

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/RIOP2020 Tue Feb 1 14:23:25 2022

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**::*  ** :*:.****  *****
Mus_musculus      -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Rattus_norvegicus -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Homo_sapiens       -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Pan_troglodytes    -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Macaca_mulatta     -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Callithrix_jacchus -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Canis_lupus_familiaris -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Bos_taurus         -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Equus_caballus     -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  27
Heterocephalus_glaber -----MGKVNVAKLRYMSRDDFRVLTAVEMGM  60
Pavo_muticus       -----MGKLVVMLRYLSKEHFRVLTAVEMGM  27
Pavo_cristatus     -----MGKLVVMLRYLSKEHFRVLTAVEMGM  27
Gallus_gallus      -----MGKLVVMLRYLSKEHFRVLTAVEMGM  27
Chelonia_mydas     -----MGRLNVVMLRYLSRDHFRVLTAVEMGM  27
Rhinatrema_bivittatum -----MGKLVVMLRYLSREDFRVLTAVEMGM  27
Xenopus_tropicalis -----MGKLVVLLRYLSREDFRVLTAVEMGM  27
Latimeria_chalumnae -----MGKLVGLLRSLREDFRVLTAVEMGM  27
1.....10.....20.....30.....40.....50.....60

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*****  **::*****:*****:****  **::*:*  *****  . *
Mus_musculus      KNHEIVPCSLIASIASLKHGGCNKILRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Rattus_norvegicus KNHEIVPCSLVASIASLKHGGCNKILRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Homo_sapiens       KNHEIVPGSLIASIASLKHGGCNKVLRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Pan_troglodytes    KNHEIVPGSLIASIASLKHGGCNKVLRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Macaca_mulatta     KNHEIVPGSLIASIASLKHGGCNKVLRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Callithrix_jacchus KNHEIVPGSLIASIASLKHGGCNKVLRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Canis_lupus_familiaris KNHEIVPCSLVASIASLKHGGCNKVLRELVKHKLIAWERTKIFFISFCLAVOGYRLTNAG  87
Bos_taurus         KNHEIVPCSLVASIASLKHGGCNKVLRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Equus_caballus     KNHEIVPCSLVASIASLKHGGCNKVLRELVKHKLIAWERTKT-----VOGYRLTNAG  79
Heterocephalus_glaber KNHEIVPCSLIASIASLKHGGCNKILRELVKHKLIAWERTKT-----VOGYRLTNAG  112
Pavo_muticus       KNHEIVPASLIASIASLKRGGCNKILRELGKHLRLAYERTKT-----VOGYRLTNAG  79
Pavo_cristatus     KNHEIVPASLIASIASLKRGGCNKILRELGKHLRLAYERTKT-----VOGYRLTNAG  79
Gallus_gallus      KNHEIVPASLIASIASLKHGGCNKILRELGKHLRLAYERTKT-----VOGYRLTNAG  79
Chelonia_mydas     KNHEIVPASLIASIASLKHGGCNKILRELVKHKLLAYERTKT-----VOGYRLTNGG  79
Rhinatrema_bivittatum KNHEIVPASLIASIASLKHGGCNKVLRELVKHKLLVYERSKT-----VOGYRLTYGG  79
Xenopus_tropicalis KNHEIVPASLIASIASLKHGGCNKILRELVKHKLIAWERTKT-----VOGYRLIYGG  79
Latimeria_chalumnae KNHEIVPASLIASIASLKHGGCNKILRELVKHKLLAYERTKT-----VOGYRLTCAG  79
.....70.....80.....90.....100.....110.....120

