

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/BICD1.psf Tue Feb 1 11:25:45 2022

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

		70	80	90	100	110	120
Pavo_muticus	-----MAAQCDPLSGYLQQPLSDPG						
Pavo_cristatus	-----MAAQCDPLSGYLQQPLSDPG						
Gallus_gallus	-----MAAQCDPLSGYLQQPLSDPG						
Chelonia_mydas	-----MAAQCDPLSGYLPQPLSDPG						
Mus_musculus	-----MASQSEP--GYLAAAQSDPG						
Rattus_norvegicus	-----MAAQGEP--GYLAAAQSDPG						
Homo_sapiens	-----MAAQGEP--GYLAAQ--SDPG						
Pan_troglodytes	-----MAAQGEP--GYLAAQ--SDPG						
Macaca_mulatta	-----MAAQGEP--GYLAAQ--SDPG						
Callithrix_jacchus	LQDELAPRREEPVPEGRRAEAAAQAERRRQRELERCAPTMAAQGEP--GYLAAQ--SDPG						
Bos_taurus	-----MAAQGEP--GYLAAQ--SDPG						
Canis_lupus_familiaris	-----MAAQGEP--GYLAAQ--SDPG						
Equus_caballus	-----MAAQGEP--GYLAAQ--SDPG						
Rhinatrema_bivittatum	-----MAALCDTLGGYLQQS--DPG						
Xenopus_tropicalis	-----MAAQCDTIGGYMNS--DPG						

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Pavo_muticus	SNSE	RTSDSPVPGSEEDSAGPPRPLHSP	EWGEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	80
Pavo_cristatus	SNSE	RTSDSPVPGSEEDSAGPPRPLHSP	EWGEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	80
Gallus_gallus	SNSE	RTSDSPVPGSEEDSAGPPRPLHSP	EWGEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	80
Chelonia_mydas	SNSE	RSADSPPLPGSEEDSAGP-RPLRSP	EWGEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	79
Mus_musculus	SNSE	RTSDSPVAGSEEDLVAAAPLLHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGRSGEDF	78
Rattus_norvegicus	SNSE	RTSDSPVAGSEEDLVAAAPLLHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGRSGEDF	78
Homo_sapiens	SNSE	RTSDSPVPGSEEDLVAGAT-LHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGRSGEDF	76
Pan_troglodytes	SNSE	RTSDSPVPGSEEDLVAGAT-LHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGRSGEDF	76
Macaca_mulatta	SNSE	RTSDSPMPGSEEDLVAGAT-LHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGRSGEDF	76
Callithrix_jacchus	SNSE	RTSDSPMPGSEEDLVAGAT-LHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGRSGEDF	176
Bos_taurus	SNSE	RTSDSPMPGSEEDLVAGAP-LHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	76
Canis_lupus_familiaris	SNSE	RTSDSPMPGSEEDLVAGAP-LHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	76
Equus_caballus	SNSE	RTSDSPVPGSEEDLVAGAP-LHSP	EWSEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	76
Rhinatrema_bivittatum	SNSE	RTSDSPPLPGSEEDSSNPAA-PQD	PEWTEERFRVDRKKLEAMLQAAAE	EGKGSGEDF	77
Xenopus_tropicalis	SNSE	RSADSPPLPGSEEDSPGSAV-PHD	PEWGEERFRVDRKKLEMTLQAAAE	EGKGSGEDF	77
130.....140.....150.....160.....170.....180				

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*****::*****:
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKENVKEAKEKIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKENVKEAKEKIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKENVKEAKEKIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKENVKEAKEKIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMAVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKEDVKEAKEMIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKRDNVKEAKERIMSVLDTKSNRVTLK
FQKIMEETNTQIAWPSKLKIGAKSKDPHIKVS GKKENVKEAKERIMSVLDTKSNRVTLK
.....190.....200.....210.....220.....230.....240

