File: /media/morpheus/disk1/fst/pep_msa/GA**KDp\$**e: Tue Feb 1 12:11:22 2022 Page 1 of 8

	. :: * * * : * : *: *	
Pavo muticus	MSLLQSALDFLAGPGTLGAAS-RD-QNDFVGQTVEMGEMKLRIRR	43
Pavo_cristatus	MSLLQSALDFLAGPGTLGAAS-RD-QNDFVGQTVEMGEMKLRIR-R	43
Gallus_gallus	MSLLQSALDFLAGPGTLGAAS-RD-QNDFVGQTVEMGEMKLRIR-R	43
Anas_platyrhynchos	MSLLQSALDFLAGPGSLGAAS-RD-QNDFVGQTVEMGDMRLRVRR	43
Chelonia_mydas	MSLLQSAWDFLAGPGSLGAAS-RD-HNDFVGQTVELGDMKLRIK-R	43
Latimeria chalumnae	MSQSLFQSALDFLAGPGSGGAAS-RD-QNDFVGQTVEMGEMKLRIR-R	45
Rhinatrema bivittatum	MSLLQSALEFLAGPGSLGAVSGRD-QNDFVGQTVELGALRLRVRR	44
Homo_sapiens	MSLLQSALDFLAGPGSLGGASGRD-QSDFVGQTVELGELRLRVRR	44
Pan_troglodytes	MSLLQSALDFLAGPGSLGGASGRD-QSDFVGQTVELGELRLRVRR	44
Macaca_mulatta	MSLLQSALDFLAGPGSLGGASGRD-QSDFVGQTVELGELRLRVRR	44
Callithrix jacchus	MSLLQSALDFLAGPGSLGGASGRD-HSDFVGQTVELGELRLRVRR	44
Rattus norvegicus	BLLQSALDFLAGPGSLGGAAGRD-QSDFVGQTVELGELRLRVRR	44
Mus musculus	MSLLQSALDFLAGPGSLGGAAGRD-QSDFVGQTVELGELRLRVRR	44
Canis_lupus_familiaris		60
Equus_caballus	MSLLQSALDFLAGPGSLGGAAGRD-QTDFVGQTVELGELRLRVRR	44
Bos taurus	QTDFVGQTVEMGELRLRVRR	44
Xenopus_tropicalis	MSLLQSALDFLAGPGSLGGAG-RD-QHDFVGQTVEMGDMKMRVKR	43
	1102030405060	
	: *****:*.*: **::*********::***:**:********	
Pavo_muticus	VIA <mark>EGG</mark> FAFVYEAQDL <mark>GSGK</mark> DYALKRLLSNEEEKNKAIIQEVCFMKKLSGHPNIVQFCSA	103
Pavo_cristatus	VIA <mark>EGG</mark> FAFVYEAQDLGSGKDYALKRLLSNEEEKNKAIIQEVCFMKKLSGHPNIVQFCSA	103
Gallus_gallus	VIAEGGFAFVYEAQDLGSGKDYALKRLLSNEEEKNKAIIQEVCFMKKLSGHPNIVQFCSA	103
Anas_platyrhynchos	VIAEGGFAFVYEAQDLGSGKEYALKRLLSNEEEKNKAIIQEVCFMKKLSGHPNIVQFCSA	103
Chelonia_mydas	VIA <mark>EGG</mark> FAFVYEAQDLGSGKDYALKRLLSNEEEKNRAIIQEVCFMKKLSGHPNIVQFSSA	103
Latimeria_chalumnae	VIAEGGFAFVYEAHDLGSGKEYALKRLLSNEEEKNKAIIQEVCFLKKLSGHPNIVQFSSA	105
Rhinatrema_bivittatum	VIAEGGFAFVYDAEDLQSGKEYALKRLLSNEEEKNKAIIQEVCFMKKLSGHPNIVQFCSA	104
Homo_sapiens	VLA <mark>EGG</mark> FAFVYEAQDVGSGREYALKRLLSNEEEKNRAIIQEVCFMKKLSGHPNIVQFCSA	104
Pan_troglodytes	VLA <mark>EGG</mark> FAFVYEAQDVGSGREYALKRLLSNEEEKNRAIIQEVCFMKKLSGHPNIVQFCSA	104
Macaca_mulatta	VLA <mark>EGG</mark> FAFVYEAQDVGSGREYALKRLLSNEEEKNRAIIQEVCFMKKLSGHPNIVQFCSA	104
Callithrix_jacchus	VLA <mark>EGG</mark> FAFVYEAQDVGSGREYALKRLLSNEEEKNRAIIQEVCFMKRLSGHPNIVQFCSA	104
Rattus_norvegicus	VLA <mark>EGG</mark> FAFVYEAQDLGSGREYALKRLLSNEEEKNRAIIQEVCFLKKLSGHPNIVQFCSA	104
Mus_musculus	VLAEGGFAFVYEAQDLGSGREYALKRLLSNEEEKNRAIIQEVCFLKKLSGHPNIVQFCSA	104
Canis_lupus_familiaris		120
Equus_caballus	VLAEGGFAFVYEAQDLGSGREYALKRLLSNEEEKNRAIIQEVCFMKKLSGHPNIVQFCSA	104 104
Bos_taurus	VLA <mark>EGG</mark> FAFVYEAQDL <mark>GSGRE</mark> YAL <mark>KRLLSNEEEKNR</mark> AIIQEVCFMKKLSGHPNIVQFCSA VIA <mark>EGG</mark> FAFVYEAQDVGSGKDYALKRLLSNEEEKNKSIIQEICFMKKLSGHPNIVQFCSA	104
Xenopus_tropicalis	708090100110120	103
	/0	

Pavo muticus	ASIGKEESDTGQGEFLLLTELCKGQLVEFLKKVEPKGPISCDTVLKIFYQTCRAVQHMHK	163
Pavo cristatus	ASIGKEESDTGQGEFLLLTELCKGQLVEFLKKVEPKGPISCDTVLKIFYQTCRAVQHMHK	163
Gallus_gallus	ASIGKEESDTGQGEFLLLTELCKGQLVEFLKKVEPKGPISCDTVLKIFYQTCRAVQHMHK	163
Anas platyrhynchos	ASIGKEESDTGQGEFLLLTELCKGQLVEFLKKVEPKGPISCDTVLKIFYQTCRAVQHMHK	163
Chelonia mydas	ASIGKEESDTGQGEFLLLTELCKGQLVEFLKKVESKGPLSCDTVLKIFYQTCRAVQHMHK	163
Latimeria chalumnae	ASIGKEESDTGQAEFLILTELCRGQVVEFLKKAESKGPLSCDTILKIFYQTCRAVQHMHK	165
Rhinatrema bivittatum	ASIGKEESDTGQAEFLLLTELCKGQLVEFLSKVESKGSLSCDTVLKIFYQSCRAVQHMHK	164
Homo_sapiens	ASIGKEESDTGQAEFLLLTELCKGQLVEFLKKMESRGPLSCDTVLKIFYQTCRAVQHMHR	164
Pan_troglodytes	ASIGKEESDTGQAEFLLLTELCKGQLVEFLKKMESRGPLSCDTVLKIFYQTCRAVQHMHR	164
Macaca_mulatta	ASIGKEESDTGQAEFLLLTELCKGQLVEFLKKMESRGPLSCDTVLKIFYQTCRAVQHMHR	164
Callithrix_jacchus	ASIGKEESDTGQAEFLLLTELCKGQLVEFLKKMESRGPLSCDTVLKIFYQTCRAVQHMHR	164
Rattus_norvegicus	ASIGKEESDTGQAEFLLLTELCKGQLVEFLRRVECKGPLSCDSILKIFYQTCRAVQHMHR	164
Mus_musculus	ASIGKEESDTGQAEFLLLTELCKGQLVEFLKRVECKGPLSCDSILKIFYQTCRAVQHMHR	164
	ASIGKEESDTGQAEFLLLTELCKGQLVDFLKKIESRGPLSCDTVLKIFYQTCRAVQHMHR	180
Equus_caballus	ASIGKEESDTGQAEFLLLTELCRGQLVEFLKKVESKGPLSCDTILKIFYQTCRAVQHMHR	164
Bos_taurus	ASIGKEESDTGQAEFLLLMELCRGQLVEFLKKVESKGPLSCDTVLKIFYQTCRAVQHMHR	164
Xenopus_tropicalis	ASIGKEESDTGQGEFLLLTELCRGQLVEFLNKAECKGPLSCDTVLKIFYQTCRAVQHMHK	163
	$\dots 130 \dots 140 \dots 150 \dots 160 \dots 170 \dots 180$	

File: /media/morpheus/disk1/fst/pep_msa/GA**KDp\$**e: Tue Feb 1 12:11:22 2022 Page 2 of 8

