiaris	SATPGLADQKTGLPSEPSSSYSPREKPIIFYPQGLTDSHLPQKALKVSAAILGPGDQKTGL	2428
Pavo_muticus	EDDNFISVGATTVLETPEKEELNIEERIPVYLRNLG-----	891
Pavo_cristatus	EDDNFISVGATTVLETPEKEELNIEERIPVYLRNLG-----	891
Gallus_gallus	GDDNFIPSSSTATVLETPEKEELNIEERIPVYLRNLG-----	887
Chelonia_mydas	EGDNVIFPLAP-TLKTDPKKDINIEERIPVYLRNLG-----	939
Rhinatrema_bivittatum	EIDNVVPYWSP-TIKTPDKKELNIEERIPVYLRNLG-----	922
	.....2770.....2780.....2790.....2800.....2810.....2820	

Mus_musculus	-----DLSEKALKVLGDVSGTEQKTQIP-VVSSALLHKEG	1044
Rattus_norvegicus	-----NVSEKALKVLGGVRSTEQKTEIP-VVSSALLHTEV	1397
Homo_sapiens	LPVHSTSYSNRGKPVIFYQQTLSDSLPEEALKVPPVPGPDAQKTETPSVSSSLYSYREK	1717
Pan_troglodytes	LLVHSTTYSNRGKPVIFYQQTLSDSLPEEALKVPPVPGPDAQKTETPSVSSSLYSYREK	1717
Macaca_mulatta	IPVYSTPYSNRGKAFIFYQQTLSDSLPEEALKVPPVPGPDAQKTETPSVSSSLYSYSHREK	1838
Callithrix_jacchus	PPVYSITYSHRGKPVIFYEQTLSDSLSEALKVPPVPRPDAQKTGTTPSVSSSLYSYSHREK	1748
Bos_taurus	-----VLPDTHLTKEALNVSNAPAQADQKTGIPVITSPSFSYNEK	2001
Equus_caballus	PSEPSSSYSHREKSSIFY-QQEPDSLTEEALTVSAPVGPADQKTRLPSEPSSSYSHREK	2200
Felis_catus	PSEPSSSYSHREKPIIFYPQDLTDSQVPEEALKVSAVRGPADQKTGLPSEPSSSYSLGGK	2525
Canis_lupus_familiaris	LSEPSSSYSHREKSNIFYAQEFPGSHLTEEALKVSAFSGIGDQKTGIPVLSSSSYSLRGK	2488
Pavo_muticus	-----IDSPGTILTTPFVPRGPPIREVEFSFSDLRITLKDS	925
Pavo_cristatus	-----IDSPGTILTTPFVPRGPPIREVEFSFSDLRITLKDS	925
Gallus_gallus	-----IDSPGTILTTPFVPRGPPIREVEFSFSDLRITLKDS	921
Chelonia_mydas	-----IDSPSAILTTPFVPRGPPIREVEFSFSELRLTKES	973
Rhinatrema_bivittatum	-----IDSPSTILTTPFVPRGTIKELEFSFSEHRLTKGS	956
2830.....2840.....2850.....2860.....2870.....2880	

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:
Mus_musculus      PSAYQEDLPD--LTEEPLQILG-----VSEEVSS-----SYQRKLPDH- 1081
Rattus_norvegicus PTISSQEDLPN--LTEEALQILG-----VAEEVPSVP--SRDKTRLISYQKKLPDG- 1444
Homo_sapiens      PIVFYQQALPDSELTQEALKVSAVPPADQKTGLSTVTSSFYSHTEKPNISYQQELPDSH 1777
Pan_troglodytes   PIVFYQQALPDSELTQEALKVSAVPPADQKTGLSTVTSSFYSLTEKPNIPYQQELPDSH 1777
Macaca_mulatta    PVVIFYQQALPDSELTQEALKVSAVPPADQKTGLSTVTSSFYSHTEKPNISYQQELPDGH 1898
Callithrix_jacchus PIVFYQQALRDSQLTKEALKVSAVPPADQKTGLSTVTSSFYSHTEKPNISY--QELPDSH 1806
Bos_taurus        PIIFYQQ-----ALPDSQ 2014
Equus_caballus    SSIFYQQEP--DSHLTEEALTVSAVPGPADQKTRLPSEPSSSYSHREK--SSIFYQQEPDSH 2258
Felis_catus       PVIFYQQALSDRHLTEEAVNISASPGPADQETRVSTVPSISYSHIEKPNVLYQQPLSDSQ 2585
Canis_lupus_familiaris PIIFYQQALSDRHLTDEALNVSASSGPADQETGIPTVSSVSYSHERPSILYQQPFSDNQ 2548
Pavo_muticus      TDTLTRTIQ-----QPQGLL 941
Pavo_cristatus    TDTLTRTIQ-----QPQGLL 941
Gallus_gallus     TDTLTRTIQ-----QPQGLL 937
Chelonia_mydas    TDTLTKHVQ-----LSEG--SL 988
Rhinatrema_bivittatum RDTLTKSVS-----QFEGDSQ 972
.....2890.....2900.....2910.....2920.....2930.....2940

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* *
Mus_musculus      --IEVFLKSVGSGSADRKTGAQIVSSSR-EKSSG----FHQQELP-NTGGDAVDAFHP- 1131
Rattus_norvegicus --TEVSLKSVGFGSTDQKTGAHIVSSSRREKSSG----FHQQELP-NTCGDALGTFHP- 1495
Homo_sapiens      LTEEALKVSNVPGPADQKTGVSTVTSTSYSHREK--PIVSYQRELH-FTEAGLKILRVP 1834
Pan_troglodytes   LTEKALKVSYVPGPADQKTGVSTVTSTSYSHREK--PIISYQRELH-FTEAGLKILRVP 1834
Macaca_mulatta    LTEKALKVSDVPGPADQKSGSLSTVTSTSYSHREK--PIISYQRELH-RFTEAGLKILRVP 1955
Callithrix_jacchus LTEKALKVSNVPGSADEKTGVSTATSTSYSHREE--PIISYQRELH-HFTEGALGILRVS 1863
Bos_taurus        LTVEALKVSDVPGPSDQKTGIPTVPPSSSYREK--PIISYQESP-DLTQVALKVFEVP 2071
Equus_caballus    LTKEALTVSGVPGQADQKTEIPTVPSSSYREK--PVIFYQERSLSDLTEEALQILGVP 2316
Felis_catus       LPVEALKVSAVSGPGDQKTRKPTVTSTSYSHREKEKPIISYQRELH-DLTQEALKVLKVP 2644
Canis_lupus_familiaris LAIAALKVSAVSGSDDQKTRKPTITSASYSEREK---PIIVHQQLP-DLTQESLNVFRIP 2604
Pavo_muticus      APVDVIQTSFNSTSTVSTVSIIPMNSETDSDTFSP-----RDLSPRFSLPFGA 988
Pavo_cristatus    APVDVIQTSFNSTSTVSTVSIIPMNSETDSDTFSP-----RDLSPRFSLPFGA 988
Gallus_gallus     TAVDVIQTSFNSTSTVSTVSIIPMNSETDSDTFSP-----RELSPRFSIPFGE 984
Chelonia_mydas    SAFDITQISFNSTGASTLGMSIPMGSEAGPDTPLP-----TELSLQFSRSKSD 1035
Rhinatrema_bivittatum KEDDNSQSSPYSGMSTLSMSIPMGSDVGNPTPLP-----SELSPLLLRSQSE 1020
.....2950.....2960.....2970.....2980.....2990.....3000

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:
Mus_musculus      EPVVQEVVK-----VQTPGAPAGPSS 1152
Rattus_norvegicus EPVAQKVKGKPTPEPSNIQG-KASALSPQQLPASHLTGEALKVSDGSACVAQMPEAPAGPSI 1554
Homo_sapiens      GPADQKTGINILPSNSYPQREHSVISYEQLPDLTEVTLKAIGVPGPADQKTGIQIASSS 1894
Pan_troglodytes   GPADRKTGINILLNSNSYPQREHSVISYEQLPDLTEVTLKAVGVPGPADRKTGIQIASSS 1894
Macaca_mulatta    GPADQKTGINVLSSNSYPQREQSVISYQQLPDLTEVTLKAVGVPGPADQKTGIQIASSS 2015
Callithrix_jacchus EPADQKTGINTLSSNSYPQREQSVISYQQLPDLTEVTSKAVEVPGPADQKTEIQILSSS 1923
Bos_taurus        GPADQKIGIPPVTSASYSYGEKPIISYQQLPDANENALRGLGVPRQADQTVGVRIVPPA 2131
Equus_caballus    GPAEQKTGISAVTSAASSHGEKPIISYQQLPDITETLKASAVSGPADQKVGKRIIPSS 2376
Felis_catus       GLGGQKTGIPAVTSTFYSHREKPIISYHQELSDPNEGALRVLGTPGPADQKTGIQIGPST 2704
Canis_lupus_familiaris GLGDQRTGITAVTSTTYSHREKPVISYQQLPAPNEGALKVLGAPGSADQSGIRFGPST 2664
Pavo_muticus      KPMSQ-----CTVSC---HKA EVTAPLSTQRET 1013
Pavo_cristatus    KPMSQ-----CTVSC---HKA EVTAPLSTQRET 1013
Gallus_gallus     KPMSQ-----CTMSC---HKVEATTPLSTQWET 1009
Chelonia_mydas    KPLSQ-----CSIAY---HQLELPAAQSTKGG 1060
Rhinatrema_bivittatum RPISQ-----CNITYCHTKQVLEPHFPIESIA 1049
.....3010.....3020.....3030.....3040.....3050.....3060

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Mus_musculus      SHFHKEKLSDYQK-----A 1166
Rattus_norvegicus FYFHKERFSNYQK-----A 1568
Homo_sapiens      SYSNREKASIFHQQLPDVTEELNVFVVPQGDRKTEIPTVPLSYYSRREKPSVISQOE 1954
Pan_troglodytes   SYSNREKASIFHQQLPDVTEELNVFVVPQGDRKTEIPTVPLSYYSRREKPSVISQOV 1954
Macaca_mulatta    SYSNREKPSIFHQQLPDITEETFNVFVVPQGDKAEIPTVPLSYSHREKPSVISQOE 2075
Callithrix_jacchus SYSNREKPSVFHQQLPDVTEELNVFVVPQGDKTDIPTVSSSYYSYGEKPSVSSQYE 1983
Bos_taurus        SYSHRESPIFSYQ-----OE 2146
Equus_caballus    SYSYRDKASIFNE-----OE 2391
Felis_catus       SYSHRESPIFSYQESSDITEETWKVSPVSGPANQKTEIHIIPSSSYSYREKDSILYQOE 2764
Canis_lupus_familiaris SYSHRKNPIFSYLE-SPDITEETLKISAVSGPGDQKTGIHIIPSSSYSYREKDSIFYQOE 2723
Pavo_muticus      ECSAVSKLAEPSQ----- 1026
Pavo_cristatus    ECSAVSKLAEPSQ----- 1026
Gallus_gallus     ECSVSKLAEPSQ----- 1022
Chelonia_mydas    E-SSVSKSVELSQ----- 1072
Rhinatrema_bivittatum EIAITEESTDHNQ----- 1062
.....3070.....3080.....3090.....3100.....3110.....3120

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Mus_musculus      SPHRDLTESSLKASTVPGLSDQKKKPAVSSGFCL---HKEKHEISASALLNCQTAELLTV 1223
Rattus_norvegicus SPDCDLTENSLSKSTVPGLSDQKKRPPVSSGSCS---HKEKHKISAADLLDAQAAELPTV 1625
Homo_sapiens      LPDShLTEEALKVSPVSIPEAQKTGIPIGLSSSYSHSHKEKLIKISTVHIPDDQKTEFPAA 2014
Pan_troglodytes   LPDShLTEEALKVSPVSIPEAQKTGIPIGLSSSYSHSHKEKLIKISTVHIPDDQKTEFPAA 2014
Macaca_mulatta    LPDShLTEEALKVSPVSIPEAQKTGIPIGPSSSYSHSHKEKLIKISTVLIIPDDQKTEFPAA 2135
Callithrix_jacchus LPDShLTEEALKVLPVSIPEAQKTEIPIGLSSSYSHSHEKLIKISTADISDDQKTEFSAT 2043
Bos_taurus        LPD--LTEEALKVFALPGPADQNAEIPIGPSSSY--SHKERLKS-----PDDQKTELPST 2198
Equus_caballus    LPD--PTEEALKVFAPAPADQKTEIPIGPSSSY--SHKEKLIKISAVILPHDQKTELPPIA 2447
Felis_catus       LPD--VTEKVLKVFALPGPADQKTEIPTGPSSSY--SHKEKLNISPVILPDVQKTEFLTA 2820
Canis_lupus_familiaris LPD--VTEAALKVFALPGPADQKTEIPIGPSSSY--SHEEKLKISPVILPDDQETELLTA 2779
Pavo_muticus      -----HLQTVSPDCRSNRES PMLVAKSLQDLPAKKESKDVSGSSQGWTAGCLAGVK 1077
Pavo_cristatus    -----HLQTVSPDCRSNRES PMLVAKSLQDLPAKKESKDVSGSSQGWTAGCLAGVK 1077
Gallus_gallus     -----HLQTVSPDCRSNRES PMLVAKGVQDILLAKKELKDMSGSSQQRWTASSAGVK 1073
Chelonia_mydas    -----RLHTVPAGSDFE-EGRTLVSKHVQKLIDKFESRDIGLSLEKLSASPLAGDA 1122
Rhinatrema_bivittatum -----MLPELSISNSSN-EKQIVSKRVQMLIDKFESRSPILSQDHPASSLVESA 1112
.....3130.....3140.....3150.....3160.....3170.....3180