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MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEDTGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
MDVSHTEHSHVIGKGGNNIKKVMEETGCHIHFPDSNRNNQAEKSNQVS IAGQPAGVESAR
.....250.....260.....270.....280.....290.....300

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VRIRELLPLVLMFELPIAGILQPIPDPSNHTIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPIPDPSNHTIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPIPDPSNHTIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPIPDPSNHTIQHISQTYNISVSFKQSRSMYGATVIVRG
ARIRELLPLVLMFELPIAGILQPVDPNTPSIQHISQTYSVSVSFKQSRSMYGATVTVRG
ARIRELLPLVLMFELPIAGILQPVDPNTPSIQHISQTYSVSVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPVDPNPSPIQHISQTYNISVSFKQSRSMYGATVIVRG
VRIRELLPLVLMFELPIAGILQPIPDPSIPTIQHISQTYNISVSFKQSRSMYGTTVIVRG
VRIRELLPLVLMFELPIAGILQPIPDPSIPTIQHISQTYNITVSFKQSRSVYGATVIVRG
.....310.....320.....330.....340.....350.....360

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*****.*****.*.***:*****.*:*****
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTNAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNVKHIMQRTGA
SQNNNTNAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNVKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTATLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTATLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTALLLEHLGGGLASAI PVSTQLDIAAQHHLFMMGRNGSNIKHIMQRTGA
SQNNNTSAVKEGTAMLLEHLAGSLATAI PVSTQLDIAAQHHLFMMGRNGCNIKHIMQRTGA
.....370.....380.....390.....400.....410.....420

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*****.* *****:*****:.*:.* ** *:****
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEIEPQFITQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEIEPQFITQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEIEVEPQFITQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEIEPQIITQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEDI EVDPOVIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEDI DVDPQVITQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOFIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOFIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOLIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOFIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOFIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOFIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOFIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVDPOFIAQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVEPQYITQLME
QIHFPDPSNPQKKSTVYLGTTIESVCLARQYLMGCLPLVLMFDMKEEIEVEPQCITQLME
.....430.....440.....450.....460.....470.....480
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QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIASNASTVSCPVG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIASNASTVSCPVG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIASNASTVSCPVG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKRLGLLESSNGVTIATNPSTISCPVG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVSIATSLSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVSIATSLSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATSPSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATSPSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATSPSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATSPSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATSPSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATSPSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATSPSPASCPAG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATNPSTLSCPIG
QLDVFISIKPKPKQPSKSVIVKSVERNALNMYEARKCLLGLESSGVTIATNPSTLSCPVP

.....490.....500.....510.....520.....530.....540

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Pavo_muticus	L	S	C	P	G	L	D	I	L	S	A	G	L	G	T	G	L	G	L	G	P	T	A	L	S	V	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	499	
Pavo_cristatus	L	S	C	P	G	L	D	I	L	S	A	G	L	G	T	G	L	G	L	G	P	T	A	L	S	V	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	499	
Gallus_gallus	L	S	C	P	G	L	D	I	L	S	A	G	L	G	T	G	L	G	L	G	P	T	A	L	S	I	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	499	
Chelonia_mydas	L	S	C	P	G	L	D	I	L	S	A	G	L	G	T	G	L	G	L	G	P	T	A	L	S	V	N	T	S	T	A	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	498	
Mus_musculus	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	A	T	P	N	S	L	L	N	A	L	N	T	S	V	S	P	L	O	S	S	S	S	G	T	P	S	P	-	497
Rattus_norvegicus	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	S	S	S	G	T	P	S	P	-	498
Homo_sapiens	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	495
Pan_troglodytes	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	495
Macaca_mulatta	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	495
Callithrix_jacchus	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	595
Bos_taurus	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	A	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	495
Canis_lupus_familiaris	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	T	S	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O	S	P	S	S	G	T	P	S	P	-	495
Equus_caballus	L	A	C	P	S	L	D	I	L	A	S	A	G	L	G	T	G	L	G	L	G	P	T	T	L	S	L	N	T	S	T	T	P	N	S	L	L	N	A	L	N	S	S	V	S	P	L	O											

