

LPCAT2 siRNA (h): sc-93397

BACKGROUND

LPCAT2 (lysophosphatidylcholine acyltransferase 2), also known as Acetyl-CoA:lyso-PAF acetyltransferase (lysoPAFAT) or acyltransferase-like 1 (AYTL1), is a 544 amino acid protein that belongs to the 1-acyl-sn-glycerol-3-phosphate acyltransferase family. As a single-pass type II endoplasmic reticulum and Golgi apparatus membrane protein, LPCAT2 is involved in lipid and phospholipid metabolism. LPCAT2 has both acyltransferase and acetyltransferase activities that are calcium-dependent. LPCAT2 is known to play a role in PAF biosynthesis by catalyzing the conversion of the PAF precursor, lyso-PAF into PAF. LPCAT2 also has the ability to convert lyso-PAF to 1-alkyl-phosphatidylcholine (PC), which is a major component of cell membranes and a PAF precursor. During a resting state, LPCAT2 acyltransferase activity is preferred. Following acute inflammatory stimulus by LPS, acetyltransferase activity is enhanced and PAF synthesis increases.

REFERENCES

- Shindou, H., et al. 2007. A single enzyme catalyzes both platelet-activating factor production and membrane biogenesis of inflammatory cells. Cloning and characterization of acetyl-CoA:LYSO-PAF acetyltransferase. *J. Biol. Chem.* 282: 6532-6539.
- Talmud, P.J., et al. 2009. Gene-centric association signals for lipids and apolipoproteins identified via the HumanCVD BeadChip. *Am. J. Hum. Genet.* 85: 628-642.
- Bailey, S.D., et al. 2010. Variation at the NFATC2 locus increases the risk of thiazolidinedione-induced edema in the Diabetes REduction Assessment with ramipril and rosiglitazone Medication (DREAM) study. *Diabetes Care* 33: 2250-2253.
- Agarwal, A.K. and Garg, A. 2010. Enzymatic activity of the human 1-acylglycerol-3-phosphate-O-acyltransferase isoform 11: upregulated in breast and cervical cancers. *J. Lipid Res.* 51: 2143-2152.
- Casabonne, D., et al. 2011. Single nucleotide polymorphisms of matrix metalloproteinase 9 (MMP9) and tumor protein 73 (TP73) interact with Epstein-Barr virus in chronic lymphocytic leukemia: results from the European case-control study EpiLymph. *Haematologica* 96: 323-327.

CHROMOSOMAL LOCATION

Genetic locus: LPCAT2 (human) mapping to 16q12.2.

PRODUCT

LPCAT2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LPCAT2 shRNA Plasmid (h): sc-93397-SH and LPCAT2 shRNA (h) Lentiviral Particles: sc-93397-V as alternate gene silencing products.

For independent verification of LPCAT2 (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-93397A, sc-93397B and sc-93397C.

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

LPCAT2 siRNA (h) is recommended for the inhibition of LPCAT2 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 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

LPCAT2 (H-7): sc-514354 is recommended as a control antibody for monitoring of LPCAT2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 LPCAT2 gene expression knockdown using RT-PCR Primer: LPCAT2 (h)-PR: sc-93397-PR (20 μ l, 268 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.

PROTOCOLS

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