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Mus_musculus      TQRSCLHREDPAISTVIKPDQKIPLPTTFHGSSDQVKPVIFVQKQLRRDQSEDIPIKI 1283
Rattus_norvegicus IQRSCLHREKLAISTVIKPDQKIPLPTTCHASCAQVKPVIFVQKQLSGRDQSEDIPIKI 1685
Homo_sapiens      TLSSYSQIEKPKISTVIGPNDQKTPSQIAFHSSYSQTVKPNILFQQQLPDRDQSKGILKI 2074
Pan_troglodytes   TLSSYSQIEKPKISTVIGPNDQKTPSQIAFHSSYSQTVKPNILFQQQLPDRDQSKGILKI 2074
Macaca_mulatta    TLSSYSQIEKPKISTVIGPNDQKTPSQIAFHSSYSQTVKPNILFQQQLPDRDQSKGILKI 2195
Callithrix_jacchus ALSYYPQIEKSKISTVIGPDDQKTPSLTAFHSSYSQRGKPEILFQQQLPDKDQSKVSLKI 2103
Bos_taurus        PSGSYSHREKPKTSTIIIGPADQKTPLLTGFNPNSYSQRVKPSIFFQQLGDRHOSGDILKI 2258
Equus_caballus    PPSSHSQRKKPKNSTVIEPDDQKTPLLTGFNFYSQRVKPSIFFQQLPDKHOSGDILKI 2507
Felis_catus       PPSSYSKREKPKISTVSGPDDQKTPLPTVFHNSCSQ-----NFEIEDILKI 2866
Canis_lupus_familiaris PLSFYSKREKPKISTVIGSDNQKTPLLTVLHNSYSQVKPKGIFLQHLSDKHOSENILKI 2839
Pavo_muticus      DEKERG-----SQASSAGSEKNKGEESDSLIG-----FGALQEIIRKL 1114
Pavo_cristatus    DEKERG-----SQASSAGSEKNKGEESDSLIG-----FGALQEIIRKL 1114
Gallus_gallus     DEQGRG-----SQTSSSEGSEKNKQESDYILIG-----SGALQEIIRKL 1110
Chelonia_mydas    DEMDVSGEPLSSNVDASVNDLNKDQGNDSFIG-----CNTLKEIQKL 1164
Rhinatrema_bivittatum VEMEGN-KTQSSCLSVSNQNNKDLNDSFVG-----SRTLKEIRKL 1153
.....3190.....3200.....3210.....3220.....3230.....3240

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      . *      .      .      .      .
Mus_musculus      STVSEPTVVNTVLPVLLPGSYSHREKSDSFYPOELP----- 1319
Rattus_norvegicus STVSEPTVANTGAPVLLSSSYPYREKSDSFSSPKELP----- 1721
Homo_sapiens      SAVPELTDVNTGKPVLSLSSSYFHREKSNIFSPQELPGSHVTEVDLKVSTIPGPAGOKTVL 2134
Pan_troglodytes   SAVPELTDVNTGKPVLSLSSSYFHREKSNIFSPQELPGRHVTEVDLKVSTIPGPAGOKTVL 2134
Macaca_mulatta    SAVPELTDVNTGKPIPLSSSYFHREKSSIFSPQELPGRHVTEVDLKISTIPGPPSOKTVL 2255
Callithrix_jacchus SAVPEPTDVNTGKPIPLSSSYFHREKSSIFSPQELPGRYVTEVDLKVSAIPRPAGOKTVL 2163
Bos_taurus        SSVAEPTDVNSQISIPLSASYSHSEKSSVFYPKELPKHLREDLSKVSTVPGPADKKTIVL 2318
Equus_caballus    SAVPEQTDVNSGIPVPLSSSYSYKENTNILYPQDLSDKHLTEDTLKVSTIPGPADOKTVL 2567
Felis_catus       SPVPEPIVNSGIPVPLSSSYSHREKSNIFYPOELPKHLAEDALNISSIPVPADOKSL 2926
Canis_lupus_familiaris SAVSEPIDVNSGIPVPLSSSYSHREKSNIFYPOELPKHLGKALKVSTIPLPADOKSL 2899
Pavo_muticus      LAEAENITGSRWDPVFSNASSRETESS----- 1141
Pavo_cristatus    LAEAENITGSRWDPVFSNASSRETESS----- 1141
Gallus_gallus     LAEAENIAGSWHDPVFSNASSSETESS----- 1137
Chelonia_mydas    LAEAENIALTQFDPVPSVAPFQEVSD----- 1191
Rhinatrema_bivittatum LEEAEDITFGNSHPAFPFSGSMKEYNEC----- 1180
      .....3250.....3260.....3270.....3280.....3290.....3300

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Mus_musculus      -----DGHLEFVDLKVSSGLQADQISGLPTGIPGTYSHSEK 1356
Rattus_norvegicus -----DRHPAKVDMQASSSLGQADQISRLPTVPPGTYSHSEK 1758
Homo_sapiens      PTALPSSFSHREKPDIFYQKDLDPDRHLTEDALKISSALGQADQITGLQTVPSGTYSHGEN 2194
Pan_troglodytes   PTALPSSFSHREKPDIFYQKDLDPDRHLTEDALKISSALGQADQITGLQTVPSGTYSHGEN 2194
Macaca_mulatta    PTALPSSFSHREKPDIFYQKDSPDRRLTEDALKISSALGQADQITGLHTVPSGTYSHGEN 2315
Callithrix_jacchus PTAPFSSLSHQEKPDIIYH-KDLDPDRHLTEDALKISSALGQADQITRSQTVPSCTHAHGEK 2222
Bos_taurus        PAVPPSSFSHREKPAILYHQDFPERHLTEDNLKFSSSLEQADQNNGLSTVPPGTYSHSEK 2378
Equus_caballus    PTAPPSSFSHRQKPDIFYQQLPDLTHLTEDALKISSGLGQAGQSTGLSTVPPGTYSRSEK 2627
Felis_catus       PTAPPGSFSHREKPNLFYQQDFPDRHLPEDSVMFSSRGLGQADQITGLSTVTPGTYSHSEK 2986
Canis_lupus_familiaris PTAP-SSFSHREQPDIFCQDFPDRHLTQDALMFSSGVGQADQITGLSTVTPGTYSSEK 2958
Pavo_muticus      -----PVQTGKEDGTKD 1153
Pavo_cristatus    -----PVQTGKEDGTKD 1153
Gallus_gallus     -----PVQIEKEDGTKD 1149
Chelonia_mydas    -----SSAPIEKDGSED 1203
Rhinatrema_bivittatum -----FLLSRNLNDFCD 1192
      .....3310.....3320.....3330.....3340.....3350.....3360

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      .      :      :      :      *      .      .
Mus_musculus      HOLISEHVQELMDNLNSSSESSCLSVDSMPLNSQIDDGVIICKPESLGFANAGCEEMONID 1416
Rattus_norvegicus YQLISEHVQELIDNLNSSSECLNADIMMPSNSQIDDGVIICKPESRFANVGCEEIODID 1818
Homo_sapiens      HKLVSEHVQRLIDNLNSSDSSVSNN-VLLNSQADDRVVINKPESAGFRDVGSEEIQDAE 2253
Pan_troglodytes   HKLVSEHVQRLIDNLNSSDSSVSNN-VLLNSQADDRVVINKPESAGFRDVGSEEIQDAE 2253
Macaca_mulatta    HKLVSEHVQRLIDNLNSSDSSVSNN-VLLNSQADDRVVINKPESAGFRDLGSEEIQDAE 2374
Callithrix_jacchus HKLISEHVQRLIDNLNSSGSSFSNN-VLLNSQADDRVVINKPESAGFRDVGPEEIQDAE 2281
Bos_taurus        HKPVSHHVQRLIDNLDSSTSVISNN-MPLNSQADGRVVIINKPESGFEVVGSEIIRDTE 2437
Equus_caballus    HKLVSDHIQRLIDNLDSNNSIIISNN-MPLNSQADGRVVIINKPESGFEVVGSEIIRDT 2686
Felis_catus       QKLVS DHVQMLIDNLDSNNSIISS-MPLSSQADGRVVIISKPESSRFEGVGSVEIQDTS 3045
Canis_lupus_familiaris QKLVS DHVQMLIDNLDSNNSVTSNS-MPLNSQADGRVVIISKPESSSFEDVRSEEIQDRS 3017
Pavo_muticus      SELVKDSSPQFQKVSWAESMNQSS-----IQE-GSIPKPLDSCKDDLKWEERSFDAS 1204
Pavo_cristatus    SELVKDSSPQFQKVSWAESMNQSS-----IQE-GSIPKPLDSCKDDLKWEERSFDAS 1204
Gallus_gallus     SELVKDSIAPLQKVMSWAESMNQRS-----IHE-GSITKPDSCKDDLKWEERSFDGG 1200
Chelonia_mydas    SRLAKEISPALQRLISWDESLTRRS-----MQEDSSLMKTLNPHRRSLKWESSLGID 1255
Rhinatrema_bivittatum STSSRDSTENLFPLHRSLSWSPSSN-----LSKDNSQMKTLSSLMDSLKWETTDGIE 1245
      .....3370.....3380.....3390.....3400.....3410.....3420

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      :      . :      . :      . :      *      . :
Mus_musculus      RGSK----TLKEIQTLLEAENMALKRCNFSVPLVPFRDVNDVSFIRSKKVVCFKESSTT 1472
Rattus_norvegicus HGSK----TLKEIQTLLEAENMALKRCNFSVPLVPFRDVSDVSFVQSKKVVCFKETPTS 1874
Homo_sapiens      NSAK----TLKEIRTLLEAENMALKRCNFPAPLARFRDISDISFIQSKKVVCFKEPSST 2309
Pan_troglodytes   NSSK----TLKEIRTLLEAENMALKRCNFPAPLAPFRDISDVSFIQSKKVVCFKEPSST 2309
Macaca_mulatta    NSSK----TLKEIRTLLEAENIALKRCNFPAPLAPFRDISDISFIQSKKVVCFKEPSST 2430
Callithrix_jacchus SSSK----TLKEIRTLLEAENIALKRCNFPAPLAPFRDISDISFIQSKKVVCFKEPSST 2337
Bos_taurus        NSSR----TLKEIQTLLEAENIALRRYNVPAPLVPFRDVSDISFIQSKKMVCFKKEPLTT 2493
Equus_caballus    SGAK----TLKEIRELLMEAENIALKRCSFAPLVPFRDVSDISFIQSKKVVCFKEPPTA 2742
Felis_catus       NSSK----TLKEIRTLLEAENIALKRCNFPAPLVPFRDVSDISIIQSKKMVCFNEPLTA 3101
Canis_lupus_familiaris SGSK----TLKEIRTLLEAENIALKRCNFPAPLVPFRDVSDISFIQSKKVVCFKKEPLTA 3073
Pavo_muticus      LCSR-----EDVVEMSREFRTG-----RSVGRSEPEGCSSGTTRDNQPAVVAVAQS 1250
Pavo_cristatus    LCSR-----EDVVEMSREFRTG-----RSVGRSEPEGCSSGTTRDNQPAVVAVAQS 1250
Gallus_gallus     LCSR-----EDVVEMTREFRTG-----KSVGRSEPEGCSSVTTRDNLPAAVAVAQS 1246
Chelonia_mydas    LPTK----EEIVEETTKPTQGAMEACGVAKSIGRSEPEGCSSATVDKNLPALMALTKS 1310
Rhinatrema_bivittatum RLTIIEGFLQEPIGKKTLPKAKETVEQSKLAKPLSRSEPEGCSSAIADTKAPNSTHPEED 1305
      .....3430.....3440.....3450.....3460.....3470.....3480