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*****::***:..  *****:*****:*****  *::**  .  ....*****
Mus_musculus      YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  138
Rattus_norvegicus YDYLALKTLSSRQVVDVGNQIGVGKESDIYIVANEEGQQFALKLHRLGR-TSFRNLKKN  138
Homo_sapiens       YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEEGQQFALKLHRLGR-TSFRNLKKN  138
Pan_troglodytes    YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  138
Macaca_mulatta     YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  138
Callithrix_jacchus YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  138
Canis_lupus_familiaris YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  146
Bos_taurus         YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  138
Equus_caballus     YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  138
Heterocephalus_glaber YDYLALKTLSSRQVSVGNQMGVGKESDIYIVANEAGQQLALKLHRLGR-TSFRNLKKN  171
Pavo_muticus       YDYLALKTLSSRQVISVGNQMGVGKESDIYIVANEDEQQFAMKLHRLGR-TSFRSLKKN  138
Pavo_cristatus     YDYLALKTLSSRQVISVGNQMGVGKESDIYIVANEDEQQFAMKLHRLGR-TSFRSLKKN  138
Gallus_gallus      YDYLALKTLSSRQVISVGNQMGVGKESDIYIVANEDEQQFAMKLHRLGR-TSFRSLKKN  138
Chelonia_mydas     YDYLALKTLSSREVNVSVGNQMGVGKESDIYIVANEDEQQFAMKLHRLGR-TSFRNLKKN  138
Rhinatrema_bivittatum YDYLALKAFSSREAVSVGNQMGVGKESDIYIVANEDEQQFAMKLHRLGR-TSFRNLKKN  139
Xenopus_tropicalis YDYLALKTLSSREVVTSGVGNQMGVGKESDIYIVANEDEQQFAMKLHRLGR-TSFRNLKKN  138
Latimeria_chalumnae YDYLALKALSSRDVLNSVGNQMGVGKESDIYIVANEDEQQFAMKLHRLGR-TSFRNLKKN  138
.....130.....140.....150.....160.....170.....180

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/RIORats Tue Feb 14:23:25 2022

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*****.:**:*:*:*:*****:.* ***** *****:***:*****
Mus_musculus          RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Rattus_norvegicus     RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Homo_sapiens          RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Pan_troglodytes       RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Macaca_mulatta        RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Callithrix_jacchus    RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Canis_lupus_familiaris RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 206
Bos_taurus            RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Equus_caballus        RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Heterocephalus_glaber RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 231
Pavo_muticus          RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Pavo_cristatus        RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Gallus_gallus         RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Chelonia_mydas        RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Rhinatrema_bivittatum RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 199
Xenopus_tropicalis    RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
Latimeria_chalumnae   RDYHKHRHNSWLYLSRLSAMKEFAYMKALYERKFPVVKPIDYNRHAVIMELINGYPLCQ 198
.....190.....200.....210.....220.....230.....240

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::::*:**:*:*:*:*****:.* *****:***** **
Mus_musculus          IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Rattus_norvegicus     IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Homo_sapiens          IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Pan_troglodytes       IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Macaca_mulatta        IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Callithrix_jacchus    IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Canis_lupus_familiaris IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 266
Bos_taurus            IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Equus_caballus        IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Heterocephalus_glaber IHHVEDPASVYDEAMELIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 291
Pavo_muticus          VRQMEDPASVYSELMDLIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Pavo_cristatus        VRQMEDPASVYSELMDLIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Gallus_gallus         VRQMEDPASVYSELMDLIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Chelonia_mydas        VRQMEDPASVYSELMDLIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Rhinatrema_bivittatum VRHIEDPASVYSELMDLIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 259
Xenopus_tropicalis    VRHIEDPASVYSELMDLIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
Latimeria_chalumnae   VRHIEDPASVYSELMDLIVKLGNHGLIHGDFNEFNLMMLDKDDHITMIDFPQMVSTSHPN 258
.....250.....260.....270.....280.....290.....300

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*****:**:*:*:*:*****:.* *****:***** **
Mus_musculus          EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Rattus_norvegicus     EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Homo_sapiens          EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Pan_troglodytes       EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Macaca_mulatta        EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Callithrix_jacchus    EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Canis_lupus_familiaris EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 326
Bos_taurus            EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Equus_caballus        EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Heterocephalus_glaber EWYFDRDVKCIREFFMKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 351
Pavo_muticus          EWYFDRDVNCIEFFFKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Pavo_cristatus        EWYFDRDVNCIEFFFKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Gallus_gallus         EWYFDRDVNCIEFFFKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Chelonia_mydas        EWYFDRDVNCIEFFFKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Rhinatrema_bivittatum EWYFDRDVNCIEFFFKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 319
Xenopus_tropicalis    EWYFDRDVNCIEFFFKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
Latimeria_chalumnae   EWYFDRDVNCIEFFFKRFSEYSELYPTFSDIRKESLDVEVSASGYTKEMQADELLHP 318
.....310.....320.....330.....340.....350.....360

