

CLUSTAL W (1.81) multiple sequence alignment

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RET.mouse    MAKATSGAAGLG-LKLILLPLLGEAPLGLYFSRDAYWERLYVDQPAGTPLLYVHALRDA
RET.rat      MAKARSGAAGLG-LKLFLLPLLGEAPLGLYFSRDAYWERLYVDQPAGTPLLYVHALRDA
RET.human    MAKATSGAAGLR-LLLLLLLLPLLGKVALGLYFSRDAYWEKLYVDQAAGTPLLYVHALRDA
RET.chimp    MAKATSGAAGLR-LLLLLLLLPLLGKVALGLYFSRDAYWEKLYVDQPAGTPLLYVHALRDA
RET.baboon   MAKATSGAAGLRLLLLLLLLPLLGKVALGLYFSRDAYWEKLYVDQPAGTPLLYVHALRDA
RET.cat      MAKATATAGAAR-LRLLLLPLLGEAPLGLYFARDAYWEKLYVDQPAGMPLLYVHALRDM
RET.dog      -----PLGLYFSRDAYWEKLYVDQPSGMPLLYVHALRDI
RET.cow      MAKATASTVGLR-L-LLLLPLLGEAPLGLYFSRDAYWEKLYVDQPAGTPLLYVHALRDV
RET.pig      MAKATVGAVGLR---LLLLPLLGEAPLGLYFSRDAYWEKLYVDQPAGMPLLYVHALQDV
RET.chicken  -----SFGLYFPRKEYSENVYIDQPAGAPLLRIHALRDS
RET.fugu     ---MGSSYGFSRGNIVVLLLLLLLDGVTGLYFSQNEYIETVYVVGQPAGTPVLQVHAMRDG
RET.zfish    -----SFG-----LYFPQRLYTENIYVVGQQQSPLLQVISMREF
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RET.mouse    PGEVPSFRLGQHLYG-VYRTRLHENDWIRINETTGLLYLNQSLDHSSWEQLSIRNGGFPL
RET.rat      PGEVPSFRLGQYLYG-VYRTRLHENDWIHIDSGTGLLYLNQSLDHSSWEQLSIRNGGFPL
RET.human    PEEVPSFRLGQHLYG-TYRTRLHENNWICIQEDTGLLYLNRLSLDHSSWEKLSVRNRGFPL
RET.chimp    PEEVPSFRLGQHLYG-TYRTRLHENNWICIQEDTGLLYLNRLSLDHSSWEKLSVRNRGFPL
RET.baboon   PEEVPSFRLGQHLYG-TYRTRLHENNWICIQEDTGLLYLNRLSLDRSSWEKLSGRNRGFPL
RET.cat      PEEVPAFRLGQHLYGIAYRARLHENEWIRIEEDTGLLYLNRLSLDHSTWDKLSIRNGGFV
RET.dog      PEEVPSFRLGQHLYGIAYRARLHENDWIRIEEDTGLLYLNRLSLDHSTWEKLSIRNGGFV
RET.cow      PEEVPSFRLGQHLYG-AYRTRLHENDWVRIQEDTGLLYLNQSLDHSSWEKLNIRNGGFPL
RET.pig      PGEVPSFRLGQHLYG-VYRTRLHENDWIRIQEDTGLLYLNQSLDHSSWEKLSIRNGGFPL
RET.chicken  HGETAHFHLQONLII--SRARSHENHWFQIREKMGLLYLSKSLDREDFNMLSVGN-WMPL
RET.fugu     DTERPHFYLCMNSR----RRPAHVSWFRLDISTGVLSLNKTTLEESDFASFYP-SSQSVK
RET.zfish    PTERPYFFLCSH-----RDAFTSWFHIDEASGVLYLNKTTLEWSDFSSLSRSGSVRSPK
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RET.mouse    LTIFLQVFLGSTAQREGCECHWPGC TRVYFSFINDTFPNCSSFKAQDLCIPETA VS-FRVR
RET.rat      LTVFLQVFLGSTAQREGCECHWPGCARVYFSFINDTFPNCSSFKARDLCTPETGVS-FRIR
RET.human    LTVYLKVFLSPTSLREGECEQWPGCARVYFSFFNTSFPACSSLKPRELCFPETRPS-FRIR
RET.chimp    LTVYLKVFLSPTSLREGECEQWPGCARVYFSFFNTSFPACSSLKPRELCFPETRPS-FRIR
RET.baboon   LTVYLKVFLSPTSLREGECEQWPGCARVYFSFFNTSFPACTSLKPRELCFPETRPS-FRIR
RET.cat      LTIYLVFLSPTSLREGECEQWPSCARVYFSFVNTSFPACGSLKPRELCFPETSVS-FRIR
RET.dog      LTIYVQVFLSSASLREGECEQWPGCARVYFSFINTSFPACGSLKPRELCFPETGVS-FRIR