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      :      . :      . :      . :      . :
Mus_musculus      DVCTQ---RESFVEEVPHIEYVQKDITQTNLKYQRGVGNWEFISATFRSPLQEAEGT 1528
Rattus_norvegicus DVCIQ---KDSFAEEVPHITKYVQKDITQTNLKYQRNVNWEFISATFRSPLHEANGT 1930
Homo_sapiens      GVSNGDLLHRQPFTEESSRRCIQKDITQTNLKCRRGIENWEFISSTTVRSPLQEAESK 2369
Pan_troglodytes   GVSNGDLFQRPFTEESSRRCIQKDITQTNLKCRRGIENWEFISSTTVRSPLQEAESK 2369
Macaca_mulatta    DVSNGDLLQRPFTEESSRRCIQKDITQTNLKCRRGIENWEFISSTTVRSPLQEAESK 2490
Callithrix_jacchus DLSNVELLQRAFTTEESSRRCIQKDITQTNLKCRRGIENWEFISSTTVGSPLOEAENK 2397
Bos_taurus        DESNDDLQRQPFTEESSRRCIQKDITQTNLKCRRGIENWEFISSTTVRSPLQEAESK 2553
Equus_caballus    DESNDGLRRRQPFTEESSRRCIQKDITQTNMCKCRRGIENWEFISSTTVGSPLOEAESK 2802
Felis_catus       AESNSDLRRQPFTEESSRRCIQKDITQTNLKCRRGIENWEFISSTTLRSPLQEAESK 3161
Canis_lupus_familiaris DEYNGDLQRQPFTEESSRRCIQKDITQTNLKCRRGIENWEFISSTTVRSPLQEAESK 3133
Pavo_muticus      NASSELSTGRPSELGNPSPSEPRGSVINVPGSFQNKLSKADVAVSTTGGIQESSGSSSGD 1310
Pavo_cristatus    NASSELSTGRPSELGNPSPSEPRGSVINVPGSFQNKLSKADVAVSTTGGIQESSGSSSGD 1310
Gallus_gallus     SANSEFSTERPSELGSPSPSEPQGSVINVPASFQSKLSKANVAVSKAGGIRESSGSSSGD 1306
Chelonia_mydas    STSSKSSIERVSELQNPATPLGSIISDLGDFQHALAKT----- 1350
Rhinatrema_bivittatum GTTEESSVEKGFDLQSLTTEILSGISNLEGLEHAVAQMN----- 1346
      .....3490.....3500.....3510.....3520.....3530.....3540

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      . :      . :      . :      . :
Mus_musculus      ARMAyDETFROYKAARSVMRSEPEGCSTGIGNKMIIPMMTIKSDSSSDVSDG--CCSWD 1586
Rattus_norvegicus ARVAFDENFRQYRATRSVMRSEPEDCSTGIGDKIIIPMMTIKSDSSSDVSDG--CCSWD 1988
Homo_sapiens      VSMALLETLRQYQAAKSVMRSEPEGCSTGIGNKIIIPMMTVIKSDSSSDASDNGSCSWD 2429
Pan_troglodytes   VSMALLETLRQYQAAKSVMRSEPEGCSTGIGNKIIIPMMTVIKSDSSSDASDNGSCSWD 2429
Macaca_mulatta    VSMALLETLRQYQAAKSVMRSEPEGCSTGIGNKIIIPMMTVIKSDSSSDASDNGSCSWD 2550
Callithrix_jacchus ASMALEETHROYQAAKSVMRAEPEGCSTGIGNKIIIPMMTIKSNSSSDTSDNGSCSWD 2457
Bos_taurus        ARVAFDETFKQYKAARSVMRSEPEEYSRITGNKIVIPMMTIKSDSSSDAS----SCSWD 2609
Equus_caballus    AKAALDETLRQYKAARSVMRSEPEGCGRITGNKIVIPMMTIKSDSSSDAS----SCSWD 2858
Felis_catus       AGVTLDDETLRQCRAAQSVMRSEPEGYSGTIGNKIVIPMMTIKSDSSSDAS----SCSWD 3217
Canis_lupus_familiaris ARVTVDETCRQYRAAKSVMRSEPEGYSGTIGNKIVIPMMTIKSDSSSDAS----SCSWD 3189
Pavo_muticus      SLAARVRNLLGNPLMPAGSAAGTSGGFQSMMSKTSAGSKARGVQESDGS--SGDLSAARV 1370
Pavo_cristatus    SLAARVRNLLGNPLMPAGSAAGTSGGFQSMMSKTSAGSKARGVQESDGS--SGDLSAARV 1370
Gallus_gallus     SLAAHVKNLLGNPLMLLGRADISGGFQSMMSKTSAGSKAEGVQESHGSS--SGDLSAARV 1366
Chelonia_mydas    -----KTSVAGS-----EEGDG----- 1362
Rhinatrema_bivittatum -----IMGN-----VKGDS----- 1355
      .....3550.....3560.....3570.....3580.....3590.....3600

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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3610.....3620.....3630.....3640.....3650.....3660	
Mus_musculus	NNLPESLESVSDVFLNFFPYTSPKTSITDSREEEWLSESEDGYG-STDSLAAHVKYLLQC	1645
Rattus_norvegicus	NNLPESLESVSDVFLNFFPYTSPKTSITDSREEEGLSESEDGYG-SADSLAAHVKYLLQC	2047
Homo_sapiens	SNLPESLESVSDVLLNFFPYVSPKTSITDSREEEGVSESEDGGGSSVDSLAAHVKNLLQC	2489
Pan_troglodytes	SNLPESLESVSDVLLNFFPYVSPKTSITDSREEEGVSESEDGGGSSVDSLAAHVKNLLQC	2489
Macaca_mulatta	SNLPESLESVSDVLLNFFPYVSPKTSITDSREEEGVSESEDGGGSSVDSLAAHVKNLLQC	2610
Callithrix_jacchus	SNLPESLESVSDVLLNFFPYVSPKTSITDSREEEGVSESEDGGGSSVDSLAAHVKNLLQC	2517
Bos_taurus	S---NSLESVSDVLLNFFPYSSPKTSMTDSREEEGVLESDDGGGSSVDSLAAHVKNLLKC	2666
Equus_caballus	S---NSVESVSDVLLNFFPYASPKTSMTDSREEEGVSESDDGCGSSVDSLAAHVKNLLKC	2915
Felis_catus	S---NSLESVSDVLLNFFPCASPKTSITDSREEESVSESDDGGGSSVDSLAAHVKNLLKC	3274
Canis_lupus_familiaris	S---NSLESVSDVLLNFFPYSSPKTSLTDSREEE-GVSESDDGCGGSSVDSLAAHVKNLLKC	3245
Pavo_muticus	KNLLGDPSETLGSTTDVPGGFQSVLSKRSAAGSKAGCVQESNGSSSADSLAARVRSLIRS	1430
Pavo_cristatus	KNLLGDPSETLGSTTDVPGGFQSVLSKRSAAGSKAGCVQESNGSSSADSLAARVRSLIRS	1430
Gallus_gallus	KNLLGDPSESLGSTTDVPGGFQSVLSKPSAAGSKAGGVQESDGSSSADSLAARVKSLLRN	1426
Chelonia_mydas	-----IRESDDSSSVDSLAAARVTSLLKN	1385
Rhinatrema_bivittatum	-----IRESDDSSSADSLAARVTSLLKG	1378

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Mus_musculus	ETSLNQAKQILKNAAAAEYRVRTAWNLKFNLRGRDGYSEISLNEDDRRKVEEIKAKLFG	1705
Rattus_norvegicus	ESSLNQAKQILKNAAAAEYRVRAQAWNLFNLRDYGYPVSELNEDDRRKVEEIKAKLFG	2107
Homo_sapiens	ESSLNHAKEILRNAEEEEESVRRAHAWNMKFNLAHDCGYSISELNEDDRRKVEEIKAEELFG	2549
Pan_troglodytes	ESSLNHAKEILRNAEEEEESVRRAHAWNLKFNLAHDCGYSISELNEDDRRKVEEIKAEELFG	2549
Macaca_mulatta	ESSLNHAKEILRNAEEEEESVRRAHAWNLKFNLAHDCGYSISELNEDDRRKVEEIKAEELFG	2670
Callithrix_jacchus	ESSLNHAKEILRNAEEEEESVRRAHAWNLKFNLAHDCGYSISELNEDDRRKVEEIKAEFFFG	2577
Bos_taurus	ESSLNHAQQLKNAAAAEESVRARAWNLFNMAHDYGYSEISELNEDDRRKVEEIKAKLFG	2726
Equus_caballus	ESSLNHAKEILRNAEEEEECRRVARAWNLFNLAARECGYPISISELNEDDRRKVEEIKAKLFG	2975
Felis_catus	ESSLNHAQQLRNAEEEEECRRVARAWNLFNLAHECGYSISELNEDARRKKVEEIKAEELS	3334
Canis_lupus_familiaris	ESSLNHAQQLRNAEEEEECRRVARAWNLFNLAHECGYSISELNEDDRRKVEEIKAKFLS	3305
Pavo_muticus	GSPLMPATPTLKSADEEEER--KARAW-VKLKLASRSQEAVLDLNEEDRORIEEIKAEELL	1487
Pavo_cristatus	GSPLMPATPTLKSADEEEER--KARAW-VKLKLASRSQEAVLDLNEEDRORIEEIKAEELL	1487
Gallus_gallus	GSPLMPATPTILRSSDEEEER--KARAW-VKLKLANQSQEAVLDLSEEDRORIEEIKAEELL	1483
Chelonia_mydas	ESPVLHATQILKSAAEEER--KARAW-VKLKLT SQPQGSVDLNEEDRORIDEIKTELL	1442
Rhinatrema_bivittatum	EDPLTRATOMIONAEEEK--RARVV-WVKLVLSQP PGSGVDLS EDRKKIEEIKAEELLQ	1435
3670.....3680.....3690.....3700.....3710.....3720	

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Mus_musculus	SDLIRGHRSPSSWRGRHINLSRSIEQSNPCFKVGSFQIQSHPPFQKLLPDDIKISKGVG	1825
Rattus_norvegicus	SDLIRGHRSPSSWRGRHINLSRSIDQSNPHFKIGNSFQIQSHPPFEKLVDPDDIKISKGVG	2227
Homo_sapiens	SEMTRGRQNPSSCRAKHVNLSASLDQNNSHFKVWNSLQKSHSPFQNFIPDEFKISKGLR	2669
Pan_troglodytes	SEMTRGRQNPSSCRAKHVNLSASLDQNNSHFKVWNSLQKSHSPFQNFIPDEFKISKGLQ	2669
Macaca_mulatta	SEMTRGRQSPSSCRAKHVNLSASLDQNNSHFKVWNSLQKSHSPFQNFIPDEFKISKGLR	2790
Callithrix_jacchus	SEMTRGRQSPSSCRAKHVNLSASLDQNNSHFKVWNSLQKSDSPFQNFIPDEFKISKGLQ	2697
Bos_taurus	SEIVRGQRSPSSWRTRHINLSKSLDQNNHQFKVWNSLQKSHSPFQNFISEDLEISKGLR	2846
Equus_caballus	SEMIRGQSPSSWRTRHINLSRSLDQNNPHFEVWNSLQKSHSPFQNFITADDFKISKGLR	3095
Felis_catus	-----	3369
Canis_lupus_familiaris	SDMIRGQRSPSSWRTRHIDLKSLDQCNPHFKVWNSLQLRSHSPFQNFADDFRISQGLR	3425
Pavo_muticus	LEPS-----L	1547
Pavo_cristatus	LEPS-----L	1547
Gallus_gallus	LEPS-----L	1543
Chelonia_mydas	PESN-----T	1502
Rhinatrema_bivittatum	RDFT-----S	1497
	.....3790.....3800.....3810.....3820.....3830.....3840	

Mus_musculus	MPVHAYMDPQPSELVEPTCVPAKEMDFSSSQILPPEPKKQFTTATITFSSHEHSECISDS	1885
Rattus_norvegicus	MPFHEHMDPQPSELIEPTCVPAKEMDFSSSQEILPSEPCKQFTTITFSSHQHSCICISDS	2287
Homo_sapiens	MPFDEKMDPWLSELVEPAFVPPKEVDFHSSSQMPSPPEPMKKFTTITFSSSHRHSKICISNS	2729
Pan_troglodytes	MPFHEKMDPWLSELVEPAFVPPKEVDFHSSSQMPSPPEPMKKFTTITFSSSHRHSKICISNS	2729
Macaca_mulatta	MPFHEKMNPLSELVEPAFVPPKVDHSSSQMPSPPEPVKKFTTITFSSSHRHSKICISNS	2850
Callithrix_jacchus	MPFHEKMDPWLSELVEPAFVPPKEVDFHSSSQMPSPPEPMKNITITFSSSHRHSKDISDS	2757
Bos_taurus	MPFHEKLDPWLSELVEPACMPPEEMDCHSSQMLPPEPMKKFTTITFSSSHRHSKCFSDS	2906
Equus_caballus	MPFRERMNPWLSELVEPACVPPEEMDCHSS-HMVPPEPMKKFTTITFSSHQHSCICFSDS	3154
Felis_catus	-----FTTITFASHRHSKCFSDS	3388
Canis_lupus_familiaris	MPFHEKIDPWLSELVEPASVPLEEMDCHSSQMLPPEPMKKFTTITFSSSHRHSKCFSDS	3485
Pavo_muticus	QHVVPLYRAELSDCGLLKDTQLKSLSTAEPPTCSQHQAIVASS-HSGCAGLHLPLQKQOET	1606
Pavo_cristatus	QHVVPLYRAELSDCGLLKDTQLKSLSTAEPPTCSQHQAIVASS-HSGCAGLHLPLQKQOET	1606
Gallus_gallus	QHVVPLYRAELSDCGLLKNTQLKSLSTAEPPTCSQHQAIVASS-RSGCVGLHLPLEKQOET	1602
Chelonia_mydas	RPVTTIYRSDPADYSPLDDAQKALNTIQKHIVHQLQTLRPNPFDAITELHTPLCKDMDK	1562
Rhinatrema_bivittatum	IDLIHTNPSHIIDNLLPCDSTYAFASKELPVLHQIQQFIAPVDNISTELHKDSKNTIDT	1557
	.....3850.....3860.....3870.....3880.....3890.....3900	