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	****::*******:**********	
Pavo_muticus	QKPP11HRDLKVENLL1SNQGT1KLCDFGSATTVAYYPDYSWSAQKRALVEEE1TRNTTP	223
Pavo_cristatus	QKPP11HRDLKVENLL1SNQGT1KLCDFGSATTVAYYPDYSWSAQKRALVEEE1TRNTTP	223
Gallus_gallus	QKPP11HRDLKVENLL1SNQGT1KLCDFGSATTVAYYPDYSWSAQKRALVEEE1TRNTTP	223
Anas_platyrhynchos	QKPPIIHRDLKVENLLISNQGTIKLCDFGSATTVAYYPDYSWSAQKRALVEEEITRNTTP	223
Chelonia mydas	QKPPIIHRDLKVENMLISNQGTIKLCDFGSATTIAHYPDYSWSAQKRAIVEEEITRNTTP	223
Latimeria chalumnae	QKPPLIHRDLKVENLLISNQGTIKLCDFGSATSIAHYPDYSWSAQKRAMVEDEITRNTTP	225
Rhinatrema_bivittatum	QKPPIIHRDLKVENLLISNQGTIKLCDFGSATTIAHYPDYSWSAQKRAIVEDEMTRNTTP	224
Homo_sapiens	OKPPIIHRDLKVENLLLSNOGTIKLCDFGSATTISHYPDYSWSAORRALVEEEITRNTTP	224
Pan_troglodytes	QKPPIIHRDLKVENLLLSNQGTIKLCDFGSATTISHYPDYSWSAQRRALVEEEITRNTTP	224
Macaca mulatta	QKPPIIHRDLKVENLLLSNQGTIKLCDFGSATTISHYPDYSWSAQRRALVEEEITRNTTP	224
_	OKPPIIHRDLKVENLLVSNOGTIKLCDFGSATTISHYPDYSWSAORRALVEEEITRNTTP	224
Callithrix_jacchus	OKPPIIHRDLKVENLLLSNOGTIKLCDFGSATTISHYPDYSWSAQKRAMVEEEITRNTTP	224
Rattus_norvegicus		
Mus_musculus	QKPPIIHRDLKVENLLLSNQGTIKLCDFGSATTISHYPDYSWSAQKRAMVEEEITRNTTP	224
Canis_lupus_familiaris		240
Equus_caballus	QKPPIVHRDLKVENLLLSNQGTIKLCDFGSATTTLHYPDYSWSAQKRALVEDEITRNTTP	224
Bos_taurus	QKPPIIHRDLKVENLLLSNQGTIKLCDFGSATTISHYPDYSWSAQRRALVEEEITRNTTP	224
Xenopus_tropicalis	QKPP11HRDLKVENLLVSNQGTVKLCDFGSSTT1AHYPDYNWTAQQRATVEDEVTRNTTP	223
	190200210220230240	

Pavo muticus	MYRTPEMIDLYSNFPISEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYAIPQNDTR	283
Pavo cristatus	MYRTPEMIDLYSNFPISEKODIWALGCILYLLCFROHPFEDGAKLRIVNGKYAIPONDTR	283
Gallus_gallus	MYRTPEMIDLYSNFPISEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYAIPQNDTR	283
	MYRTPEMIDLYSNFPISEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYTIPQNDTR	283
Anas_platyrhynchos Chelonia mydas		283
	MYRTPEMIDLYSNFPIGEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYSIPQNDTR	
Latimeria_chalumnae	MYRTPEIIDLYSNFPINEKQDIWALGCILYLLCFKQHPFEDGAKLRIVNGKYSIPENDTR	285
Rhinatrema_bivittatum	IYRTPEIIDLYSNFPIDEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYSIPQNDMQ	284
Homo_sapiens	MYRTPEIIDLYSNFPIGEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYSIPPHDTQ	284
Pan_troglodytes	MYRTPEIIDLYSNFPIGEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYSIPPHDTQ	284
Macaca_mulatta	MYRTPEIIDLYSNFPI <mark>GEK</mark> QDIWAL <mark>GC</mark> ILYLLCFRQHPFEDGAKLRIVNGKYSIPPHDTQ	284
Callithrix_jacchus	MYRTPEIIDLYSNFPIGEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYSIPPHDTQ	284
Rattus_norvegicus	MYRTPEIVDLYSNFPIGEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYSIPVNDTR	284
Mus musculus	MYRTPEIVDLYSNFPIGEKQDIWALGCILYLLCFRQHPFEDGAKLRIVNGKYSIPVNDTR	284
Canis_lupus_familiaris	MYRTPEIVDLYSNFPIGEKODIWALGCILYLLCFROHPFEDGAKLRIVNGKFSIPPNDTR	300
Equus caballus	MYRTPEIVDLYSNFPISEKODIWALGCILYLLCFGOHPFEDGAKLRIVNGKYSIPPNDTR	284
Bos taurus	MYRTPEIVDLYSNFPIGEKODIWALGCILYLLCFGOHPFEDGAKLRIVNGKYAIPADDTR	284
Xenopus_tropicalis	MYRTPEIIDLYSNFPIGEKQDIWALGCILYLLCFKQHPFEDGAKLRIVNGKYSVPQNDTK	283
nenopub_cropredirb	250260270280290300	200
	200200200200	
	*:***.** . :::** ****:* ***:***********	
Dana muhi aua	YSVFHDLIRSTLKVNPEERLSITELVNQLQEIAAARNVNPKSPVTELLEQNGGYGNNAQP	343
Pavo_muticus		
Pavo_cristatus	YSVFHDLIRSTLKVNPEERLSITELVNQLQEIAAARNVNPKSPVTELLEQNGGYGNNAQP	343
Gallus_gallus	YSVFHDLIRSTLKVNPEERLSITELVNQLQEIAAARNVNPKSPITELLEQNGGYGNNAQP	343
Anas_platyrhynchos	YSVFHDLISSSLKVNPEERLSITELVNQLQEIAAARNVNPKSPITELLEQNGGYGNNAQP	343
Chelonia_mydas	YTVFHDLIRSTLKVNPEERLSVTELVNQLQEIAAARNVNPKSPITELLEQNGGYGNNAVP	343
Latimeria_chalumnae	YTVFHDLIRSMLKMNPEERLSITELVNQLQEIAAARNVTPKSPITELLEQNGGYG-NTQS	344
Rhinatrema_bivittatum	YTVFHDLIRSTLKVNPVERLSITELVNQLQDIAAARNVNPKSPITELLEQNGGYGNNAQP	344
Homo_sapiens	YTVFHSLIRAMLQVNPEERLSIAEVVHQLQEIAAARNVNPKSPITELLEQNGGYGSATLS	344
Pan_troglodytes	YTVFHSLIRAMLQVNPEERLSIAEVVHQLQEIAAARNVNPKSPITELLEQNGGYGSATLS	344
Macaca_mulatta	YTVFHSLIRAMLQVNPEERLSIAEVVHQLQEIAAARNVNPKSPITELLEQNGGYGSTVLS	344
Callithrix jacchus	YTVFHSLIRAMLQVNPEERLSIAEVVHQLQEIAAARNVNPKSPITELLEONGGYGSAALS	344
Rattus_norvegicus	YTVFHDLIRGMLKVNPEERLSIAEVVRQLQEIAAARNVNPKAPITELLEQNGGYGNSGPS	344
Mus musculus	YTVFHDLIRAMLKVNPEERLSIAEVVRQLQEIAAARNVNPKAPITELLEQNGGYGNSGPS	344
Canis_lupus_familiaris		360
Equus_caballus	YSVFHGLIRAMLKVNPEERLSITELVNOLOEIAAARNVNPKSPITELLEONGGCGNAALS	344
Bos_taurus	YSVFHSLIRSMLKVNPEERLSVTELVNQLQEIAAARNVNPKSPITELLEQNGGYGHAAPP	344
		344
Xenopus_tropicalis	YTVFHGLINSMIKVNPEERLSITEVVSQLQEIAAARNVNPKSPITELLEQNGGYGNTVIQ310320340350360	343

File: /media/morpheus/disk1/fst/pep_msa/GAKDpte: Tue Feb 1 12:11:22 2022 Page 3 of 8