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Pavo_muticus	ALWTTSLANTN-ATGFS AIPHLMIPSTAQAATLTSILLSGVPNYSQNTIPSPPPGLTPVEVH	558
Pavo_cristatus	ALWTTSLANTN-ATGFS AIPHLMIPSTAQAATLTSILLSGVPNYSQNTIPSPPPGLTPVEVH	558
Gallus_gallus	ALWTTSLANTN-ATGFS AIPHLMIPSTAQAATLTSILLSGVPNYSQNTIPSPPPGLTPVEVH	558
Chelonia_mydas	TLWATSLANTS-ATGFS AIPHLMIPSTAQAALTSILLSGVPNYSQNTIPSPPPGLTPVDIH	557
Mus_musculus	TLWAPPIANTASATGFSTIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	557
Rattus_norvegicus	TLWASSIPNTASATGFSTIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	558
Homo_sapiens	TLWAPPLANTSSATGFS AIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	555
Pan_troglodytes	TLWAPPLANTSSATGFS AIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	555
Macaca_mulatta	TLWAPPLANTSSATGFS AIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	555
Callithrix_jacchus	TLWAPPLANTSSATGFS AIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	655
Bos_taurus	TLWAPPLGNTSSATGFS AIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	555
Canis_lupus_familiaris	TLWAPPLANTSSATGFS AIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	555
Equus_caballus	TLWAPPLANTSSATGFS AIPHLMIPSTAQAATLTNILLSGVPTYGHTAPSPPPGLTPVDVH	555
Rhinatrema_bivittatum	TLWATALANTSSSTIGFSTIPHLMIPSAQAATFSILLSGVPNYSQSTIPSPPPGLTPVEVG	554
Xenopus_tropicalis	TLWATSLANTSNAIGFPAIPHLMIPSAQAATLTNILLSGVPNYSQNTIPSPPPGLTPVDVH	554
610.....620.....630.....640.....650.....660	

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Pavo_muticus	VNGMQSESKKGSASLNGHVKTITNIKYAALSAAISLGENVLSPNHSDSARQSTHGASEQVA			618
Pavo_cristatus	VNGMQSESKKGSASLNGHVKTITNIKYAALSAAISLGENVLSPNHSDSARQSTHGASEQVA			618
Gallus_gallus	VNGMQSESKKGSASLNGHVKATINIKYAALSAATSLGENVLNANHSDSARQSTHGASEQVA			618
Chelonia_mydas	VNGMQSENKKGPSLNGHVKTITNIKYAALSAATSLGENVLSTNHSDSRQTNSHTSEQVT			617
Mus_musculus	INSMQTEGKNISASINGHVOPANMKYGPLSTSSLGKVLSSNHGDPSMQTA---GPEQAS			614
Rattus_norvegicus	INSMQTEGKNISASINGHVOPPNMKYGPLSTSSLGKVLSSNHGDPSMQTA---GPEQAS			615
Homo_sapiens	INSMQTEGKKISAALNGHAQSPDIKYGAISTSSLGEKVLSANHGDPSIQTS---GSEQTS			612
Pan_troglodytes	INSMQTEGKKISAALNGHAQSPNIKYGAI STSSLGEKVLSANHGDPSIQTS---GSEQTS			612
Macaca_mulatta	INSMQTEGKKISAALNGHAQSPNIKYGAI STSSLGEKVLSANHGDPSIQTS---GSEQTS			612
Callithrix_jacchus	INSMQTEGKKISAALNGHAQSPNIKYGAI STSSLGEKVLSANHGDPSIQTS---GSEQAS			712
Bos_taurus	INTMQAEGKKISAALNGHTQSPSLKYGAISTSSLGEKVLSANHGDPSRQTA---GSEQTS			612
Canis_lupus_familiaris	INTMQTEGKKISASLNGHAQSPNIKYGAIPTSSSLGEKVLSGNHGDPSRQTT---GPEQAS			612
Equus_caballus	INSMQTEGKKISAALNGHTQSPNIKYGAI STSSLGEKVLSANHGDPSRQTT---GSEQAS			612
Rhinatrema_bivittatum	INSIQSESCKGSSSSLNGHVOPANIKYGAISSLGENVLNTNHTDPSROTSSHNSSEQVT			614
Xenopus_tropicalis	MNGIHSECKKVTSALNGHVKPTNMKYGTI SSSSLGDKVLTNANLAFAESRSNNHGSADEVN			614
670.....680.....690.....700.....710.....720			