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus      VGPDDKITETEEEDSDFTFSSDEEMLEKAKVWRSELEKEADPADESGGSWCCSTDSKOIK- 377
Rattus_norvegicus VGPDDKITETEEESDLSSLDEEMLERAKVQRSELENEPNPADESGSSCCFSSADSKOMK- 377
Homo_sapiens      LGPDDKNITETKEGSEFSFSDGEVAEKAEEVYGSSENESEERNCLLEESEGCYCRSSGDPEQIK- 377
Pan_troglodytes   LGPDDKNITETKEGSEFSFSDGEVAEKAEEVYRSENESEQNCLLEESEGCYCRSSGDPEQIK- 377
Macaca_mulatta    LGPDDKNITETEEERSEFSFSDGEVAEEAEVYRSENESEQNCLLEESEGCYCRSSGDPEQIK- 377
Callithrix_jacchus LGPDDKNITETEEERSEFSFSDGEVAEEAEVYRSENESEQNCLLEESEGCDCRSSGDPEQIK- 377
Canis_lupus_familiaris VGPTDRNIETEDSEFSYSDEEMSEKANVCSLNQSDLNSTDESTDCCVSSGD-LEQIK- 384
Bos_taurus        AGPDKNITETEEERSDFPFSDEEMSERARDCRSENEGGWNCAAESVDCCRSFENLEQIK- 377
Equus_caballus    LGPDDENTETEEERSECS-SDEEVSEKAKVCRSENESEERNSSGDELVACCCRSAGDLEQIK- 376
Heterocephalus_glaber VGPDDKNITETEEEGSDFFSFSDDEVSENAKVCSESEVESEQYAVDESRCVYS--TSDHEQVK- 408
Pavo_muticus      SGC--DEDDHTAEVAEFEEFAESNFKFLRSNQEDNTELIHVEDS--ESRTSEDAMYHNE- 373
Pavo_cristatus    SGC--DEDDHTAEVAEFEEFAESNFKFLRSNQEDNTELIHVEDS--ESRTSEDAMYHNE- 373
Gallus_gallus     LRS--DEDDHTAEVSESEEFASNLKFFRSNQEDNVELIHEEDS--ESRTSEDATYNNE- 373
Chelonia_mydas    AGP--DEEDYKTVFTQLVDDFDGKVNLYTAAEENKINFTELEDDTESKSSKVLNMSSK- 375
Rhinatrema_bivittatum AGPSDDEEEAKGGFPLCSEDIKGAADMTEEQNRRYSTNEADDNLEMRSSKDFSQSIK- 378
Xenopus_tropicalis TGPSDDDDDDDDDDDDDD-DGETSCKQPTTEEDGEKAKSVSSATCTLDAPSSLSWEDSVKD 377
Latimeria_chalumnae VGPEEGDEEEGAKPVQPPREFESKCIALTNDMEQPGSSSESESEDEDVAGDSGNVROTKE 377
.....370.....380.....390.....400.....410.....420

