

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/KAN4161.fst Tue Feb 1 12:25:32 2022

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Xenopus_tropicalis      -----MEQAENLNGNIYK-----GYCGDNTGDEENIQIGENDKGGNA      37
Rhinatrema_bivittatum  -----MAQTGNIK-----AASEKGEEGILNGDDDKK-KA      29
Pavo_muticus           ----MKS LCPARPGLRRR-----GSFFSLWEKEEVIVNGKDENERKY      38
Pavo_cristatus         ----MKS LCPARPGLRRR-----GSFFSLWEKEEVIVNGKDENERKY      38
Gallus_gallus          ----MKS LCPARPGLRRR-----GSFFSLWEKEEVIVNGKDENERKY      38
Anas_platyrhynchos     -----MAYPANTNG-----SAAKEEVAINGEDEKERRD      29
Chelonia_mydas         -----MAYPANISG-----STSEKEEAVLSGDDDKHKA      29
Mus_musculus           -----MAYTTKVN-----GCAAEKADGVNLGDHNKEKKD      29
Rattus_norvegicus      MVSLRAWEVCAVDRRLSLKWRGAELPGCG--GRRLACCGPVVENADGVNLGDRNKEKKD      58
Homo_sapiens           -----MAHTTKVNGSAS-----GKAGDILSGDQDKEQKD      29
Macaca_mulatta         -----MAHTTKVNGSAS-----GKADDILNGDQDKEQKD      29
Callithrix_jacchus     -----MAHTTKVNGSAS-----GKADDILNGDQDKEQKD      29
Bos_taurus            --MLCGSSWALCLLTCAGPITLREVGPRLLGFLAENQLFCFWVGKANDILNGEQDREQKD      58
Equus_caballus         -----MAHTAKANGCAS-----GKADDVLNGDHDKEHKD      29
Canis_lupus_familiaris -----MAHTTKVNGCAS-----GKAEDVLNGDHDKEQKD      29
Latimeria_chalumnae    -----MLHLAKFTLIVEFFPYGVKNEKAQG--LDFSCSRLEKGNVNVNGEDDKDTQA      50
1.....10.....20.....30.....40.....50.....60

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Xenopus_tropicalis      AYFVETPYGYQLDLDFLKYVEDIQKNTIKKVSLLKKRKLVPNLAEG-RNPFSQEAGWPS      96
Rhinatrema_bivittatum  PYFVETPYGYQLDLDFLKYVEDIQKNTIKKVTLOKKRKLVPFLFAGASRSSAGQASGWS      89
Pavo_muticus           PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKAVPASTST-KNSGGHCGDWTS      97
Pavo_cristatus         PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKAVPASTST-KNSGGHCGDWTS      97
Gallus_gallus          PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKAVPASTST-KNAGGHCGDWTS      97
Anas_platyrhynchos     PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKAIPASTGT-KNSGGHCSGWS      88
Chelonia_mydas         PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKLVPFTTGT-KNASGQYSGWS      88
Mus_musculus           PYFVETPYGFQLDLDFVKYVDDIQKNTIKKLNIOKKRKPSVPCPEV-RAIPGHQGVWTS      88
Rattus_norvegicus      PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKPSGPCAEV-RAIPGPQGVWTS      117
Homo_sapiens           PYFVETPYGYQLDLDFLKYVDDIQKNTIKRLNIOKKRKPSVPCPEP-RTTSGQGGIWTS      88
Macaca_mulatta         PYFVETPYGYQLDLDFLKYVDDIQKNTIKRLNIOKKRKPSVPCPEP-RTTSGQGGIWTS      88
Callithrix_jacchus     PYFVETPYGYQLDLDFLKYVDDIQKNTIKRLNIOKKRKPSVQCPEP-RTTSGQGGIWTS      88
Bos_taurus            PYFVETPYGYQLDLDFLKYVDDIQKNTIKKVNIOKKRKPSGPCPDS-RAAPGQHGQWTS      117
Equus_caballus         PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKPSVPCPEP-RAIPGQGGIWTS      88
Canis_lupus_familiaris PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKKRKPSVPCPEP-RAITGQGGWTS      88
Latimeria_chalumnae    PYFVETPYGYQLDLDFLKYVDDIQKNTIKKLNIOKRSKVAKPIVTP-KSAAGQFSGWS      109
.....70.....80.....90.....100.....110.....120

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Xenopus_tropicalis      TDSLSSNSDDNKHSPSLLTRR---HTFENTARP-SSQEASPSFLTVPENKPLPPSPQI      152
Rhinatrema_bivittatum  TDSLSSNSDENKQSPSFLIARSH-PTPPQASRPFLSLEASPSFLTIPESKPLPPASQP      148
Pavo_muticus           TESLSSNSDENKQSPSFLIARSH-PTPPQASRPFLSLEASPSFLTIPESKPLPPASQP      154
Pavo_cristatus         TESLSSNSDENKQSPSFLIARSH-PTPPQASRPFLSLEASPSFLTIPESKPLPPASQP      154
Gallus_gallus          TESLSSNSDENKQSPSFLIARSH-PTPPQASRPFLSLEASPSFLTIPESKPLPPASQP      154
Anas_platyrhynchos     TESLSSNSDENKQSPSFLIARSH-PTPPQASRPFLSLEASPSFLTIPESKPLPPASQP      145
Chelonia_mydas         TESLSSNSDENKQSPSFLIARSH-PTPPQASRPFLSLEASPSFLTIPESKPLPPASQP      145
Mus_musculus           TESLSSNSDDSKQCPNFLARSH-VTSTPIPRPPAPLETSPFTFAISENROLLPPSPQ      147
Rattus_norvegicus      TESLSSNSDDSKQCPNFLARSH-VTSTPIPRPPAPLETSPFTFAISENROLLPPSPQ      176
Homo_sapiens           TESLSSNSDDNKCPCNFLIARSH-VTSTPIPKPPPPLETSLPFLTIPENROLLPPSPQ      147
Macaca_mulatta         TESLSSNSDDNKCPCNFLIARSH-VTSTPIPKPPPPLETSLPFLTIPENROLLPPSPQ      147
Callithrix_jacchus     TESLSSNSDDNKCPCNFLIARSH-VTSTPIPKPPPPLETSLPFLTIPENROLLPPSPQ      147
Bos_taurus            TESLSSNSDDNRQCPNFLGRSH-VTSTPIPKPPPPLETSLPFLTIPESROLLPPSPQ      176
Equus_caballus         TESLSSNSDDNKCPCNFLIARSH-VTSTPIPRPPAPLETSPFTFAISENROLLPPSPQ      147
Canis_lupus_familiaris TESLSSNSDDNKCPCNFLIARSH-VTSTPIPRPPAPLETSPFTFAISENROLLPPSPQ      147
Latimeria_chalumnae    TESLSSNSDENKLSPSFLTTSKQPVPPSAHVKTFAFSPFTFLTPVDSKLLPPSPRL      169
.....130.....140.....150.....160.....170.....180

