## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	: .: ***. * :: :. ::*. : : *: :	
Rattus norvegicus	MAALEEKASQVAEWLKKIFGDHPIPQYEMNARTTEILYHLSERNRV	46
Mus musculus	MAAPEEKALQVAEWLKKVFGDHPIPQYEMNSRTTEILYHLSERNRV	46
Homo_sapiens	MEPQEERETQVAAWLKKIFGDHPIPQYEVNPRTTEILHHLSERNRV	46
Pan_troglodytes	MEPQEERETQVAAWLKKIFGDHPIPQYEVNPRTTEILHHLSERNRV	46
Macaca mulatta	MEPLEERETQVAAWLKKIFGDHPIPQYEVNPRTTEILHHLSERNRV	46
Callithrix_jacchus	MEPLEEREAKVAAWLKKIFGDHPIPQYEVNPRTTEILYHLSERNRL	46
	MEAPEEKEAQVAAWLKKIFGDHSIPQYEVNARTTEILHHLSELNRV	46
Equus_caballus	MEAQEEKEAQVAAWLKKIFGDHAIPQYEVNPRTTEILHHLAERNRV	46
Bos taurus	MEALEEKEAQVAAWLKKIFGDHPIPQYEVNAWTTEILYNLSERNRI	46
Xenopus_tropicalis	MDEKSTKIITWLKKMFGDKPLPPYEVNTRTVEILYQLAEWNEA	43
Rhinatrema bivittatum	MDEKSTKIILWLKKVFGDKPISHYEVNTRTTDILYQLAECNEA	43
Latimeria chalumnae	MAAKSDEVTLWLKKKFGEQPIPQYEVNTRTTELLYQQAQINKA	43
Chelonia_mydas	MEEKLRRVTLWLKRTFGDQPIPQYEVNSRTVDILYELAECNET	43
Pavo muticus	MAAGGSRQKAAAAEVS-MPEKLQRITSWLKKTFENQLVPRVEVNTQSFDPLYALVEYSEE	59
Pavo_muticus Pavo_cristatus	MAAGGSRQKAAAAEVS-MPEKLQRITSWLKKTFENQLVPRVEVNTQSIDPLYALVEYSEE	59
Gallus_gallus	MAAGGSTQKAAAAEVS-MPEKLQKIISWLKKTFENQLVPQFDVNTKTTDLLYELVEYSEE	60
Anas_platyrhynchos	MAEADTMEKLRQVTLWLKEVFENQPIPHYEVNPQTVEILYNLKEYSET	48
Anas_pracyrnynchos	1102030405060	40
	14050	
	*::*: :: .* . :: * :	
Rattus_norvegicus	RDRDVNLVIEDLROKASEYESEAKRLEDFLMESVNFSPANLSNT	90
Mus musculus	RDRDISLVIEDLKOKASEYESEAKRLEDFLMESVNFSPANLSKS	90
Homo sapiens	RDRDVYLVIEDLKQKASEYESEAKYLQDLLMESVNFSPANLSST	90
Pan_troglodytes	RDRDVYLVIEDLKOKASEYESEAKYLODLLMESVNFSPANLSST	90
Macaca mulatta	RDRDVYLVVEDLKQKASEYESEAKYLQDLLMESVNFSPANLSST	90
Callithrix_jacchus	RDRDVILVIEDLKOKASEYESEGRVSRCRPGWSAVVPSSKYLODLLMESVNFSPANLSST	106
Canis lupus familiaris	RDRDVYLVIEDLKOKASEYESEAKHLONLLMESVNFSPANLSST	90
Equus_caballus	RDRDVYLVIEDLKQKASEYESEAKHLQDLLMESVNFSPANLSGT	90
Bos taurus	RDRDVYLVTEDLKOKAKEYESEAKHLODLLMESVNFSPASLSST	90
<del>_</del>	RDKDLTLVTEDLKUKSAEVKAEAKYLQDLLTEGLGPSYTNLSRM	90 87
Xenopus_tropicalis Rhinatrema_bivittatum	RDKDITLVIEDIKLKTAETAAEASFLQDLLLESMGPSFTSLSRM	87 87
	RDRDVSLLIKDLKQKTAETAAEASYLQDFLMESVGLSFTSLSRM	8 <i>7</i> 87
