

ELOVL6 siRNA (m): sc-62272

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 catalysts in fatty acid elongation reduction and localize to the endoplasmic reticulum (ER). ELOVL6 (elongation of very long chain fatty acids protein 6), also known as fatty acid elongase 2, LCE (long-chain fatty-acyl elongase), FACE (fatty acyl-CoA elongase) or FAE, is a 265 amino acid multi-pass membrane protein that localizes to endoplasmic reticulum and mitochondria. A fatty acid elongase with specificity for C12-C16 saturated and monounsaturated fatty acids, ELOVL6 is implicated in Insulin sensitivity and energy metabolism, and is therefore considered a potential target for metabolic diseases including cardiovascular disease and diabetes.

REFERENCES

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2. Moon, Y.A., et al. 2001. Identification of a mammalian long chain fatty acyl elongase regulated by sterol regulatory element-binding proteins. *J. Biol. Chem.* 276: 45358-45366.
3. Matsuzaka, T., et al. 2002. Cloning and characterization of a mammalian fatty acyl-CoA elongase as a lipogenic enzyme regulated by SREBPs. *J. Lipid Res.* 43: 911-920.
4. Jakobsson, A., et al. 2006. Fatty acid elongases in mammals: their regulation and roles in metabolism. *Prog. Lipid Res.* 45: 237-249.
5. Matsuzaka, T., et al. 2007. Crucial role of a long-chain fatty acid elongase, ELOVL6, in obesity-induced Insulin resistance. *Nat. Med.* 13: 1193-1202.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611546. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Lu, Y., et al. 2008. Multiple genetic variants along candidate pathways influence plasma high-density lipoprotein cholesterol concentrations. *J. Lipid Res.* 49: 2582-2589.

CHROMOSOMAL LOCATION

Genetic locus: Elov6 (mouse) mapping to 3 G3.

PRODUCT

ELOVL6 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ELOVL6 shRNA Plasmid (m): sc-62272-SH and ELOVL6 shRNA (m) Lentiviral Particles: sc-62272-V as alternate gene silencing products.

For independent verification of ELOVL6 (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-62272A, sc-62272B and sc-62272C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ELOVL6 siRNA (m) is recommended for the inhibition of ELOVL6 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 μ M in 66 μ l. 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 ELOVL6 gene expression knockdown using RT-PCR Primer: ELOVL6 (m)-PR: sc-62272-PR (20 μ l, 353 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chu, X., et al. 2013. Sterol regulatory element-binding protein-1c mediates increase of postprandial stearic acid, a potential target for improving Insulin resistance, in hyperlipidemia. *Diabetes* 62: 561-571.

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.