_	*. : *. * ::***:*****	400
Pavo_muticus	RISVTSVSQSSKPAGQLNNIYNAGLTVAECDQTYGG-FFDILRGGTERFFTNIKDTSSKV	402
Pavo_cristatus Gallus gallus	RISVTSVSQSSK <mark>P</mark> AGQL <mark>N</mark> NIYNAGLTVAECDQTYGG-FFDILRGGTERFFTNIKDTSSKV RISVTSVSQSSR <mark>P</mark> AGQLNNIYNAGLTVAECDQTYGG-FFDILRGGTERFFTNIKDTSSKV	402 402
	RISVISVSQSSRPAGQLINNI INAGLIVAECDQIIGG-FFDILRGGIERFFINIKDISSKV RVSVTSVSQSSKPAGQLINNIYNAGLIVAECDQIYGG-FFDILRGGIERFFINIKDISSKV	402
Anas_platyrhynchos Chelonia mydas	RVSVTSVSQSSKPAGQLNNMINAGLTVAECDQTIGG-FFDILKGGTERFFTNIKDTSSKV RMSASSVPQGSKPAGQLNNMYNAGLTVAELDQSYVG-FFDILKGGTERFFTNIKDTSSKV	402
Latimeria_chalumnae	RMSASSVPQGSAFAGQLNNMINAGLIVAELDQSIVG-FFDILKGGTERFFINIKDISSKV RPPVTSTSQDFRPAGQLNNMYNSGLTEMDQSYGGGFFDILKGGTERFLSNIKDTSSKV	402
Rhinatrema_bivittatum	RTPASTLPQGPKSAGQFNNMYNAGLTALDGEQSYGG-FFDILKGGTERFLSNIKDTSSKV	403
Homo_sapiens	RGPPPPVGPAGSGYSGGLALAEYDQPYGG-FLDILRGGTERLFTNLKDTSSKV	396
Pan_troglodytes	RGPPPPVGPAGSGYSGGLALAEYDQPYGG-FLDILRGGTERLFTNLKDTSSKV	396
Macaca mulatta	RGPPPLVGPAGSGYSGGLALAEYDQPYGG-FLDILRGGTERLFTNLKDTSSKV	396
Callithrix_jacchus	RGPPPPVGPAGSGYGGGLALAEYDOPYGG-FLDILRGGTERLFTNLRDTSSKV	396
Rattus norvegicus	RAQPPSGGPVNSSGVLALAEYDQPYGG-FLDILRGGTERLFTNLKDTSSKV	394
Mus musculus	RAQPPCGGTVNSSGVLALAEYDQPYGG-FLDILRGGTERLFTNLKDTSSKV	394
	RGPPPPGG-SSSGYSGGLALAEYDQPYGG-LLDILRGGTERLFTNLKDTSSKV	411
Equus_caballus	RGLSPPGGPTSSSYSGGLVVAEYDQPYGG-LLDILRGGTERLFTNIKDTSSKV	396
Bos taurus	GSTGSSLVVTEYEQPYGG-FLDILRGGTERLFTNIKDTSSKV	385
Xenopus_tropicalis	RSSSGAPQNSKPLAHPGLTLTDDDQTSGG-FFDILKGGTERILSNIKDTSSKV	395
	370380390400410420	

Pavo_muticus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLCLDSKHP	453
Pavo_cristatus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLCLDSKHP	453
Gallus_gallus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLCLDSKHP	453
Anas_platyrhynchos	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLCLDSKHP	453
Chelonia_mydas	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDSKHP	453
Latimeria_chalumnae	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDSRHP	453
Rhinatrema_bivittatum	IQSVANYAKGELDLSYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDSKHP	454
Homo_sapiens	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESALKNNIEDVRLFLDSKHP	447
Pan_troglodytes	IQSVANYAKGDLDISYITSRIAGADAGLLVSVMSFPAEGVESALKNNIEDVRLFLDSKHP	456
Macaca_mulatta	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESALKNNIEDVRLFLDSKHP	447
Callithrix_jacchus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESALKNNIEDVRLFLDSKHA	447
Rattus_norvegicus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDAKHP	445
Mus_musculus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRMFLDAKHP	445
Canis_lupus_familiaris	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDSKHP	462
Equus_caballus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDSKHP	447
Bos_taurus	IQSVANYAKGDLDISYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDSKHP	436
Xenopus_tropicalis	IQSVTNYAKGDLDLSYITSRIAVMSFPAEGVESAIKNNIEDVRLFLDSKHP	446
	430450460470480	
	*:***** * **::***** **** * **:*: ** **:*	
Pavo muticus	GHYAVYNLSPRTYRPSRFHNRVSECGWPARRAPNLQNLYSICKNMHLWLKQDQKNVCIVH	513
Pavo cristatus	GHYAVYNLSPRTYRPSRFHNRVSECGWPARRAPNLQNLYSICKNMHLWLKQDQKNVCIVH	513
Gallus_gallus	GHYAVYNLSPRTYRPSRFHNRVSECGWPARRAPNLQNLYSICKNMHLWLKQDQKNVCIVH	513
Anas platyrhynchos	GHYAVYNLSQRTYRPSRFHNRVSECGWPARRAPNLQNLYSICKNMHLWLKQDQKNVCIVH	513
Chelonia mydas	GHYAVYNLSPRTYRSSRFHNRVSECGWPARRAPNLQNLYSICKNMHLWLKQDHKKVCIVH	513
Latimeria chalumnae	GHYAVYNLSQRTYRPSKFHNRVSECGWPARRAPNLQNLYSICKNMHLWLKQDQKNICIVH	513
Rhinatrema bivittatum	GHYAVYNLSPRTYRPARFHNRVSECGWPARRAPNLOSLYSICKNMHLWLKQDQKNICIVH	514
Homo_sapiens	GHYAVYNLSPRTYRPSRFHNRVSECGWAARRAPHLHTLYNI CRNMHAWLRQDHKNVCVVH	507
Pan_troglodytes	GHYAVYNLSPRTYRPSRFHNRVSECGWAARRAPHLHTLYNICRNMHAWLRQDHKNVCVVH	516
Macaca_mulatta	GHYAVYNLSPRTYRPSRFHNRVSECGWAARRAPHLHTLYNICRNMHAWLRQDHKNVCVVH	507
Callithrix_jacchus	GHYAVYNLSPRTYRPSRFHNRVSECGWAARRAPHLHTLYNICRNMHAWLRQDHKNVCVVH	507
Rattus_norvegicus	GHYAVYNLSPRIYRASKFHNRVTECGWAVRRAPHLHSLYTLCRSMHAWLREDHRNVCVVH	505
Mus_musculus	GHYAVYNLSPRIYRASKFHNRVTECGWAVRRAPHLHSLYTLCRSMHAWLREDHRNVCVVH	505
Canis_lupus_familiaris		522
Equus_caballus	GHYAVYNLSPRMYRPSKFHNRVSECGWAARRAPSLHSLYSICRNMHSWLRQDHKNVCVVH	507
Bos_taurus	GRYAVYNLSPRTYRPSKFHNRVSDCGWVARRAPSLRSLYSLCRNMHAWLRRDPGNVCVVH	496
Xenopus_tropicalis	GHYAVYNLCLRKYRPSKFHNRVSECGWAGRRAPNLMNLYSICKNMHLWLKQDPKNVCIVH	506
	490500510520530540	