Latimeria_chalumnae	RDRDVSLVIDDMKQKTAEYGSEASYLQDFLMESVGLSFTSLSST RDRDVSLVIDDMKQKTAEYESEVNYLQDLLMESVMLSFNSLSSA	87 87
Chelonia_mydas	RERDVSFLIEDMKQRAAEYDADAEYLQSLLTESLNLSPSSLSKE	103
Pavo_muticus	RERDVSFLIEDMKQRAAEYDADAEYLQSLLTESLNLSPSSLSKE RERDVSFLIEDMKQRAAEYDADAEYLQSLLTESLNLSPSSLSKE	103
Pavo_cristatus		
Gallus_gallus	RERDVSFLIEDMKK <mark>R</mark> AAEYDA <mark>G</mark> AEYL <mark>Q</mark> SLLTESL <mark>G</mark> L <mark>SP</mark> SSLSEE RERDLAFLVEDTEOKAAEYEAOAKYLEDLLTKGLGLSLSSLSSE	104
Anas_platyrhynchos		92
	708090100110120	
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Rattus norvegicus	GSRFLNALVDSAIALEIKDTSLASFIPAVNDLTSDLFRTKSKSEEIKLELGKLEKNLTAT	150
Mus musculus	GSRFLNALVDSAIALEIKDTSLASFIPAVNDLTSDLFRTKSKSEEMKLELGKLEKNLTAT	150
Homo_sapiens	GSRYLNALVDSAVALETKDTSLASFIPAVNDLTSDLFRTKSKSEEIKIELEKLEKNLTAT	150
Pan troglodytes	GSRYLNALVDSAVALETKDTSLASFIPAVNDLTSDLFRTKSKSEEIKIELEKLEKNLTAT	
Macaca mulatta	GSRYLNALVDSAVALETKDISLASFIPAVNDLISDLFRIKSKSEEIKIELEKLEKNLIAI GSRYLNALVDSSVALETKDISLASFIPAVNDLISDLFRIKSKSEEIKIELEKLEKNLIAI	150
Macaca_mulatta Callithrix jacchus	SSRYLNALVDSSVALETEDTSLASFIPAVNDLTSNLFRIKSKSEEIKIELEKLEKNLTAT	150 166
Canis lupus familiaris	GSRYLNALVDSAVALETKDTSLASFIPAVNDLTSDLFRTKSKSEEIKLELEKLELANLTAT	150
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Equus_caballus	GSRYLNALVDSAVALETKDTSLASFIPAVNDLTSDLFRTKSKNEEIKLELAKLEKNLTAT GSRYLNALVDSAVVLETKDTSLASFIPAVNDLTSDLFRTKSKNEEIKLELAKLEKNLTAT	150
Bos_taurus		150
Xenopus_tropicalis	GNNYLNQIVDSCLALELKNSSLSSYIPAVNDLSSELVATELSNQELEAELTGLRKKLTEA GSSYLNELVDSTLVLEVKDSSLASYIPAVIDLTSELLVLESKNQEMELELTNLRKKLTAA	147
Rhinatrema_bivittatum		147
Latimeria_chalumnae	GSGILNALVDSAMVLNTKDTSSTSYAYAINDLTTDLLTAERRROKMDQELTELKKKLTAA	147
Chelonia_mydas	GTSYLNALVDSAMALETKDTSLASFISAINDLTSDLHATESRNREMELELTSLRKKLTAA	147
Pavo_muticus	GSAHLKTLVDSAMILETKDTSLTSFFCAISDRSLELHAAESKNKEMEQKLLNLKKKMTAT	163
Pavo_cristatus	GSAHLKTLVDSAMILETKDTSLTSFFCAISDRSLELHAAESKNKEMEQKLLNLKKKMTAT	163
Gallus_gallus	GTAHLNTLVDSAMILETKDTYLTSFFCAISDRTLELHAAESKNKEMEQRLVNLKKKLTAT	164
Anas_platyrhynchos	GATYLNTLVNSAITLGTKDTSLASFFCAINDMSSELYATESKNKELELELASMNKKLTAA	152
	130140150160170180	

