

LPAAT- ζ siRNA (m): sc-75691

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

- 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.
- 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.
- 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.
- Leung, D.W. 2001. The structure and functions of human lysophosphatidic acid acyltransferases. *Front. Biosci.* 6: D944-D953.
- 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.
- Vergnes, L., et al. 2006. Agpat6 deficiency causes subdermal lipodystrophy and resistance to obesity. *J. Lipid Res.* 47: 745-754.
- 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 (mouse) mapping to 8 A2.

PRODUCT

LPAAT- ζ 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LPAAT- ζ shRNA Plasmid (m): sc-75691-SH and LPAAT- ζ shRNA (m) Lentiviral Particles: sc-75691-V as alternate gene silencing products.

For independent verification of LPAAT- ζ (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-75691A, sc-75691B and sc-75691C.

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

LPAAT- ζ siRNA (m) is recommended for the inhibition of LPAAT- ζ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LPAAT- ζ gene expression knockdown using RT-PCR Primer: LPAAT- ζ (m)-PR: sc-75691-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.