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Xenopus_tropicalis	PQHNHFHVTKTILMETRRRLRLEQEKIIMOVASSYNDIRRPRIASFSGMGSTGSLSSVITGITGH							212
Rhinatrema_bivittatum	SQHNHFHVTKTILMETRRRLRLEQERAIMOVASAG-DLRRPRIASFSGMGSVGSLSSFVGSGGH							207
Pavo_muticus	PRNHLHVTKTILMETRRRLRLEQE-RMMQVM--PGDVRRPRLSSFSGMGSTSSLPSFVGSSGY							211
Pavo_cristatus	PRNHLHVTKTILMETRRRLRLEQE-RMMQVM--PGDVRRPRLSSFSGMGSTSSLPSFVGSSGY							211
Gallus_gallus	PRNHLHVTKTILMETRRRLRLEQE-RMMQVM--PGDVRRPRLSSFSGMGSTSSLPSFVGSSGY							211
Anas_platyrhynchos	PRNHLHVTKTILMETRRRLRLEQE-RMMQVT--PGDVRRPRLSSFSGMGSTSSLPSFVGSSGY							202
Chelonia_mydas	PRNHLHVTKTILMETRRRLRLEQEKVIMQVT--PGDVRRPRISSFGLGSASSLPFVGSSGH							203
Mus_musculus	PRNHLHVTKTILMETRRRLRLEQERVIMOMA--PGDFRRPRIASFSGMGSTSSLPSFVGSSANH							205
Rattus_norvegicus	PRNHLHVTKTILMETRRRLRLEQERVIMOMA--PGEFRRPRIASFSGMGSTSSLPSFMGSGNH							234
Homo_sapiens	PKHNHLHVTKTILMETRRRLRLEQERATMOMTI--PGEFRRPRIASFSGMGTTSSLPSFVGSGNH							205
Macaca_mulatta	PKHNHLHVTKTILMETRRRLRLEQERATMOMTI--PGEFRRPRIASFSGMGSTSSLPSFVGSGNH							205
Callithrix_jacchus	PKHNHLHVTKTILMETRRRLRLEQERATMOMTI--PGEFRRPRIASFSGMGSTGSLPSFVGSGNH							205
Bos_taurus	PKHNHLHVTKTILMETRRRLRLEQERVIMOVA--PGEFRRPRIASFSGMGSTSSLSSFGLGSNH							234
Equus caballus	SKHNHLHVTKTILMETRRRLRLEQERVIMOT---PGEFRRPRIASFSGMGSTSSLSSFMGSGNH							204
Canis_lupus_familiaris	PKHNHLHVTKTILMETRRRLRLEQERVIMOVA--PGEFRRPRIASFSGMGSTSSLSSFGLGSNH							205
Latimeria_chalumnae	PKHNHFHVTKTILMETRRRLRLEQLRLIMQSG--PGDVRRPRLASLGAMGSTSSLSSFITGSGGH							227
	.....190.....200.....210.....220.....230.....240							

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Xenopus_tropicalis	N---	ISAAQQLONGHQANGDYS-----	ALFASSLGSSIRHSPPLSSGVSTPVTNVSPMHLQH	264
Rhinatrema_bivittatum	S----	QVSQPLONGHQANGDHG-----	TYFASSLGGSIHRHSPPLSSGMNTPVTNVSPMHLQH	259
Pavo_muticus	G----	HLPQQLHNGYQGNGDFG-----	ACFGSSLGSSIRHSPMSSGISTPVTNVSPVHLQQ	263
Pavo_cristatus	G----	HLPQQLHNGYQGNDFG-----	ACFGSSLGSSIRHSPMSSGISTPVTNVSPVHLQQ	263
Gallus_gallus	G----	HLPQQLHNGYQGNDFG-----	ACFGSSLGSSIRHSPMSSGISTPVTNVSPVHLQQ	263
Anas_platyrhynchos	S----	HLSQQLONGYQGNQDYG-----	ACFSSSLGSSIRHSPMSSGISTPVTNVSPVHLQH	254
Chelonia_mydas	N----	QMSQQLONGYQGNQDYN-----	VYLASSLGGSSIRHSPPLSSGISTPVTNVSPVHLQH	255
Mus_musculus	S----	SAIHQLONGYQGNQDYNSVPAAPTTS	SMGSSVRHSPLSSGISTPVTNVSPMHLQH	262
Rattus_norvegicus	S----	SAMHQLONGYQGNQDYSSVPAVPPTT	SMGSSVRHSPLSSGISTPVTNVSPMHLQH	291
Homo_sapiens	N----	PAKHQLONGYQGNQDYGGYAPAAPTT	SMGSSIRHSPPLSSGISTPVTNVSPMHLQH	262
Macaca_mulatta	N----	PAIHQLHNGYQGNQDYGGYAPAAPTT	SMGSSIRHSPPLSSGISTPVTNVSPMHLQH	262
Callithrix_jacchus	N----	PAMHQLONGYQGNQDYGGYAPAAAATT	SMGSSIRHSPPLSSGISTPVTNVSPMHLQH	262
Bos_taurus	N----	PTMPQLONGYQGNQDYGGYAPAAAATT	SMGSSIRHSPPLSSGISTPVTNVSPMHLQH	291
Equus caballus	N----	PAMHQLONGYQGNQDYGGYAPAAAATT	SMGSSIRHSPPLSSGISTPVTNVSPMHLQH	261
Canis_lupus_familiaris	N----	PAMHQLONGYQGNQDYGGYVPATATT	SMGSSIRHSPPLSSGISTPVTNVSPMHLQH	262
Latimeria_chalumnae	NHISP	TSQLONGYQANGEYN-----PYFT	SSIGSSIRHSPMSSGMTTPVSNVSPMHLQH	282
	.....	250.....260.....	270.....280.....290.....300	

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Xenopus_tropicalis	IREQMAIALKRLKELEEQVKTIPILOVKISVLQEEKROLMSEIKSOKLSNOKDTAGFRKR	324
Rhinatrema_bivittatum	IREQMAIALTRLKELEEQVKTIIPVLQVKISVLQEEKROLTAEILKGORTIPSONATSGFRKR	319
Pavo_muticus	IREQMAIALKRLKELEEQVKTIIPVLQVKISVLQEEKRHMAELKSORKSSQNDMYGFRKR	323
Pavo_cristatus	IREQMAIALKRLKELEEQVKTIIPVLQVKISVLQEEKRHMAELKSORKSSQNDMYGFRKR	323
Gallus_gallus	IREQMAIALKRLKELEEQVKTIIPVLQVKISVLQEEKRHMAELKSORKSSQNDVYGFRKR	323
Anas_platyrhynchos	IREQMAVALKRLKELEEQVKTIIPVLQVKISVLQEEKRHMAELKTORKPSQNETYGFRKR	314
Chelonia_mydas	IREQMAVALKRLKELEEQVKTIIPVLQVKISVLQEEKROMMAERKSQRIPNNDTYGFRKR	315
Mus_musculus	IREQMAIALKRLKELEEQVRTIPVLQVKISVLQEEKROLASQLKSQRASSQNEACGVRKR	322
Rattus_norvegicus	IREQMAIALKRLKELEEQVRTIPVLQVKISVLQEEKROLASQLKNORAAQNEACGVRKR	351
Homo_sapiens	IREQMAIALKRLKELEEQVRTIPVLQVKISVLQEEKROLVSQLNORAAQINVCGRKR	322
Macaca_mulatta	IREQMAIALKRLKELEEQVRTIPVLQVKISVLQEEKROLASQLKNORAAQINVCGRKR	322
Callithrix_jacchus	IREQMAIALKRLKELEEQVRTIPVLQVKISVLQEEKROLASQLKNORAAQNDLCGVRKR	322
Bos_taurus	IREQMAIALKRLKELEEQVRTIPVLQVKISVLQEEKROLASQLKNORAAQNDVCGVRKR	351
Equus_caballus	IREQMAIALKRLKELEEQVRTIPVLQVKISVLQEEKROLSSQLKNORAAQNDVCGVRKR	321
Canis_lupus_familiaris	IREQMAVALKRLKELEEQVRTIPVLQVKISVLQEEKROLASQLKNORATAQNDACGVRKR	322
Latimeria_chalumnae	IREQMVALKRLKELEEQVKTIPILOVKISVLQEEKROLVSQLSSEKISNQCFSNFRKR	342
	.....310.....320.....330.....340.....350.....360	