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Mus_musculus      DGGLPEESAHVSSFEVTALSOAVEEMERQVLPHRSVTE-----FSEESRRTEND 426
Rattus_norvegicus EDGLPEESADVSSFEVTKLHQAVEEVGROVLTHKVAE-----VSEESTRTEDD 426
Homo_sapiens      EDSLSEESADARSFEMTEFNQALEEIKGOVVENNSVTE-----FSEEKNRTENY 426
Pan_troglodytes   EDSLSEESADARSFEMTEFDQALEEIKGOVVENNSVTE-----FSEEKNRTENY 426
Macaca_mulatta    EDSLSEESADARCFEMTEFNQALEEIKGOVVENNSVTE-----FSEEKSRTENY 426
Callithrix_jacchus EDGLSEESADAQSFEMNEFHQALEEIKGOVVENNSVTE-----FSEEKSRTENY 426
Canis_lupus_familiaris EDDLSEES--AHNFELPELSQALEEIEEQAINSSITE-----YSEEKNKTKND 431
Bos_taurus        EESLSEDSADAHRFEMTEFSQALEEIEGOVVENNSVSE-----FSGE-NRRERD 425
Equus_caballus    EDNLSEGSADAHNFEMTELSQALEEIKGOVVENNSVTE-----FSGETNRTEND 425
Heterocephalus_glaber EDSLSEESAHSKNFEMTEFSQPLEEIKGOIVESSCTE-----FSEE-NRNEND 456
Pavo_muticus      EADTTTETSENQLKLSLSELSSALDEVEGQPLHCKSEDAESCV-----FSEHEGMLEST 427
Pavo_cristatus    EADTTTETSENQLKLSLSELSSALDEVEGQPVHCKSEDAESCV-----FSEHEGMLEST 427
Gallus_gallus     EADTTTETSENQLKLSLSESSALDKVEGQPVCKSSQEDGVSYVIL----FPEHERMLEGT 429
Chelonia_mydas    EVDITDSSKKEQSMDMTEFSHALEKVEGQITVKGASNNNAESSAID----FSEDEKRTENT 431
Rhinatrema_bivittatum EANYLESGECELEKLDMTDFCQAVEELEGGQITIRGRNRNVDSSVID----FHGGEEKKDERA 434
Xenopus_tropicalis TAD---ESGSLQSLDMAEFTKALAELEGHGPEYQTTGIPCCSLEDERLIDTNTISERGD 434
Latimeria_chalumnae TVDTCAGSGGLQALGMAELKPAIEELEGOSSSGKDRDNGDCSVID----FSGEERRFENT 433
.....430.....440.....450.....460.....470.....480

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Mus_musculus      ----GQPGQRS-PAGSEDCDDEPPHLIALSSVNREFRPFPRDEESMSSVTRHRTIRTL SVTS 481
Rattus_norvegicus PRHDGQPGQSS-PAGCAEGEDELPLDIALSSLNKEFRPFPRDEDSVSSVTOHRTIRTL SVTS 485
Homo_sapiens      NRQDGQRVQGGVPAGSDEYEDECPLHLIALSSLNREFRPFPRDEENVGAMNQYRTRTL SITS 486
Pan_troglodytes   NRQDGQRVQGGVPAGSDEYEDECPLHLIALSSLNREFRPFPRDEENVGAMNQYRTRTL SITS 486
Macaca_mulatta    NGQDGQRVQGGVPAGSEEDYDECPHLIALS-LNREFRPFPRDEENMGAMNQYRTRTL SITS 485
Callithrix_jacchus TGQDGQTVQGGISAGSEEHEDCEPHLIALSSLNREFR---DEENMGAINQYRIRTL SITS 483
Canis_lupus_familiaris TRQDGKASQGGMPMGNEEYEDACPHLIALS-LNKEITSFRNEENTEDTKQYRTRTL SVTS 490
Bos_taurus        ARQDGETGQGGILVGPPEDECEPHLIALSSLNKEFRPFPRDEENMEDTNRHRTIRTL SVTS 485
Equus_caballus    TRQDGKTGRGGVPTGSAEGEDECPLHLIALSSLNREFRPFPRDEENIEDIKQRRTRTL SVTS 485
Heterocephalus_glaber TMREGQTSQGGSPAGSEEDDDDCPLINLSSLNKEFRPFPRDEENRGNIDQYRTRTL SVTS 516
Pavo_muticus      SE--NQATQGERRIDKDNEDDECPDLVDLSTLNKKLNPNYRNEDNIPHAENKARTIR-TTS 484
Pavo_cristatus    SE--NQATQGERRIDKDNEDDECPDLVDLSTLNKKLNPNYRNEDNIPHAENKARTIR-TTS 484
Gallus_gallus     SK--NKATQGDHCIDKDKEDDECPDLVDLSTLHKTLPYRNEDNIPHAENKARTIR-TTS 486
Chelonia_mydas    TKIGDHIGQGEDPAD-KEYEDECPDLVDLSTLNREFRPFPRDEESMVHINEHRTIRTL STTS 490
Rhinatrema_bivittatum NQSEDWTGQGEPRIDTEKYEDECPLVGLSSVNKDFRPFPRDEESRIHINEHRTIRTL STTS 494
Xenopus_tropicalis KGQKDGDDQLGDQDS-DECQDECPELVNLSSESNKEYKPFPRDEESLAHVNEHRTIRTL SVTS 493
Latimeria_chalumnae KDTEDRTDQSDEPAD-LEDRDECPDLVDLSSVNKEFRPFPRDEESMLHVNEHRTIRTL SFNS 492
.....490.....500.....510.....520.....530.....540