## **CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT**

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Rattus norvegicus	LVL <mark>ek</mark> clredl <mark>kk</mark> advhlsaerakaegrlonmdflkakaaefregiraaeeolssr <mark>g</mark> mda	210
Mus_musculus	LVLEKCLREDLKKAELQLSAEKAKVDSRLQNMDFLKAKAAEFRFGIKAAEEQLSARGMDA	210
Homo_sapiens	LVLEKCLQEDVKKAELHLSTERAKVDNRRQNMDFLKAKSEEFRFGIKAAEEQLSARGMDA	210
Pan_troglodytes	LVLEKCLQEDVKKAELHLSTERAKVDNRRQNMDFLKAKSEEFRFGIKAAEEQLSARGMDA	210
Macaca_mulatta	LVLEKCLQEDVKKAELHQSIERAKVDNRRQNMDFLKAKSEEFRFGIKAAEEQLSARGMDA	210
Callithrix_jacchus	LVLEKCLQEDLKKAELHLSTERAKVDHRRQNMDFLKAKSEEFRFRIKAAEEQLSARGMDA	226
Canis_lupus_familiaris	LVLEKCLREDLKKAELHLSTERAKVDNRLQNMDFLKAKSEEFRFGIRTAEEQLSARGMDA	210
Equus_caballus	LVLEKCLREDLKKAELHLSTERAKVDNRLQNMNFLKAKSEEFRCGIRAAEEQLSARGLDA	210
Bos_taurus	LVLEKCLQEDLKKAELHLCTERARVDSRLQNMDFLKAKSEEFRSGIRTAEEQLSARGMDA	210
Xenopus_tropicalis	LVL <mark>ek</mark> sl <mark>qqdlkk</mark> aeeqcnfekakvevraqnmkklkdkseeykykihaakdqlssagmee	207
Rhinatrema_bivittatum	LVLEKTLQEDLRKAEEQC <mark>TVEKAKVDSRMQNMEFLKAKSEEFR</mark> VRIKAAEEQL <mark>S</mark> AN <mark>G</mark> MDS	207
Latimeria_chalumnae	LVLEKSLEEDLV <mark>KT</mark> EDKLAVETARTEVRIQNVEMIKAKLDSLRFKSKAAEKKLSDN <mark>G</mark> MNS	207
Chelonia_mydas	LVLEKHLKEDL <mark>KKTEEH</mark> LATEKAKADS <mark>RTQN</mark> MKFLKDKSEDFKFRIKAAEEQLSAS <mark>GMDP</mark>	207
Pavo_muticus	LMLEKQLEEDLEKAKTHLEIEGAKSESRCQNLQFLKDKSEDLRIRIKIAKEQLAATGLDQ	223
Pavo_cristatus	LMLEKQLEEDLEKAKTHLEIEGAKSESRCQNLQFLKDKSEDLRIRIKIAKEQLAATGLDQ	223
Gallus_gallus	LVLEKQLEKDLEKTKTHLEIEVAKSENRLQNLQFLEDKSEDLKIRIKTAEEQLAASGLDQ	224
Anas_platyrhynchos	LAMEKRLEEDLRKTRDYLEVERVKAESRSQNLKFLRDKSEDFKIRIKAAEEKLAANGLDY	212
	$\dots 190 \dots 200 \dots 210 \dots 220 \dots 230 \dots 240$	
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Rattus_norvegicus	SLSHRSLVALSDKLSELKQQTIPLKKKLESYLDLMPNPSLAQVKIEEAKRELDAIEAELT	270
Mus_musculus	SLSHRSLAALSEKLSELKEQTIPLKKKLESYLDLMPSPSLAQLKIEEAKRELDAIEAELT	270
