SANTA CRUZ BIOTECHNOLOGY, INC.

LPD lipase siRNA (h): sc-91389

BACKGROUND

The Lipase family belongs to one of the most robust genetic superfamilies found in living organisms which includes esterases and thioesterases. Lipase gene products are related by tertiary structure rather than primary amino acid sequence. LPD lipase, also designated lipase member I precursor or membrane-associated phosphatidic acid-selective phospholipase A1-β (mPA-PLA1 β), functions in the hydrolysis of phosphatidic acid (PA) to produce lysophosphatidic acid (LPA), both of which are involved in lipid biosynthesis and signal transduction. LPD lipase is a secreted protein expressed in testis. Two isoforms exist for LPD lipase due to alternative splicing. The first isoform represents the major form of the protein while the second isoform contains a unique 23 amino acid sequence at the N-terminus in place of the 13 amino acid sequence of the major form. Defects in LPD lipase may cause susceptibility to familial hypertrigliceridemia, a common inherited disorder in which the concentration of very low density lipoprotein (VLDL) is elevated in the plasma. Familial hypertrigliceridemia can increase the risk of heart disease, obesity and pancreatitis.

REFERENCES

1. Chang, S.W., et al. 2006. Codon optimization of *Candida rugosa* lip1 gene for improving expression in *Pichia pastoris* and biochemical characterization of the purified recombinant LIP1 lipase. J. Agric. Food Chem. 54: 815-822.
2. Brunke, S. and Hube, B. 2006. MfLIP1, a gene encoding an extracellular lipase of the lipid-dependent fungus *Malassezia furfur.* Microbiology 152: 547-554.
3. Deb, C., et al. 2006. A novel lipase belonging to the hormone-sensitive lipase family induced under starvation to utilize stored triacylglycerol in *Mycobacterium tuberculosis*. J. Biol. Chem. 281: 3866-3875.

CHROMOSOMAL LOCATION

Genetic locus: LIPI (human) mapping to 21q11.2.

PRODUCT

LPD lipase 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 LPD lipase shRNA Plasmid (h): sc-91389-SH and LPD lipase shRNA (h) Lentiviral Particles: sc-91389-V as alternate gene silencing products.

For independent verification of LPD lipase (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-91389A, sc-91389B and sc-91389C.

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.

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

LPD lipase siRNA (h) is recommended for the inhibition of LPD lipase 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 LPD lipase gene expression knockdown using RT-PCR Primer: LPD lipase (h)-PR: sc-91389-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.