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	* ****.***.:*:*************************	
Pavo_muticus	CLDGRAASAVVVCSFLCFCRLFTTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMMAEEP	573
Pavo_cristatus	CLDGRAASAVVVCSFLCFCRLFTTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMMAEEP	573
Gallus_gallus	CLDGRAASAVVVCSFLCFCRLFTTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMMAEEP	573
Anas_platyrhynchos	CLDGRAASAVVVCSFLCFCRLFTTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMMAEEP	573
Chelonia mydas	CLDGRAASAVVVCSFLCFCRLFTTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMMAEEP	573
Latimeria chalumnae	CLDGRAASAVVVCSFLCFCRLFTTAEAAVYMFSMKRSPPGIWPSHKRYIEYMCDMMAEEP	573
Rhinatrema_bivittatum	CLDGRAASAVVVCSFLCFCHLFTTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMMAEEP	574
Homo_sapiens	CMDGRAASAVAVCSFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMVAEEP	567
Pan_troglodytes	CMDGRAASAVAVCSFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMVAEEP	576
Macaca mulatta	CMDGRAASAVAVCSFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMVAEEP	567
Callithrix_jacchus	CMDGRAASAVAVCSFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMVAEEP	567
Rattus norvegicus	CMDGRAASAVAVCAFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYVCDMVAEEP	565
Mus musculus	CMDGRAASAVAVCAFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYVCDMVAEEP	565
<u> </u>		582
Canis_lupus_familiaris	CMDGRAASAVAVCSFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMVAEEP	567
Equus_caballus		
Bos_taurus	CMDGRAVSAVAVCSFLCFCRLFSTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMVAEEP	556
Xenopus_tropicalis	CTDGRAASAVVLCSFLCFCRLFTTAEAAVYMFSMKRCPPGIWPSHKRYIEYMCDMMAEEP	566
	550560570580590600	
	· ****::::: :****** · * .********:*: :******:*:::: ****	
Pavo_muticus	II <mark>PHSKP</mark> ILVRSIIM <mark>TP</mark> VPLF <mark>SKQRNGCRPFCEVYVGDER</mark> VTTTSQEYDKMKEFKIEDGK	633
Pavo_cristatus	II <mark>PHSKP</mark> ILVRSIIM <mark>TPVPLFSKQRNGCRPFCEVYVGDERVTTTSQEYDKMKEFK</mark> IEDGK	633
Gallus_gallus	II <mark>PHSKP</mark> ILVRSIIM <mark>TPVPLFSKQRNGCRPFCEVYVGDERI</mark> TTTSQEYDKMKEFKIEDGK	633
Anas_platyrhynchos	IIPHSKPILIKSIIMTPVPLFSKQRNGCRPFCEVYVGDERVATTSQEYDKMKEFKIEDGK	633
Chelonia mydas	IIPHSKPILIKSITMTPVPLFSKLRNGCRPFCEVYVGDERVTTTSQEYDKMKDFKTEDGK	633
Latimeria chalumnae	II <mark>PHSKP</mark> ILVKSIVLTPVPLFNK <mark>QRNGCRPFCEVYVGDDRVVTTSQEYDKMKDYKTEDGK</mark>	633
Rhinatrema_bivittatum	II <mark>PHSKP</mark> IFVKSIIMTPVPLFNKORSGCRPFCEVFVGEERVITTSOEYDKMKDFKIEDGK	634
Homo_sapiens	ITPHSKPILVRAVVMTPVPLF5KORSGCRPFCEVYVGDERVASTSOEYDKMRDFKIEDGK	627
Pan_troglodytes	ITPHSKPILVRAVVMTPVPLFSKQRSGCRPFCEVYVGDERVASTSQEYDKMRDFKIEDGK	636
Macaca_mulatta	ITPHSKPILVRAVVMTPVPLFSKQRSGCRPFCEVYVGDERVASTSQEYDKMRDFKIEDGK	627
Callithrix jacchus	ITPHSKPILVRAVVMTPVPLFSKQRSGCRPFCEVYVGDERVASTSQEYDKMRDFKIEDGK	627
Rattus_norvegicus	ITPHSKPMLVKSVVMTPVPLFSKQRNGCRPFCEVYVGEERVTTTSQEYDRMKEFKIEDGK	625
Mus musculus	ITPHSKPMLVKSVVMTPVPLFSKORNGCRPFCEVYVGEERVTTTSQEYDRMKEFKIEDGK	625
Canis_lupus_familiaris	ITPHSKPILVKAVVMTPVPLFSKORNGCRPFCEVYVGDERVTTTSQEYDKMRDFRIEDGK	642
Equus_caballus	ITPHSKPILVKAVVMTPVPLFSKQRNGCRPFCEVYVGDERVTTTSQEYDRMRDFKIEDGK	627
	VTPHSKPILVKAVVMTPVPLFSKQRSGCRPFCEVYVGDERVTTTSQEYDKMRDFKIEDGK	616
Bos_taurus		
Xenopus_tropicalis	IIPHSKPILIRAITMTPVPLFSKQRNGCRPFCEVYVGDERVATTSQEYDKMRDFRNEDGK	626
	610620630640650660	
	* * * .: * * * * * * * * * * * * * * * *	
Pavo_muticus	AVI <mark>PLGITVQGD</mark> VLIVIYHARSTL <mark>GGR</mark> LQAKMASMKMFQIQFHTGFV <mark>PRN</mark> ATTVKFAKYD	693
Pavo_cristatus	AVI <mark>PLGITVQGD</mark> VLIVIYHA <mark>RSTLGGR</mark> LQAKMASMKMFQIQFHTGFV <mark>PRN</mark> ATTVKFAKYD	693
Gallus_gallus	AVIPLGITVQGDVLIVIYHARSTLGGRLQAKMASMKMFQIQFHTGFVPRNATTVKFAKYD	693
Anas_platyrhynchos	AVI <mark>PLGITVQGD</mark> VLIVIYHA <mark>RSTLGGRLQAKMASMK</mark> MFQIQFHTGFV <mark>PRNATTVK</mark> FAKYD	693
Chelonia_mydas	AVIQLGITVQGDVLIVIYHARSTLGGRLQAKMASMKMFQIQFHTGFVPRNATTVKFAKYD	693
Latimeria_chalumnae	AEI <mark>P</mark> LGITVQGDVLIVIYHA <mark>RST</mark> LGGRLQAKVRYD	668
Rhinatrema_bivittatum	AEI <mark>P</mark> LNITV <mark>QGD</mark> VLVVIYHA <mark>RSTLGGRL</mark> QAKMA <mark>SMK</mark> MFQLQFHTGFV <mark>PRN</mark> ATTVKFATYD	694
Homo sapiens	AVI <mark>PLGVTVQGDVLIVIYHARSTLGGRLQAKMASMKMFQIQFHTGFVPRNATTVK</mark> FAKYD	687
Pan_troglodytes	AVI <mark>PLGVTVQGDVLIVIYHARSTLGGRL</mark> QAKMASMKMFQIQFHTGFVPRNATTVKFAKYD	696
Macaca_mulatta	AVI <mark>PLGVTVQGD</mark> VLIVIYHARSTLGGRLQAKMASMKMFQIQFHTGFVPRNATTVKFAKYD	687
Callithrix jacchus	AVIPLGITVQGDVLIVIYHARSTLGGRLQAKMASMKMFQIQFHTGFVPRNATTVKFAKYD	687
Rattus_norvegicus	AVIPLGITVQGDVLTIIYHARSTLGGRLQAKMASMKMFQIQFHTGFVPRNATTVKFAKYD	685
Mus musculus	AVIPLGVTVQGDVLIIIYHARATLGGRLQAKMASMKMFQIQFHTGFVPRNATTVKFAKYD	685
Canis_lupus_familiaris		702
Equus_caballus	AVIPLGITVOGDVLIIIYHARSTLGGRLOAKMASMKMFOIOFHTGFVPRNATTVKFAKYD	687
Bos_taurus	AVIPLGITVQGDVLIIIYHARSTLGGRLQAKMASMKMFQIQFHTGFVPRNAATVKFAKYD	676
Xenopus_tropicalis	AEIPLNVTVQGDVLIVIYHARSTLGGRLQAKMTSMKMFQIQFHTGFVPRNATTVKFAKYD	686
TOTOPUS_CLOPICALIS	670680690710720	000

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Pavo muticus	LDACDIQEKYPDLFQVNLEVEVEPRDRPSCEQLPWDNMNIKGLNPKILFSTREEQQEILS	753
Pavo cristatus	LDACDIQEKYPDLFQVNLEVEVEPRDRPSCEQLPWDNMNIKGLNPKILFSTREEQQEILS	753
Gallus_gallus	LDACDIQEKYPDLFQVNLEVEVEPRDRPSCEQLPWDNMNIKGLNPKILFSTREEQQEILS	753
Anas_platyrhynchos	LDACDIQEKYPDLFQVNLEVEVEPRDRPSCEQPPWDNMNIKGLNPKILFSTREEQQEILS	753
Chelonia_mydas	LDACDIQEKYPDLFQVNLEVEVEPRDRPCSERAPWDNLNIKGLNPKILFSSREEQQEILS	753
Latimeria_chalumnae	LDACDIQEKYPDLFQVNLEVDVEPRDRQSSKTLPWENFATKGLNPKILFSTREEQQEILS	728
Rhinatrema bivittatum	LDACDIQEKYPDLFQVNLEVEVEPQDKPNHDSPPWENMNMKGLNPKILFSSREEQQEILS	754
Homo_sapiens	LDACDIQEKYPDLFQVNLEVEVEPRDRPSREAPPWENSSMRGLNPKILFSSREEQQDILS	747
Pan_troglodytes	LDACDIOEKYPDLFQVNLEVEVEPRDRPSREAPPWENSSMRGLNPKILFSSREEQQDILS	756
Macaca mulatta	LDACDIOEKYPDLFQVNLEVEVEPRDRLSREAPPWENSSMRGLNPKILFSSREEQQDILS	747
Callithrix jacchus	LDACDIOEKYPDLFOVNLEVEVEPRDRPSREAPPWENSSMKGLNPKILFSSREEQODILS	747
Rattus norvegicus	LDACDIOEKYPDLFOVNLEVEVEPRDRPSRDVPPWENTSLRGLNPKILFSNREEOODILS	745
Mus musculus	LDACDIQEKYPDLFQVNLEVEVEPRDRPSREAPPWENTSLRGLNPKILFSNREEQQDILS	745
Canis lupus familiaris		762
Equus_caballus	LDACDIOEKYPDLFQVNLEVEVEPRDRPSREAPPWESASLRGLNPKILFSSREEQODILS	747
Bos taurus	LDACDIQEKYPDLFQVSLEVEVEPRDRPGHEAPPWEGAGMRGLNPKILFSSREEQQDVLS	736
Xenopus tropicalis	LDACDIQEKYPDLFQVNLEVEVSSRDKQATSSPPWENINTKRLNPKILFSSREEQQEMLS	746
	730740750760770780	