Mus_musculus	SGCKVGVTADSQCSGSLGVFKPHIPEEQISPRDLKQKTSFQSSLERHGSTP---VTILA	1942
Rattus_norvegicus	SGFKVDVTAGSQCTGPSLGVFKPHIPEEQISPRDLKQKTISSPSSLQRHSYTP---VTILV	2344
Homo_sapiens	SVVKVGVTGEGSQCTGASVGVFNNSHFTEEQNPPRDLKQKTSSPSSFKMHSNSQDKEVTILA	2789
Pan_troglodytes	SVVKVGVTGEGSQCTGASVGVFNNSHFTEEQNPPRDLKQKTSSPSSFKMHSNSQDKEVTILA	2789
Macaca_mulatta	SVVKVGVTGEGSQCTGASVGVFNNSHFTEEQNPPRDLKQKSSPSSFKMHSNSPDKEVTILA	2910
Callithrix_jacchus	---SVGVTGEGSQCTGASVGIFNNSHFTEEQNPPRDLKQKTSSPSSFKMHSKSPDKEVTILA	2814
Bos_taurus	SFLKVGVTGEGSQCSGASVGVFNNSHFTEEQNPPRDLKQRTSSPSSLKIIISQSPDKAVTILA	2966
Equus_caballus	SVLKVGVTGEGNQCTGASVGVFNNSHFTEEQNPPRDLKQKTYSPSSFKTISHSPDKAVTILA	3214
Felis_catus	SVLKVGVTGEGSQCTGASVGVFNNSHFTEEQNPPRDLKQKTSSPSSFKIVSHSPDKAVTILA	3448
Canis_lupus_familiaris	SVLKVGVTGEGSQCTGASVGVFNNSHFTEEQNPPRDLKQRTSSPSSFKIVSHSPDKAVTILA	3545
Pavo_muticus	RVVSFGAASDAQTEK-VPSPAQKKLSFPKSTEEMAKQITSITFSSRRRFQSPPLTSVGLDG	1665
Pavo_cristatus	RVVSFGAASDAQTEK-VPSPAQKKLSFPKSTEEMAKQITSITFSSRRRFQSPPLTSVGLDG	1665
Gallus_gallus	RVMSFAAASDAQAK-VPSPAQKKLSFPKCEEMSKQITSITFSSRRRFQSPPLTSVGLDG	1661
Chelonia_mydas	FSLGLVDGSCAPTEEDVILSSQKROSTKPSVEVAKQITSITFASCKRSQSPPLASTVPSA	1622
Rhinatrema_bivittatum	SLKGMAGITIKIQIEQETLPSQHLS-----DVSKPIASITFSSRKRSPSPSVSVLNT	1609
3910.....3920.....3930.....3940.....3950.....3960	

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	:	*	:	:	.	.	.	:										
Mus_musculus	DGSR	RQKLPVDFE	HSN	QEKLL	QRLG	FKVSH	SEPN	VSTINV	SNFKGVQFSGKDTIVS	QDK	2002							
Rattus_norvegicus	DS	SRQKLPVDFE	HSN	NQKGL	LQSA	FNFSH	SEPS	VSTINV	-FKGVQFSGNDTIVR	QDK	2403							
Homo_sapiens	EG	RRSQKLPVDFE	RSF	QEEKPL	ERSD	FTGSH	SEP	STRANCS	SNFKEIQISDNHTL	ISMGR	2849							
Pan_troglodytes	EG	RRSQKLPVDFE	HSF	QEEKPL	ERSD	FTGSH	SEP	STRANCS	SNFKEIQISDNHTL	ISMGR	2849							
Macaca_mulatta	EG	RRSQKLSVD	FEHSC	QEEKPL	ERP	PDFTG	NHSE	PSTS	SANCSNFK	EQISDNHTL	ISMGR	2970						
Callithrix_jacchus	EC	RRSQKLSVD	FEHSL	QEEKPL	ERSY	FTGSH	CEP	STTADS	SNVKEIQISDNHTL	ISRGR	2874							
Bos_taurus	EN	SQSQKLSV	--EHS	YQEEKP	LEKSD	FKSS	HPKPS	ASAND	SNFKEVHFS	DNHTL	ISMGR	3024						
Equus_caballus	ES	SRQKLPV	--EHP	HQEEKL	LER	-YFKG	SLSE	PSTS	SANCSNFK	EQVHFS	DNHTL	ISMGR	3271					
Felis_catus	ES	SRQKLSI	--EHS	QQEEKL	LLERS	DFKGS	DSE	PSTSA	KYSVKEVHFS	DNHTL	ISVSR	3506						
Canis_lupus_familiaris	ES	SRQKLSV	--EHS	QQEEKP	LEKSD	FKSS	DSE	PSTST	KCSN	VKEVHFS	DNHTF	ISMGR	3603					
Pavo_muticus	FF	SGDD	--LDEI	MPLE	MSATA	EEQ	SRGK	QH	WERSET	CPPS	NLALAGS	QYNEIV	FTAD	--	1721			
Pavo_cristatus	FF	SGDD	--LDEI	MPLE	MSATA	EEQ	SRGK	QH	WERSET	CPPS	NLALAGS	QYNEIV	FTAD	--	1721			
Gallus_gallus	FF	SGDD	--LDEI	MPLE	MSVT	TEQ	SHGK	QH	WERSET	CP	LSGS	APAGS	QSN	EIA	FTAD	--	1717	
Chelonia_mydas	SL	SED	--LHG	IMP	FEIV	SV	SAK	DRP	SKQ	QVES	PKSCP	SSP	LATH	SHDN	FK	FSAD	--	1678
Rhinatrema_bivittatum	DT	AEDN	POLHSI	VP	MD	TIV	IED	QSHL	IRQL	GTS	SRV	CALLD	-----	SKSHLL	TGD	--	1660	
	3970	3980	3990	4000	4010	4020						

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Mus_musculus	L	T	S	T	V	---	---	---	---	---	E	V	K	E	K	N	V	T	V	T	P	D	L	P	S	C	I	F	L	E	Q	P	E	L	F	E	S	H	I	P	H	T	D	L	Q	M	R	K	Y	P	S	P	S	--	2051																																													
Rattus_norvegicus	L	I	S	T	V	---	---	---	---	---	E	V	K	E	K	N	V	T	L	T	P	D	L	P	S	C	I	F	L	E	Q	---	---	---	E	E	S	H	I	P	H	T	D	L	H	M	R	K	C	P	S	P	S	--	2449																																													
Homo_sapiens	P	S	S	T	L	G	V	N	R	S	S	S	R	L	G	V	K	E	K	N	I	T	I	T	P	D	L	P	S	C	I	F	L	E	Q	R	E	L	F	E	Q	S	K	A	P	R	A	D	D	H	V	R	K	H	S	P	S	P	Q	2909																																								
Pan_troglodytes	P	S	S	T	L	G	V	S	R	S	S	S	R	L	G	V	K	E	K	N	I	T	I	T	P	D	L	P	S	C	I	F	L	E	Q	R	E	L	F	E	Q	S	K	A	P	R	A	D	D	H	V	R	K	H	S	P	S	P	Q	2909																																								
Macaca_mulatta	P	S	S	T	L	G	V	G	R	S	S	S	R	L	G	V	K	E	K	N	V	T	V	T	P	D	L	P	S	C	I	F	L	E	Q	R	E	L	F	E	Q	S	K	A	P	H	T	D	D	P	V	R	K	H	S	P	S	P	Q	3030																																								
Callithrix_jacchus	P	S	S	T	L	G	V	S	R	S	S	S	R	L	G	V	K	E	K	N	I	T	I	T	P	D	L	P	S	C	I	F	L	E	Q	R	E	L	F	E	Q	S	K	A	P	R	A	D	D	H	V	R	K	H	S	T	S	P	Q	2934																																								
Bos_taurus	P	N	S	T	L	---	---	---	---	---	E	V	K	E	K	N	V	I	T	A	D	L	P	S	H	I	F	L	E	Q	---	---	---	E	V	F	E	Q	S	K	A	P	H	A	D	D	H	V	R	K	H	S	P	P	P	Q	3074																																											
Equus_caballus	P	S	S	T	L	---	---	---	---	---	G	A	K	O	K	T	V	I	R	T	P	D	L	P	S	H	I	F	L	E	Q	R	E	L	F	D	S	K	V	S	H	A	D	D	H	V	R	K	H	S	P	P	L	Q	3322																																													
Felis_catus	P	S	S	T	L	---	---	---	---	---	G	V	K	E	K	T	V	A	I	T	P	D	L	S	H	V	L	L	E	R	Q	L	F	E	Q	S	K	A	P	H	T	D	H	R	V	K	H	S	P	P	P	Q	3557																																															
Canis_lupus_familiaris	P	S	S	T	L	---	---	---	---	---	G	V	K	E	K	N	V	I	T	P	D	L	S	S	H	I	I	L	E	Q	R	L	F	E	Q	S	K	A	P	H	A	D	D	H	V	R	K	H	S	P	P	P	Q	3654																																														
Pavo_muticus	---	---	---	---	---	---	---	---	---	---	K	D	R	F	H	D	V	S	A	D	G	N	R	A	G	A	Y	Q	E	T</																																																																						

Species	Sequence	Position
Mus_musculus	-----CPEIASRIFLEQPKLSEQSKAPHVDR-EIREDHSEFFPKCODYIVADPSPDFPDQQ	2105
Rattus_norvegicus	-----GLDIASCIFLEQHKFFEQSGQHVDHHEMREDYSLFPKCGYIAADPS-DFPDQQ	2503
Homo_sapiens	HQDYVAPDLPSCIFLEQRELFECCKAPYVDH-QMRENHSPLPQGODSIASDLPPISLEQ	2968
Pan_troglodytes	HQDYVAPDLPSCIFLEQRELFECCKAPYVDH-QMRENHSPLPQGODSIASDLPPISLEQ	2968
Macaca_mulatta	HQDYVAPDLPSCIFLEQRELFECCKAPYVDH-QMRENHSPLPQGODSIASDLPPISLEQ	3089
Callithrix_jacchus	HQDYIAPDLPSCIFLEQRELFECCEVPRVDH-QMREKHSPLPQGHDSVASDLPPISLEQ	2993
Bos_taurus	RDYVAPNLPSCRIFLEKRELFKQSKAPHVD--QLRENHSPLPQSDYIASDLPPSIFLEQ	3132
Equus_caballus	HKDYVVSNNLPCRIFLEKQELFEQSKSPHVDH-QMRENHSPLPQGGDYIASDLPPSIFLEQ	3381
Felis_catus	HQDYVAPNLPSCRIFLEKRELFECCKAPHLDH-QMRENHSPFPQGGDYIASDLPPSIFLEQ	3616
Canis_lupus_familiaris	HQDYVAPNLPSCRIFLEKQELFEQSKAPHLDH-QMRENHSPFPQGGDYIASDLPPSIFLEQ	3713
Pavo_muticus	-NPDTPSRDVTIELGRHSARLLGLD-DRRFNQGMKGLHEPHSVSSYQQEKSSPSSHVOLCE	1821
Pavo_cristatus	-NPDTPSRDVTIELGRHSARLLGLD-DRRFNQGMKGLHEPHSVSSYQQEKSSPSSHVOLCE	1821
Gallus_gallus	-NLDTPSQDVTIELDRHSARLLGLDCDRRFSGQGMKGLHESHSSISSYQQEKSSPTSHVOLCE	1818
Chelonia_mydas	EEAESSTHDTLGLGRHSSKFSGVDHDMKFDQEVNMFYQPLSMSPHQQGKMNLNQNVPFAD	1782
Rhinatrema_bivittatum	-----	1701

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Species	Sequence	Position
Mus musculus	Q----CKPPDVVGHTRKQNSLLSEGQDYELLEV-QHIPOSYFSNMNVVEAKVSDAISQS	2159
Rattus norvegicus	Q----CKPPGVDGHRVKNQHYPLSPVQDCEVEEV-QCIPQSYFSNMNVVEAKVSDMVSQD	2557
Homo sapiens	C----QSKAPGVDDQMKHHHFLPQGDQCVVEKNNQHKPKSHISN-INVEAKFNTVVSQS	3023
Pan troglodytes	C----QSKAPGVDDQMKHHHFLPQGDQCVVEKNNQHKPKSHISN-INVEAKFNTVVSQS	3023
Macaca mulatta	C---QSKAPGVDDQMSKHHFFPFGQDQCVVEKNNQHKPKSHISS-INVEAKFNNVVSQS	3144
Callithrix jacchus	C----QSKTPGVDDQMRKHHSPLPQGDQCVVEKNNQHKPKSHIST-INVEAKFN-NVSQS	3047
Bos taurus	ROLFEQSKAPNVDDHHLRLKLSPLPQSQDSVVEKNNQHKPKLHISDVIDVEAKFSDVVSQS	3192
Equus caballus	ROLFEQSKVSDVDHMRKHSPLPQGNQCVVEKNNQPKPKSHISN-INVEAKFNNVVSQS	3440
Felis catus	ROLFEQSKAPDVD-HMGKYHSPFRQGDYVVEKNNQHKFKFSYISNMINVEAKFSDVVSQP	3675
Canis lupus familiaris	ROLFEQSKAPDVD-HMGKYHSPLPQVDYVVEKNNQHKFKFSYISNMINVEAKFDNVISQS	3772
Pavo muticus	S-----LEVSDPAIQIDLPKDHGKLLLE-EЕКCPSDAVPLIQEVSQGEQIGASQHS	1870
Pavo cristatus	S-----LEVSDPAIQIDLPKDHGKLLLE-EЕКCPSDAVPLIQEVSQGEQIGASQHS	1870
Gallus gallus	S-----LEGSDPAIQIDLPKDHGKLLLE-EЕКCPSDAVFFIQEVSQGEQIDAHQHS	1867
Chelonia mydas	S-----SERPVRSRLRTLLKLDHGNLLEKEDKLKLSDMFVSQTNVETGYANVIHCS	1832
Rhinatrema bivittatum	-----RESFQTAQLRLRDFPQETLSREVKIQFEASSVNSTSIGTGNNSVQPS	1749
	.....4150.....4160.....4170.....4180.....4190.....4200	

