SANTA CRUZ BIOTECHNOLOGY, INC.

ELOVL5 siRNA (m): sc-62270

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). Elongation of very long chain fatty acids protein 5 (ELOVL5), also known as HELO1 (human elongase 1), is predominantly expressed in adrenal gland and testis, but is also found in lung, brain and prostate tissue. ELOVL5 participates in the elongation of monounsaturated and polyunsaturated fatty acids of 18 to 20 carbons and thereby regulates the activity of PPARα. In addition, ELOVL5 localizes to the sebaceous glands of the pheromone-producing region of skin and may be associated with pheromone production and regulation.

REFERENCES

1. Leonard, A.E., et al. 2001. Cloning of a human cDNA encoding a novel enzyme involved in the elongation of long-chain polyunsaturated fatty acids. Biochem. J. 350: 765-770.
2. Inagaki, K., et al. 2002. Identification and expression of a rat fatty acid elongase involved in the biosynthesis of C18 fatty acids. Biosci. Biotechnol. Biochem. 66: 613-621.
3. Leonard, A.E., et al. 2002. Identification and expression of mammalian long-chain PUFA elongation enzymes. Lipids 37: 733-740.
4. Mamalakis, G., et al. 2004. Depression and adipose polyunsaturated fatty acids in an adolescent group. Prostaglandins Leukot. Essent. Fatty Acids 71: 289-294.
5. Barragan, I., et al. 2005. Mutation screening of three candidate genes, ELOVL5, SMAP1 and GLULD1 in autosomal recessive retinitis pigmentosa. Int. J. Mol. Med. 16: 1163-1167.
6. Jakobsson, A., et al. 2006. Fatty acid elongases in mammals: their regulation and roles in metabolism. Prog. Lipid Res. 45: 237-249.

CHROMOSOMAL LOCATION

Genetic locus: Elovl5 (mouse) mapping to 9 E1.

PRODUCT

ELOVL5 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 ELOVL5 shRNA Plasmid (m): sc-62270-SH and ELOVL5 shRNA (m) Lentiviral Particles: sc-62270-V as alternate gene silencing products.

For independent verification of ELOVL5 (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-62270A, sc-62270B and sc-62270C.

PROTOCOLS

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

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

ELOVL5 siRNA (m) is recommended for the inhibition of ELOVL5 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.

GENE EXPRESSION MONITORING

ELOVL5 (E-10): sc-398653 is recommended as a control antibody for monitoring of ELOVL5 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ELOVL5 gene expression knockdown using RT-PCR Primer: ELOVL5 (m)-PR: sc-62270-PR (20 µl, 402 bp). 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.