Pavo_muticus	KFGKPELPRQPGSTAQYEAEASQLDLSSESAPTETE-SPHSSGTDANNFFHSLDWKE	809
Pavo_cristatus	KFGKPELPRQPGSTAQYEAEASQLDLSSESAPTETE-SPHSSGTDANNFFRSLDWKE	809
Gallus_gallus	KFGKPELPRQPGSTAQYEAEASQLDLSSESAPTEGE-SPHSSGTDANNFFHSLDWKE	809
Anas_platyrhynchos	KFGKPELPRQPGSTAQYEAEASQLEQSSESALTETE-SSHSSGTDANNFFHSLDWKE	809
Chelonia_mydas	KFGKPELPRQPGSTAQYEAEESKLEQSPESAPTEPD-SPQSSSTDGNNFFHTLDWEE	809
Latimeria_chalumnae	KFGKPELPRQPGSTAQYEAEIHRSEPSQESLSTEPE-SPLSNDNNGNQFFQTLDWQAE	785
Rhinatrema_bivittatum	KFGKPELPRQPGSTAQLKKKWTSQNTLLKANSTDSDPSQKKAMLMQITSSTTLDWKD	811
Homo_sapiens	KFGKPELPRQPGSTAQYDAGAGSPEAEPTDSD-SPPSSSADASRFLHTLDWQE	799
Pan_troglodytes	KFGKPELPRQPGSTAQYDAGAGSPEAEPTDSD-SPPSSSADASRFLHTLDWQE	808
Macaca_mulatta	KFGKPELPRQPGSTAQYDAGAGSPEAEPTDSD-SPPSSSADTSRFLHTLDWQE	799
Callithrix_jacchus	KFGKPELPRQPGSTAQYDAGVGSPEAEPPDSD-SPPSSSADTSRFLHTLDWQE	799
Rattus_norvegicus	KFGKPELPRQPGSTAQYDAEAGSPEAEITESD-SPQSSSTDTNHFLHTLDWQE	797
Mus_musculus	KFGKPELPRQPGSTAQYDAEAGSPEAEITESD-SPQSSSTDTNHFLHTLDWQE	797
Canis_lupus_familiaris	KFGKPELPRQPGSTAQYDAEAGSLDAEPTESD-SPQSSGTDTSHFLHTLDWHE	814
Equus_caballus	KFGKPELPRQPGSTAQYDAEAGSPDTEPTESD-SPQSSSADTPHFLHTLDWHE	799
Bos_taurus	KFGKPELPRQPGSTAQYDAEAGPADAEPPESD-SPHSS-VDADHFLHTLDWRE	787
Xenopus_tropicalis	KFGKPELPRQPGSTAQYEGDINMEKPSPDLSDSETLQKNNFFQTLDWQDQSG	798
	790800810820830840	
	: *: **:	
Pavo_muticus	GKSPESGVDDNSSKNDHVQLSDEREESELSDEEFPTFPGEERAVTVDEGDSVTPE	864
Pavo_cristatus	GKSPESGVDDNSSKNDHVQLSDEREESELSDEEFPTFPGEERAVTVDEGDSVTPE	864
Gallus_gallus	GRSPESGVDDTSSKNDHGQLSDEREESDPSDEEFPTFPGEERAVSVDEGDSATPE	864
Anas_platyrhynchos	GKCPESGPDDNSSKNDNVQLSDEREESDPSDEEFPAFPSEEKVVIVDERDSGTQE	864
Chelonia_mydas	GKDPATGAEDRLSKDNHLGLIDDRDESDPSDEEFSAFPSEGKTDLVEEKEKPSPPEDD	867
Latimeria_chalumnae	GKDGEIGSENHFPREDRTGLIDDSEPSDDDFLSFSADCKTKPVEESEKPSESEQKDP	842
Rhinatrema_bivittatum	GKDIEVEGKGHISREDMEGGEESEPSDEGFAAFSSEPRTVSIEEKRKSAQGEDVKT	867
Homo_sapiens	EKEAETGAENASSKESESALMEDRDESEVSDEGGSPISSEGQEPRADPEPPGLAAGL	856
Pan_troglodytes	EKEAETGAENASPKESESALMEDRDESEVSDDGGSPISSEGQEPRADPEPPGLAAGP	865
Macaca_mulatta	EKEAETGAANASPKESESALMEDRDESEVSDEGGSPVSSEGQEPRADPEPPGLAAGL	856
Callithrix_jacchus	EKESETGAEDASPKESESALMEDRDESEVSDEGGSPISSEGQEPRADSDTPCLAAGL	856
Rattus_norvegicus	EKDPETGVDNTSPKESQSNLIADGDGSEVSDEEEASCPSEERKPGAGEDTPRLAAGT	854
Mus_musculus	EKEPETGLDNTSPKESQSVLIADGDGSEVSDEEEASFPSEERKPGAGEDTPRLAAGT	854
Canis_lupus_familiaris		870
Equus_caballus	ERDSETGPGSNIAKESQSAPTEDGGESEPSDEEAVPSSTESRE-LPDEDSSGPPART	855
Bos_taurus	DRDSSVGPEGHLAEEGPSAVAEDGCVSEPSDEEAPTPSAESGD-TGDEDVP	837
Xenopus_tropicalis	VRNAQIGOQENVAKEDYENEYLSDSKSEASDEEFYSFPQGNRGIRCEENGPAVGTDDSVA850860870880890900	858