	.	. .	:.*.***.:** **	:::	*
Mus_musculus	APDHCTAAST-----PPSNRKALSCVRITLCPKTS-SKLDSGTLGERFHS�DPASKTRIN	2213			
Rattus_norvegicus	APDHFHTAAT-----PPS SRKALSCVRITLCPKTP-SKLDSGTLDERFHS�DPASKTRIN	2611			
Homo_sapiens	APNHCTLAAS--ASTPPSNRKALSCVHITLCPKTS-SKLDSGTLDERFHS�DAASKARMN	3080			
Pan_troglodytes	APNHCTLAAS--ASTPPSNRKALSCVRITLCPKTS-SKLDSGTLDERFHS�DAASKARMN	3080			
Macaca_mulatta	APNQCTLATS--ASTPPSNRKALSCVRITLCPKTS-SKLDSGTLDKRCHSLDAASKARMN	3201			
Callithrix_jacchus	DPNHVRLPTS--ASTP-SNRKALSCVRITLCPKTS-SKLDSGTLDKRFYSLDAASKARIN	3103			
Bos_taurus	VPNQCTVVTS--ASTPPSNRKALSCIRITLCPKTP-SKLDSGNLDKRFS�DPATKTRMN	3249			
Equus_caballus	APNQCTLVTS--ASTPPSNRKALSCVRITLCPKTP-SKLDSGTLDKRFHS�DPASKTRMN	3497			
Felis_catus	VPNQCTLVTS--ASTPPSNRKALSCVRITLYPKTP-SKVDSGTLDRRLFHS�DPASKTRMN	3732			
Canis_lupus_familiaris	APSQCTLVTSTSASTPPSNRKALSCFRITLYPKTP-SKLDSGTLDKRFHSLDPASKTRMN	3831			
Pavo_muticus	SPDEILSTR----SPSSPIKKVLSCVHITLSPKCNNSELH-----RDNLNTENEMRLG	1918			
Pavo_cristatus	SPDEILSTR----SPSSPIKKVLSCVHITLSPKCNNSELH-----RDNLNTENEMRLG	1918			
Gallus_gallus	--DEILPTM----SPSSPIKKVLSCVHITLSPKCNNSELH-----RDNLNTENEMRLG	1913			
Chelonia_mydas	SPDKILTAMP--ESPSSPTRKALSCVHITLSPKRNSELF-----SILDAAEAETRNS	1882			
Rhinatrema_bivittatum	SLAHLATIDS--VLSSPTRKALSCVRVILSPKPDHKLINLEFDKPNYYEIGARPS	1807			
	.....4210.....4220.....4230.....4240.....4250.....4260			

		.	:	:	:	.	..*:	*	:	
Mus_musculus	SEFNSDLRIISSRSI	----	EPTSKLLTCKPVAQDQESLIVFLGPKSP	PLDLQVAQSSLPDS	2268							
Rattus_norvegicus	SEFNSDLRIISSRSI	----	EPTSKLLTCKPVAQDQESLIVFLGPKSP	PLDLQVAESSLPDS	2666							
Homo_sapiens	SEFNFDLHTVSSRSI	----	EPTSKLLTCKPVAQDQESLGLFLGPKSSLD	FQVVOQPSLPDS	3135							
Pan_troglodytes	SEFNFDLHTVSSRSI	----	EPTSKLLTCKPVAQDQESLGLFLGPKSSLD	FQVVOQPSLPDS	3135							
Macaca_mulatta	SEFNFDLHTVSSRSI	----	EPTSKLLTCKPVVDQESLGLFLGPKSSLD	FRVVOQPSLPDS	3256							
Callithrix_jacchus	SELNFDLPTIISRSI	----	EPTSKLLTCKPVAQDQESLGLFLGPKSSLD	FQVIQPSLPDS	3158							
Bos_taurus	SEFNSDLQTISSRSI	----	EPTSKLLTCKPVAQDQESLGLFLGPKSSSD	FQVVOQPSLPDS	3304							
Equus_caballus	SEFKSDLQTISSRSI	----	EPTSTLLTCKNPVAQDQESLGLFLGPKSSLD	FQVVOQPSLPDS	3551							
Felis_catus	SEFNSDLQTISSRSI	----	EPTSKLSAKPVAQDQESLGLFLGPKSSSD	FQVVOQPSLPDS	3787							
Canis_lupus_familiaris	SEFNSDLQTISSRSI	----	EPTSKLLASKPIAQNQESLGLFVGPKSSPD	FQVVOQPSLPDS	3886							
Pavo_muticus	DKLEVNSQPVLKAP	ETILLEAVSKLPTADLIPEDRRWSSFPVPSADPC	-----	1966								
Pavo_cristatus	DKLEVNSQPVLKAP	ETILLEAVSKLPTADLIPEDRRWSSFPVPSADPC	-----	1966								
Gallus_gallus	DKLEVNSQPVLKAP	ETILLQADPKLPTADLIPEDRCSSFPVPSADPC	-----	1961								
Chelonia_mydas	DRLKTDQAQMLSSSPPKILLESASKLLTAESIPKQSSSHFPKPISS	-----	1929									
Rhinatrema_bivittatum	RNSETRDQKFSISP	LRSLTVSKLLTDESAPKSGSSYFPVPVSYPESEFNHYGALS	1865									
4270.....4280.....4290.....4300.....4310.....4320											

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Mus_musculus	KTIFQDLKTKPPQNSQIVTSRQTQVNIHLEGYSKPEGTPVSADGSQEQQSKVSFTTSFGK	2328
Rattus_norvegicus	KTISQDLKTIPTPQNSQIVTSRQTQVNISDLEEYSKPEGTPVPADGSGEQNKAPFTITSSGM	2726
Homo_sapiens	NTIITQDLKTIPTSPNSQIVTSRQIQVNISDFEGHSNPEGTPPVFADRLEPKMKITPLSAFSEK	3195
Pan_troglodytes	NTIITQDLKTIPTSPNSQIVTSRQIQVNISDFEGHSNPEGTPPVFADRLEPKMKITPLSAFSEK	3195
Macaca_mulatta	NTIITQDLKTIPTSPNSQIVTSRQIQVNISDFEGHSNPEGTPPVFADRLEPKMKITPLSAFSEK	3316
Callithrix_jacchus	NTIITQDLKTIPTSPNSQIVTSRQIEVNISDFEGHSNPEGTPPVFADRLEPKKKITPLSAFSEK	3218
Bos_taurus	NVITQDLKTIPIYQNSQIVTSRQTQVNSSDLEEYSNPEGTPPVFADRSPPEEIKSPFPSPFSKG	3364
Equus_caballus	STVTQDLKIMPFQNSQIVTSRQTQVNISDLEGYSNPEGTPISTDRPSEEIKTPFSAFSGK	3611
Felis_catus	NTISQDLKTIPTFQNSQIVTSRQTQVNISDLEGYSPGEGTPVADRLESSEEIKTPFSAFSGK	3847
Canis_lupus_familiaris	NDISQDLKSILFQNSQIVTSKQTQVNISDLEGYSSPEGTPPVFADRSEEGIKAPPSAFPGK	3946
Pavo_muticus	----PVFSSVPSTAGQELPLDGSEK-----LQAQSSGGCGLKNICNCTDPARSRK	2012
Pavo_cristatus	----PVFSSVPSTAGQELPLDGSEK-----LQAQSSGGCGLKNICNCTDPARSRK	2012
Gallus_gallus	----SVFSSVPSTAGQELLHGSEK-----LQAMSSGGCGLKNICSCTDPAKSRK	2007
Chelonia_mydas	----QDLRYMPLESSQRVPFSSQAH-----TRGLDSCGHNLQDNFKITVSAQTGK	1975
Rhinatrema_bivittatum	FDIAKLDSLPLPLVTLDMPLSRKMPT-----MPCDSSRQIQWQDDSKSVVPAQREK	1915
4330.....4340.....4350.....4360.....4370.....4380	

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Mus_musculus	LSSDAITQIITTESPEKILFSSEIFIHADDRGQGILDPMAOK----PSRFASSSSVQOIPA	2384
Rattus_norvegicus	LSSDAVTQVITTESPEKIMFSSEIFINADDRGQDIPYPTON----PSRFASSSSGQOITA	2782
Homo_sapiens	LSSDAVTQIITTESPEKILFSSEIFINAEDRGHEITEPGNOKLRKAPVKFASSSSVQOITF	3255
Pan_troglodytes	LSSDAVTQIITTESPEKILFSSEIFINAEDRGHEITEPGNOKLRKAPVKFASSSSVQOITF	3255
Macaca_mulatta	LSSDAVTQIITTESPEKILFSSEIFINAEDRGHEITEPGNOKLRKAPVKFASSSSVQOITF	3376
Callithrix_jacchus	LSSDAVTQIITTESPEKILFSSEIFINPEDHVHEITEPSNOKLRKASVKFASSSSVQOITF	3278
Bos_taurus	LSSDAVTQIITTESPGKAIFSSSEIFVNAEDRGHEIPELNTOKSGNIPVKFASSSSVQOITV	3424
Equus_caballus	FSSDAVTQIITTESPEKAIFSSSEIFINPEDYGHEIPHPSAOKLKGVPVKFASSSSVQOITV	3671
Felis_catus	LSSDAVTQIITTESPGKITFSSEIFINAEDHGFESEPSTONVDKVPVKFASSSSVQOITH	3907
Canis_lupus_familiaris	LSSDAVTQIITTESPGKIMFSSEIFINKORGLAISEPSTOKLKGVPVKFASSSSVQOITH	4006
Pavo_muticus	STSDATTQIITTESPGKITFSAEIYVNSQDSESSAHQSSIQAKEFPQNTTSALN-RTSSF	2071
Pavo_cristatus	STSDATTQIITTESPGKITFSAEIYVNSQDSESSAHQSSIQAKEFPQNTTSALN-RTSSF	2071
Gallus_gallus	STSDATTQIITTESPGKITFSAEIYVNSQDISSAHQSSSTQAKEFPQNTTSSLN-RTSSF	2066
Chelonia_mydas	TTSDAITQIITTESPEKITFSAEIYVSTEDGETSFGSSHORACEIANLATSSLN-HISPS	2034
Rhinatrema_bivittatum	ASSDAMTQIITTESPEKITFSAEIYISPSDENIINRSLNOKVGAS-GVSPLPNN-RIS-L	1972
4390.....4400.....4410.....4420.....4430.....4440	

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Mus_musculus	SHGKDAQPVLPLPYKPSGSSKMYVPLLKRVPSYLD	SKSDTTVESSHSGSND	AIAPDFPPO	2444		
Rattus_norvegicus	SQGKDAQPVLPLPYKPSGSSKMYVPLLKPVP	SYLD	SKSDTTVESSHSGSND	AIAPDFPPO	2842	
Homo_sapiens	SRGTDGQPLLLPYKPSGSTKMYVLPOLRQIP	SPD	SKSDTTVESSHSGSND	AIAPDFPAQ	3315	
Pan_troglodytes	SRGTDGQPLLLPYKPSGSTKMYVLPOLRQLP	SPD	SKSDTTVESSHSGSND	AIAPDFPAQ	3315	
Macaca_mulatta	SRGTDGQPLLLPYKPSGSTKMYVLPOLRQIP	SPD	SKSDTTVESSHSGSND	AVAPDFPAQ	3436	
Callithrix_jacchus	SHGTDGQPLLLPYKPSGSMKMYVLPOLRQIP	SLD	SKSDTTVESSHSGSND	AIAPDFPAQ	3338	
Bos_taurus	PHGTDGQPLLLPYKPSGSTKMYVLPOLTQIP	SSL	SKSDTTIESSHSGSND	AIAPDFPAQ	3484	
Equus_caballus	PHGTDACP	SLLPYKPSGSPKMYVSPOLRQIP	FLD	STSDTTVESSHSGSND	AIAPDFPAQ	3731
Felis_catus	PHGTDACP	SLLPYKPPGSTRMYYVLPOLKQIP	SLD	SRSDTTIESSHSGSND	AIAPDFPAE	3967
Canis_lupus_familiaris	PHGTDACP	SLLPYKPPGSTKMYVPELRQIP	SLD	SRSDTTVESSHSGSND	AIAPDFPAE	4066
Pavo_muticus	PRQGAGRPLLLPYKPSGSTEMYVVPYEKAGAKI	SP	LGSE-----	NSGSNDALPSGLPAN	2125	
Pavo_cristatus	PRQGAGRPLLLPYKPSGSTEMYVVPYEKAGAKI	SP	LGSE-----	NSGSNDALPSGLPAN	2125	
Gallus_gallus	PRQGAGQPLLLPYKPSGSTEMYVVPYLKAGAKI	SP	LGSE-----	NNGSNDALPPGLPAN	2120	
Chelonia_mydas	HRP-ADQPLLLPYKPSGSSEMYVPHPMKGPKI	SPVR	SETTTVESSHSGSND	AIPPNFPAK	2093	
Rhinatrema_bivittatum	SSQLGDSQQLSHRRARSP	VEFFFP-YPEGRRKIS	SPVRS	DTTIESSHPGSND	AVAPYFPVE	2031
4450.....4460.....4470.....4480.....4490.....4500					