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<i>Xenopus_tropicalis</i>	SYSAGNAAGFEPPSRVRS----	AGELHIDSDDEMETPEONSQTLIKEFROLTAEMQALEK	379
<i>Rhinatrema_bivittatum</i>	SYSAGNADQFGQLTQVRR----	GGELHIDSEDEMESVEQSSQRVVEFROLTAEMQALEK	374
<i>Pavo_muticus</i>	SYSAGNAEQWEHLSQVRK----	GGELYIDCED-EMESAEQSSRRVEEFROLTAEMQALEK	378
<i>Pavo_cristatus</i>	SYSAGNAEQWEHLSQVRK----	GGELYIDCED-EMESAEQSSRRVEEFROLTAEMQALEK	378
<i>Gallus_gallus</i>	SYSAGNAEQWEHLSQVRR----	GGELYIDCED-EMESAEQSSRRVEEFROLTAEMQALEK	378
<i>Anas_platyrhynchos</i>	SYSAGNAEQWEHLSQGRR----	GGELYIDCED-EMDSGEQSSQRITTEFROLTAEMQALEK	369
<i>Chelonia_mydas</i>	SYSAGNAEQWGHLSQVRR----	GGELYIDCEE-DME---QNSQRIITEFROLTFEMQALER	367
<i>Mus_musculus</i>	SYSAGNASQLELLARARRG----	GGELYIDYEEEEEMESVEQSTQRIQEFROLTADMQALER	379
<i>Rattus_norvegicus</i>	SYSAGNASQLELLSRARRG----	GGELYIDYEEEEEMETVEQSTQRIREFROLTADMQALEQ	408
<i>Homo_sapiens</i>	SYSAGNASQLELLSRARRS----	GGELYIDYEEEEEMETVEQSTQRIKEFROLTADMQALEQ	379
<i>Macaca_mulatta</i>	SYSAGNASQLEQLSRARGS----	GGELYIDYEEEEEMESVEQSTQRIKEFROLTADMQALEQ	379
<i>Callithrix_jacchus</i>	SYSAGNASQLEQLSRARRS----	GGELYIDYEEEEEMETVEQSTQRIKEFROLTADMQALEQ	379
<i>Bos_taurus</i>	SYSAGNASQLEQLSRTRRS----	GGELYIDYEEEEEMESVEQSTQRIKEFROLTADMQALEQ	408
<i>Equus_caballus</i>	SYSAGNASQLEQLSRARRS----	GGELYIDYEDDEEMESVEQSTQRIKEFROLTADMQALEQ	378
<i>Canis_lupus_familiaris</i>	SYSAGNASQLEQLSRARRS----	GGELYIDYEEEEEMESVEQSAQSIREFROLAADMQALER	379
<i>Latimeria_chalumnae</i>	SYSTGNVDQFEQLAQIRRSGEQV	GVGELHIDSEDEIESMEQSSQRVKEFROLTAEMQALER	401
	.....370.....380.....390.....400.....410.....420		

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<i>Xenopus_tropicalis</i>	KIHDSS-LESRCPTDTPREIKTKKCSRSVAVGADENMNDIIIIYHKSVKSSQDASVGTETI	438	
<i>Rhinatrema_bivittatum</i>	KIQDSS-YEAPAGLNLGRENQPEKKRVSVAVGTDKNMDDVVVYRSSRSRREVGVGTTK	433	
<i>Pavo_muticus</i>	KIQDSN-YEVPENL---RESLTKE--SRSVAVGADENMNDVVIYNRSSRQHREAVAGTQE	432	
<i>Pavo_cristatus</i>	KIQDSN-YEVPENL---RESLTKE--SRSVAVGADENMNDVVIYNRSSRQHREAVAGTQE	432	
<i>Gallus_gallus</i>	KIQDSN-YEVPENL---RESLTKE--SRSVAVGADENMNDVVIYNRSSRQHREAVAGTEK	432	
<i>Anas_platyrhynchos</i>	KIQDSN-YEVPENLRLVIRESLTKE--SRSVAVGTDENINDVVIYNRSSRQREAVAGTEK	426	
<i>Chelonia_mydas</i>	KIQDSN-YEIPSNLRMLNRENLTKE--SRSVAVGADENMNDVVIYNRSSRPTCEVAVGTEK	424	
<i>Mus_musculus</i>	KIQDSS-CEVASSELRENGQCPRE--CKSVAVGSDENMNDVVVYHRDLRCPKDTAVGTVT	436	
<i>Rattus_norvegicus</i>	KIQDSS-CEATPELRENGQCASE--RKSVAVGSDENMNDVVVYHRDFRSRKDTAVGTVT	465	
<i>Homo_sapiens</i>	KIQDSS-CEASSELRENG-----E--CRSVAVGAENMNDIVVYHGRSRSCKDAAVGTIV	431	
<i>Macaca_mulatta</i>	KIQDSS-CEASSELRENG-----E--CRSVAVGAENMNDIVVYHGRSRSCKDAAVGTLT	431	
<i>Callithrix_jacchus</i>	KIQDSS-CEASSELRENG-----E--CRSVAVGAENMNDIVVYHGRSRSFKDAAVGTVI	431	
<i>Bos_taurus</i>	KIQDSS-YEASSELRGNGECQPE--FRSVAVGAEDMNDIVVYCRGARSCKDAAVGMVT	465	
<i>Equus_caballus</i>	KIQDSS-YEASSELRENGQSQPE--CRSVAVGADEHMDNIVVYHGRSRSCKDAAVGTVT	435	
<i>Canis_lupus_familiaris</i>	KIQDSG-CQAPEG-----RSVAVGADDTMDSVVVYRRAAGSRRDAAVGTAT	425	
<i>Latimeria_chalumnae</i>	KIQESNEVPVTSGFTORTENPQAKYRSIAVGADENMNDIVIIYHKSRTCKAIVGTAV	461	
	.....430.....440.....450.....460.....470.....480		

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Xenopus_tropicalis      IKAAGSRKNADKAIMAQPLMFSRTTEASVEMKDSAGDHVDIIDACVGNLSKIVSVGVLC 558
Rhinatrema_bivittatum  LQAAGTRKKVKDKALMVQPLVCNKAVEAAVKTRDQMLGDHVTILVDSVCGTHVQSCSIGVSC 553
Pavo_muticus           LQAAGSRKKVKDKAVMAQPLVISRMVEAVVQMRDQMVGDHVVHADSSVGSHLQMSVGTSC 552
Pavo_cristatus         LQAAGSRKKVKDKAVMAQPLVISRMVEAVVQMRDQMVGDHVVHADSSVGSHLQMSVGTSC 552
Gallus_gallus          LQAAGSRKKVKDKAMMAQPLVSRMVEAVVQMRDQMVGDHVVHADSSVGSHLQMSVGTSC 552
Anas_platyrhynchos     LQAAGSRKKVKDKATMAQPLVSRIVEAVVPTRDQMVGDHVSVDSSVGNHLQMSIGTSC 546
Chelonia_mydas         LQAAGSRKKVKDKALMAQPLVFSRMVEAVVQTRDQMVGDHVDVADSCVGNHLQMRDIGISC 544
Mus_musculus           LQAAGSRKKVKDKATMAQPLVFSKLVEALVPTRDQMVGSHTVDSVCGTSSVGTSSVGTSC 556
Rattus_norvegicus      LQAAGSRKKVKDKAIMAQPLVFSKLVEALVPTREQMVGSHTVDSVCGTSSVGTSSVGTSC 585
Homo_sapiens           LQAAGSRKKVKDKATMAQPLVFSKVVEAVVQTRDQMVGSHTDLVDTCVGTSSVGTSSVGTSC 551
Macaca_mulatta         LQAAGSRKKVKDKATMAQPLVFSKVVEAVVQTRDQMVGSHTDLVDTCVGTSSVGTSSVGTSC 551
Callithrix_jacchus     LQAAGSRKKVKDKATMAQPLVFSKVVEAVVQTRDQIVGSHTVLVDTCVGTSSVGTSSVGTSC 551
Bos_taurus             LQAAGSRKKVKDKAMMAQPLVFSKMVEAVVPTRDQMVGSHTVDTCVGTSSVGTSSVGTSC 585
Equus_caballus         LQAAGSRKKVKDKAMMAQPLVYSKMVEAVVQTRDQMVGSHTVDTCVGTSSVGTSSVGTSC 555
Canis_lupus_familiaris LQAAGSRKKVKDKAVMAQPLVGDKMVEAVVPTRDQMVGSHTVDTCVGTSSVGTSSVGTSC 545
Latimeria_chalumnae    LQAAGSRKKTKDKGLMVQPLVSSRAVEAVVQMRDQIVGNHVNFDVCGVNSIQTNSSVGVIC 581
.....550.....560.....570.....580.....590.....600

