SANTA CRUZ BIOTECHNOLOGY, INC.

LPGAT1 siRNA (h): sc-78964

BACKGROUND

LPGAT1, also known as acyl-CoA:lysophosphatidylglycerol acyltransferase 1, is a 370 amino acid multi-pass membrane protein that belongs to the 1-acyl-sn-glycerol-3-phosphate acyltransferase family. While it demonstrates a clear preference for long chain saturated fatty acyl-CoAs and oleoyl-CoA as acyl donors, LPGAT1 acts as a lysophoshatidylglycerol (LPG) specific acyltransferase that recognizes various acyl-CoAs and LPGs as substrates. LPGAT1 prefers oleoyl-LPG over palmitoyl-LPG as an acyl receptor and oleoyl-CoA over lauroyl-CoA as an acyl donor. Expressed at high levels in liver, placenta, peripheral blood, lung, kidney and brain, LPGAT1 is expressed at lower levels in colon. LPGAT1 contains an HXXXXD motif, which is essential for acyltransferase activity and may constitute the binding site for the phosphate moiety of the glycerol-3-phosphate. The gene that encodes LPGAT1 consists of approximately 87,316 bases and maps to human chromosome 1q32.3.

REFERENCES

1. Tayebi, N., et al. 2001. Gaucher disease and parkinsonism: a phenotypic and genotypic characterization. Mol. Genet. Metab. 73: 313-321.
2. Plasilova, M., et al. 2004. Exclusion of an extracolonic disease modifier locus on chromosome 1p33-36 in a large Swiss familial adenomatous polyposis kindred. Eur. J. Hum. Genet. 12: 365-371.
3. Yang, Y., et al. 2004. Identification and characterization of a gene encoding human LPGAT1, an endoplasmic reticulum-associated lysophosphatidylglycerol acyltransferase. J. Biol. Chem. 279: 55866-55874.
4. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610473. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Betarbet, R., et al. 2008. Fas-associated factor 1 and Parkinson's disease. Neurobiol. Dis. 31: 309-315.
6. Holliday, E.G., et al. 2009. Strong evidence for a novel schizophrenia risk locus on chromosome 1p31.1 in homogeneous pedigrees from Tamil Nadu, India. Am. J. Psychiatry 166: 206-215.
7. Yokoi, T., et al. 2009. Analysis of the vitreous membrane in a case of type 1 Stickler syndrome. Graefes Arch. Clin. Exp. Ophthalmol. 247: 715-718.

CHROMOSOMAL LOCATION

Genetic locus: LPGAT1 (human) mapping to 1q32.3.

PRODUCT

LPGAT1 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 LPGAT1 shRNA Plasmid (h): sc-78964-SH and LPGAT1 shRNA (h) Lentiviral Particles: sc-78964-V as alternate gene silencing products.

For independent verification of LPGAT1 (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-78964A, sc-78964B and sc-78964C.

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

LPGAT1 siRNA (h) is recommended for the inhibition of LPGAT1 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 LPGAT1 gene expression knockdown using RT-PCR Primer: LPGAT1 (h)-PR: sc-78964-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.