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Mus_musculus	MLGTRDDDLSTNTVNIKHKEGIYSKRAATK-----GKNPSQKGDAA-----	2484	
Rattus_norvegicus	VLGTRDDDLSTTVNIKHKEGIYSKRAASK-----GKQPSQKGNAE-----	2882	
Homo_sapiens	VLGTRDDDLSATVNIKHKEGIYSKRVTKASLPVGEKPLQENAD-----	3360	
Pan_troglodytes	VLGTRDDDLSATVNIKHKEGIYSKRVTKASLPVGEKPLQENAD-----	3360	
Macaca_mulatta	VLGTRDDDLSATVNIKHKEGIYSKRVTKASLPVGEKPLRNENAETSKLILKLIRKYRMP	3496	
Callithrix_jacchus	VLGTRDDDLVSATVNIKHKEGIYSKRVTKASLPVGGKPLRSDSAD-----	3383	
Bos_taurus	VLGTRDDDLADTVNIKHKEGIYSKRAVTKASLSMGKKPFQKDNA-----	3528	
Equus_caballus	VLGTRDDDLVAS-VNIKHKEGIYSKRAVAKASLSVGKKPFQKDNAGSSDTII-----	3781	
Felis_catus	VLGTRDDDLSTPADTKHKEGIYSKRAVAKPSFSVGKNPPQKDNA-----	4011	
Canis_lupus_familiaris	VLGTRDDDLSTVPANIKHKEGIYSKRVPKASLLVGRKTPQKDNA-----	4110	
Pavo_muticus	VLGIQDDKPPDTTAIAKHKEGGYCKRAKPKLAWAEEQMIQEGAPG-----	2170	
Pavo_cristatus	VLGIQDDKPPDTTAIAKHKEGGYCKRAKPKLAWAEEQMIQEGAPG-----	2170	
Gallus_gallus	VLGIQDDKPPDTTAIAKHKEGVCSERAKPKLAWAEEQMIQEGAPG-----	2165	
Chelonia_mydas	VLGSMDENPLDIVAIAKHKEGVYSKRSEPKVAWAKEKTSLEATTES-----	2139	
Rhinatrema_bivittatum	VLGSRDSDVSEIITIKHEEGIYSRRVEPKRAWEEFEKTSQETLADS-----	2077	
4510.....4520.....4530.....4540.....4550.....4560		

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Mus_musculus	-----APVQMPITWDENVLDENQ-EEVISRGVVIMAGPEEMSSLEK-----	2525				
Rattus_norvegicus	-----APVQMPVTWDKNVYKENQ-DEIISRRVVIEIAGPEEMPSQEK-----	2923				
Homo_sapiens	-----ASVQVLITGDENLSDKKQ-QEIHSTRAVTEAAQAKEKESLQK-----	3401				
Pan_troglodytes	-----ASVQVLITGDENLSDKKQ-QEIHSTRAVTEAAQAKEKESLQK-----	3401				
Macaca_mulatta	-----RMAKGILKNKSKGFTLPDASVQVLITGDENLSDKKQ-KEIHSTRAVTEAAQAKEKESLQK-----	3555				
Callithrix_jacchus	-----ASVQVLITGDENLSDKKL-KESHSTSAVTEAAQAKEKEPLQK-----	3424				
Bos_taurus	-----DAHVQVLITGDEDLSDKNQEKIYTKKAVTKIAGSEEEKESLEK-----	3571				
Equus_caballus	-----SDAKVQVSIISGDENLSDKNQMKEMYSKTAVTEAAQPEEKEPLQK-----	3825				
Felis_catus	-----DAEVQVSVSGDGLSDKNQKKEIYSKKAVAKAAQPEEKEFLET-----	4054				
Canis_lupus_familiaris	-----DAQVQVSIIDDENLSDKNQKKEIYTKKAVTKAAQPEE-ESLQK-----	4152				
Pavo_muticus	-----SHHLKSANTTHSVFRSAQFCLHHPVP-----	2196				
Pavo_cristatus	-----SHHLKSANTTHSVFRSAQFCLHHPVP-----	2196				
Gallus_gallus	-----SHRLKSVNATHSVFKSAQFYLYHHPVP-----	2191				
Chelonia_mydas	-----VNHLESVKTHSVFKTAQFYLYHHPVPL-----	2166				
Rhinatrema_bivittatum	-----RKHLELTKMVQPVSRLLGQ-----KPT-----	2098				
4570.....4580.....4590.....4600.....4610.....4620					

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Mus_musculus	DLAGPSD-----ITVQDRKTENLPDTKSIKQKE-----GSLEI---	2558
Rattus_norvegicus	DLAGSSD-----ITVQDRKTGNLPDAKSIKQKE-----GSLEI---	2956
Homo_sapiens	DTADSSAAAAAEHSAQVGDPEMKNLPDTKAITQKEEIHRRKTVPEEAWPNNKESLQINIE	3461
Pan_troglodytes	DTADSSAAAAAEHSAQVGDPEMKNLPDTKAITQKEEIHRRKTVPEEAWPNNKESLQINIE	3461
Macaca_mulatta	DTADSSAAAAAEHSAQVGDPEIKNSPDTKAITQKEEIHRRKTVPEEAWTSNKKESLQINIE	3615
Callithrix_jacchus	DTADSSAAAAAEHSAQVGDPKIKSFPDSKAITQKEEIHRRKTITEETWPKDKESLQINIE	3484
Bos_taurus	DTTGRGSSTAAASQHSQTDTKSLPDTKAIKQKEEVHSKRKVPKEAWSEEKKALQIDIA	3631
Equus_caballus	DTAGSSDATAAERSAQLQDTKIESLPDAQATEQKEEIHRSKSELPEAWAEDKKSLOIDIA	3885
Felis_catus	ATAGSSGAAAAEFSARLQNIKIESPPDTEAIKQNEEIHRSKRTVPKEAWTEDQESLOIDIA	4114
Canis_lupus_familiaris	ASKGSSDAAAAEHSARLQDIKLESLPDTKAIKQKEEILNKRTPKEAWKEDKESLOIDIA	4212
Pavo_muticus	-----MCESHLLSNK-----	2206
Pavo_cristatus	-----MCESHLLSNK-----	2206
Gallus_gallus	-----TCENYLLSN-----	2200
Chelonia_mydas	-----QHESYFLSN-----	2175
Rhinatrema_bivittatum	-----SQDIHHLQQQ-----	2108
4630.....4640.....4650.....4660.....4670.....4680	

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      .      :      *      :
Mus_musculus      ESECHSAFENTTAHSVFRSAKFYFHHHPVHLPHEQDFCHESLGRSVFMRHSWKDFFHHHSG- 2617
Rattus_norvegicus EPECHSEFANTTHSVFRSAKFYFHHHPVHLPQEQDLCRESSGRNVLTQHPWKDLFCHSG- 3015
Homo_sapiens      ESECHSEFENTTTRSVFRSAKFYIHHHPVHLPDQDICHESLGRSVFMRHSWKDFFQHHPDK 3521
Pan_troglodytes   ESECHSEFENTTTRSVFRSAKFYIHHHPVHLPDQDICHESLGRSVFMRHSWKDFFQHHPDK 3521
Macaca_mulatta    ESECHSEFENTTTHSVFRSAKFYIHHHPVHLPDQDICHESLGRSVFMRHSWKDFFQHHPDK 3675
Callithrix_jacchus ESECHSKFENTTTHSVFRSAKFYIHHHPVHLPDQDVCHESLGRSVFMRHSWKDFFQHHPDK 3544
Bos_taurus        ESRCHSEFENTTTHSVFRSAKFYFHHHPVHLPDQDFCHESLGRSVFMRHSWKDFFQHHPDK 3691
Equus_caballus    ESRCHSEFENTTTHSVFRSAKFYFHHHPVHPPSDQDFCHDSLGRSIFMKHSWKDFFQHHPDK 3945
Felis_catus       ESRCHSEFENTTTHSVFRSAKFYFHHHPVHLPDQDVCHESLGRSVFMRHSWKDFFQHHPDK 4174
Canis_lupus_familiaris ESRCHSEFENTTTHSVFRSAKFYFHHHPVHLPDQDFCHESLGRSVFMRHSWKDFFQHHPDK 4272
Pavo_muticus      SSELSEDSSGVGHTGIPSSSTAIHNQKKAHRHRRVFSahr-----KK 2247
Pavo_cristatus    SSELSEDSSGVGHTGIPSSSTAIHNQKKAHRHRRVFSahr-----KK 2247
Gallus_gallus     -SELSEDSSGVGHTGISSSTVIQNRKKAHRHRRVFSaHh-----KK 2240
Chelonia_mydas    -DEPSEECTDIGHTGPSSRDFFQNWRAAKDQHS SVYP-----QE 2215
Rhinatrema_bivittatum DSAIPSAVIRNQTLSSSRDLFRHESSIKEDHLQFLGYPE-----KEQQ 2152
.....4690.....4700.....4710.....4720.....4730.....4740

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      *      :      :      :      :
Mus_musculus      ---HSCLPPPGRPSDKLDKTKMDYTRIKSLINLNLGEHEKIHITKNQARDPK-GKROAN 2673
Rattus_norvegicus ---HSLGPPPGRS---DNTEMECTRVKSLMDLNLGGHEKIHITKNQARDTKEDKRPA 3069
Homo_sapiens      HREHMCLPLP---YQNMdkTKTDYTRIKSLINVLGNKEVMDITKSQVRDYPKHNGQIS 3578
Pan_troglodytes   HREHMCLPLP---YQNMdkTKTDYTRIKSLINVLGNKEVMDITKSQARDYPEHNGQIS 3578
Macaca_mulatta    QREHICLPLP---YQNMdkTKTDYTRIKSLINVLGNKGVTDTKSQARDYPEYSGQIN 3732
Callithrix_jacchus HREHICLPLP---YQNMdkTKMDYTKIKSLINVLGNKEVIHTTKSQATDYPKYNVOIN 3601
Bos_taurus        QREYTCPLSP---QHMKEKTKTDYTRIESLINVLENKELKRATQSQARDFPKSDKOIN 3748
Equus_caballus    QREYICLPPH---QNVKTKMDYTKIESLINVLENKEAMHTSKIEAKEYPKFDDKOIN 4002
Felis_catus       QRGHTCLPCP---DENVEKTKADYTRIESLINVLENKEVMHSAKSQARDYPKSDKOIS 4231
Canis_lupus_familiaris QREHTSLPSP---RONVEKTKTDYTRIESLINVLEN-DVMHTAKSRARDNPKSDKOLN 4328
Pavo_muticus      HGEHQFFPLT-----AEADYSKNEDLNVDTSLDNETPGEELLQRG-GIEAEQMAAC 2297
Pavo_cristatus    HGEHQFFPLT-----AEADYSKNEDLNVDTSLDNETPGEELLQRG-GRAEQMAAC 2297
Gallus_gallus     DGEREFFPLT-----AEADYSKNEDLNVDTSLDNETPGEELLQRG-RREADQMAAC 2290
Chelonia_mydas    GEEDEFSPLT-----AEMDYSKVEDLRFNAFLGKEASGKELVQEDQKKVRDYLLSS 2266
Rhinatrema_bivittatum GEEDRFSPLR-----AEVDYSK-DDFISDMTSQYETLNKESKLSIREQTRGYSLTN 2202
.....4750.....4760.....4770.....4780.....4790.....4800

