SANTA CRUZ BIOTECHNOLOGY, INC.

Perilipin siRNA (m): sc-61323

BACKGROUND

The PAT (Perilipin, adipophilin, TIP47) family proteins are evoluntionary related proteins associated with lipid droplets and implicated in intracellular lipid metabolism. The phosphoprotein Perilipin (Peri), also designated lipid droplet-associated protein, belongs to the Perilipin subfamily of proteins. Perilipin localizes on the surface of intracellular lipid droplets within adipocytes, where it protects lipid storage droplets by coating them in adipocytes until they are digested by hormone sensitive lipase (HSL), thereby modulating adipocyte lipid metabolism. As a critical regulator of lipolysis, elevated Perilipin levels have been linked to obesity, as the absence results in leanness. In its phosphorylated state, Perilipin is maximally sensitive to HSL.

REFERENCES

1. Qi, L., et al. 2004. Gender-specific association of a Perilipin gene haplotype with obesity risk in a white population. Obes. Res. 12: 1758-1765.
2. Tansey, J.T., et al. 2004. The central role of Perilipin a in lipid metabolism and adipocyte lipolysis. IUBMB Life 56: 379-385.
3. Qi, L., et al. 2005. Intragenic linkage disequilibrium structure of the human Perilipin gene (PLIN) and haplotype association with increased obesity risk in a multiethnic Asian population. J. Mol. Med. 83: 448-56.
4. Meadows, J.W., et al. 2005. Expression and localization of adipophilin and Perilipin in human fetal membranes: association with lipid bodies and enzymes involved in prostaglandin synthesis. J. Clin. Endocrinol. Metab. 90: 2344-2350.
5. Adler-Wailes, D.C., et al. 2005. Effects of the human immunodeficiency virus-protease inhibitor, ritonavir, on basal and catecholamine-stimulated lipolysis. J. Clin. Endocrinol. Metab. 90: 3251-3261.
6. Robenek, H., et al. 2005. PAT family proteins pervade lipid droplet cores. J. Lipid Res. 46: 1331-1338.
7. Wolins, N.E., et al. 2005. S3-12, Adipophilin, and TIP47 package lipid in adipocytes. J. Biol. Chem. 280: 19146-19155.
8. Sengenes, C., et al. 2005. Natriuretic peptides: a new lipolytic pathway in human fat cells. Med. Sci. 21: 61-65.

CHROMOSOMAL LOCATION

Genetic locus: Plin1 (mouse) mapping to 7 D3.

PRODUCT

Perilipin 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 Perilipin shRNA Plasmid (m): sc-61323-SH and Perilipin shRNA (m) Lentiviral Particles: sc-61323-V as alternate gene silencing products.

For independent verification of Perilipin (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-61323A, sc-61323B and sc-61323C.

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

Perilipin siRNA (m) is recommended for the inhibition of Perilipin 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 Perilipin gene expression knockdown using RT-PCR Primer: Perilipin (m)-PR: sc-61323-PR (20 µl, 445 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wang, L., et al. 2017. Ethanol-triggered lipophagy requires SQSTM1 in AML12 hepatic cells. Sci. Rep. 7: 12307.
2. Fuwa, M., et al. 2024. Mitochondrial fractions located in the cytoplasmic and peridroplet areas of white adipocytes have distinct roles. FEBS Lett. 598: 1753-1768.

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.