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	..*	*****.*: :****: .:* ..*.:*.:*.:*****	
Pavo_muticus	AKSNGTEGCNDAFVEVGMPRSPSHSANTSDLKQMMSSSKQACAKROAVELLOGTKNSHLH	678	
Pavo_cristatus	AKSNGTEGCNDAFVEVGMPRSPSHSANTSDLKQMMSSSKQACAKROTVELLOGTKNSHLH	678	
Gallus_gallus	AKSNGTEGCNDAFVEVGMPRSPSHSANTSDLKQMMSSSKQACSKROTVELLOGTKNSHLH	678	
Chelonia_mydas	TKSDTAEGCNDADFVEVGMPRSPSHSANASDLKQMMSSSKQSCIKROTVELLOGTKNSHLH	677	
Mus_musculus	PKSNSVEGCNDAFVEVGMPRSPSHSGNAGDLKQMLGASKVSCAKROTVELLOGTKNSHLH	674	
Rattus_norvegicus	PKSNSVEGCNDAFVEVGMPRSPSHSGNAGDLKQMLGPSKVSCKAKROTVELLOGTKNSHLH	675	
Homo_sapiens	PKSSPTEGCNDAFVEVGMPRSPSHSGNAGDLKQMMCP SKVSCAKROTVELLOGTKNSHLH	672	
Pan_troglodytes	PKSSPTEGCNDAFVEVGMPRSPSHSGNAGDLKQMMCP SKVSCAKROTVELLOGTKNSHLH	672	
Macaca_mulatta	PKSSPTEGCNDAFVEVGMPRSPSHSGNAGDLKQMMCSSKVSCKAKROTVELLOGTKNSHLH	672	
Callithrix_jacchus	PKSSPTEGCNDAFVEVGMPRSPSHSGNAGDLKQMMCP SKVSCAKROTVELLOGTKNSHLH	772	
Bos_taurus	PKSNPTEGCNDAFVEVGMPRSPSHSGNAGDLKQMMGPSKVACAKROTVELLOGTKNSHLH	672	
Canis_lupus_familiaris	PKSNPTEGCNDAFVEVGMPRSPSHSGNAGDLKQMMGPSKVSCAKROTVELLOGTKNSHLH	672	
Equus_caballus	PKPSPAEGCNDADFVEVGMPRSPSHSGNAGDLKQMMGPSKVPCAKROTVELLOGTKNSHLH	672	
Rhinatrema_bivittatum	SKSDTTEGCNDAFVEVGMPRSPSHSANSSELKQMLGSTKVSCKSKROTVOLLOGTKNSHLH	674	
Xenopus_tropicalis	SKID-SEGCNDAFVEVGMPRSPSHSANTKDLKQMLNSTKAPCTROTIVKLLHGAKNSHLH	673	
730.....740.....750.....760.....770.....780		