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      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .      .
Mus_musculus      EQKKDQK-----VTPELTTECPVSLNELWNRYQERQKQONPSGACDTKELSLVERLDR 2726
Rattus_norvegicus DPKKDQK-----VTPELTSSQCPMSLNELWNKYQERQKQKPSGACDNKELSLVERLDR 3122
Homo_sapiens      DPQRDQK-----VTPEQTTOHTVSLNELWNKYRERQQRQPELGDRKELSLVDRLDR 3631
Pan_troglodytes   DPKRDKQ-----VTPEQTTOHTVSLNELWNKYRERQQRQPELGDRKELSLVDRLDR 3631
Macaca_mulatta    DPKRDKQ-----VTPEQTTOHTVSLNELWNKYRERQQRQPELGDRKELSLVDRLDR 3785
Callithrix_jacchus DPKRDKQ-----LTPEQTTOHNVGLNELWNKYRERQQRQPKLGDRKELSLVERLDR 3654
Bos_taurus        DLKRDPK-----ATPELTSEHTVSLNELWNRYQERQKQKP-EVSAKKELSLVERLDR 3800
Equus_caballus    DPKRDKH-----VTAELTTOHTVSLNELWNKYQERQKQKPPEFTGKKELSLVERLDR 4055
Felis_catus       DPKRDKH-----VTPELATQHTVSLNELWNKYQERQKQKPPEFSDRKELSLVERLDR 4284
Canis_lupus_familiaris DQKRDKH-----VTPEPTAQHTVSLNELWNRYQERQQRPPQFGDRKELSLVDRLDR 4381
Pavo_muticus      SQTSHLR---VVKDLPLRHRTHSAGSLDELWVKFLERQKRNOQHHCRRNGELTLVERLDR 2354
Pavo_cristatus    SQTSHLR---VVKDLPLRHRTHSAGSLDELWVKFLERQKRNOQHHCRRNGELTLVERLDR 2354
Gallus_gallus     SQMSNLREN-VVKDLPLRQRTHSAGSLDELWVKFLERQKRYQHHFRNRNGELTLVERLDR 2349
Chelonia_mydas    SQRTDLSRR-QKMDLPLKQSTYSTGSLDELWTKFLERQKKHHLNLSNELSLVERLDR 2325
Rhinatrema_bivittatum SQETDRGRWRRIEPLKQSTLSNGSLDELWAKFTERQKKHSHYNN-NSLSLVQRLDR 2261
.....4810.....4820.....4830.....4840.....4850.....4860

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**::***: ::* .. :. :. :.*
Mus_musculus      LAKLLQNPITHSLRASEAQDDSRGGHRAREWTGRRQOKQKGRKHSKSLERGQS-TG 2785
Rattus_norvegicus LAKLLQNPITHSLQASESTQDDRRWGRGARGWTGRRQHQKQKGRKHSKSLERGHS-TG 3181
Homo_sapiens      LAKILQNPITHSLQVSESTHDDSRGERSVKEWSGR-QQQRNKLOKKKRFKSLEKSHKNTG 3690
Pan_troglodytes   LAKILQNPITHSLQVSESTHDDSRGERSVKEWSGR-QQQRNKLOKKKRFKSLEKSHKNTG 3690
Macaca_mulatta    LAKILQNPITHSLQVSESTHDDSRGERDVKEWSGR-QQQRNKLOKKKRFKSLEKSHKNTG 3844
Callithrix_jacchus LAKLLQNPITHSLQVSESTRDDGRGERMKEWSGR-QQQRNKLOKKKQFKSLEKSHKNTG 3713
Bos_taurus        LAKLLQHPITHSLQVSESTQDDSRGEQDAKEWSDKQQQKNKLOKKKRYKSLEKCHKNTG 3860
Equus_caballus    LAKLLQNPITHSLRPSESTQDDSRVERDVKEWSGTQQQKNKLOKKKWKYSLEKCNKNTG 4115
Felis_catus       LAKLLQNPITYSLWASESTQDDSRGERDIK-----QQQKIKLOKKKRYKSLEKCHKNTG 4338
Canis_lupus_familiaris LAKLLQNPITYSLRTSESTQDDSRGERDVKEWSGRQQQKSKLOKKKRYKSLEKFHKNAG 4441
Pavo_muticus      LARVLQNPVRYTLIPAKSERNASEKTSE---QEKVRLPE-----KSVAESTLEPR--AA 2403
Pavo_cristatus    LARVLQNPVRYTLIPAKSERNASEKTSE---QEKVRLPE-----KSVAESTLEPR--AA 2403
Gallus_gallus     LARVLQNPVRYTLIPAKSERSASENTSEVKEQEKIRLPE-----KSMAESTLGPH--AA 2401
Chelonia_mydas    LARVLQNPVRHSLMPTENGKSNIGKTRGREQKKIRHQD-----KKVYESNLDYSYRNVL 2379
Rhinatrema_bivittatum LARLLQNPVIHSLMAVDGKQSSAMPVSQKQKEMESRHKVG-----QESGSSRLGFHQHAS 2316
.....4870.....4880.....4890.....4900.....4910.....4920

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:
Mus_musculus      DFRKSKVFSPHQGGKSSQFKIEQIKLDKYILRKEPGFNNVNTSLDSRPSEES-VSLTDS 2844
Rattus_norvegicus DFRKSKVLSPEHGGKSSQRNIEKIKLDKYILRKQPDFNNVNTSLDSRPSEESSELLTDS 3241
Homo_sapiens      ELKKSCKVLSHHRAGRSNQIKIEQIKFDKYILSKQPGFNYISNTSSDCRPSEESSELLTDTT 3750
Pan_troglodytes   ELKKSCKVLSHHRAGRSNQIKIEQIKFDKYILSKQPGFNYISNTSSDCRPSEESSELLTDTT 3750
Macaca_mulatta    ELKKTCKVLSHHGAGRSNQIKIEQIKFDKYILSKQPGFNYISNTSSDCRPSEESSELLTDTA 3904
Callithrix_jacchus ELKKSCKVFSHHGAGRSNQIKIEQIKFDKYILSKQPGFDYISNTSSDCRPSEESSELLTDTT 3773
Bos_taurus        DLKKNKILSAHQAGRPNQIKIEQFKFDKYILRKHPGFHYINNTSSDSRHSSESELLTDTT 3920
Equus_caballus    DLKKGKVLSTHQARRSNQIKIEQIKFDKYILRQPGFYVNNNTSSDSRVSESESEMLTESA 4175
Felis_catus       ELKKSCKALSHPQAGRSNQIKIEQIKFDKYILRKQPGVHYINNTSSDSRPSDESELLTDTA 4398
Canis_lupus_familiaris ELKKSCKMLSTHQAGRSNQIKIEQIKFDKYILRKQPDFHYRNNTSSDSRPSEESSELLTDTA 4501
Pavo_muticus      RVKERPRINCRERS-----FVELRRNRSGEKVTCHTTSEISEHQYWDTCSDTCSEERLSK 2458
Pavo_cristatus    RVKERPRINCRERS-----FVELRRNRSGEKVTCHTTSEISEHQYWDTCSDTCSEERLSK 2458
Gallus_gallus     RVKERPRINCRERS-----FVELRKDRSGEKVTCHTTNEISEHQYLDTCSDTCSEIRLSK 2456
Chelonia_mydas    NAEERSDTSYDEKR-----RVESRQORAGERTINMKRFLK-QKYLDPLSDTSLETMPTK 2433
Rhinatrema_bivittatum DVAASHKIWHSEDTPDFAIKQSRPHQIEEISTERRIRILQQTRYLDIPSESSSTAGPAK 2376
.....4930.....4940.....4950.....4960.....4970.....4980

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: :*: * * : :.***:***.***:*** :: :*: ***
Mus_musculus      PNIFSSSTDSPVDSVLTPTDRDMPLN-ERSSSISTIDTVRLIQAFGQDRLSLSPRRIKLY 2903
Rattus_norvegicus PNLFSSTESPVEDVLTHTGRDMPLN-ERSSSISTVDITARLIQAFGHDRLYLSPRQIKLY 3300
Homo_sapiens      TNILSGTTSTVESDILTQTDREVALH-ERSSSVSTIDTARLIQAFGHERVCLSPRRIKLY 3809
Pan_troglodytes   TNILSSTTSTVESDILTQTDREVALH-ERSSSVSTIDTARLIQAFGHERVCLSPRRIKLY 3809
Macaca_mulatta    TNILSSTTSTVESDILTQTDREVALH-ERSSSVSTIDTARLIQAFGHERVCLSPRRIKLY 3963
Callithrix_jacchus TTILSSTTSTVESDILTQTDREVALH-ERSSSVSTIDTARLIQAFGRERVCLSPRRIKLY 3832
Bos_taurus        TNILSTTTSPVESDILTQTDKEMTLH-ERSSSISTIDTARLIHAFGHERVCLSPRRIKLY 3979
Equus_caballus    TNILSTTTSPAESDILTQTDKEVTLH-DRSSSISTIDTARLIKAFGHERVCLSPRRIKLY 4234
Felis_catus       TNILSTTNSPVESDILTQTDKEVTLQ-ERSSSISTIDTARLIQAFGHERVCLSPRRIKLY 4457
Canis_lupus_familiaris TNLLSTTTSPVESDILTQTDREVTLQ-ERSSSISTIDTARLIQAFGHERVCLSPRQIKLY 4560
Pavo_muticus      DLCTTISSTISESDAVTQTDVETTTQTEVSSSVSTIDTARLVRAFGHRRVQVSPRLSOLY 2518
Pavo_cristatus    DLCTTISSTISESDAVTQTDVETTTQTEVSSSVSTIDTARLVRAFGHRRVQVSPRLSOLY 2518
Gallus_gallus     DLCTTISSTISESDAVTQTDIETTTQTEVSSSVSTIDTARLVRAFGHRRVQVSPRLSOLY 2516
Chelonia_mydas    DHVVVTDSTASESDMVTQTEMETTSPTTEVSSSISTIDTARLIRAFGHERVRLSPRLSKLY 2493
Rhinatrema_bivittatum EEPSTITDITTT-ESEVATQTDSEMAQTETGSSSISTIDTARLIRAFGLRKVHVPPKLSOLY 2435
.....4990.....5000.....5010.....5020.....5030.....5040

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	*
Mus_musculus	STVTSQRRRYLEQPCCKHNKRALNTACPQMTSEHSRRRRHIOVANHMTSSDSVSS-PGSLLS	2962				
Rattus_norvegicus	SSVTNQRRKHLEKPCCKHKRALNTACPQMTSEHTRRRRHVOVANRIMSSDSVSS-AGSCLS	3359				
Homo_sapiens	SSITNQRRYLEKRSKHSKKVLNTGHPLVTSEHTRRRHIOVANHVISSDSISSSASSFSL	3869				
Pan_troglodytes	SSITNQRRYLEKRSKHSKKVLNTGHPLVTSEHTRRRHIOVANHVISSDSISSSASSFSL	3869				
Macaca_mulatta	SSITNQRRYLEKRSKHSKKVLNTGHPLVTSEHTRRRRIOVANHVISSDSISSSASSFSL	4023				
Callithrix_jacchus	SSITNQRRYLEKRSKHSKKVLTTCHPQMTSEHTRRRRIOVENHVISSDSISSSVSSFSL	3892				
Bos_taurus	SSITDHQRRYLEKRSKKNKKALNTGYPQITSEHTRRKHIOVTDHVSS-DSVSSSTSSFWFS	4038				
Equus_caballus	SSITDHQRRYLEKRSRKNKKVLDTCRPQITSEHTRRKHIOVANHMISSDSISSSTSSFWFS	4294				
Felis_catus	SSITDHQRRYLERRSKKNKKALNTSHPPQMTSEHTRRKHIOVANHVISSDSISSSTSSFWFS	4517				
Canis_lupus_familiaris	SSITDHQRRYLERRSKKNKKALNMNHPQMTSEHTRRKHIOVADHVISSDSVSSSTSSFWFS	4620				
Pavo_muticus	HTIHQQKSRSEKWDEEDSGVRGVEHPQVTS-ERHRKQKETQK-----ALDPALTSSGSGWG	2572				
Pavo_cristatus	HTIHQQKSRSEKWDEEDSGVRGVEHPQVTS-ERHRKQKETQK-----ALDPALTSSGSGWG	2572				
Gallus_gallus	HTIHQQKSRSEKWDEEDSGVRDVEHPKVAS-ERHRKQKETQK-----ALDPALTSSGSGWG	2570				
Chelonia_mydas	CTISQQKSRSEKWDKGRSKVGLKYPNMNTSAERHKKRRDQTQMSDSVISDSVATINSSCG	2553				
Rhinatrema_bivittatum	STIDQQKNRFNGQKGSRKTTKDHKRMFPFSEMQRSRKDTQIADSVISSDITTSIASSWG	2495				
	.....5050.....5060.....5070.....5080.....5090.....5100				

	. . . : * . . . : * . : *** : ****	. . . : * : *** : *** : * * :	.	
Mus_musculus	LDSALSNEETVRMVSKGVQAGNLEIVA-	GVKKYTQDVGVTFFTPSSSEARLEEDSD----	3017	
Rattus_norvegicus	LDSTLSNEENVHMLNKGVQAGNLEIVT-	GAKKYTQDVGVTFFTPSSSEARLEEDSD----	3414	
Homo_sapiens	SNSTFCNKQNVHMLNKGIQAGNLEIVN-	GAKKHTRDRVGITFFTPSSSEAKLEENDS---	3924	
Pan_troglodytes	SNPTFCNKQNVHMLNKGIQAGNLEIVN-	GAKKHTRDRVGMTFFTPSSSEAKLEEDSD----	3924	
Macaca_mulatta	SNSTFCNKQNAHMLNKGIQAGNLEIVN-	GAKKHTRDRVGITFFTPSSSEAKLEEDSD----	4078	
Callithrix_jacchus	SNSTLCNKQNVHMLNKGIQAGNLEIVN-	GAKKNTRDRVGMTFFTPSSSEAKLEDSDS----	3947	
Bos_taurus	SNSTLCNKQNTHMLNKGVQAGNLEIVS-	GVRKNTRDRVGMTFFTPSSSEARVEEDSD----	4093	
Equus_caballus	STSTLCNKQNVHMLNKGIQAGNLEIVN-	GVRKHTRDRVGMTFFTPSSSEARVEEDSD----	4348	
Felis_catus	SSPTLCNKQNVHMLNKGVQAGNLEIVN-	GVKKHTRDRVGMTFFTPSSSEARVEEYSD---	4572	
Canis_lupus_familiaris	SSSTLCNMQNVOQLNKAVQAGNLEIVN-	GVKKHTRDRVGMTFFTPSSSEARIEEDSD----	4675	
Pavo_muticus	PSSALS NKRRARMLNKGIQAGDLEIVNGAT	KKNTRDRVGVTFFTPSPRSIQPNQRPRDP-WHR	2631	
Pavo_cristatus	PSSALS NKRRARMLNKGIQAGDLEIVNGAT	KKNTRDRVGVTFFTPSPRSIQPNQRPRDP-WHR	2631	
Gallus_gallus	PSSALS NKRRARMLNKGIQAGDLEIVNGAT	KKNTRDRVGVTFFTPSPRSIQPNQRPRDP-WHR	2629	
Chelonia_mydas	PSSALS NKRHIRM LNKGIQAGDLEIVNSAT	KKNTRDRVGMTFFTPRSSQ--VRRPQKP-SSC	2610	
Rhinatrema_bivittatum	PSPALSNKRNRARLLNKGVQAGDLEIVNSA	TKRNRDRVGMTFPPSPASQEMVPKDSPSEH	2555	
	.....5110.....5120.....5130.....5140.....5150.....5160			