RET.cow      LTVYLVFLSPASVREGECEQWPGCARVYFSVINASFPACGALKARELCFPESGLS-FRIR
RET.pig      LTVYLQVFLSPASLRESECEQWPGCARVYFSFINASFPACGALKPRDLCFPEASLS-FRIR
RET.chicken  SKVMYVFLSSHPPQEKECD SATRTTVVLSLINATAPACSSLSARQLCFTEM DLS-FHIK
RET.fugu     -KLSMHVMALPGFTKNSL CNSRSCPRINLEFVNATMPQCGQTDL KELCFPHK DTSNPHIT
RET.zfish    -DLTLKVGVSSTPPMKVMCTILPTVEVKLSFINDTAPSCGQVELSTLCFPEK- ISNPHIT
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RET.mouse    ENRPPGTFYHFHMLPVQFLCPNISVKYSL LGGDSL PFRCDPDCLEVSTRWALDRELREKY
RET.rat      ENRPPGTFYQFRMLPVQFLCPNISVKYKLL EGDGLPFRCDPDCLEVSTRWALDRELQEKY
RET.human    ENRPPGTFHQFRLLPVQFLCPNISVAYRLL EGEGLPFRCAPDSLEVSTRWALDREOREKY
RET.chimp    ENRPPGTFHQFRLLPVQFLCPNISVAYRLL EGEGLPFRCAPDSLEVSTRWALDREOREKY
RET.baboon   ENRPPGTFHQFRLLPVQFLCPNISVAYRLL EGEGLPFRCAPDSLEVSTRWALDREOREKY
RET.cat      ENRPPGTFHQFRLLPVQFLCPNISVAYRLL EGENLPFHCAPDSLEVSTRWPLDRELREKY
RET.dog      ENRPPGTFHQFRLLPMQFLCPNISVSYKLL EGENLPFRCAPDSLEVSTRWALDRELREKY
RET.cow      ENRPPGTFHQFRLLPVQFLCPNVSVAYRLL GGESLPFRCDPDSLEVSTRWALDREOREKY
RET.pig      ENRPPGTFHQFRLLPVQFLCPNVSVAYSLL GGESQPFRCAADSLEVSTRWALDREOREKY
RET.chicken  ENKPPGTFHQQLPSVHHLQONLSIT YKLLAAEGLPFRYNENTTGVSVTQRLDREERERY
RET.fugu     ENRFPGALRQLRRLSRFNVC PNYTISYNVETETPAPFAVNETTAELVVTAML DREESESY
RET.zfish    ENREPGALRQLRRFTHMSICPNYTI SYGVVAGSSVPFAVDDSTSELVVT AQVDREEKEVY
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RET.mouse    VLEALCIVAGPGANKETVTL SFPVTVYDEDDSAPTFSGGVGTASAVVEFKRKEGTVVATL
    
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RET.rat VLEAECAVAGPGANKEKVAVSFPVTVYDEDDSPPTFSGGVTASAVVEFKRKEGTVVATL  
RET.human ELVAVCTVHAGAR-EEVVMVFPVTVYDEDDSPPTFPAGVDTASAVVEFKRKEGTVVATL  
RET.chimp ELVAVCTVHAGAR-EEVVMVFPVTVYDEDDSPPTFPAGVDTASAVVEFKRKEGTVVATL  
RET.baboon ELVAVCTVHAGAR-EEVVMVFPVTVYDEDDSPPTFPAGVDTASAVVEFKRKEGTVVATL  
RET.cat ELVAACTVRVGARKEEVVMVFPVTVYDEDDSPPTFLGGIDTASAVVEFKRKEGTVVAKI  
RET.dog ELVAACTVRVGARKEEVVMVFPVTVYDEDDSPPTFLGGFDTASAVVEFKRKEGTVVATI  
RET.cow ELVAACTVRVGAR-EEEVVMVFPVTVYDEDDSPPTFLGGVDSASAVVEFKRKEGTVVATL  
RET.pig ELVAACTVRVGAR-EEEVVMVFPVTVYDEDDCAPTFLGGIDTASAVVEFKRKEGTVVATL  
RET.chicken ELIAKCTVREGFR-EMEVEVPFLVNVLDEDDSPFLPNGTDTADAVVEFNRKEGTVLATL  
RET.fugu RLLLVCVTRTETV-ITKVETSLDVFVDEDDNAP-YLNGTDTADIVISFNRTVGGSFGL  
RET.zfish HLDIVCMVRTERN-LEEVRSLHVNIYDEDDNSP-YVNGTDTEDVLEFDRSEGTVFGTL  
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RET.mouse QVFDADVVPAS--GELVRRYTNTLLSGDSWAQQTFRVEHSPNETLVQVNNNSVRATMHNY  