	*** **.*:*. .:***** ****:.*.:. :. * :***:***	
Pavo_muticus	T T D R L L S D A E L S A S E S P M A D K K A P G S E R A A E R A A A A Q O N S E R A R L A - O P S Y V N M Q A F D Y E	737
Pavo_cristatus	T T D R L L S D A E L S A S E S P M A D K K A P G S E R A A E R A A A A Q O N S E R A R L A - O P S Y V N M Q A F D Y E	737
Gallus_gallus	T T D R L L S D A E L S A S E S P M A D K K A P G S E R A A E R A A A A Q O N S E R A R L A - O P S Y V N M Q A F D Y E	737
Chelonia_mydas	T T E R L L S D S E L S A S E S P V A D K K A P G S E R A A E R A A A A Q O N S E R V R L V P O S S Y V N M Q A F D Y E	737
Mus_musculus	G T D R L L S D P E L S A T E S P L A D K K A P G S E R A A E R A A A A Q O K S E R A R L A S O P T Y V H M Q A F D Y E	734
Rattus_norvegicus	S T D R L L S D T E L S A T E S P L A D K K A P G S E R A A E R A A A A Q O N S E R A R L A S O P P Y V H M Q A F D Y E	735
Homo_sapiens	S T D R L L S D P E L S A T E S P L A D K K A P G S E R A A E R A A A A Q O N S E R A H L A P R S S Y V N M Q A F D Y E	732
Pan_troglodytes	S T D R L L S D P E L S A T E S P L A D K K A P G S E R A A E R A A A A Q O N S E R A H L A P R S S Y V N M Q A F D Y E	732
Macaca_mulatta	S T D R L L S D P E L S A T E S P L A D K K A P G S E R A A E R A A A A Q O N S E R A H L A P R S S Y V N M Q A F D Y E	732
Callithrix_jacchus	S T D R L L S D P E L S A T E S P L A D K K A P G S E R A A E R A A A A Q O N S E R A H L A P R S S Y V N M Q A F D Y E	832
Bos_taurus	S T D R L L S D P E L S A A E S P L A D K K A P G S E R A A E R - - A A Q O N N E R A R L A P R P S Y V N M Q A F D Y E	730
Canis_lupus_familiaris	S T D R L L S D P E L S T T E S P L A D K K A P G S E R A A E R A A A A Q O N S E R A R L A P R P S Y V N M Q A F D Y E	732
Equus_caballus	S T D R L L S D P E L S T T E S P L A D K K A P G S E R A A E R A A A A Q O N S E R A R L A S R P - Y V N M Q A F D Y E	731
Rhinatrema_bivittatum	T T D R L R S D S E L S A A E G P V A D K K A P G S E R A A E R A A A A Q O N S E R V R L A P O P S Y V N M Q A F D Y E	734
Xenopus_tropicalis	T A E R L L S D E M S P P E G H M T D K K A P G S E R A A E R - A A A Q O N S E R A R L T S O S A Y N M Q A F D Y E	732
790.....800.....810.....820.....830.....840	

	****:*****.***:*.::*	
Pavo_muticus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPSMTTTYE	797
Pavo_cristatus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPSMTTTYE	797
Gallus_gallus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPSMTTTYE	797
Chelonia_mydas	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPSMTTTYE	797
Mus_musculus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTAYE	794
Rattus_norvegicus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTAYE	795
Homo_sapiens	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTYE	792
Pan_troglodytes	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTYE	792
Macaca_mulatta	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTYE	792
Callithrix_jacchus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTYE	892
Bos_taurus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTFE	790
Canis_lupus_familiaris	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTFE	792
Equus_caballus	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTFE	791
Rhinatrema_bivittatum	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVPYKPTMSTTYE	794
Xenopus_tropicalis	QKKLLATKAMLKKPVVTEVRTPTNTWSGLGFSKSMPAETIKELRRANHVSYPKPTMTTTYE	792
850.....860.....870.....880.....890.....900	

