SANTA CRUZ BIOTECHNOLOGY, INC.

LPAAT-α siRNA (m): sc-75693

BACKGROUND

Phosphatidic acid and lysophosphatidic acid are phospholipids involved in lipid biosynthesis and signal transduction. LPAAT-α (lysophosphatidic acid acyltransferase α), also designated 1-acylglycerol-3-phosphate O-acyltransferase 1 (AGPAT1), catalyzes the synthesis of phosphatidic acid from lysophosphatidic acid by incorporating an acyl moiety at the sn-2 position of the glycerol backbone. LPAAT-α is a membrane-bound protein belonging to the LPAAT family. Members of the LPAAT family have a well-known role in lipid biosynthesis and may also play a role in tumor progression. LPAAT-α is widely expressed with highest expression in skeletal muscle.

REFERENCES

1. West, J., et al. 1997. Cloning and expression of two human lysophosphatidic acid acyltransferase cDNAs that enhance cytokine-induced signaling responses in cells. DNA Cell Biol. 16: 691-701.
2. Aguado, B. and Campbell, R.D. 1998. Characterization of a human lysophosphatidic acid acyltransferase that is encoded by a gene located in the class III region of the human major histocompatibility complex. J. Biol. Chem. 273: 4096-4105.
3. Bursten, S.L. 1998. Interaction of lipopolysaccharide with a mammalian lysophosphatidate acyltransferase (LPAAT) transfected into *E. coli*, and effect of lisofylline on LPAAT transfected into mammalian cells. Prog. Clin. Biol. Res. 397: 345-356.
4. Leung, D.W. 2001. The structure and functions of human lysophosphatidic acid acyltransferases. Front. Biosci. 6: D944-D953.
5. Yamashita, A., et al. 2007. Topology of acyltransferase motifs and substrate specificity and accessibility in 1-acyl-sn-glycero-3-phosphate acyltransferase 1. Biochim. Biophys. Acta 1771: 1202-1215.
6. Kumar, K.G. and Smith Richards, B.K. 2008. Transcriptional profiling of chromosome 17 quantitative trait loci for carbohydrate and total calorie intake in a mouse congenic strain reveals candidate genes and pathways. J. Nutrigenet. Nutrigenomics 1: 155-171.

CHROMOSOMAL LOCATION

Genetic locus: Agpat1 (mouse) mapping to 17 B1.

PRODUCT

LPAAT-α 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 LPAAT-α shRNA Plasmid (m): sc-75693-SH and LPAAT-α shRNA (m) Lentiviral Particles: sc-75693-V as alternate gene silencing products.

For independent verification of LPAAT-α (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-75693A, sc-75693B and sc-75693C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

LPAAT-α siRNA (m) is recommended for the inhibition of LPAAT-α 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 LPAAT-α gene expression knockdown using RT-PCR Primer: LPAAT-α (m)-PR: sc-75693-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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