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>Mus_musculus      MATRPQPLGMEPEGSADLLHGPEGARGQYGSTQKIEDLMDMVKKLQKVGSLPEFRIEVLINRINEVQQAKKKASEELGEAQTVWVNDNLQKEL
>Homo_sapiens     --MAGRSLTSKAEPTAGAVDRAEKAGGQDTSQKIEDLMEMVQKLQKVGSLPEFRIEVLINRINEVQQAKKKANKDLGEARTICEALQKEL
>Canis_lupus      -----MVKKLQKAGSLPEFRIEVLINRINEVQQAKKKASEELGEARTVWEALQKEM
>Monodelphis_domestica -----GGGPDSSRNLEPFRIEGMINRINELQQAKKANKELCETQAHRSQKEL
>Sarcophilus_harrisii -----KMEEMISIIISQLQAQRCTNEELQRNQLKMETLKEEL
>Macropus_eugenii -----RNPQFRLENMNRINELQQAKKIANKELCETQAHRSLEKEL
>Ornithorhynchus_anatinus -----MEKNQDQRSLGLMREKAMEHTEYKVEADLVMLVEKLOKAGTLEPFIEDLIKIKDLQVRKKNANEELKTRAHSEALQREL
>Anolis_carolinensis -----MAGAEGGIRRKTMEGNDPDPWDFSSKMEEIISLVKQMQNVKLEPFIEDLVKINKLQQAKKILSEELSEANEHSKSLQREL
>Pelodiscus_sinensis -----GTLEPFRMDDLVGRLRKLQRAKQALSQELQDSQARSKELQEEL
>Chelonia_mydas   -----MLFESNELPPSFASDICALHYAGTLEPFRMDDLVGRLSRQLQRAKQALSQELHEGQARSEELQAEEL
>Xenopus_tropicalis -----ESLTSLLRKLLEATDLEPKLEELLTDIKRVQEARCALSRLEQECREQGETAKREL
>Latimeria_chalumnae FELARVPLGGKAAAVGGLLFHPSGVRGNEESRLEEDLLKIVKELKQAGKTVPRIEELVKLKLQQLQKNAVDDEELCEARCREALQKEL
>Danio_rerio      -----MSELLESSFSIEDIIKT--SKSPDSRAELKPEELITQLRKLQVKKILEEEVTEVMLLKCARKEE
>Oryzias_latipes  -----MSTYSSLRQTNMNSQDQELQGSNNGNLMGKLRRLQGNRALGEIKELKLTSEALQKDL
>Oreochromis_niloticus -----MSDLEGFSDIEDMINVKPLRGGGELQEPKVEQLIGKLRLLKQKRALEEEIVKIKSVSDSLEKEL
>Ictalurus_punctatus -----TRPKPESTESSFNVEDVFRF--PQAPGREKDLKIEELLSKLRKLQVVKLVLEEEVKEALSICSTLRDED
>Branchiostoma_floridae (136)MDPDGMVALLDVFDREGVTPYMLFFKDLGLEEKFEGLVEARTMSVKEPFRVEDLLSVRELO-----
>Asterina_pectinifera -----KNCESSALVNFSCLAFAWNQLRSLLLVQECVMIHLIMGETTGFPTFGIDIKNISKDLQEEKERNERKLEARSKRRKLENKY
>Capitella_teleta -----DVRVDVIVNSLKEQLQERSNLDTKLNELRKRFRVVEKNV
>Crassostrea_gigas -----TRPMAGNSSTFRVDLLHSLKEIQEKNCLEHKLAEERRSRRELENLL
>Lottia_gigantea  -----MAAVEQNFRVETLLHNKELQNEKTCLQKLEQRKRKRAERHF
>Mytilus_californianus -----KKSYLEQKLNERNRRRQLEQEL
Consensus          : : *:*:*:::***:::***:::***:::***:::***:::***

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>Mus_musculus      DLLREKVRLEKIDILNRKEETLRIMQLHCQEKESERQK--HSQLQECKERISFLNSQIDKEKAKLRKLRLDFEHELETMSQHKDTLEFHF
>Homo_sapiens     DSLHGKVLHKEILSKQETLRILRLHCQEKESERHRK--HTMLQECKERISALNLQIEEEKNKQRQLRLAFEBEQLEDLMGQHKDLWDFH
>Canis_lupus      DLSLGEKVRLEKILNKKQETLRILRLHCQEKESERQK--HTMLQECKERISALNSQIEEEKNKQRQLRLDFEHELEDLMGQHKDLWKFH