RET.rat QVFDADVVPAS--GELVRRYTNTLLSGDSWAQQTFRVEHTPNETLVQSNNSVRATMHNY  
RET.human RVFDADVVPAS--GELVRRYTNTLLPGDTWAQQTFRVEHWPNETSVQANGSFVRATVHDY  
RET.chimp RVFDADVVPAS--GELVRRYTNTLLPGDTWAQQTFRVEHWPNETSVQANGSFVRATVHDY  
RET.baboon RVFDADVVPAS--GELVRRYTNTLLPGDTWTQQTFRVEHWPNETSVQANGSFVRATVHDY  
RET.cat RVFDADVVPAS--GELLKRYTNTLLSGDAWVLQTFRIEHPNETLAQANGSFVRATVHDY  
RET.dog HVFDADVVPAS--GELLRRYTNTLLPGDAWALQTFRVEHSPNETLVQANGSFVRATVHDY  
RET.cow RVFDADVVPAS--GELLRRYTNTLLSGDPKALRTFRVEHAPNETLAQANGSFVRATVHDY  
RET.pig RVFDADVVPAS--GELLRRYTNTLLSRDTWALQTFRVEHLPNETLAQVNGSFVRATVHDY  
RET.chicken TVYDADTTPIYPLESSRKKYTGIIITDDPWINETFRVEHIFDEIHFSPNGSQVRGTQHEY  
RET.fugu SVFDRDLTPIIG--RSHNKYVGTLLNIDPWAKETFDIKSSFRE--RKAQGG-IRETVHDY  
RET.zfish FVYDRDTPVYPTNQVQNKLVGTLMTNDSWIKNNFAIEHKFRE--EKAIFGNVRGTVHEY  
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RET.mouse KLILNRSLISISESRVLQAVLVNDSDFQGPAGGILVLFHFNVSVLPVTLNLP-RAYSFPV  
RET.rat KLVLNRSLISISESRVLQAVLVNDSDFQGPAGG-VLFLHFHFNVSVLPVTLNLP-MAYSFPV  
RET.human RLVLNRNLSISENRTMQLAVLVNDSDFQGPAGG-VLLLHFHFNVSVLPVSLHLP-STYSLSV  
RET.chimp RLVLNRNLSISENRTMQLAVLVNDSDFQGPAGG-VLLLHFHFNVSVLPVSLHLP-STYSLSV  
RET.baboon RLVLNRNLSISENRTMQLAVLVNDSDFQGPAGG-VLLLHFHFNVSVLPVSLHLP-SSYSLSV  
RET.cat RLVLNRSLPISENRSVLQAVLVNDSDFQGPAGG-TLFLHFHFNVSVLPVSLHLP-STYTFTV  
RET.dog RLVLNRSLPISESRSVLQAVLVNDSDFQGPAGG-ILLLHFHFNVSVLPVSLHLP-SAYTFTV  
RET.cow KLVLNRSLPISESWAVQLAVLVNDSDFQGPAGG-VVLLHFHFNVSVLPVSLRLP-SAYSFSV  
RET.pig RLVLNRSLISILENRAVQLAVLVNDSDFQGPAGG-VLLLHFHFNVSVLPVSLHLP-SAYSFAV  
RET.chicken KLVLNKSISVTEHRFQLDVLVNDTEFNGPEKS--VMLHFHFNVSILPVSIOFPNTTYRFTV  
RET.fugu YLVLKRNLNVNENRTLQDLVNDTTPGLEGT--VLLHFHFNITILPVHIQFSNITHIFPL  
RET.zfish KLKLSQNLVTEQRSFLLGYLVNDTTPGPEGT--VLLHFHFNVTVPVIRFSNVTYSFTV  
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RET.mouse NKRARRYAQIGKVCVENCQEFSGVSIQYKLOPSSINCT-----ALGVVTSPEDTSGT  
RET.rat NRRARRYAQIGKVCVENCQEFSGVSIQYKLOPSSINCS-----ALGVVTSSTEDTSGT  
RET.human SRRARRFAQIGKVCVENCQAFSGINVOYKYLHSSGANCS-----TLGVVTSAEDTSGI  
RET.chimp SRRARRFAQIGKVCVENCQAFSGINVOYKYLHSSGANCS-----TLGVVTSAEDTSGI  
RET.baboon SRRARRFAQIGKVCVENCQAFSGINVOYKYLHSSGANCS-----TLGVVTSAEDTSGI  
RET.cat SRRARRFAQIGKVCVENCQEFSGIHVQYRLQLSSTNCS-----VLGVVTSAEDTSGN  
RET.dog SRRARRFAQIGKVCVENCQEFSGIHVQYKYLQLSSTNCS-----VLGVVTSAEDTTGT  
RET.cow SRRARRFAQIGKVCVENCQEFSGIQVQYRLQPSANCS-----ALGMVTSAEDTSGT  
RET.pig SRRARRFAQIGKVCVENCQEFSGIHVQYKYLQLSNANCS-----ALGIVTSAEDTTGT  