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```
GEMLFEAGFEAPPTLLQKSLAEENVDLLGLNS--DTSPEQKQPISEINSS-SNAALLNNL
Pavo_muticus
                                                                                                                                                            921
                                         GEMLFEAGFEAPPTLLQKSLAEENVDLLGLNS - - DTSPEQKQPISEINSS - SNAALLNNL
GEMLFEAGFEAPPTLLQKSLAEENVDLLGLNS - - DTSPEQKQPISEINSS - SNAALLNNL
GEMLFEAGFEAPPTLLQKSLTEENVDLLGLNS - - DASPEQKEPISEINSS - SNAALLNNL
GELSFEVNFEASSASSQKPLTEENVDLLGLNS - - DISQEQQQPISETSTSTSNADLLNNL
ANIFFEADFETPCAQPQEPQLEDHIDLLGLDS - - DVPSEQNQTASEMKSSSNADLLNNL
AEFLFEADFGASSTEMKDAKVEDNVDLLGLHS - - NAPSEQVLPATGMKSSSSNADLLSDL
EEFISEVHFELSTVESHAIKVEDHVDLLGLDS - - ECKPEQNVPTSEMKSSSSNADLLNNL
VQQDLVFEVETPAVLPEPVPQEDGVDLLGLHS - - EVGAGPAVPPQACKAPSSNTDLLSCL
VQQDLVFEVETPAVLPEPVPQEDGVDLLGLHS - - EVGAGPAVPPQACKAPSSNTDLLSCL
VQQDVAFEVGTPAVLPEPVPQEDGVDLLGLHS - - EVGAGPAVPPQACKAPSSNTDLLSCL
VQQDVAFEVGTPAVLPEPVPQEDGVDLLGLHS - - EVGAGPAVAPQALQAPSSNTDLLSCL
VPQDSVLEVGSPAELPEPETQEDGVDLLGLHS - - EVGAGPAVAPQALQAPSSNTDLLSCL
                                                                                                                                                            921
Pavo_cristatus
Gallus_gallus
                                                                                                                                                            921
                                                                                                                                                            922
Anas_platyrhynchos
Chelonia mydas
                                                                                                                                                            925
                                                                                                                                                            900
Latimeria_chalumnae
Rhinatrema_bivittatum
                                                                                                                                                            925
                                                                                                                                                            914
Homo_sapiens
Pan_troglodytes
                                                                                                                                                            923
                                                                                                                                                            914
Macaca_mulatta
Callithrix_jacchus
                                                                                                                                                            916
                                         RQQDLIFDVGMLAAPQEPVQPEEGVDLLGLHS--EGDLRPAAPLQASGVQSSNTDLLSSL
KQQDLIFDVGMLAAPQEPVQPEEGVDLLGLHS--EGDLRPAAPLQACGVPSSNTDLLSCL
Rattus_norvegicus
                                                                                                                                                            912
Mus musculus
                                                                                                                                                            912
926
                                                                                                                                                            911
                                                -----A<mark>PAAP</mark>QD----DSVDLLGLHA----EAGPVPAPQAPGGPPSNADLLGCL
                                                                                                                                                            878
Bos_taurus
Xenopus_tropicalis
                                          REVLFEANKDTQSTEQGPP-VEEEVDLLGLNP-ATNKVDTNTVPSEIKNSSSNIALLDNL
                                                                                                                                                            916
                                          \dots \dots 910 \dots \dots 920 \dots \dots 930 \dots \dots 940 \dots \dots 950 \dots \dots 960
Pavo muticus
                                          FVSGASOVSEEPTG----DLLGEGTDFFFSGOSOHPAATOKTSAAA--VSSADPFDPFT
                                                                                                                                                            974
                                          FV<mark>SG</mark>ASQV<mark>SEEPTG----DLLGEG</mark>TDFFFS<mark>G</mark>QSQH<mark>P</mark>AATQKTSAAA--V<mark>SS</mark>ADPFDPFT
                                                                                                                                                            974
Pavo cristatus
                                          FV<mark>SG</mark>ASQV<mark>SEEP</mark>TG-----DLL<mark>G</mark>QGADFFFS<mark>G</mark>QSQ<mark>HP</mark>AVTQ-TSAAA--A<mark>SS</mark>ADPFDPFT
                                                                                                                                                            973
Gallus gallus
Anas_platyrhynchos
                                          FV<mark>G</mark>SASQIA<mark>EEP</mark>TG----DLL<mark>G</mark>QGTSFFYSKQSQCSDAAQEMTSA----<mark>SADP</mark>FGLFT
                                                                                                                                                            972
Chelonia_mydas
                                          LV<mark>GST</mark>SQI<mark>SE</mark>EST<mark>G-----DLL<mark>GEG</mark>ADFFFSSQ<mark>PQP</mark>SASNQSTS<mark>PSTTVSSAADPFDPFT</mark></mark>
                                                                                                                                                            980
                                         FAGSTAKAPQEATG-----DLLVGGEEFFFS-TSQSSVNQ--GPSSTASASSADTFDPFG
FISSTS---QNSTE-----DLIGGQDLFFSS-QPQSSVNASVTSSSAAISSAADPFDPFA
Latimeria_chalumnae
                                                                                                                                                            952
Rhinatrema bivittatum
                                                                                                                                                            976
                                          LG-<mark>PP</mark>EAA<mark>SQGPP</mark>E----DLLS-ED<mark>P</mark>LLLA<mark>SPAPP</mark>LSVQSTPR<mark>GGPP</mark>--AAADPF<mark>GP</mark>LL
Homo_sapiens
                                                                                                                                                            965
                                          LG-<mark>PPEAASQGPP</mark>E----DLLS-EDPLLLASPAPPLSVQSTPRGGPP--AAADPFGPLL
LG-<mark>PP</mark>EA<mark>TSQGPP</mark>E----DLLG-EA<mark>P</mark>LLLASPAPPLSMQSTPGGGPP--AAADPFGPLL
Pan_troglodytes
                                                                                                                                                            974
                                                                                                                                                            965
Macaca_mulatta
                                          LG-SPEAASQGSPE----DLLG-EAPLLLASPAPPLSVQSTPRGGPP--TAADPFGPLL
Callithrix jacchus
                                                                                                                                                            967
                                          LE-<mark>P</mark>SDASQV<mark>GPPG----DLLGGETP</mark>LLLA<mark>SP</mark>VSLLGVQSNLQGKVP--DTVDPFDQFL
Rattus norvegicus
                                                                                                                                                            964
Mus_musculus LE-PSDAAQVGPPG----DLLGGEAPLLLASPVSPLGLQNNLQGKVP--DTVDPFDQFL Canis_lupus_familiaris LG-GPDAAPEVPPG----DLLGGEAPLLFASPAPSSSAQSPPREGP----AADPFDPLL
Mus musculus
                                                                                                                                                            964
                                                                                                                                                            976
Equus caballus
                                          LG-A<mark>P</mark>VAA<mark>PG</mark>SS<mark>PG----DLLGSEVPP</mark>LFA<mark>SPAPP</mark>LSAR<mark>ST</mark>PREE<mark>P</mark>A--VSADPFDPLL
                                                                                                                                                            963
                                          LG-A<mark>PGPAPEGAVG-----GLLDG</mark>DAALVFS<mark>SPAPAPCTQTT</mark>---A<mark>P----AADP</mark>FGPLL
                                                                                                                                                            925
Bos_taurus
Xenopus tropicalis
                                          FSDSLS<mark>GT</mark>ADNVKT<mark>DFIGHDLLG</mark>NR<mark>G</mark>DFYFI<mark>GPPQT</mark>SVES<mark>SS</mark>NSFDI<mark>P-FSSSDP</mark>FDPFA
                                                                                                                                                            975
                                           . \dots . 970 \dots . 980 \dots . 990 \dots . 1000 \dots . 1010 \dots . 1020
                                          .. . .*** : ..: : . .: : .. :::: * *:

MSSSENSALSGPDLFGDFLNPSA-TSTANAFPPTHSSLPPSSSSDFLNLGNLTSEPPKM
                                                                                                                                                          1033
Pavo_muticus
                                          M<mark>SS</mark>S<mark>E</mark>NSAL<mark>SGPD</mark>LF<mark>G</mark>DFL<mark>NP</mark>SA-TSTANAFPPTHSSLPPSSSSDFLNL<mark>G</mark>NLTSEPPKM
                                                                                                                                                          1033
Pavo_cristatus
                                          MSSS<mark>E</mark>NSAL<mark>SGPD</mark>LFGDFL<mark>NP</mark>SA-<mark>AST</mark>ANTFS<mark>STHS</mark>SL<mark>PPSSSSD</mark>FLNL<mark>G</mark>NLTS<mark>EPPK</mark>M
                                                                                                                                                          1032
Gallus_gallus
                                          MSSSF<mark>E</mark>NLSLPSA<mark>DLFGETLNSNS-TSTP</mark>NTFLSNSN<mark>T</mark>LLVSSSS<mark>D</mark>LLNFGKLETS--KM
MSSGSEKPTLSGPDLFGDFL<mark>NP</mark>NA-TSTSSVFPSTQSAPPPSSSSDFLHLGNLV<mark>P</mark>DLPKM
Anas platyrhynchos
                                                                                                                                                          1029
                                                                                                                                                          1039
Chelonia_mydas
                                         TSATSVKETSSGPDLFGDFLSSNS-GSTPSAFPSTNSAPPPSSSSELFNLGNLSSEPLKM
MSSGSENQIYSGPDLFGNLLNPNS-ASTPNVFPSTQSAPPPSSSSDFLNLGYLASETPKI
PSSGNNSQPCSNPDLFGEFLNSDS-VTVPPSFPSAHSAPPPSCSADFLHLGDLPGEPSKM
PSSGNNSQPCSNPDLFGEFLNSDS-VTVPPSFPSAHSAPPPSCSADFLHLGDLPGEPSKM
Latimeria_chalumnae
                                                                                                                                                          1011
Rhinatrema_bivittatum
                                                                                                                                                          1035
Homo sapiens
                                                                                                                                                          1024
Pan troglodytes
                                                                                                                                                          1033
                                          LSSDSDSOPCSNPDLFGEFLNSDS-AAVPPSFPSAHSAPPPSSSADFLHLGDLPGEPSKM
Macaca mulatta
                                                                                                                                                          1024
                                         LSSDTDAOPCSSPDLFCELLNSDS-AAVP-SFPSAHSAPPLACSTDFLHLGDLPGEPTKI
LPSSSDTOPCSKPDLFGEFLNSDS-VASSTAFPSTHSAPPPSCSTAFLHLGDLPAEPNKV
LSSNSDTOPCSKPDLFGEFLNSDS-VASSTAFPSTHSAPPPSCSTAFLHLGDLPAEPSKV
Callithrix_jacchus
                                                                                                                                                          1025
Rattus_norvegicus
                                                                                                                                                          1023
Mus_musculus
                                                                                                                                                          1023
                                         LPSGPNTQPCSQPDLFGEFLHSESPAAAPASFPSTHSAPPPACSTDFLHLGDLPAEPGKM
Canis_lupus_familiaris
                                                                                                                                                          1036
Equus_caballus
                                          LPADPDAQPSSKPDLFGEFLNSDSLAAPPASFPSTHSAPPPACSPDFLHLGDLPAEPGKM
                                                                                                                                                          1023
                                          L<mark>PP</mark>DVDTPPSSQPDLFGEFLNSDAPAAQPAPFPSTHSAPPPACSTDFLHLGDLPAEPSKM
Bos_taurus
                                                                                                                                                            985
                                          M<mark>ST</mark>SENK--S<mark>SGPD</mark>LFEGLVS<mark>PNS</mark>-A<mark>STP</mark>NVY<mark>PS</mark>VQSAAPPTSNIDFLNLDNL<mark>P</mark>TRQS<mark>K</mark>I
                                                                                                                                                          1032
Xenopus_tropicalis
                                          \dots \dots 1030 \dots \dots 1040 \dots \dots 1050 \dots \dots 1060 \dots \dots 1070 \dots \dots 1080
```

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	.*.* ****	
Pavo muticus	SSTSHPDLLGGWDSWAGSSAASNVASPQLK-SLFEGQVFTTGSQSSVSSGSSFSQAK	1090
Pavo_cristatus	SSTSHPDLLGGWDSWADSSAASNVASPQLK-SLFEGQVFTTGSQSSVSSGSSFSQAK	1090
Gallus_gallus	SSTSHPDLLGGWDSWADSSAASNVASPQLK-SLFEGQVFTTGSQSSVSSGSSFSQAK	1089
Anas_platyrhynchos	SSTSYPDLLGGWDLGVDCSRSVFTPSAQTK-SAVEGSQSGVSSGPALNQSK	1080
Chelonia_mydas	TSSASHPDLLSGWDSWADSPTTTNLATQQPKKSALEGQVLTTGSQTSVPSGLSFSQAK	1097
Latimeria_chalumnae	ATSSSQPDLMGGWDAWNSTLNSSNTVPPQTNKPQAFEGPPLTVGDPTPSVSSTSSFSQSK	1071
Rhinatrema_bivittatum	VS <mark>STSQPDLLSGWDSWATSPNATSIATPQP</mark> RKSAFEASESTTASQSSVSLSSDSSFNPTK	1095
Homo_sapiens	TASSSNPDLLGGWAAWTETAASAVAPTPATEGPLFSPGGQPAPCGSQASWTK	1076
Pan_troglodytes	TASSSNPDLLGGWAAWTETAASAVAPTPATEGPLFSSGGQPAPCGSQASWTK	1085
Macaca_mulatta	TASSSNPDLLGGWAAWTETAASAVAPTPATEGPLFSPGGQLAPCGPQASWTK	1076
Callithrix_jacchus	TASSSNPDLLGGWAAWAEAAASATTPVPATEGPLFT-GGQPAPCGPQASWTK	1076
Rattus_norvegicus	IASSSHPDLLGGWDTWAETALPGPASMPVPEGTLFSSAGHPAPPGPNPSQTK	1075
Mus_musculus	IASSSHPDLLGGWDTWADTATPGPASIPVPEGTLFSSAGHPAPPGPNPSQTK	1075
Canis_lupus_familiaris		1084
Equus_caballus	AASTSHPDLLGGWDAWAEAPAPTPATEGPLLAPGGQPAPPGPSASRTK	1071
Bos_taurus	TASASHPDLLGAWDAWAEAPAPALAADGTFFSPGDQPAPSGLPAGQTK	1033
Xenopus_tropicalis	VSSASNPDLLGGWSSWEETSKSSNVFLPKLNKPAFEGPAYSSTSHLSTSSSSSFSQTK	1090
	109011001110112011301140	
	*, ***** :* *	
Dania	SQNFDPFADLANLGSSLP	1108
Pavo_muticus Pavo cristatus	SQNFDPFADLANLGSSLPSQNFDPFADLANLGSSLP	1108
Gallus gallus	SQNFDPFADLANLGSSLPSQNFDPFADLANLGSSLP	1108
Anas_platyrhynchos	SQNVDPFADLANLGSGLPSQNVDPFADLANLGSGLP	1098
Chelonia mydas	SQNFDPFADLANLKSGLPSQNFDPFADLANLKSGLP	1115
Latimeria chalumnae	SQSFDPFADLGNLGSTLP	1089
Rhinatrema bivittatum	SSNFDPFADLGNLSSTLP	1113
Homo_sapiens	SQNPDPFADLGDLSSGLQ	1094
Pan_troglodytes	SQNPDPFADLGDLSSGLQDPQAQSTVSPRGQRVCTCSRRLPTGKLKPGVADTGAAASPHR	1145
Macaca_mulatta	SONPDPFADLGDLSSGLO	1094
Callithrix_jacchus	SONLDPFADLGDLSSGLO	1094
Rattus norvegicus	SONPDPFADLSDLSSSLO	1093
Mus musculus	SONT.DPFADT.SDT.SSST.Q	1093
Canis_lupus_familiaris	SQSLDPFADLGDLSSGLQ	1102
Equus_caballus	SQSLDPFADLGDLSPGLP	1089
Bos_taurus	SQSQDPFADLGDLSAGLQ	1051
Xenopus_tropicalis	SSGFDPFADLDNLSSSLQ	1108
	115011601170118011901200	
	**	
Pavo muticus	. ** -GSSTGGFSTSGFAQKTVPSQKSGGQWQKPTKAQSTS-WQSQTKSGAQAKPNYT	1160
Pavo cristatus	-GSSTGGFSTSGFAQKTVPSQKSGGQWQKPTKAQSTS-WQSQTKSGAQAKPNYT	1160
Gallus_gallus	-GSSTGGFSTSGFAQKTVPSQKSGGQWQKPTKPQTWQSQAKSGTQAKPNYT	1157
Anas platyrhynchos	-GSSMSGFSGSGFGQKAAPSQKSGNQWQKSTKPQSTL-WHSQTKPSTTAKPNYS	1150
Chelonia mydas	-GPSGGGFPAGGFGQKSAPSQKGGNQWQTKKPQNTGTSWQSHA-QPQQVKSSTQSKPNYT	1173
Latimeria_chalumnae	-SSSGAAFTAGSFSQKPAQAPVGGKQWQSNRPQSAGSSWQQAHPKPQQPKPTAQSKANYN	1148
Rhinatrema_bivittatum	-GSS-VRFPTARLSQKLSQSQKGAGTWQTTKPQSASPSWQPQT-KPQQVKSETQAKPKYN	1170
Homo_sapiens	GSPAGFPPGGFIPKTATTPKGSSSWQTS-RPPAQGASWPPQ-AKPPPKACTQPRPNYA	1150
Pan troglodytes	HCGSPAGFPPGGFIPKTATTPKGSSSWQTS-RPPAQGASWPPQ-AKPPPKACTQPRPNYA	1203
Macaca_mulatta	GSPAGFPPGGFIPKTATTAKGSGSWQTS-RPPAQGASWPPQ-AKPPLKACTQPRPNYA	1150
Callithrix_jacchus	GSPAGFPPGSFVPKTAATPKASGSWQTS-RSPAQGTPRPPQ-AKPPPKASTQLRPNYA	1150
Rattus_norvegicus	GLPAGLPAGSFVGTSATTHKSNSSWQTT-RPTAPGTSWPPQ-AKPAPRASEQLR	1145
Mus_musculus	<mark>G</mark> LPAGLPAGGFVGAPAPTQKSNSPWQAN-RPTAPGTSWTPQ-AKPAPRASEQLR	1145
Canis_lupus_familiaris		1159
Equus_caballus	GSTAGFAPGAFGPKAAPPPKGGGSWQTS-RPPAQGAPWPPQ-ARPPPKTSAQPRPNYT	1145
Bos_taurus	GSPAAAAPGGFGPKAAPPPKASSSWQTS-RPPAQGTPWPPQ-AKPPPKASVPPRPNYT	1107
Xenopus_tropicalis	GSSTQFPSQSTEKSAQKVSNSWQSVKQPAKPQTGGNPWQSQAKPATQSKPNYT	1161
	121012201230124012501260	

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..***.****:*.*. **:.* .** *** .:**: : *: *.:*:***:.: :
                            VNFSVIGGREERGVRTPSFGQKPKVSANDFEDLLSNQGFSAKSDKKGPKTIAEMRKQEMS
Pavo_muticus
                                                                                                        1220
                            VNFSVIGGREERGVRTPSFGQKPKVSANDFEDLLSNQGFSAKSDKKGPKTIAEMRKQEMS
Pavo_cristatus
                                                                                                        1220
                            VNFSVIGGREERGVRTPSFGQKPKVSANDFEDLLSNQGFSAKSDKKGPKTIAEMRKQEMS
Gallus_gallus
                                                                                                        1217
                            GNFGVIGGREERGVRTPSFGQKPKVSANDFEDLLSNQGFSAKSDKKGPKTIAEMRKQEMS
                                                                                                        1210
Anas_platyrhynchos
Chelonia mydas
                            VNFSVIGGREERGIRAPGFGQKPKVSENDFEDLLSNQGFSAKSDKKGTKTIAEMRKQEMS
                                                                                                        1233
                            LGFSVIGGREERGIRA<mark>PS</mark>FGLKPKFSENDFEDLLCEQGFAAKLDKKGPRTIAEMRREELT