		. . . : *	:	.	:****	*.	:	
Mus_musculus	-----VTSSSEKAKEKKFLSNYLQTKNLRKNKPNPCAG-VSWFVPVPSGQS	3063						
Rattus_norvegicus	-----MTSWSEKAKEKKFLSNYLRGKNLRKNKPNPCEG-VSWFVPVENRKS	3460						
Homo_sapiens	-----VTSWSEEKREEKMLFTGYPEDRKLLKKNKKSHEG-VSWFVPVENVES	3970						
Pan_troglodytes	-----VTSWSEEKREKMLFTGYPERDKLLKKNKKSHEG-VSWFVPVENVES	3970						
Macaca_mulatta	-----VTSWSEKHKEEKLFLTYPGDRKLLKKNKKSHEG-VSWFVPVENVES	4124						
Callithrix_jacchus	-----VTSWSEKHKEEKMFLTTPVDRKLRNKENSHEG-VSWFVPVENVES	3993						
Bos_taurus	-----VTSWSEKIIEKRLLTSYLGDKKLLKKNKKTCCBG-VSWFVPVENMKS	4139						
Equus_caballus	-----VTSWSEENIEEKRLLTNYLGDKRLRKNEQSCREG-VSWFVPVENVKS	4394						
Felis_catus	-----VTSWSEEKIEESLLTGVLGDKKLRKNQKSCSEG-VSWFVPVENVKC	4618						
Canis_lupus_familiaris	-----MTSWSEKIEEKRLLTNYLGDKRLRNKNHSCCBG-VSWFVPVENVKS	4721						
Pavo_muticus	VDGIFGESDGMVIDHQAAAGSKGKGQPGNLFM EKRTKRSRLHLPOG-ISWFVQAEDLK F	2690						
Pavo_cristatus	VDGIFGESDGMVIDHQAAAGSKGKGQPGNLFM EKRTKRSRLHLPOG-ISWFVQAEDLK F	2690						
Gallus_gallus	VDGIFGESDGMVIDHQAAAGSKGKGQPGNFFMEKRTKRSRLHLPOG-ISWFVQAEDLK F	2688						
Chelonia_mydas	ADGGFGOLDGGFSDFQNPPGKEKLGQPSNFLMDKKTGSNRPLPQVGVSWFVPAEGLKS	2670						
Rhinatrema_bivittatum	TWKVFSOPD--WRQVQVAGTEAEKKWPDGILMERTTRKNKLNLRG-VSWFVPAEDLKS	2612						
5170.....5180.....5190.....5200.....5210.....5220							

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      .:***      *      ** ..* *: **.**: *      :      .
Mus_musculus      GSKKEN-LPKIYRPFVISWFEPVTKTPWREPLREONWQA----QCMNSRGSLLGGPGRDSG 3118
Rattus_norvegicus  ESKKEN-LPKIYRPAISWFEPVTQTKPWREPLREONWQA----QCMNSRGSLLGGPGRDSG 3515
Homo_sapiens       RSKKEN-VPNTCGPGISWFEPIITKTRPWREPLREONCQG----QHLDGRGSLAGPGREAG 4025
Pan_troglodytes    RSKKEN-VPNTCGPGISWFEPIITKTRPWREPLREONCQG----QHLDGRGSLAGPGREAG 4025
Macaca_mulatta     GSKKEN-VPKLTWGPVSWFEPIITKTPWREPLREONWQG----QHLDGRGSLAGPGREDG 4179
Callithrix_jacchus GSKKEN-MPKMCGPGVSWFEPLTKTPWREPLREONWQG----QHLDGRGSLAGPRREDG 4048
Bos_taurus         GPKKEN-MPKLHGPGVSWFAPITNTKTPWREPLREONWQG----QHMDSHSSLAGP----G 4190
Equus_caballus     CPKKEN-LPKLRGPGISWFAPITSTKTPWREPLREONWQG----QHMDNHGSLAGS----G 4445
Felis_catus        GPKKEN-LPKLYGPGICWFAPITNTKTPWREPLREONWQG----QHMDSHGSLAGP----G 4669
Canis_lupus_familiaris EPKKEN-LPKLHGPGICWFAPITNTKTPWREPLREONWQG----QHVDGHRPLAGP----D 4772
Pavo_muticus       ESRKENCSNSIPGPGSTWFEPTTTKHWREPLREKNFOE----QQCSRLTQPAVPEGGAE 2746
Pavo_cristatus     ESRKENCSNSIPGPGSTWFEPTTTKHWREPLREKNFOE----QQCSRLTQPAVPEGGAE 2746
Gallus_gallus      ESRKENRSNSIPGPGSSWFEPITTKTPWREPLREKNFOE----QQYSKVTQSAVPERDAE 2744
Chelonia_mydas     DSRKENKSSSFSGPGPSWFEPLNTKTPWRDPLRERNWQE----QQGSIKIQPVVPVRDVE 2726
Rhinatrema_bivittatum DSRKENNYKPASGPGPAWFESLTHTKPWKPLQEKYMOEKLIQNQISTQTQPAISPPEVV 2672
.....5230.....5240.....5250.....5260.....5270.....5280

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      * *: **.*: * ***** * :*:*:*:*: **:*. :.:*: *::
Mus_musculus      QVSLRPFVRATLQESLQHRPDPFISHSGERIKRLKLLVQERKLSLFOSEREALFH-SAR 3177
Rattus_norvegicus QSFLQPFVRATLQESLQHRPDPFISRSGERIKRLKLLVQERKLQNLQNEREALFN-TAR 3574
Homo_sapiens       RDLLRPFVRATLQESLQHRPDPFISRSGERIKRLKLLVQERKLQSMQTERDALFN-IDR 4084
Pan_troglodytes    RDLLKPFVRATLQESLQHRPDPFISRSGERIKRLKLLVQERKLQSMQTERDALFN-IDR 4084
Macaca_mulatta     RDPLKPFVRATLQESLQHRPDPFISSSGERIKRLKLLVQERKLQSMQSERDVLFN-IDR 4238
Callithrix_jacchus RDTLKPFRATLQESLQHRPDPFISRSGERIKRLKLLVQERKLQSMQSERDALFN-IDR 4107
Bos_taurus         KEPLKPFVRATLQESLQHRPDPFISRSGERIKRLKLLVQERKLQNLQSEREALFN-TVQ 4249
Equus_caballus     RDPLRPFVRATLQESLQHRPDPFISRSRERIKRLKLLVQERKLQNLQSEREALFN-AVR 4504
Felis_catus        RDPPRPFVKATLQESLQHRPDPFISRSGERIKRLKLLVQERKLQNLQSEREALFN-TVR 4728
Canis_lupus_familiaris RERLRPFVRATLQESLHHRPDPFISRSGERIKRLKLLVQERKLQNLQSEREALFN-VSR 4831
Pavo_muticus       TRPTRPFVKLTLEALAVHRPDPFISRSGERVKHLKLVMEERRIQSVLQSERGELLN-PPE 2805
Pavo_cristatus     TRPTRPFVKLTLEALAVHRPDPFISRSGERVKHLKLVMEERRIQSVLQSERGELLN-PPE 2805
Gallus_gallus      TRPTRPTVKLTLEALAVHRPDPFISRSGERVKHLKLVMEERRIQSALQSEQLFELFN-PPE 2803
Chelonia_mydas     NKPPRPFVKMTLEALALHRPDPFISRSGERVKRLKLVMEERKLQNLQSEREELFN-PPE 2785
Rhinatrema_bivittatum TKISSPFVRITMQEALKMCRPDPFISRSRQVRRLLELLAEERQNLQVFESERNQLFNRL EE 2732
.....5290.....5300.....5310.....5320.....5330.....5340

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      :      :      .:      .:      *      **.**:*:
Mus_musculus      -----PLPRRVLLAVQKNKPIGKKEMIQRTR----- 3204
Rattus_norvegicus -----PLPRRVLLAVQKNKPIGKTEMIRRTTR----- 3601
Homo_sapiens       ERQGHQNRMCPLPKRVFLAIQKNKPISKKEMIQRSKR----- 4121
Pan_troglodytes    ERQGHQNRMCPLPKRVFLAIQKNKPISKKEMIQRSKR----- 4121
Macaca_mulatta     ERQGHQNRMRPLPKRVFLAVQSKPISKKEMIQRSKR----- 4275
Callithrix_jacchus EQQSHQNCMRPLPKRVFLAAQKNKPISKKEMIQRSKR----- 4144
Bos_taurus         EWQGYRDPVHLLRKRGFLLAAQKRPVGGKEMIQRSKR----- 4286
Equus_caballus     ERQGYRDPMCPLPKRGFMAAQKNRPIGKKEMIQRSKR----- 4541
Felis_catus        EWQGCQDPTRRLLKRGFLDAQKNRPIGKKEMIQRSKR----- 4765
Canis_lupus_familiaris EWQGYRDPHTLLPKKGFLDARKSRPIGKKEMIQRSKR----- 4868
Pavo_muticus       RRKGYRNASHVLADRGYLIKEKRAIPKSEMVQRSKR----- 2842
Pavo_cristatus     RRKGYRNASHVLADRGYLIKEKRAIPKSEMVQRSKR----- 2842
Gallus_gallus      KRKGYRNASHVLPGRGHLIKEKRAIPKSEMVQRSKR----- 2840
Chelonia_mydas     K-KGYKNASYLLYNRDCLVKQKRRITILKGEMVQRSKRGNAASEVFRNVGRLGAATNRVGK 2844
Rhinatrema_bivittatum TRRGWK-----CVRDHMVLQNN-AIPKKEMVQRSKR----- 2762
.....5350.....5360.....5370.....5380.....5390.....5400

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:*****:::*****: **. * *: ** :: :: *: *****. **:
Mus_musculus      -----IYEQLPEVKKKREEEKKRSEYKSYWLRQAQHYKMKVTNHLGRKVPWD 3251
Rattus_norvegicus -----FYEQLPEVKKKREEEKKRSEYTSYRLRAQHYKMKVTNHLGRKVPWD 3648
Homo_sapiens       -----IYEQLPEVQKKREEEKKRSEYKSYRLRAQLYKKRVTNQLGRKVPWD 4168
Pan_troglodytes    -----IYEQLPEVQKKREEEKKRSEYKSYRLRAQLYKKRVTNQLGRKVPWD 4168
Macaca_mulatta     -----IYEQLPEVQKKREEEKKRSEYKSYRLRAQLYKKRVTNQLGRKVPWD 4322
Callithrix_jacchus -----IYEQLPEVQKKREEEKKRSEYKSYRLRAQLYKKRVTNQLGRKVPWN 4191
Bos_taurus         -----IYEQLPEVQKKREEEKKRSEYKSYRLRAQLYKKKVTNQLGRKVPWD 4333
Equus_caballus     -----IYEQLPEVQKKREEEKKRLEYKSYRLRAQLFKKKVANQLGRKVPWD 4588
Felis_catus        -----IYEQLPEVQKKREEEKKRLEYKSYRLRAQLFKKKVTNQLGRKVPWN 4812
Canis_lupus_familiaris -----IYEQLPEVQKKREEEKKRLEYKSYRLRAQLFKKKVTNQLGRKVPWN 4915
Pavo_muticus       -----IYEQLPEVQKKREEEKKRSEYNSNRLRAQLYKTKITNRVLGRKVPWN 2889
Pavo_cristatus     -----IYEQLPEVQKKREEEKKRSEYNSNRLRAQLYKTKITNRVLGRKVPWN 2889
Gallus_gallus      -----IYEQLPEVQKKREEEKKRSEYNSYRLKAQLYKMKITNRVLGRKVPWN 2887
Chelonia_mydas     QGQKRR IYEQLPEVQKKREEEKKRSEYTSYRLKAQLYKTKITNHLGRKVPWN 2897
Rhinatrema_bivittatum -----MYEQLPEIKKKREEEKKRSEYKSYRLKAQLYRKKVMNHLGRKTPWN 2809
.....5410.....5420.....5430.....5440.....5450...

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