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Xenopus_tropicalis      SPIVQNAAGSSLPMSWIVKQKVEMCDTGTGRDLLCDKCVGNQDVLFEALNIREP-I 617
Rhinatrema_bivittatum  QPVLNNAAGVPELPMDRWMVKERVEMSDKCTGRAVEMCDKNVGIELSVCESGINTETGG 613
Pavo_muticus           RPEVRSTAAGPELLMSCWLVRERAEMRDCTGRCVELLDKKVGMETSVCETGVNTEESVS 612
Pavo_cristatus         RPEVRSTAAGPELLMSCWLVRERAEMRDCTGRCVELLDKKVGMETSVCETGVNTEESVS 612
Gallus_gallus          RPAVRSTAAGPELLMSRWLVRERAEMRDCTGRCVELLDKKVGMETSVCETGVNTEESVS 612
Anas_platyrhynchos     RPTVRSTAVGPEVLMTWLVRERAEMRDCTGRHVELYDKQVGVETSICETGVNTEESVS 606
Chelonia_mydas         RPNLQSTAVGPELLMNRWLVRERAEMRDCTGRCVELLDKKVGMETSVCETGVNTEESVS 604
Mus_musculus           HPDCKNQVVGSELPMNWWVVKERVAMHDCVGRSVETCDRSVGVEVSVETGNTTEASGS 616
Rattus_norvegicus      HPDRKNQVVGPELPMNWWVVKERVAMHDCVGRSVETCDRSVGVEVSVETGNTTEASGS 645
Homo_sapiens           QPECKNKVVGPPELPMNWWVVKERVEMHDCAGRSVEMCDKSVSVEVSVETGNTTEESVN 611
Macaca_mulatta         QPECKNKVVGPPELPMNWWVVKERVEMHDCAGRSVEMCDKSVSVEVSVETGNTTEESVN 611
Callithrix_jacchus     QPECKNKVMGPPELPMNWWVVKERVEMHDCAGRSVEMCDKSVSVEVSVETGNTTEESVN 611
Bos_taurus             QPDHENKEVGPPELPMNWWVVKERVEMHDCAGRSVEMCDKSVGMDISVETGNTTEESVN 645
Equus_caballus         QPDHENKEVGPPELPMNWWVVKERVEMHDCAGRSVEMCDKSVGMDISVETGNTTEESVN 645
Canis_lupus_familiaris QPSRESRLAGPELPMNCWIVKERVVDVDRDCTSRVEMCDKSVGMDISVETGNTTEESVN 605
Latimeria_chalumnae    TPTLCDIAGVPEVPLDCWVVEKTEMDQKCIQHIEVCNKNVGVELCTCEVGINTEESIE 641
.....610.....620.....630.....640.....650.....660

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Xenopus_tropicalis      DQDGTGDLTKELRSVCGGDSVDVIVKPVMSLSGVNTEFVNKVDSSVTASPTADQ 677
Rhinatrema_bivittatum  DLTLLCKTEVEIKEVRTVCGGDCSVDVTISPVKEFVSLGTNTEIINKADFAVMAMPHTATQ 673
Pavo_muticus           HLSLCRTTREIRETRSICGDCSVDVVVCAPKERVSRQTATETVCRAEATVMAMPSTATQ 672
Pavo_cristatus         HLSLCRTTREIRETRSICGDCSVDVVVCAPKERVSRQTATETVCRAEATVMAMPSTATQ 672
Gallus_gallus          DLSLCRTAREVRETRSICGDCSVDVVVCAPKERVSRQTATETVCRAEATVMAMPSTATQ 672
Anas_platyrhynchos     DLSLCRTAQEVRETRSICGDCSVDVVVCAPKERVSRQTATETVCRAEATVMAMPSTATQ 666
Chelonia_mydas         NLSLCRTKAEIKEVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 664
Mus_musculus           DLTLLKTNLNLKDVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 676
Rattus_norvegicus      DLTLLKTNLNLKDVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 705
Homo_sapiens           DLTLLKTNLNLKEVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 671
Macaca_mulatta         DLTLLKTNLNLKEVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 671
Callithrix_jacchus     DLTLLKTNLNLKEVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 671
Bos_taurus             DLALLRTNLNLKEVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 705
Equus_caballus         DLTLLKTNLNLKEVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 675
Canis_lupus_familiaris DLSLLKTNLNLKEVRSICGDCSVDVIVCPKCEVSRSTNTEVVTCTVESAVMAVPQTATQ 665
Latimeria_chalumnae    NLELFKRKAEPKESRSVCGDCLVNVIVCLPKELVSCSTNTDILSKLDSAVMAVPQTATQ 701
.....670.....680.....690.....700.....710.....720

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/KAN61ep5 Tue Feb 1 12:25:32 2022