Homo_sapiens	SLSHQSLVALSEKLARLKQQTIPLKKKLESYLDLMPNPSLAQVKIEEAKRELDSIEAELT	270
Pan_troglodytes	SLSHQSLVALSEKLARLKQQTIPLKKKLESYLDLMPNPSLAQVKIEEAKRELDSIEAELT	270 270
Macaca_mulatta	SLSHQSLVALSEKLARLKQQTIPLKKKLESYLDLMPNPSLARVKIEEAKRELDSIEAELT	286
Callithrix_jacchus	SLSHQSLVALSEKLAKLKQQTIPLKKKLESYLDLMPNPSLAQVKIEEAKRELDSIEAELT	286 270
Canis_lupus_familiaris Equus_caballus	SLSHQSLVALSEKLAELKQQTIPLKKKLESYLDLMPNPSLAQVKIEEAKRELDTIEAELT SLSHQSLVALSEKLAELKQQTIPLKKKLESYLDLMPNPSLAQVKIEEAKRELDIIEAELT	270
Bos_taurus	SLSHQSLVALSEKLAELKQQIIPLKKKLESYLDLMPNPSLAQVKIEEAKRELDTIEAELT	270
Xenopus tropicalis	SLTHRSLVSLSETQTELNAQSMAAKEKLNSYLDLAPNPSLVKVKIEEAKRELKATEAELT	267
Rhinatrema bivittatum	SLSHQSLVALSEKRTKLKEQAVPLKKKLESYLDLSPNPSLAQVKIEEAKRELNSIDAELT	267
Latimeria chalumnae	SLSHQSLVHLSEKLAKLKEETVPLKKKLESYLDLTPNPSLAQVKIEEAKRELAALEAELD	267
Chelonia_mydas	SLTHQSLVSLSEKLTELKQQTVPLKKKLESYLDLTPNPSLARVKIEEAKRELNALEAEFS	267
Pavo muticus	SLMHEPLVCLSEKLAGMQEEMEHLKKELECYLDLPPNLPLARVKVEEAKRELNALEEEFS	283
Pavo cristatus	SLMHEPLVCLSEKLAGMOEEMEHLKKELECYLDLPPNLPLARVKVEEAKRELNALEEEFS	283
Gallus gallus	SLLHESLVSMSEKLAEMOEEMVHVKKKLEYYLDLPPNLSLARVKVEEAKRELNALEEEFS	284
Anas platyrhynchos	SLMHQSLVSMSEKLEEMQKEVVPVKRELDSYLDLTPNPSLVQVKVEEARRELNDLEAELS	272
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	.: ::	
Rattus_norvegicus	KKVDMMEL 278	
Mus_musculus	KKVDMMGL 278	
Homo_sapiens	RRVDMMEL 278	
Pan_troglodytes	RRVDMMEL 278	
Macaca_mulatta	RRVDMMEL 278	
Callithrix_jacchus	RRVDMMEL 294	
Canis_lupus_familiaris		
Equus_caballus	KKVDMMEL 278	
Bos_taurus	KRVNMMEL 278	

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TKVNMMEFVVPEPSKRRLK

EKVDVMEFSLPEQYKRRI<mark>T</mark>

SKVDMMALSV<mark>PEP</mark>SKRRFT

KQIEMLTHDLLETKRL---

KQIEMLTHDLLETKRL---

KQIEMLTHDVQETKKL---

KEILMLTLEMPESRKNKFT

......310.....

Rhinatrema\_bivittatum QKVDMMELALPEQKKYRFP

Xenopus tropicalis

Chelonia\_mydas Pavo\_muticus

Pavo\_cristatus

Gallus\_gallus

Latimeria\_chalumnae

Anas\_platyrhynchos