SANTA CRUZ BIOTECHNOLOGY, INC.

ELOVL2 siRNA (m): sc-62266

BACKGROUND

Elongation of very long chain fatty acid-like (ELOVL) proteins 1-6 are members of the ELO family of proteins, which play an important role in tissue-specific biosynthesis of very long chain fatty acids and sphingolipids. The ELOVL proteins act as elongases and catalyze fatty acid elongation reduction and localize to the endoplasmic reticulum (ER). Elongation of very long chain fatty acids protein 2 (ELOVL2), also referred to as Ssc2 (sequence similarity to Cig30 2), is the human homolog of the yeast ELO2 protein. It is abundantly expressed in the testis, kidney and liver. ELOVL2 participates in the elongation of polyunsaturated fatty acids of 20 and 22 carbons thereby regulating the activity of PPARα. It has a narrow substrate preference which includes arachidonic acid and eicosapentaenoic acid. In addition, the overexpression of ELOVL2 enhances the synthesis of triacyglycerol (TAG).

REFERENCES

1. Tvrdik, P., et al. 2000. Role of a new mammalian gene family in the biosynthesis of very long chain fatty acids and sphingolipids. J. Cell Biol. 149: 707-718.
2. Zhang, K., et al. 2001. A 5 bp deletion in ELOVL4 is associated with two related forms of autosomal dominant macular dystrophy. Nat. Genet. 27: 89-93.
3. Leonard, A.E., et al. 2002. Identification and expression of mammalian long-chain PUFA elongation enzymes. Lipids 37: 733-740.
4. Berger, A., et al. 2002. Dietary effects of arachidonate-rich fungal oil and fish oil on murine hepatic and hippocampal gene expression. Lipids Health Dis. 1: 2.
5. Pereira, S.L., et al. 2004. Identification of two novel microalgal enzymes involved in the conversion of the ω3-fatty acid, eicosapentaenoic acid, into docosahexaenoic acid. Biochem. J. 384: 357-366.
6. Agaba, M., et al. 2004. Zebrafish cDNA encoding multifunctional fatty acid elongase involved in production of eicosapentaenoic (20:5n-3) and docosahexaenoic (22:6n-3) acids. Mar. Biotechnol. 6: 251-261.
7. Wang, Y., et al. 2006. Regulation of hepatic fatty acid elongase and desaturase expression in diabetes and obesity. J. Lipid Res. 47: 2028-2041.

CHROMOSOMAL LOCATION

Genetic locus: Elovl2 (mouse) mapping to 13 A3.3.

PRODUCT

ELOVL2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ELOVL2 shRNA Plasmid (m): sc-62266-SH and ELOVL2 shRNA (m) Lentiviral Particles: sc-62266-V as alternate gene silencing products.

For independent verification of ELOVL2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62266A, sc-62266B and sc-62266C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ELOVL2 siRNA (m) is recommended for the inhibition of ELOVL2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ELOVL2 gene expression knockdown using RT-PCR Primer: ELOVL2 (m)-PR: sc-62266-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.