SANTA CRUZ BIOTECHNOLOGY, INC.

LYCAT siRNA (m): sc-149170

BACKGROUND

LYCAT (lysocardiolipin acyltransferase), also known as AGPAT8, ALCAT1 or 1-AGPAT 8, is a 414 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum and plays an important role in phospholipid metabolism. Highly expressed in kidney and heart with lower expression in spleen, brain, liver, placenta and small intestine, LYCAT specifically catalyzes the acyl-CoA-dependent conversion of substrates, such as monolysocardiolipin and dilysocardiolipin, to their diacylated form, thereby playing an important role in hematopoietic stem cell development. In addition, LYCAT functions as a remodeling enzyme for cardiolipin (an essential membrane polyglycerophospholipid) and exhibits catalytic activity toward lysophosphatidic acid (LPA), converting it to phosphatidic acid (PA). Two isoforms of LYCAT exist due to alternative splicing events.

REFERENCES

1. Clark, H.F., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. Genome Res. 13: 2265-2270.
2. Cao, J., et al. 2004. A novel cardiolipin-remodeling pathway revealed by a gene encoding an endoplasmic reticulum-associated acyl-CoA:lysocardiolipin acyltransferase (ALCAT1) in mouse. J. Biol. Chem. 279: 31727-31734.
3. Agarwal, A.K., et al. 2006. Functional characterization of human 1-acylglycerol-3-phosphate acyltransferase isoform 8: cloning, tissue distribution, gene structure, and enzymatic activity. Arch. Biochem. Biophys. 449: 64-76.
4. 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.
5. Wang, C., et al. 2007. Mouse lysocardiolipin acyltransferase controls the development of hematopoietic and endothelial lineages during *in vitro* embryonic stem-cell differentiation. Blood 110: 3601-3609.

CHROMOSOMAL LOCATION

Genetic locus: Lclat1 (mouse) mapping to 17 E2.

PRODUCT

LYCAT 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 LYCAT shRNA Plasmid (m): sc-149170-SH and LYCAT shRNA (m) Lentiviral Particles: sc-149170-V as alternate gene silencing products.

For independent verification of LYCAT (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-149170A, sc-149170B and sc-149170C.

PROTOCOLS

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

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

LYCAT siRNA (m) is recommended for the inhibition of LYCAT 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 LYCAT gene expression knockdown using RT-PCR Primer: LYCAT (m)-PR: sc-149170-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.