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..: . : * . : . : ** . : . : ** * * * : * : * : * : * :
Xenopus_tropicalis  QNTNEMDTANQYNTNTDLCCIDSSNTALSTYSKQNTNTEVEMRSVAIGDGKVKEVNSLP 737
Rhinatrema_bivittatum QTSTVLEMVNQFTSMEEVCLADSSNTALNTSDKQNTNTIDVAVRTVGVGDGLVKDIKALP 733
Pavo_muticus         QTSTAMEMVSRCTSTEAPVAVDCGNTNVPSSRDQQTSTVSVEMRTVAVGDGRVKDIHASA 732
Pavo_cristatus       QTSTAMEMVSRCTSTEAPVAVDCGNTNVPSSRDQQTSTVSVEMRTVAVGDGRVKDIHASA 732
Gallus_gallus        QTSTAMEMVSRCTNTEAPVAVDCGNTNVPSSRDQQTSTVSVEMRTVAVGDGRVKDIHASA 732
Anas_platyrhynchos   HTSTALEMVSRCTSTEALVLADCGNTNVPSSHDKQNTNVSVEVTRTVAVGDGRVKDIHASA 726
Chelonia_mydas       QTSTVLAMVNQFTNTETASLMDSSNTTLSTYDKQNTNVNEMRTVAVGDGRVKDVNTSA 724
Mus_musculus         HTSTNLERVDQCTNTEAATLVESCTNTLLSTMDKQSTQTVEMRTVAIGEGRVDINPST 736
Rattus_norvegicus    HTSTNLERVDQCTNTEVTTLVESCTNTLLSTLDKQSTQTVEMRTVAIGEGRVDINPST 765
Homo_sapiens         DTSTDLEQVHQFTNTETATLIESCTNTCLSTLDKQSTQTVETRTVAVGEGRVKDINSST 731
Macaca_mulatta       DTSTDLEQVHQFTNTETATLIDSCNTNTCLSTLDKQSTQTVETRTVAVGEGRVKDINSST 731
Callithrix_jacchus   DTSMDLEQVHQFTNTETATLIESCTNTCLSTLDKQSTQTVETRTVAVGEGRVKDVNSST 731
Bos_taurus          HTSTVVEQVQSQFTNTEVATLIESCTNTSLSTVDKQSTHTVEMRTVAVGEGRVKDV-SS 764
Equus_caballus       HTNTILEQVNQFTNTETATLIESCTNTSLSTSDKQSTQTVEMRTVAIGEGRVKDINSSA 735
Canis_lupus_familiaris HTSTVLGQVNQATNTEVATLVESCTNTSVSTLDKQSTQTVETRTVAIGEGRVKDVNSA 725
Latimeria_chalumnae  ESNTVLETTNQFTSTETAILTDSSTNTVTSAFDKQNTIIVETRTVAVGDGRVKDFSTSP 761
.....730.....740.....750.....760.....770.....780

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* ** : * . : . : ** : * * * : * : * : * : * : * : * :
Xenopus_tropicalis  KTRSIGVSTSDS---DFESS-TPKTKDFGVGHINIMDNFLIGMKSRSIACGP-SEALPLG 792
Rhinatrema_bivittatum KTRSVGVGTSVSSSEPNFEKLPALKTNESGVGQINIHENYLVLGLKMRSIACGP-TEPLIVS 792
Pavo_muticus         KTRSVGVGTLLSSHPGFEEKLSVIKTKDCGVGQININENYLVLGLKMRSIACGPPPLVVVPT 792
Pavo_cristatus       KTRSVGVGTLLSSHPGFEEKLSVIKTKDCGVGQININENYLVLGLKMRSIACGPPPLVVVPT 792
Gallus_gallus        KTRSVGVGTLLSSHPGFEEKLSVIKTKDCGVGQININENYLVLGLKMRSIACGPPPLVVVPT 792
Anas_platyrhynchos   KTRSVGVGTLYSSHPDFEKPSSAIKTKDCGVGQININENYLVLGLKMRSIACGPPPLVVVPA 786
Chelonia_mydas       KTRSIGVGTLLSCDSSFEEKTTVIKTKDCGVGQINIHENYLVLGLKMRSIACGPPPLSVVSA 784
Mus_musculus         KTRSVGVGTVLSGNSEFDRPSCAVKTKESGVGQINIQDNYLVGLKMRTIACGPPQLTVGLM 796
Rattus_norvegicus    KTRSVGVGTVLSGSSDFDKPCAVKTKESGVGQINIHENYLVLGLKMRTIACGPPQLTVGLI 825
Homo_sapiens         KTRSIGVGTLLSGHSGFDRPSAVKTKESGVGQININDNYLVGLKMRTIACGPPQLTVGLT 791
Macaca_mulatta       KTRSIGVGTLLSGHSGFDRPSAVKTKESGVGQININDNYLVGLKMRTIACGPPQLTVGLT 791
Callithrix_jacchus   KTRSIGVGTLLSGHSGFDRPSAVKTKESGVGQININDNYLVGLKMRTIACGPPQLTVGLT 791
Bos_taurus          KMRSIGVGTVLSGNAGFDRPSAVKTKESGVGQISINDNYLVGLKMRTIACGPPQLTVGPT 824
Equus_caballus       KTRSIGVGTVLSGTSGFDRPSAVKTKELGVGQININDNYLVGLKMRTIACGPPQLTVGPT 795
Canis_lupus_familiaris KTRSVGVGTVLSGSAGFDRPSAVKTKESGVGQININDNYLVGLKMRTIACGPPQLTLGLA 785
Latimeria_chalumnae  KTRSIGVGPMAVSIGIEKPTAVKTKDCGVGLISISENYLIGLKTRNIACGPTNLPNMPA 821
.....790.....800.....810.....820.....830.....840

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. . . . : * : * : * : * : * : * : * : * : * :
Xenopus_tropicalis  PDTRSIAVGDEPFQEQECIPLINKEPTDTPAVIDQVIEQVOKLLQEQMMLLAENYTELA 852
Rhinatrema_bivittatum AGTS-----DEPLCEHFSASVESQPKTQMATNLDHYIERVOKLLQEQMMLLAENYSELA 847
Pavo_muticus        STR-SIGVGGEPPVCESVSSLLSPLPPPELRTGLDHYIERVOKLLQEQMMLLAENYSELA 851
Pavo_cristatus       STR-SIGVGGEPPVCESVSSLLSPLPPPELRTGLDHYIERVOKLLQEQMMLLAENYSELA 851
Gallus_gallus        STR-SIGVGGDPPVCESVSSLLSPLPPPELRTGLDHYIERVOKLLQEQMMLLAENYSELA 851
Anas_platyrhynchos   GTR-SIGVGGEPPVCESVSGLLESPLPPPELRTGLDHYIERVOKLLQEQMMLLAENYTELA 845
Chelonia_mydas       STR-SIGVGDEPVYEPVSILVESPLPPPEMRTGLDHYIEQVOKLLQEQMMLLAENYSELA 843
Mus_musculus        GSRRSVGVGNPEVVGELPEESPQPRVASG-MVTGLDHYIERVOKLLAEQQTLLAENYSELA 855
Rattus_norvegicus    GSRRSVGVGNPEVVDLLEDPLQPVPSG-MMTGLDHYIERVOKLLAEQQTLLAENYSELA 884
Homo_sapiens         ASRRSVGVGDDPVGESLENP-QPQAPLG-MMTGLDHYIERIQKLLAEQQTLLAENYSELA 849
Macaca_mulatta       ASRRSVGVGDDPVGESLENP-QPQAPPG-MMTGLDHYIERIQKLLAEQQTLLAENYSELA 849
Callithrix_jacchus   ASRRSVGVGDDPVGEFLENP-QPQIPPG-MMTGLDHYIERVOKLLAEQQTLLAENYSELA 849
Bos_taurus          GSRRSVGVGDEPVGEFVESP-QPQAPSG-METGLDHYIERVOKLLAEQQAALLAENYSELA 882
Equus_caballus       ASRRSIGVGDEPVGEFESPP-QPQAPSR-MMTGLDHYIERVOKLLAEQQTLLAENYSELA 853
Canis_lupus_familiaris ASRRSVGVGDEPVGEFESP-QLOAPPG-MMTGLDHYIERVOKLLAEQQMMLLAENYSELA 843
Latimeria_chalumnae NTR-SVGVDKGLIS-----VASQEAKEATVGVVDHYIERVOKLLQEQMMLLAQNYSELA 874
.....850.....860.....870.....880.....890.....900

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# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/KAN41ep5 Tue Feb 1 12:25:32 2022

