SANTA CRUZ BIOTECHNOLOGY, INC.

ELOVL3 siRNA (m): sc-62268

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 3 (ELOVL3), also known as Cig30 (cold-inducible glycoprotein of 30 kDa), is expressed in brown adipose tissue, liver, sebaceous glands of skin and epithelial cells of the hair follicles. It participates in the elongation of saturated and monounsaturated fatty acids of up to 24 carbons. ELOVL3 plays a role in the formation of neutral lipids that are required for proper function of the skin. In response to cold exposure, ELOVL3 is significantly upregulated and is important for lipid accumulation during the recruitment process of brown adipose tissue.

REFERENCES

1. Tvrdik, P., et al. 1999. Cig30 and Pitx3 genes are arranged in a partially overlapping tail-to-tail array resulting in complementary transcripts. J. Biol. Chem. 274: 26387-26392.
2. 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.
3. Westerberg, R., et al. 2004. Role for ELOVL3 and fatty acid chain length in development of hair and skin function. J. Biol. Chem. 279: 5621-5629.
4. Jakobsson, A., et al. 2005. Differential regulation of fatty acid elongation enzymes in brown adipocytes implies a unique role for ELOVL3 during increased fatty acid oxidation. Am. J. Physiol. Endocrinol. Metab. 289: E517-E526.
5. Anzulovich, A., et al. 2006. ELOVL3: a model gene to dissect homeostatic links between the circadian clock and nutritional status. J. Lipid Res. 47: 2690-2700.
6. Westerberg, R., et al. 2006. ELOVL3 is an important component for early onset of lipid recruitment in brown adipose tissue. J. Biol. Chem. 281: 4958-4968.

CHROMOSOMAL LOCATION

Genetic locus: Elovl3 (mouse) mapping to 19 C3.

PRODUCT

ELOVL3 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 ELOVL3 shRNA Plasmid (m): sc-62268-SH and ELOVL3 shRNA (m) Lentiviral Particles: sc-62268-V as alternate gene silencing products.

For independent verification of ELOVL3 (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-62268A, sc-62268B and sc-62268C.

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

ELOVL3 siRNA (m) is recommended for the inhibition of ELOVL3 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 ELOVL3 gene expression knockdown using RT-PCR Primer: ELOVL3 (m)-PR: sc-62268-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.