SANTA CRUZ BIOTECHNOLOGY, INC.

MBOAT5 siRNA (h): sc-95749

BACKGROUND

MBOAT5 (membrane-bound O-acyltransferase domain-containing protein 5), also known as lysophosphatidylcholine acyltransferase 3 (LPCAT3), lysophospholipid acyltransferase 5 (LPLAT 5), 1-acylglycerophosphocholine O-acyltransferase, C3F, OACT5 or nessy, is a 487 amino acid multi-pass membrane protein of the endoplasmic reticulum that belongs to the membrane-bound acyltransferase family. As an acyltransferase, MBOAT5 aids in the conversion of lysophosphatidylcholine into phosphatidylcholine, lysophosphatidylserine into phosphatidylserine, and participates in the Lands cycle by catalyzing reacylation of phospholipid remodeling. Encoded by a gene located on human chromosome 12, MBOAT5 is highly expressed in liver, adipose tissue and pancreas, with lower levels found in skeletal muscle and heart.

REFERENCES

1. Maurel-Zaffran, C., et al. 1999. Nessy, an evolutionary conserved gene controlled by Hox proteins during *Drosophila* embryogenesis. Mech. Dev. 86: 159-163.
2. Matsuda, S., et al. 2008. Member of the membrane-bound O-acyltransferase (MBOAT) family encodes a lysophospholipid acyltransferase with broad substrate specificity. Genes Cells 13: 879-888.
3. Kazachkov, M., et al. 2008. Substrate preferences of a lysophosphatidylcholine acyltransferase highlight its role in phospholipid remodeling. Lipids 43: 895-902.
4. Hishikawa, D., et al. 2008. Discovery of a lysophospholipid acyltransferase family essential for membrane asymmetry and diversity. Proc. Natl. Acad. Sci. USA 105: 2830-2835.
5. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 611950. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Jain, S., et al. 2009. Characterization of human lysophospholipid acyltransferase 3. J. Lipid Res. 50: 1563-1570.
7. Pérez-Chacón, G., et al. 2010. Signaling role for lysophosphatidylcholine acyltransferase 3 in receptor-regulated arachidonic acid reacylation reactions in human monocytes. J. Immunol. 184: 1071-1078.

CHROMOSOMAL LOCATION

Genetic locus: LPCAT3 (human) mapping to 12p13.31.

PRODUCT

MBOAT5 siRNA (h) 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 MBOAT5 shRNA Plasmid (h): sc-95749-SH and MBOAT5 shRNA (h) Lentiviral Particles: sc-95749-V as alternate gene silencing products.

For independent verification of MBOAT5 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-95749A, sc-95749B and sc-95749C.

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

MBOAT5 siRNA (h) is recommended for the inhibition of MBOAT5 expression in human 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 MBOAT5 gene expression knockdown using RT-PCR Primer: MBOAT5 (h)-PR: sc-95749-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Taniguchi, K., et al. 2015. Essential role of lysophosphatidylcholine acyltransferase 3 in the induction of macrophage polarization in PMA-treated U937 cells. J. Cell. Biochem. 116: 2840-2848.

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.