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::***: * *: :***::***:***:***: * ***: ..
Xenopus_tropicalis      ETFGEPYSQIGTLNSQLISTLSSFNVMKYGSSEELHSSGFKRHS AELDPSAG-SNLD 911
Rhinatrema_bivittatum  EAFGEPHSQIGSLNSQLISTLSSINSAMKCASTEELQTTGIQKHS GD----- 894
Pavo_muticus           EAFGEPHSQIGSLNSQLISTLTSINSVMKYASTEELRSLDLQKQCKMEKSTASG-ATLEYI 910
Pavo_cristatus         EAFGEPHSQIGSLNSQLISTLTSINSVMKYASTEELRSLDLQKQCKMEKSTASG-ATLEYI 910
Gallus_gallus          EAFGEPHSQIGSLNSQLISTLTSINSVMKYASTEELRSLDLQKQCKMEKSTASG-ATLEYI 910
Anas_platyrhynchos    EAFGEPHSQIGSLNSQLISTLTSINSVMKYASTEELRSLDLQKQCAERNIASAGATLEYI 905
Chelonia_mydas         EAFGEPHSQIESLNSQLINTLSSINSVMKYASTEELRNLDIQKQCMDRSATPD-ADLEYI 902
Mus_musculus           EAFGEPHSQIGSLNSQLISTLSSINSVMKSASTEELRNSDFQKASLGKTTGNH---LEYT 912
Rattus_norvegicus      EAFGEPHSQIGSLNSQLISTLSSINSVMKSASTEELRNPDPFQKSSLGKIAGNH---LECT 941
Homo_sapiens           EAFGEPHSQMGSLNSQLISTLSSINSVMKSASTEELRNPDPFQKTSLGKITGNY---LGYT 906
Macaca_mulatta         EAFGEPHSQIGSLNSQLISTLSSINSVMKSASTEELRNPDPFQKTSLGKITGSN---LGYT 906
Callithrix_jacchus     EAFGEPHSQIGSLNSQLISTLSSINSVMKSASTEELRNPDPFQNTSLGKITGNN---LGYT 906
Bos_taurus             EAFGEPHSQIGSLNSQLISTLSSINSVMKSALEELRHPDFLKTSLGKVTIGSN---LEYT 939
Equus_caballus         EAFGEPHSQIGSLNSQLISTLSSINSVMKSASTEELRNLDFFPKTSLGRVTGNN---LEYT 910
Canis_lupus_familiaris EAFGEPHSQIGSLNSQLISTLSSINSVMKSASTEELRNPDPFKMSLGKVTIGS---LEHT 899
Latimeria_chalumnae    DAFGQPN SQIGSLNCLMNTLSSMNSVIKYTSTEELRNLDVPRENEDHSMRKD-ANCEPT 933
.....910.....920.....930.....940.....950.....960

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Xenopus_tropicalis      PESQFISQYANGNTQTINLNOLPEATCEV-----QNVPKSAGKPSACIPASP 959
Rhinatrema_bivittatum  -----AS 897
Pavo_muticus           PHGQLANTHLTSNLRALKLEQDVVPAQEEKTT--PLVEAARGRKSFSSQDKTLAAINLTD 968
Pavo_cristatus         PHGQLANTHLTSNLRALKLEQDVVPAQEEKTT--PLVEAARGRKSFSSQDKTLAAINLTD 968
Gallus_gallus          PHGQLANTHLTSNLRALKLEQDAVPAQEEKTT--PLVEAARGRKSFSSQDKTLAAINLTD 968
Anas_platyrhynchos    PHGQLANAHLTSNLRGLKLEQDSVPAQEEKTT--PLVEAARGRKSFSSQDKTLAAINLTD 963
Chelonia_mydas         PHGQLPSACLTSSSRITLKFEQEAETIIEEKMI--ATVERGWGKKSLSQDSAIIPPINLTD 960
Mus_musculus           CKCGGLRSGGLLVNVPQSQPEVEAETAEGKH-----SRGHEQFFPMQGSTLPPVNLTD 963
Rattus_norvegicus      CKCGGLRSGGLLVNVPQSQPEVETETETEGK-----RGCEQFLTQGNILPPVNLTD 990
Homo_sapiens           CKCGGLQSGSPLSSQTSQPEQEVGTSEGKP-----ISSLDAPFTQEGTILSPVNLTD 957
Macaca_mulatta         CKCGGLQSGSPLSSQTSQPEQEVGTSEGKP-----VNSLDAPFTQEDTILSPVNLTD 957
Callithrix_jacchus     CKCGGLQLGSPLSSQTSQPEQEVGTSEGKP-----ISSLDAPFTQEGTILSPVNLTD 957
Bos_taurus             CKCGALQSGGPLNSQTS--LQEAQTTEGKP-----IGSQDTFTQESMILSPVNLTD 988
Equus_caballus         CKCGSLQSGGLLNTQTSQHERFVGTADERP-----IGSQDAFLAQEGTILSPVNLTD 961
Canis_lupus_familiaris CRCGGLPAGAPFSSQASRHEQAVGPTTEGRP-----PGGQDAFPPESTILSPVNLTD 950
Latimeria_chalumnae    TLNHS TSACMTSTTQLMMPNQEVKTTQVEKVASKTSVAEVADSKTFSPEVDMTSQLNVID 993
.....970.....980.....990.....1000.....1010.....1020

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. . :*****: * .: .:*****:*.*****:*** :
Xenopus_tropicalis      AAEGETECVSASGQTLTKSIMKKRDEKK-ESTNTKKNLQFVGINGGYETTSSDSSSDDS 1018
Rhinatrema_bivittatum  AAE-----IASNQNTLTKSIMKKKDGGK--SSNAKKNLQFVGINGGYETTSSDSSSDDT 949
Pavo_muticus           DQLASGLYVCSNSENTLTKSIMKKRDGKK-DLSNTKKNLQFVGINGGYETTSSDSSSEES 1027
Pavo_cristatus         DQLASGLYVCSNSENTLTKSIMKKRDGKK-DLSNTKKNLQFVGINGGYETTSSDSSSEES 1027
Gallus_gallus          DQLASGLYVCSNSENTLTKSIMKKRDGKK-DLSNTKKNLQFVGINGGYETTSSDSSSEES 1027
Anas_platyrhynchos    DQLASGLYVCSNSENTLTKSIMKKRDGKK-DLSNTKKNLQFVGINGGYETTSSDSSSEES 1022
Chelonia_mydas         DQLASGLYVCANNSTLTKSIMKKRDGEKGLN GAKKNLQFVGINGGYETTSSDSSSEES 1020
Mus_musculus           DQIATGLYVCPNNENTLTKSIMKKS DGNK-DSNGAKKNLQFVGINGGYETTSSDSSSDGS 1022
Rattus_norvegicus      DQIATGLYVCPNNENTLTKSIMKKS DGNK-DSNGAKKNLQFVGINGGYETTSSDSSSGGS 1049
Homo_sapiens           DQIAAGLYACTNNESTLTKSIMKKKDGNK-DSNGAKKNLQFVGINGGYETTSSDSSSDES 1016
Macaca_mulatta         DQIAAGLYACTNNESTLTKSIMKKKDGNK-DSNGAKKNLQFVGINGGYETTSSDSSSDES 1016
Callithrix_jacchus     DQIAAGLYACTNNESTLTKSIMKKKDGNK-DSNGTKKNLQFVGINGGYETTSSDSSSDES 1016
Bos_taurus             DQIAAGLYVCTNNESTLTKSIMKKKDANK-DSNGAKKNLQFVGINGGYETTSSDSSSDES 1047
Equus_caballus         DQIASGLYVCTNNESTLTKSIMKKKDGNK-DSNGAKKNLQFVGINGGYETTSSDSSSDES 1020
Canis_lupus_familiaris DQIAAGLYVCTNSENTLTKSIMKKKDGNR-DSNGAKKNLQFVGINGGYETTSSDSSSDES 1009
Latimeria_chalumnae    QPMAS-LYVSSCSPGALKSIMKKKDGRQ-DSNGTKKNLQFVGINGGYETTSSDSSSEES 1051
.....1030.....1040.....1050.....1060.....1070.....1080