RET.chicken NRNAQRFAQIGKICINCMKFRGVNITYKLLSPNVSCY-----AVGILQGREDKYGS  
RET.fugu TRRASSYAQVGVKVCVENCQQFDGFRVYRLEVPDKNASADAQSCHAAVRIAQAPDEMVAL  
RET.zfish SQKATTYSQIGKVCVENCQKFKGIDVYQLEIVDRNITAEAQSCYWAVSLAQNPNDNTGV  
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RET.mouse LFNVDTEALRRPECTKLQYTVVATDRQTRRQTQASLVVTVEGTSITEEVGCP--KSCAVN  
RET.rat LYVNDTEALRRPECTELQYTVVATDRQTRRQTQASLVVTVEGTYIAEEVGCPC--KSCAVN  
RET.human LFNVDTKALRRPKCAELHYMVVATDQOTSROAQAQLLVTVEGSYVAEEAGCP--LSCAVS  
RET.chimp LFNVDTKALRRPKCAELHYIVVATDQOTSROAQAQLLVTVEGSYVAEEAGCP--LSCAVS  
RET.baboon LFNVDTKALRRPKCAELHYMVVATDHQTSROAQTQLLVTVEGSYVAEEAGCP--LSCAVS

RET.cat LFNVDTEALQRPDCSQLRYTVVAADRPTTRKQTQALLVVTVEGTYVAEPEGCP--LSCAVS  
RET.dog LYVNDTEALQRLDCSQLQYTVVAADRPTTRRQTQAPLVVTVEGTYVAEPEGCP--LSCAVS  
RET.cow LFNVDMEALQRPDCAQLQYTVVAAEKPTRQQAQAPLLVSVEGIYVPEEPGCP--LSCAVS  
RET.pig LFNVDTEALQRPDCAQLQYTVVAAEKPTRQQAQAPLLVSVEGIYVPEEPGCP--LSCAVS  
RET.chicken LYVNDSSVLLRPECKEIQYTVQATDKQSRKYTKTLFTVVLEGTFLFKKEEDCP--DSCAMS  
RET.fugu LYVNDSEALRRPECQDLQYLVVVKEEHTQLETSTQIQIILDNEAG--QESQP--LLSCAEN  
RET.zfish LYVNDTKVLLRPECQELEYYVIAQEQONKLOAKTQLTVSFOGEADSLKTDEPRFPACA  
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RET.mouse KRRPECEECGGLGSPTGRCEWRQGDGKGITRNFSTCSPSTRTCPDGHCDAVESRDANICP  
RET.rat KRRPECEECGGLGSPTGRCEWRQGDGKGITRNFSTCSPSTRTCPDGHCDALSRDINICP  
RET.human KRRLECEECGGLGSPTGRCEWRQGDGKGITRNFSTCSPSTKTCPDGHCDVVETQDINICP  
RET.chimp KRRLECEECGGLGSPTGRCEWRQGDGKGITRNFSTCSPSTKTCPDGHCDVVETQDINICP  
RET.baboon KRRPECEECGGLGSPTGRCEWRQGDGKGITRNFSTCSPSTKTCPDGHCDVVEIQDINICP  
RET.cat KRRPECEECGGLGSLTGRCEWRQGDGKGITRNFSTCSPSIKTCPDGHCDAVESRNVNICP  
RET.dog KRRPECEECGGLGSLTGKCEWRQGDGKGITRNFSTCSPNVKTCPDGHCDAVESRNVNICP  
RET.cow KRRPECEECGGLGSLTGRCEWRQGDGKGITRNFSTCSPSIRTCPDGHCDAVESRDPNICP  
RET.pig KRQPECEECGGLGSLNGRCEWRQGDGKGITRNFSTCSPSIKTCPDGHCDAVESKDAHICP  
RET.chicken KHLAECEECGGLGVLTRGRCQWRQGSQKGIITNYSTCTPSIKTCPDGTCDIVESKDPAICP  
RET.fugu RRRGDCEARGLGTTRGRCQWRQGYDKGISENYSTCSPDLRTCPDRFCDAVESKDASICP  
RET.zfish RQRGDCEATRGLGAPTGRQWRQGRDKGISKRYSTCSPNLGTCPDGYCDAIESKNISICP  
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RET.mouse QDCLRA-DIVGGHERGE-RQGIKAGYGICNCFPDEKKKCFCEPESDQGPLCDALCRTIITA  
RET.rat QDCLRG-PIVGGHERGE-RQGIKAGYGICNCFPDEKKKCFCEPESDQGPLCDELCRTVITA  
RET.human QDCLRG-SIVGGHEPGE-PRGIKAGYGTCNCFPEEEKKCFCEPEDIQDPLCDELCRTVIAA  
RET.chimp QDCLRG-SIVGGHEPGE-PRGIKAGYGTCNCFPEEEKKCFCEPEDIQDPLCDELCRTVIAA  
