SANTA CRUZ BIOTECHNOLOGY, INC.

LYPLA2 siRNA (h): sc-78672

BACKGROUND

The multifunctional lysophospholipids (detergent-like intermediates) found in various biological membranes are regulated by the enzymatic activity of lysophospholipases. Increased levels of lysophospholipids are associated with a host of diseases, including hyperlipidemia and atherosclerosis. LYPLA1 (lysophospholipase 1), also known as APT1 or LPL1, and LYPLA2 (lysophospholipase 2) are lysophospholipases that localize to the cytoplasm and belong to the AB hydrolase 2 family. Both LYPLA1 and LYPLA2 function to enzymatically hydrolyze fatty acids from S-acetylated cysteine residues on a variety of monomeric and micellar substrates, such as H-Ras. Due to their ability to catalytically regulate the overall concentration of lysophospholipids in cellular membranes, LYPLA1 and LYPLA2 may play a crucial role in the development of lysophospholipid-associated disorders. LYPLA1 and LYPLA2 exist as multiple alternatively spliced isoforms that are expressed in tissues throughout the body.

REFERENCES

1. Bohn, E., Gerke, V., Kresse, H., Löffler, B.M. and Kunze, H. 1992. Annexin II inhibits calcium-dependent phospholipase A1 and lysophospholipase but not triacyl glycerol lipase activities of rat liver hepatic lipase. FEBS Lett. 296: 237-240.
2. Wang, A., Yang, H.C., Friedman, P., Johnson, C.A. and Dennis, E.A. 1999. A specific human lysophospholipase: cDNA cloning, tissue distribution and kinetic characterization. Biochim. Biophys. Acta 1437: 157-169.
3. Wang, A. and Dennis, E.A. 1999. Mammalian lysophospholipases. Biochim. Biophys. Acta 1439: 1-16.
4. Wang, A., Johnson, C.A., Jones, Y., Ellisman, M.H. and Dennis, E.A. 2000. Subcellular localization and PKC-dependent regulation of the human lysophospholipase A/acyl-protein thioesterase in WISH cells. Biochim. Biophys. Acta 1484: 207-214.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605599. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: LYPLA2 (human) mapping to 1p36.11.

PRODUCT

LYPLA2 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 LYPLA2 shRNA Plasmid (h): sc-78672-SH and LYPLA2 shRNA (h) Lentiviral Particles: sc-78672-V as alternate gene silencing products.

For independent verification of LYPLA2 (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-78672A, sc-78672B and sc-78672C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

LYPLA2 siRNA (h) is recommended for the inhibition of LYPLA2 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.

GENE EXPRESSION MONITORING

LYPLA2 (B-12): sc-390546 is recommended as a control antibody for monitoring of LYPLA2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LYPLA2 gene expression knockdown using RT-PCR Primer: LYPLA2 (h)-PR: sc-78672-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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