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## CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep\_msa/KANDalep Tue Feb 1 12:25:32 2022

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	**:::~* :	*	
<i>Xenopus_tropicalis</i>	SSSESDDCEEEESFNESGELYHG-----VASAIPGSPNLEEKOL--NEK	1063	
<i>Rhinatrema_bivittatum</i>	SSTESDDCEVFDES CNEGTKDASSGS-----LTERGVEIDGVEPVSEHAVLPAES	1000	
<i>Pavo_muticus</i>	SSSDSEEECEGHAYPHGRGT-----DEEHPVLGPPETSAAGTKKDGPPLEC	1073	
<i>Pavo_cristatus</i>	SSSDSEEECEGHAYPHGRGT-----DEEHAVLGPPETSAAGTKKDGPPLEC	1073	
<i>Gallus_gallus</i>	SSSDSEEECEGHAYPHDHVT-----DGEHPVLGPPETSAAGTKKDGPPLEC	1073	
<i>Anas_platyrhynchos</i>	SSSDSEEESEGHAYPHGHGAE-----EEDPALGAPETGAVGAEKDRPPLEC	1069	
<i>Chelonia_mydas</i>	SSSESDDGEGGDEYSHQEERYSLHK-----MEGGHHELNAEDVGCVGDEEVQAQES	1072	
<i>Mus_musculus</i>	SSSESDDCEDTIGYPPEEEEEEEEEK--DHDTRGMAEGHHAVNIEGFKSARVEDEVQVPEC	1080	
<i>Rattus_norvegicus</i>	SSSESDDCEDTNGYPPPEEEEEEEEEEDHDTRGMAEGHHAVNIEGFKSARVEDEVQVPEC	1109	
<i>Homo_sapiens</i>	SSSESDDCEDVIEYPLEEEEE-EEE---DEDTRGMAEGHHAVNIEGLKSARVEDEMOMVQEC	1072	
<i>Macaca_mulatta</i>	SSSESDDCEDVIEYPLEEEEE-EEE---DEDTRGMAEGHHAVNIEGFKSARVEDEMOMVQEC	1072	
<i>Callithrix_jacchus</i>	SSSESDDCEDVIEYPLEEEEE-EEEE---DEDTRGMAEGHHAVNIEGFKSARVEDEMOMVQEC	1073	
<i>Bos_taurus</i>	SSSESDDCEDVPEYPPEEEEE-EEEE---DEDTRGMAEGHHAVNVEGFTSTRVEDEMOMVPEC	1104	
<i>Equus_caballus</i>	SSSESDDCEDAIEYPPPEEEEE-EEEE---DEDTRGMAEGHHAVNVEGFTSTRVEDEMOMVPEC	1077	
<i>Canis_lupus_familiaris</i>	SSSESDDCEDVIEFPPEEEEEEEEE---EEDTRGVAEGQHAVNMEGFKSAGAEDEMOMVPEC	1067	
<i>Latimeria_chalumnae</i>	SSSETDDECDGNGYNVEEDGHVEQM-----AGELDGYSNKGILPVS-ESVEEMKEK	1101	
	.....1090.....1100.....1110.....1120.....1130.....1140		

	*.* *****:*** :.* :.*:.*:.*:.*:.*:*****	
Xenopus_tropicalis	EPEKVEIRERYELSEKMLSACNVLKD TVSDPKALANKDVRLCLTVQNEWFRVSSQKSAV	1123
Rhinatrema_bivittatum	EPEKVEIRERYELSEKMMSACNILKENLDDPKSLSSKDVRVCVNTIQHEWFRVSSQKSAI	1060
Pavo_muticus	EAEFEVEIRERYELSEKMLSACHLLKNNIDDPKALTNKDVRFCCLNTIQHEWFRVSSQKSAV	1133
Pavo_cristatus	EAEFEVEIRERYELSEKMLSACHLLKNNIDDPKALTNKDVRFCCLNTIQHEWFRVSSQKSAV	1133
Gallus_gallus	EAEFEVEIRERYELSEKMLSACHLLKNNIDDPKALTNKDVRFCCLNTIQHEWFRVSSQKSAV	1133
Anas_platyrhynchos	EAEFEVEIRERYELSEKMLSACHLLKNNIDDPKALTNKDVRFCCLNTIQHEWFRVSSQKSAV	1129
Chelonia_mydas	EPEKAEIRERYELSEKMLSACNLLKSNIEDPKALASKEMRFCCLNTIQHEWFRVSSQKSAV	1132
Mus_musculus	EPEKEEIRERYELSEKMLSACNLLKYNIKDPKALASKDMRICLNTLOHDFWFRVSSQKSAV	1140
Rattus_norvegicus	EPEKEEIRERYELSEKMLSACSLLYNINIDPKALASKDMRICLNTLOHDFWFRVSSQKSAV	1169
Homo_sapiens	EPEKVEIRERYELSEKMLSACNLLKNTINDPKALTSKDMRFCCLNTLOHEWFRVSSQKSAI	1132
Macaca_mulatta	EPEKVEIRERYELSEKMLSACNLLKNNINDPKALTSKDMRFCCLNTLOHEWFRVSSQKSAI	1132
Callithrix_jacchus	EPEKVEIRERYELSEKMLSACNLLKNNINDPKALTSKDMRFCCLNTLOHEWFRVSSQKSAI	1133
Bos_taurus	EPEKVEIRERYELSEKMLSACNLLKNNINDPKALTSKDMRFCCLNTLOHEWFRVSSQKSAI	1164
Equus_caballus	EPEKVEIRERYELSEKMLSACNLLKNNINDPKALTSKDMRFCCLNTLOHEWFRVSSQKSAI	1137
Canis_lupus_familiaris	EPEKVEIRERYELSEKMLSACHLLKNNINDPKALTSKDMRFCCLNTLOHEWFRVSSQKSAI	1127
Latimeria_chalumnae	EAETGEIRERYELSEKMMSACSVLKNNISDPKALTSKDVRACLNTIQHEWFRVSSQKSAV	1161
	.....1150.....1160.....1170.....1180.....1190.....1200	

