SANTA CRUZ BIOTECHNOLOGY, INC.

LPAAT-ζ siRNA (h): sc-75689

BACKGROUND

Phosphatidic acid and lysophosphatidic acid are phospholipids involved in lipid biosynthesis and signal transduction. LPAAT-ζ (lysophosphatidic acid acyltransferase ζ), also designated 1-acylglycerol-3-phosphate O-acyltransferase 6 (AGPAT6) or Glycerol-3-phosphate acyltransferase 4 (GPAT4), esterifies the acyl-group from acyl-ACP to the sn-1 position of glycerol-3-phosphate, an essential step in glycerolipid biosynthesis. LPAAT-ζ 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-ζ is ubiquitously expressed with highest expression in skeletal muscle, heart and testis. LPAAT-ζ also plays a role in the production of triglycerides in adipose tissue, liver and mammary glands.

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. Beigneux, A.P., et al. 2006. AGPAT6—a novel lipid biosynthetic gene required for triacylglycerol production in mammary epithelium. J. Lipid Res. 47: 734-744.
6. Vergnes, L., et al. 2006. AGPAT6 deficiency causes subdermal lipodystrophy and resistance to obesity. J. Lipid Res. 47: 745-754.
7. Chen, Y.Q., et al. 2008. AGPAT6 is a novel microsomal glycerol-3-phosphate acyltransferase. J. Biol. Chem. 283: 10048-10057.

CHROMOSOMAL LOCATION

Genetic locus: AGPAT6 (human) mapping to 8p11.21.

PRODUCT

LPAAT-ζ 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 LPAAT-ζ shRNA Plasmid (h): sc-75689-SH and LPAAT-ζ shRNA (h) Lentiviral Particles: sc-75689-V as alternate gene silencing products.

For independent verification of LPAAT-ζ (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-75689A, sc-75689B and sc-75689C.

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-ζ siRNA (h) is recommended for the inhibition of LPAAT-ζ 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 LPAAT-ζ gene expression knockdown using RT-PCR Primer: LPAAT-ζ (h)-PR: sc-75689-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.