Latimeria_chalumnae
                                                                                                        1208
Rhinatrema_bivittatum
                            VNFSVIGGREERGIRAPGFGPKPKVSENDFVDLLSKQGFSAKIDKKGPRTIAEMRKQEMS
                                                                                                        1230
                            SNFSVIGAREERGVRAPSFAQKPKVSENDFEDLLSNQGFSSRSDKKGPKTIAEMRKQDLA
Homo_sapiens
                                                                                                        1210
                            SNFSVIGAREERGVRAPSFAQKPKVSENDFEDLLSNQGFSSRSDKKGPKTIAEMRKQDLA
Pan_troglodytes
                                                                                                        1263
                            ANF<mark>S</mark>VIGAREERGVRA<mark>P</mark>SFA<mark>QKPKVSEN</mark>DFEDLL<mark>SNQGFS</mark>SRSDKKGPKTIAEMRKQDLA
                                                                                                        1210
Macaca_mulatta
                            ANFSVIGAREERGVRAPSFAQKPKVSENDFEDLLSNQGFSSRSDKKGPKTIAEMRKQDLA
Callithrix_jacchus
                                                                                                        1210
                            SHFSVIGAREERGVRAPSFAQKPKVSENDFEDLLPNQGFS-KSDKKGPKTMAEMRKQELA
SHFSVIGAREERGVRVPSFAQKPKVSENDFEDLLPNQGFS-KSDKKGPKTMAEMRKQELA
Rattus_norvegicus
                                                                                                        1204
Mus musculus
                                                                                                        1204
Canis_lupus_familiaris ANVSVIGGREERGVRAPSFGQKPRVSESDFEDLLSHQGFSSKADRKGPRTMAEMRRQEQA
Equus_caballus TNFSVIGGREERGVRAPSFAQKPRVSENDFEDLLSNQGFSSKSDKKGPRTIAEMRRQDQA
                                                                                                        1219
                                                                                                        1205
                            SSFSVIGSREERGVRAPSFGPKPRVSENDFEDLLSNQGFSSRADRKGPRTIAEMRRQDQA
                                                                                                        1167
Bos_taurus
Xenopus_tropicalis
                            ANFSVIGGREERGIRAPGFGLKPKVSESDFGDLLSNHGFSAKTDRGGPKTIAEMRRHELT
                                                                                                        1221
                            \dots 1270 \dots 1280 \dots 1290 \dots 1300 \dots 1310 \dots 1320
                            KDMDPLKLKILEWIEGKERNIRALISTLHTVLWEGENKWKPVSMADLVTPEQVKKYYRKA
Pavo muticus
                                                                                                        1280
                            KDMDPLKLKILEWIEGKERNIRALISTLHTVLWEGENKWKPVSMADLVTPEQVKKYYRKA
Pavo cristatus
                                                                                                        1280
Gallus gallus
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                                                                                                        1277
Anas_platyrhynchos
                            KDMDPLKLKILEWIEGKERNIRALISTLHTVLWEGENKWKPVSIADLVTPEQVKKYYRKA
                                                                                                        1270
Chelonia_mydas
                            KDMD<mark>PLKLKILDWIEGKERN</mark>IRALI<mark>STLHT</mark>VLWEGENKWK<mark>P</mark>VGMADLV<mark>TPEQ</mark>VKKYYRKA
                                                                                                        1293
Latimeria_chalumnae
                            KDIDPLKLKILDWIEGKERNIRALISTLHTVLWEGETRWKTVSMADLVTPDQVKKYYRKA
                                                                                                        1268
                            KDMDPOKLKILEWIEGKERNIRALISTLHTVLWEGETKWKPIGMADLVTPDOVKKYYRKA
Rhinatrema bivittatum
                                                                                                        1290
                            KDTDPLKLKLLDWIEGKERNIRALLSTLHTVLWDGESRWTPVGMADLVAPEQVKKHYRRA
Homo_sapiens
                                                                                                        1270
Pan_troglodytes
                            KDTDPLKLKLLDWIDGKERNIRALLSTLHTVLWDGESRWTPVGMADLVAPEQVKKHYRRA
                                                                                                        1323
                            KDTDPLKLKLLDWIEGKERNIRALLSTLHTVLWDGESRWTPVGMADLVA<mark>PEQ</mark>VKKHYRRA
                                                                                                        1270
Macaca_mulatta
                            KDTDPLKLKLLDWIEGKERNIRALLSTLHTVLWDGESRWTPVGMADLVAPEQVKKHYRRA
Callithrix jacchus
                                                                                                        1270
Rattus norvegicus
                            RDTDPFKLKLLDWIEGKERNIRALLSTLHTVLWDGESRWTPVSMADLVTPEQVKKQYRRA
                                                                                                        1264
                            RDTDPLKLKLLDWIEGKERNIRALLSTLHTVLWDGESRWTPVSMADLVTPEQVKKQYRRA
Mus musculus
                                                                                                        1264
Canis_lupus_familiaris RDADPLKLKLLEWTEGKERNIRALLSTLHTVLWDGESRWAPVGMADLVTPGQVKKQYRRA
                                                                                                        1279
Equus caballus
                            RDTDPLKLKLLDWTEGKEKNIRALLSTLHTVLWDGESRWTPVGMADLVTPGQVKKQYRRA
                                                                                                        1265
                            RDSDPLKLKLLEWTEGKERNIRALLSTLHTALWDGESRWTPVGMADLVTPAQVKKHYRRA
Bos_taurus
                                                                                                        1227
Xenopus tropicalis
                            KDTDPLKLKILDWIEGKERNIRALISTLHTVLWEGESRWKPVNMAELVTPDQVKKYYRKA
                              .....1330......1340......1350......1360......1370......1380
                            ** ***** *:*** *:***:**:**: **
                            VLVVHPDKATGOPYEQYAKMIFMELSDAWSEFENOGSKSLF
Pavo_muticus
                                                                                1321
                            VLVV<mark>HPDK</mark>A<mark>TGQPYEQYAK</mark>MIFM<mark>E</mark>LSDAW<mark>SEFENQGSK</mark>SLF
                                                                                 1321
Pavo_cristatus
                            VLVVH<mark>PDKATGQPYEQYAK</mark>MIFM<mark>E</mark>LS<mark>D</mark>AW<mark>SEFENQGSK</mark>SLF
                                                                                 1318
Gallus_gallus
Anas platyrhynchos
                            VLVVH<mark>PDKATGQPYEQYAK</mark>MIFM<mark>E</mark>LSDAW<mark>SEFENQGSK</mark>SLF
                                                                                 1311
                            VLVV<mark>HPDK</mark>A<mark>TGQPYEQYAK</mark>MIFM<mark>E</mark>LS<mark>DAWSEFENQGSK</mark>SLF
Chelonia_mydas
                                                                                1334
                            VLVVH<mark>PDKATGQPYEQYAK</mark>MIFMEL<mark>ND</mark>AWSEFENQGSKALF
Latimeria_chalumnae
                                                                                 1309
                            VLIVH<mark>PDKATGEPYEQYAR</mark>MIFI<mark>ELND</mark>AW<mark>SEFENQGSK</mark>FLF
Rhinatrema_bivittatum
                                                                                 1331
                            VLAVH<mark>PDK</mark>AA<mark>GQPYEQHAK</mark>MIFMEL<mark>ND</mark>AWSEFENQGSRPLF
Homo sapiens
                                                                                 1311
                            VLAVHPDKAAGQPYEQHAKMIFMELNDAWSEFENQGSRPLF
Pan troglodytes
                                                                                1364
Macaca mulatta
                            VLAVH<mark>PDK</mark>AA<mark>GQPYEQHAK</mark>MIFMEL<mark>ND</mark>AWSEFENQGSRPLF
                                                                                 1311
                            VLAVH<mark>PDKAVGQPYEQHAK</mark>MIFMEL<mark>ND</mark>AW<mark>SEFENQGSRP</mark>LF
Callithrix_jacchus
                                                                                 1311
                            VLVV<mark>HPDKATGQPYEQSAK</mark>MIFM<mark>ELND</mark>AW<mark>SEFENQGSRP</mark>LF
Rattus_norvegicus
                                                                                 1305
                            VLVV<mark>HPDKATGQPYEQYAK</mark>MIFM<mark>ELND</mark>AW<mark>SEFENQGSRP</mark>LF
                                                                                1305
Mus_musculus
Canis_lupus_familiaris
                            VLVVHPDKAAGQPYEQYAKMIFMELNDAWAEFESQGSRPLF
                                                                                 1320
Equus_caballus
                            VLVV<mark>HPDKAAGQPYEQYAR</mark>MIFM<mark>E</mark>LS<mark>D</mark>AWA<mark>EFESQGSRP</mark>LF
                                                                                 1306
                            VLVVH<mark>PDK</mark>AR<mark>GQPYEQYAR</mark>MIFM<mark>ELND</mark>AWA<mark>E</mark>FES<mark>QGSRP</mark>LF
                                                                                 1268
Bos_taurus
```

VLVVH<mark>PDK</mark>A<mark>TGQPYEQYAKMIFMELNDAWSEFENQGSR</mark>SLF

.....1390.....1400.....1410.....1420.

1322

Xenopus_tropicalis