>Monodelphis_domestica EELSLEEAQLKEILNKKQETLRILRLHCQEKETEALRQ--QAVSEGCKQRITELNSKIQEEKMKRRNQVVEFGQOLEEMMEKHKTLEWFEH
>Sarcophilus_harrisii DKLNLEMIQLEETLNMKQGTLLLLQERRREEEKALRQ--QTSMECLQNVATLNAKIQEEKLRKRKLRKEFEQOLEELMOKHKELMEFH
>Macropus_eugenii  DNLSEETQLEKILIKQETLRILHLHCQEKETEALRH--QTVSEGYKKRITELNLSKIQEEKLKKRNQRMVEFGEQLEEMMEKHKTLEWFEH
>Ornithorhynchus_anatinus DELNAEKAHLEELILNQKQETLMMRLQCEKQAEARQ--QEVSQGCKQRIEELTSKIQEEKLKQRKQRMVEFDQOLEEMMEKHKSLWFEH
>Anolis_carolinensis EKLNAEKSSLEIWNKEKETRVMQFHCEETIKRQWQ--QKLNLECKQRIEAVTAKIQAEKRRKQSKQRMVEFQLEELMEKHKLWELY
>Pelodiscus_sinensis EERCFHPPSWEEICSQKQELRLTLQLRSQETEAEGORLGC SGLTQERKQHIEELAAKIQEEKLKQRKHRLEFEQLLGELMGEHQSL----
>Chelonia_mydas   EELNKEKSNLEEICSQKQEVLRTLQLRCQETEVEMARQ--QTLSDQRKQSIIEELTAKIQEEKLKQRKQRYXXX-----
>Xenopus_tropicalis EELKAEKQLQEQTLTKNQET--LQLQECERKGAETRQ--KELSDCKQRIEGLTNRQIQEEKLKRMMQRLEYEKQVEELMAKHKDLWELY
>Latimeria_chalumnae DKLSAESFHLEETYNKKQETLQLLQFQYKERENEIKRQ--LNHSEGCKQRVEQITSQIQEEKLKRMMQRMEFEMQLEELMEKHKTSTWFEH
>Danio_rerio      DALAAEALKLEGTLNAAKEELNRSLLQKCEDLQLEARQ--LEQNHQKEELVKQYSFQIQETKLKRRKIRMKFENQLQQLTEQHKNSAVF
>Oryzias_latipes  DALQARTNQLEKDYKEKEELCRKLQFQYDKSEQDFERE--MKDHKMRKDLLEQYRCEIQEFKLRRKLRMRFENQLQHLMEKHKLHCVF
>Oreochromis_niloticus ENLQTKVVFLEAIHKEEETCRNKLQFQCESEQDSARQ--LQLNKKSEQLLEQYRYEIQDLKLRKLRMRFENQLHQLIDQHKNLHYVF
>Ictalurus_punctatus NALTAEILQGLQILSEKQETCRSLQFQKLEDLEQESQK--SELKQKQELVLYQYSQIQETKLRRKLRMRFENQLQQLIGHKNFCTLF
>Branchiostoma_floridae -KVSQQHRQISVLYNKMVETLKIATKHKVDQSQQMADNQ--EQVNQDKRASLETNLSIEQEVQRQRQYSREFESQLDELTDASHHAWLYF
>Asterina_pectinifera ETALSQKFNQATDTKAKMTDPLKVAQYKVDQSAAIQEG--QSINQEVKQRVSHLKDNCMEERRQEEBELLEGLASLTELPHMGKDFY
>Capitella_teleta  ESLTGRYLQHRDVSNSKLNQTQVAQQKVNNTQQAIDAL--QKQCHAASKENQQLVDQAERTKSEQEMEIMREFENQIVNMIKFKYAQVVFY
>Crassostrea_gigas DIENNKFTQMKEGHEKLEETMVAQLKETQTSQSMANRL--EESNQQRKKNIDELNRKLSAEKQKLQNVNFEKELADIANQLMNARTFY

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>Branchiostoma_floridae -----
>Asterina_pectinifera -----
>Capitella_teleta -----
>Crassostrea_gigas KLTTLKA-----
>Lottia_gigantea KLKESLE-----
>Mytilus_californianus LIEAI-----
Consensus          :: ::::
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Figure S1 Multiple alignment of SYCE1 homologues. Positions kept for phylogenetic inferences are indicated in red.