	..** **::** : ** ** ::*:*****:***:****.	
<i>Xenopus_tropicalis</i>	APMVEDYIAAFKDLSPAVLSYIINMADGNGNTALHYSVSHSNFDIVKLLLDADVCNVNQ	1183
<i>Rhinatrema_bivittatum</i>	PAMVEDYITAFTKISPDLRHVVNMADGNGNTALHYSVSHSNFEIVKLLLDANACNVNHQ	1120
<i>Pavo_muticus</i>	PEMVG DYITAFEEISPAVLRHIINVADGNGNTALHYSVSHSNFEIVKLLLDANVCNVNHQ	1193
<i>Pavo_cristatus</i>	PEMVG DYITAFEEISPAVLRHIINVADGNGNTALHYSVSHSNFEIVKLLLDANVCNVNHQ	1193
<i>Gallus_gallus</i>	PEMVG DYITAFEEISPAVLRHIINVADGNGNTALHYSVSHSNFEIVKLLLDANVCNVNHQ	1193
<i>Anas_platyrhynchos</i>	PEMVG DYITAFEEISPAVLRHVINMADGNGNTALHYSVSHSNFEIVKLLLDANVCNVNHQ	1189
<i>Chelonia_mydas</i>	PAMVG DYIAAFEELSPVLRHIINMADGNGNTALHYSVSHSNFEIVKLLLDANVCNVNHQ	1192
<i>Mus_musculus</i>	PAMVG DYIAAFEAVSPDLRYIINMADGNGNTALHYSVSHSNFQIVKLLLDADVCNVDHQ	1200
<i>Rattus_norvegicus</i>	PAMVG DYIAAFEAVSPDLRYIINMADGNGNTALHYSVSHSNFQIVKLLLDADVCNVDHQ	1229
<i>Homo_sapiens</i>	PAMVG DYIAAFEAISPDVLRVINLADGNGNTALHYSVSHSNFEIVKLLLDADVCNVDHQ	1192
<i>Macaca_mulatta</i>	PAMVG DYIAAFEAISPDVLRVYNLADGNGNTALHYSVSHSNFEIVKLLLDADVCNVDHQ	1192
<i>Callithrix_jacchus</i>	PAMVG DYIAAFEAISPDVLRVYNLADGNGNTALHYSVSHSNFEIVKLLLDADVCNVDHQ	1193
<i>Bos_taurus</i>	PAMVG DYIAAFEAISPEVLRHVINMADGNGNTALHYSVSHSNFEIVKMLLDADVCNVDHQ	1224
<i>Equus_caballus</i>	PAMVG DYIAAFEAISPDVLRHIINMADGNGNTALHYSVSHSNFEIVKLLLDADVCNVDHQ	1197
<i>Canis_lupus_familiaris</i>	PAMVG DYIAAFEAISPDVLRVIINMADGNGNTALHYSVSHSNFEIVKLLLDADVCNVDHQ	1187
<i>Latimeria_chalumnae</i>	PAMVG DYLAAFKGVSPDLRYVNMADGNGNTALHYSVSHSNFEIVKLLLDAG-----	1214
	.....1210.....1220.....1230.....1240.....1250.....1260	

# CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Xenopus_tropicalis	NKAGYTPIMLAALAAVEAEKDMGVVEELFGSGDVNAKASQAGQTALMLAVSHGRIDMVRA	1243
Rhinatrema_bivittatum	NKAGYTPIMLAALAAVEAEKDMRIVEELFSCGDVNAKASQAGQTALMLAVSXGRIDMVRA	1180
Pavo_muticus	NKAGYTPIMLAALAAVEAEKDMKIVEELFSCGDVNAKASQAGQTALMLAVSHGRIDMVKA	1253
Pavo_cristatus	NKAGYTPIMLAALAAVEAEKDMKIVEELFSCGDVNAKASQAGQTALMLAVSHGRIDMVKA	1253
Gallus_gallus	NKAGYTPIMLAALAAVEAEKDMRIVEELFSCGDVNAKASQAGQTALMLAVSHGRIDMVKA	1253
Anas_platyrhynchos	NKAGYTPIMLAALAAVEAEKDMRIVEELFSCGDVNAKASQAGQTALMLAVSHGRIDMVKA	1249
Chelonia_mydas	NKAGYTPIMLAALAAVEAEKDMRIVEELFSCGDVNAKASQAGQTALMLAVSHGRIDMVKA	1252
Mus_musculus	NKAGYTPIMLAALAAVEAEKDMQVVEELFSCGDVNAKASQAGQTALMLAVSHGRIDMVKG	1260
Rattus_norvegicus	NKAGYTPIMLAALAAVEAEKDMQVVEELFSCGDVNAKASQAGQTALMLAVSHGRIDMVKG	1289
Homo_sapiens	NKAGYTPIMLAALAAVEAEKDMRIVEELFGCGDVNAKASQAGQTALMLAVSHGRIDMVKG	1252
Macaca_mulatta	NKAGYTPIMLAALAAVEAEKDMRIVEELFGCGDVNAKASQAGQTALMLAVSHGRIDMVKG	1252
Callithrix_jacchus	NKAGYTPIMLAALAAVEAEKDMRIVEELFGCGDVNAKASQAGQTALMLAVSHGRIDMVKG	1253
Bos_taurus	NKAGYTPIMLAALAAVEAEKDMQVVEELFACGDVNAKASQAGQTALMLAVSHGRIDMVKG	1284
Equus_caballus	NKAGYTPIMLAALAAVEAEKDMRIVEELFGCGDVNAKASQAGQTALMLAVSHGRIDMVKG	1257
Canis_lupus_familiaris	NKAGYTPIMLAALAAVEAEKDMRIVEELFGCGDVNAKASQAGQTALMLAVSHGRIDMVKG	1247
Latimeria_chalumnae	-----	1214
	.....1270.....1280.....1290.....1300.....1310.....1320	

Xenopus_tropicalis	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQHGCNAALEDNDGSSALSIALDAG	1303
Rhinatrema_bivittatum	LLACGTDVNVQDDEGSSALMCASEHGHVEIVK-----AATGLSLDAM	1222
Pavo_muticus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGTLEDNDGSTALSIALEAG	1313
Pavo_cristatus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGTLEDNDGSTALSIALEAG	1313
Gallus_gallus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGTLEDNDGSTALSIALEAG	1313
Anas_platyrhynchos	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGTLEDNDGSTALSIALEAG	1309
Chelonia_mydas	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQAGCNGTLQDNDGSTALSIALEAG	1312
Mus_musculus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGHLEDNDGSTALSIALEAG	1320
Rattus_norvegicus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCSGHLEDNDGSTALSIALEAG	1349
Homo_sapiens	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGHLEDNDGSTALSIALEAG	1312
Macaca_mulatta	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGHLEDNDGSTALSIALEAG	1312
Callithrix_jacchus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGHLEDNDGSTALSIALEAG	1313
Bos_taurus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGHLEDNDGSTALSIALEAG	1344
Equus_caballus	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGHLEDNDGSTALSIALEAG	1317
Canis_lupus_familiaris	LLACGADVNIQDDEGSTALMCASEHGHVEIVKLLLAQPGCNGHLEDNDGSTALSIALEAG	1307
Latimeria_chalumnae	-----	1214
	.....1330.....1340.....1350.....1360.....1370.....1380	

Xenopus_tropicalis	HKDIAVILYAHVNFSTKTPSPGTPRLSRKFPSPPTQKGP TDH	1344
Rhinatrema_bivittatum	LP-----	1224
Pavo_muticus	HKDIAVLLYAHVNFSTKTPSPGTPRLSRKTPSPGPTHRA TFE-	1353
Pavo_cristatus	HKDIAVLLYAHVNFSTKTPSPGTPRLSRKTPSPGPTHRA TFE-	1353
Gallus_gallus	HKDIAVLLYAHVNFSTKTPSPGTPRLSRKTPSPGPTHRA TFE-	1353
Anas_platyrhynchos	HKDIAVLLYAHVNFSTKTPSPGTPRLSRKTPSPGPTHRA TFE-	1349
Chelonia_mydas	HKDIAVLLYAHVNFSTKTPSPSTPRLSRKTPSPGPTRRAT FD-	1352
Mus_musculus	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPGPTHRS SFD-	1360
Rattus_norvegicus	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPGPTHRS SFD-	1389
Homo_sapiens	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPGPTHRS SFD-	1352
Macaca_mulatta	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPGPTHRS SFD-	1352
Callithrix_jacchus	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPGPTHRS SFD-	1353
Bos_taurus	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPGPTHRS SFD-	1384
Equus_caballus	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPGPTHRS SFD-	1357
Canis_lupus_familiaris	HKDIAVLLYAHVNFSTKTPSPSTPRLGRKTPSPATHRS SFD-	1347
Latimeria_chalumnae	-----	1214
	.....1390.....1400.....1410.....1420.	