SANTA CRUZ BIOTECHNOLOGY, INC.

LEPROT siRNA (m): sc-105612

BACKGROUND

Mutation of Ob (obesity factor), also known as leptin precursor, results in profound obesity and type II diabetes as part of a syndrome that resembles morbid obesity in humans. The Ob gene product may function as a component of a signaling pathway in adipose tissue that functions to regulate body fat. The leptin receptor, designated Ob-R, has been shown to be a single membrane-spanning receptor that most resembles the gp130 signal transducing component of the IL-6, G-CSF and LIF receptor. LEPROT (leptin receptor overlapping transcript), also known as LEPR, VPS55 or OBRGRP, is a 131 amino acid multi-pass membrane protein that is highly expressed in placenta and heart and may play a role in energy homeostasis and body weight control. The gene encoding LEPROT maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome.

REFERENCES

1. White, D.W., et al. 1996. Leptin and Ob-R: body weight regulation by a cytokine receptor. Cytokine Growth Factor Rev. 7: 303-309.
2. Campfield, L.A., et al. 1996. The OB protein (leptin) pathway—a link between adipose tissue mass and central neural networks. Horm. Metab. Res. 28: 619-632.
3. Friedman, J.M. 1997. Leptin, leptin receptors and the control of body weight. Eur. J. Med. Res. 2: 7-13.
4. Bailleul, B., et al. 1997. The leptin receptor promoter controls expression of a second distinct protein. Nucleic Acids Res. 25: 2752-2758.
5. Sone, M., et al. 2001. Leptin and the pituitary. Pituitary 4: 15-23.
6. Kim, J.H., et al. 2008. Minimizing a QTL region for intramuscular fat content by characterizing the porcine Phosphodiesterase 4B (PDE4B) gene. BMB Rep. 41: 466-471.

CHROMOSOMAL LOCATION

Genetic locus: Leprot (mouse) mapping to 4 C6.

PRODUCT

LEPROT 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 LEPROT shRNA Plasmid (m): sc-105612-SH and LEPROT shRNA (m) Lentiviral Particles: sc-105612-V as alternate gene silencing products.

For independent verification of LEPROT (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-105612A, sc-105612B and sc-105612C.

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

LEPROT siRNA (m) is recommended for the inhibition of LEPROT 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 LEPROT gene expression knockdown using RT-PCR Primer: LEPROT (m)-PR: sc-105612-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wu, S., et al. 2013. Increased expression of fibroblast growth factor 21 (FGF21) during chronic undernutrition causes growth hormone insensitivity in chondrocytes by inducing leptin receptor overlapping transcript (LEPROT) and leptin receptor overlapping transcript-like 1 (LEPROTL1) expression. J. Biol. Chem. 288: 27375-27383.

RESEARCH USE

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