

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /Users/emmatimminschiffman/Documents/Dissertation/ceramide/protein trees/SMase SpuntJms 12-20-2011 10:57:25 2011
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H.sapiens      MDNRQANKRRKRDHVPKRRKAKGLPATISILASL-APGLEAGKFWHIADLHLDPDYKVKSPDFVQVCSAGSQFVVDAGPWGDYLCDSPPWALINSSSIYAMK-EIEP-EPDFILWTGDDTPHPVPEKLGAAVLEIVERLTKLIREVFP-DTKV 150
M.musculus     -----MTLLGWLIFLAPWGVAGAQLGRFWHISDLHLDPNYTVSKDPLQVCSAGSQFVVLNAGPWGDYLCDSPPWALINSSSIYAMK-EIEP-KPDFILWTGDDTPHPVNESLGEAAVLAIVERLTKLIREVFP-DTKV 150
X.tropicalis   -----MKAFFLLLAGSVRLSTTELGFWHLTDLHLDPNYSVTSDDRKVCPSAGDQLVVDAGQWGNLYLDCSPRILINSSINAMK-SILP-NPDFILWTGDDTPHPVNEQLGEDAVLEIRWLTNLIQETFP-TTKV 150
D.rerio        -----MACMWKCILLSIFIVFGRSDALTYFWHISDLHWDPSYDLSSSQSKCASSGGRPTPHAGRYGDYVCDSPWSLINSSLTAMR-EILP-DPDFIMWTGDDTPHPVDDQDGEQAVLRIGNLTNIKSTFP-RTKV 150
S.purpuratus   -----MYSVREILIGFYLFATCATLWGDENGFHISDVHYDPFYGDGVYF--SSSCSEADPAQYPLGNHHCDSPPWALVEVFOAMA-DTMTSETDFIVWTGDTPGAIDLSHLNTTKVLSMIQNVISEMRERLPADIRV 150
C.gigas        -----GWLHVTDHFHWDRSYSS-----NDLSCNGVVNTHGMYGDYWCDSPFSLIDVTMKAMKATLDKEDVFMWLTGDSVLTHTFDENLSINENMMDILTNLIGQOETFP-TMDV 150
S.kowalevskii -----MULLFVGTSGNSIGRIWVHTDIHYEPNYTAGDYF--ASSCRDLGGTGGYWGDRYCDSPWALVNSSVYAMR--SIEENPDFIWTGDDTPHPVDDNLTSTDKVIDIITVITLLSETFP-GTIV 150
1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100.....110.....120.....130.....140.....150
    
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H.sapiens      YAALGNHDFHPKNOFPAGSNININQIAELWKPWLSN--ESIALFKKGAFYCEKLPGPSGAGRIVVLTNLYYTSNALTADMADPGQDFQWLEDVLTADSKAGDMVYIVGHVPPGFPEKTKNKAWFREGFNKYLKVVRRKHRRVIAGOFFG 300
M.musculus     YAALGNHDFHPKNOFPAGSNRIYNQVAELWRPWLSN--ESYALFKRGAFYSEKLPGPSRAGRUVVLTNLYYSNNEQTAGMADPGQDFRWLGDVLSNASRDGEMVYVIGHVPPGFPEKTKNKAWFRESFNEEYLKVIQKHRRVIAGOFFG 300
X.tropicalis   YAALGNHDFHPKNSLPHPHNSIYDRISEFWSPLKN--ESLPSFRKGAAYSSELKDVGAAGRMIYVLTNLYYDSSNLTANMKDPGDQFQWLEDQLNANLKGKQVYVIGHVPPGFPEKTKRDKPWFREFNKRYIEIIQKHRRVIQGGFFG 300
D.rerio        YSAMGNHDFHPKNOFPAGSSTIYEQANLWRDLWLT--AQOETPKTGGYYTEKLLNQITGL-RVIVLNTNLYYDQNKLETKVKDPADQFQWLEDQDAAKNNEKVYLIGHVPPGFPEKTKRDKGWFREFNKRYIEIIQKHSVIMGQFFG 300
S.purpuratus   FPAIGNHDFHPKNOFPAGSNRFRDLSAEVVDPWLANVQDANDTFKSGGYVYVPIING--NLWVVVLTNAMYKDPLETEGIADPAGQDFDWLEDTLEAAQTAGKVFNAHILPGSLEG-ETKISFTQTSFNRYLEINRKYSNVIKGGOFFG 300
C.gigas        YATYGNHDFHPKNOYPPHNSIYDRILEHWRWINDS-TQETNPLKGAAYTLKTKYG--MRILALNTNMYYSKVTTHMDDPADQFVWVWGGNLMQARGTTKRCWLPDMFPRVLLQREEDPG---STNISILVCTYHNTVSSSGFFP 300
S.kowalevskii  FVPVGNHDFHPKHMFPMTNPVYSTIADLWSHWLGDYPAFNEKFRKVAAYTAQFTAG--LRIVGLNTVYYYSKVTLEDELDPGDQFVWVLSVNLQAATDGEKVGELRILDDMMTLVDDMMSLVDDMMSLVDDMMSLVNM 300
.....160.....170.....180.....190.....200.....210.....220.....230.....240.....250.....260.....270.....280.....290.....300
    