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.*:*****.***:*. .:.:****: :*:.. . :: :.:***** *****
 GSSMSLSRSNSREHLGTGSES DNWRD-HNGLGPTAH-EFVSSIASPKRKQNKSAEHYLSS
 GSSMSLSRSNSREHLGTGSES DNWRD-HNGLGPTAH-EFVSSIASPKRKQNKSAEHYLSS
 GSSMSLSRSNSREHLGTGSES DNWRD-HNGLGPTAH-EFVSSIASPKRKQNKSAEHYLSS
 GSSMSLSRSNSREHLGSGSES DNWRD-RNGIGPSAHSEFVSSIGSPKRKQNKSTEHYLSS
 GSSLSLRSNSSREHLASGSES DNWRD-RNGIGPMGHSEFSAPIGSPKRKQNKREHYLSS
 GSSLSLRSNSSREHLASGSES DNWRD-RNGIGPMGHSEFSAPIGSPKRKQNKREHYLSS
 GSSMSLSRSNSREHLGGGSES DNWRD-RNGIGPGSHSEFAASIGSPKRKQNKSTEHYLSS
 GSSMSLSRSNSREHLGSGSES DNWRD-RNGIGPGSHSEFAASIGSPKRKQNKSTEHYLSS
 GSSMSLSRSNSREHLGSGSES DNWRD-RNGIGPGSHSEFAASIGSPKRKQNKSTEHYLSS
 GSSMSLSRSNSREHLGSGSES DNWRD-RNGIGPSSHSEFAASIGSPKRKQNKSTEHYLSS
 GSSMSLSRSNSREHLGSGSES DNWRD-RNGIGPASHGEFAASVSGSPKRKQNKSTEHYLSS
 GSSMSLSRSNSREHLGSGSES DNWRD-RNGIGPPSPSEFAASVSGSPKRKQNKSTEHYLSS
 GSSMSLSRSNSREHLGSGSES DNWRD-RNGIGPASHSEFAASIGSPKRKQNKSTEHYLSS
 GSSLSLRSNSSREHLGNCEADNWRDHRNGIGSTAHSEYPSMGSPPKRKQNKSTEHYLSS
 DSSMSLSRSDSREQLGNCS DNWRD-RNGLD-SHNDYSSIGSPKRKQNKSAEHYLSS
910.....920.....930.....940.....950.....960

*****.******:*****
SNYMDCISSSLTGSNGCNLNSLFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSLFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSLFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSLFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSCFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSCFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
SNYMDCISSSLTGSNGCNLNSSFKGSDDLPELFSKLGGLGKYTDVFQQQEIDLQTFLLTLTDQD
.....970.....980.....990.....1000.....1010.....1020

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*****:*****:*****.*****:**:..:*****.*****:**:
LKELGITTFGARRKMLLAISSELNKNRRKLFDPNS---IRASFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFDPNS---IRASFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFDPNS---IRASFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFDPNS---VRASFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELSKNRRKLFEPNP--ASCTSFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELSKNRRKLFEPNPPTTCTSFLEGGVSGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFESPN---ARTSFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFESPN---ARTSFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFESPN---ARTSFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFEPNP---TRTSFLEGGASGRLPRQYHADIA
LKELGITTFGARRKMLLAISSELNKNRRKLFEPNP---ARTSFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFEPNP---ARTSFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFEPNP---ARTSFLEGGASGRLPRQYHSDIA
LKELGVTTFGARRKMFLAISSELNKNRRKLFDPNP---IRSSFLEGGASGRLPRQYHSDIA
LKELGITTFGARRKMLLAISSELNKNRRKLFEPNP---IRSSFLEGGASGRLPRQYHTDIA
.....1030.....1040.....1050.....1060.....1070.....1080

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Pavo_muticus	SVSGRW	978
Pavo_cristatus	SVSGRW	978
Gallus_gallus	SVSGRW	978
Chelonia_mydas	SVSGRW	979
Mus_musculus	SVSGRW	977
Rattus_norvegicus	SVSGRW	980
Homo_sapiens	SVSGRW	974
Pan_troglodytes	SVSGRW	974
Macaca_mulatta	SVSGRW	974
Callithrix_jacchus	SVSGRW	1074
Bos_taurus	SVSGRW	972
Canis_lupus_familiaris	SVSGRW	974
Equus_caballus	SVSGRW	973
Rhinatrema_bivittatum	SVSGRW	977
Xenopus_tropicalis	SVSGRW	973

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