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SANTA CRUZ BIOTECHNOLOGY, INC.

ADRP shRNA (m) Lentiviral Particles: sc-44842-V

BACKGROUND

Mannose 6-phophate receptors (MPRs) deliver lysosomal hydrolase to endosomes from the Golgi and back again. Cargo selection protein TIP47, also designated placental protein 17, is required for the transport from endosomes to the *trans*-Golgi network and interacts with the cytoplasmic domains of both cation-dependent and cation-independent MPRs. Another member of the peripilin family, Adipophilin (ADRP), is a protein associated with the globule surface membrane material of milk lipid globules. The phos-phoprotein Perilipin (Peri) is located 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 lipase. As a critical regulator of lipolysis, elevated Perilipin levels have been linked to obesity.

REFERENCES

1. Heid, H.W., et al. 1996. Adipocyte differentiation-related protein is secreted into milk as a constituent of milk lipid globule membrane. Biochem. J. 320: 1025-1030.
2. Souza, S.C., et al. 2002. Modulation of hormone-sensitive lipase and protein kinase A-mediated lipolysis by perilipin A in an adenoviral reconstituted system. J. Biol. Chem. 277: 8267-8272.
3. Kern, P.A., et al. 2004. Perilipin expression in human adipose tissue is elevated with obesity. J. Clin. Endocrinol. Metab. 89: 1352-1358.
4. Gross, D.N., et al. 2005. Dynamics of lipid droplet associated proteins during hormonally stimulated lipolysis in engineered adipocytes: Stabilization and lipid droplet binding of ADRP/adipophilin. Mol. Endocrinol. 20: 459-466.
5. Elchalal, U., et al. 2005. Insulin and fatty acids regulate the expression of the fat droplet-associated protein adipophilin in primary human trophoblasts. Am. J. Obstet. Gynecol. 193: 1716-1723.
6. Wolins, NE. et al. 2005. S3-12, Adipophilin, and TIP47 package lipid in adipocytes. J. Biol. Chem. 280: 19146-55.

CHROMOSOMAL LOCATION

Genetic locus: Plin2 (mouse) mapping to 4 C4.

PRODUCT

ADRP shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 µl frozen stock containing 1.0 x 10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see ADRP siRNA (m): sc-44842 and ADRP shRNA Plasmid (m): sc-44842-SH as alternate gene silencing products.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

APPLICATIONS

ADRP shRNA (m) Lentiviral Particles is recommended for the inhibition of ADRP expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

ADRP (C-20): sc-32450 is recommended as a control antibody for monitoring of ADRP 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ADRP gene expression knockdown using RT-PCR Primer: ADRP (m)-PR: sc-44842-PR (20 µl, 600 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

PROTOCOLS

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