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H.sapiens      HHHHDSFRMLYDDAGVPIASAMFITPGVTPWKTTLPVGVVNGANNPAIRVFEYDRATLSLKDMVTYFMNLSQANAQGTFRWELEYQLTEAYGVPDASAHSMTVLDRIAGDOS---ILORYVYNSVSVSAGVCDEACSMQHVCMARQVDID 450
M.musculus     HHHHDSFRMFYDNTGAPINVMFLTPGVTPWKTTLPGVVDGANNPGIRIFEYDRATLNLKDLVTVFLNLRQANVQETPRWEQYRLTEAYQVPDASVSSMHTALTRIASEPH---ILORYVYNSVSVSNHLTCEDSCRIEHVCAIQHVAFN 450
X.tropicalis   HHHHDSFRMFYSDSGTPVSMFIAPGVTPWKTTLPGVVNGANNPGIRIVFEYDRQNLQVDFIVTYLNLTYAN-KVSPRWEKEYRLTEAYQVPCSAQSMHDVVKKISNDSC---YLOKYKYNVSVSYDLSEACNKRCDVHVCAIREVDFN 450
D.rerio        HHHHDSFRMFYNSKGSPIASAMFITPGVTPWITTLPGVIDGGNPPGIRIFEYDRTKLLVKDIIITYLNLTYAN-IARARWEKEYRLTEAFRVPDASPASMRVMERISSEK---SLOKYFELNSVSYDLSECHADCRVDHVCAIREVDYD 450
S.purpuratus   HHHYDSFRILYDDTGLPINALYVQPSVTPROTPAP-----RNPFSFRMVTYDRDTGDIIDIHQYLLDISMDK---PTWELEYRATEAYNIADLSPVSLDQLVDFKFSSEESPDPAFERYYLNTVMASAGEDEDCRKLHICAITKLDIP 450
C.gigas        FGHEHGTFKILSNLDEPE-RLNYPPSVTPWKQNSPRTGPK-----MMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVGI 450
S.kowalevskii  SLVADMMSLVDDMMSLVDDMMMLVDNMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVDDMMSLVGI 450
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400.....410.....420.....430.....440.....450
    
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H.sapiens      AVTTCLYASG--TPVPQLPLLLMALLG---LCTLVL- 488
M.musculus     TYATCLHGLG--AKLVPGFLLILLLPS---LHVLEVL 488
X.tropicalis   KYKECVKTES--SIRHMFELTVLFIVMPVYFFTFDL 488
D.rerio        AVERCVLKEGGSSNAPVLFILFSLMLS---LWLSL-- 488
S.purpuratus   EYEDCIAGSG---NVVRGSLRTVILLFVRLWQSLMS- 488
C.gigas        ----- 488
S.kowalevskii ----- 488
.....460.....470.....480.....
    
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