RET.baboon QDCLRG-SIVGGHEPGE-PRGIKAGYGTCNCFPEEEKKCFCEPEDIQDPLCDELCRTVIAA  
RET.cat QDCLRGGSIIGGHEPGE-RWGIKAGFGICNCFPEEEKKCFCEPESDQEPLCDELCRTVIAA  
RET.dog QDCLRGGSIIGGHEPGD-RWGIKAGFGICNCFPEEEKKCFCEPESDQDPLCDELCRTVIAA  
RET.cow QDCLRGGSIIGGHEPGE-RRGIKAGFGICNCFPEEEKKCFCEPESDQDPLCDELCRTVITA  
RET.pig QDCLRGGSIIGGHEPGE-RRGIKAGFGICNCFPEEEKKCFCEPEDNQDPLCDELCRTVIAA  
RET.chicken QDCTNG-NIIGGHGKGTGNLGIKSGHGICYCFPRQN-CYCEKDDIKEQFCDEVECKTVIAG  
RET.fugu QDCTSP--VIGGHER-GLRNGIQAGHGTCYCY--TEKCFCEKEDIKETICDDMCKTIIAT  
RET.zfish QDCSSEA-IIGGYER-DLY-GIKAGHGTCYCF--EGKCFCERDEPEDDICNDMCKTVIAT  
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RET.mouse A-LFSLIISILLSIFCVCHHHKHGHKPPIASAEMTFCRPAQGFPISYSSSGTRRPSLDST  
RET.rat AVLFSFIISVLLSTFCIHRYHKHAKHAKPPIASAEMTFCRPAQGFPISYSSSGTRRPSLDSTM  
RET.human AVLFSFIVSVLLSAFCIHRYHKFAHKPPISSAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.chimp AVLFSFIVSVLLSAFCIHRYHKFAHKPPISPAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.baboon AVLFSFIVSVLLSAFCIHRYHKFAHKPPISPAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.cat AVLFSFVSMMLLSTFCIHRYHKNAHKPPIASAEMTFCRPAQAFVPSYSSSGARRPSMDSM  
RET.dog AVLFSFIVSMMLLSTFCIHRYHKNAHKPPIASAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.cow AVLFSFIVSVLLSTFCIHRYHKNAHKPPIASAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.pig AVLFSFIVSVLLSTFCIHRYHKNAHKPPIASAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.chicken AVLLSFIISVLLSSYFIHRYHKNSPKPPIASAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.fugu ALLLSFIISVLLSSYFIHRYHKNSPKPPIASAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
RET.zfish GIILSFIISVLLSSYFIHRYHKNSPKPPIASAEMTFCRPAQAFVPSYSSSGARRPSLDSTM  
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RET.mouse ENQVPVDSFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML  
RET.rat ENQVSVDSFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML  
RET.human ENQVSVDAFKILEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFHLKGRAGYTTVAVKML  
RET.chimp ENQVSVDAFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML  
RET.baboon ENQVSVDAFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML  
RET.cat ENQVSVDAFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML  
RET.dog ENQVSVDAFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML  
RET.cow ENQVSVDTFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML  
RET.pig ENPVSVDAFKIPEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFRLKGRAGYTTVAVKML



