

Degs1 siRNA (m): sc-142987

BACKGROUND

Members of the fatty acid desaturase (FADS) family regulate the desaturation of fatty acids by introducing double bonds between defined carbons of fatty acyl chains, thereby playing an essential role in the lipid metabolic pathway. Members of this family share N-terminal cytochrome b5-like domains, C-terminal multiple membrane-spanning desaturase regions and three histidine box motifs. FADS7, known as Degs1 (degenerative spermatocyte homolog 1, lipid desaturase) in rodents, is a 323 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum and belongs to the FADS family. Expressed ubiquitously, FADS7 exhibits sphingolipid- δ -4-desaturase activity and is able to convert D-erythro-sphinganine to D-erythro-sphingosine. The gene encoding FADS7 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome.

REFERENCES

1. Cadena, D.L., et al. 1997. The product of the MLD gene is a member of the membrane fatty acid desaturase family: overexpression of MLD inhibits EGF receptor biosynthesis. *Biochemistry* 36: 6960-6967.
2. Marquardt, A., et al. 2000. cDNA cloning, genomic structure, and chromosomal localization of three members of the human fatty acid desaturase family. *Genomics* 66: 175-183.
3. Ternes, P., et al. 2002. Identification and characterization of a sphingolipid δ 4-desaturase family. *J. Biol. Chem.* 277: 25512-25518.
4. Martinelli, N., et al. 2008. FADS genotypes and desaturase activity estimated by the ratio of arachidonic acid to linoleic acid are associated with inflammation and coronary artery disease. *Am. J. Clin. Nutr.* 88: 941-949.
5. Malerba, G., et al. 2008. SNPs of the FADS gene cluster are associated with polyunsaturated fatty acids in a cohort of patients with cardiovascular disease. *Lipids* 43: 289-299.

CHROMOSOMAL LOCATION

Genetic locus: Degs1 (mouse) mapping to 1 H5.

PRODUCT

Degs1 siRNA (m) is a target-specific 19-25 nt siRNA 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 Degs1 shRNA Plasmid (m): sc-142987-SH and Degs1 shRNA (m) Lentiviral Particles: sc-142987-V as alternate gene silencing 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 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

Degs1 siRNA (m) is recommended for the inhibition of Degs1 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.

GENE EXPRESSION MONITORING

FADS7 (NB-B10): sc-134338 is recommended as a control antibody for monitoring of Degs1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Degs1 gene expression knockdown using RT-PCR Primer: Degs1 (m)-PR: sc-142987-PR (20 μ l). 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.