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Mus_musculus	AGSALSCSTIPPELVKQKVVKROLTROOKAAARRRLQKGEANVFTKORRENMONIKSSLEA	541						
Rattus_norvegicus	TGSVLSCSTIPPELVKQKVVKROLTROOKAAARRRLQKGEANIFTKORRENMONIKSSLEA	545						
Homo_sapiens	SGSAVSCSTIPPELVKQKVVKROLTKOOKSAVRRRLQKGEANIFTKORRENMONIKSSLEA	546						
Pan_troglodytes	SGSAVSCSTIPPELVKQKVVKROLTKOOKSAVRRRLQKGEANIFTKORRENMONIKSSLEA	546						
Macaca_mulatta	SGSVVSCSTIPPELVKQKVVKROLTKOOKSAVRRRLQKGEANIFTKORRENMONIKSSMEA	545						
Callithrix_jacchus	SGSVVSCSTIPPELVKQKVVKROLTKOOKSAVRRRLQGEASIFTKORRENMONIKSSLEA	543						
Canis_lupus_familiaris	VGSVLSCSTIPPELVKQKVVKROLTKOOKSAVRRRLQKGEANIFTKORRENMONIKSSLEA	550						
Bos_taurus	VGSVLSCSTIPPELVKQKVVKROLTKOOKSAVRRRLQKGEANIFTKORRENMONIKSSLEA	545						
Equus_caballus	AGSVVSCSTIPPELVKQKVVKROLTKOOKSAVRRRLQKGEANIFTKOORENMONIKSSLEA	545						
Heterocephalus_glaber	AGSFVSCSTIPPELVKKIKVKROLTKOOKSAVRRRLQKGEANIFTKORRENMONIKSSLEA	576						
Pavo_muticus	VSSLGSCSTIPPELVKKIKIKROLTKOOKSALRQLQKGEANIYTKORRENMHNIKSSLDA	544						
Pavo_cristatus	VSSLGSCSTIPPELVKKIKIKROLTKOOKSALRQLQKGEANIYTKORRENMHNIKSSLDA	544						
Gallus_gallus	VSSLGSCSTIPPELVKKIKIKROLTKOOKSALRQLQKGEANIYTKORRENMONIKSSLDA	546						
Chelonia_mydas	TGSFGSCSTIPQELVKQKIKROLTKOOKAALRRRLQKGEANVYTKORRENMFNIKSTILDA	550						
Rhinatrema_bivittatum	VGSIGNCSTIPPELVKQKVVKROLTKOOKSALRRRLQKGEANVYTKOHRDHMONIKWSLEA	554						
Xenopus_tropicalis	VGTVGSCSTIPPEMIKQKVVKROLTKOOKASIRRRRLQKGEANVTIKORRDNMNIKWSVDA	553						
Latimeria_chalumnae	VGSIGSCSTIPPELVKQKIKIKROLTKOOKAEIARRRLQKGEASVYTKORRENLONIKCSLDS	552						
	.....550.....560.....570.....580.....590.....600							

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Mus_musculus	ASFWGD	547
Rattus_norvegicus	DSFWGD	551
Homo_sapiens	ASFWGE	552
Pan_troglodytes	ASFWGE	552
Macaca_mulatta	ASFWGE	551
Callithrix_jacchus	ASFWGE	549
Canis_lupus_familiaris	ASFWGE	556
Bos_taurus	ASFWGE	551
Equus_caballus	ASLWGE	551
Heterocephalus_glaber	ASFWGE	582
Pavo_muticus	ASFWG-	549
Pavo_cristatus	ASFWG-	549
Gallus_gallus	ASFWG-	551
Chelonia_mydas	ASFWG-	555
Rhinatrema_bivittatum	ASFWG-	559
Xenopus_tropicalis	ASFWG-	558
Latimeria_chalumnae	ASFWG-	557