SANTA CRUZ BIOTECHNOLOGY, INC.

Peg1 siRNA (h): sc-61315

BACKGROUND

Mesoderm-specific transcript (MEST) also designated paternally expressed imprinted gene 1 (PEG1), is an imprinted gene expressed from the paternal allele. MEST expression is markedly enhanced in white adipose tissue and could be a novel marker of the size of adipocytes. In addition, frequent loss of imprinting (LOI) of MEST may be involved in pathogenesis of lung adenocarcinoma. The human homolog of the MEST gene shares approximately 70% nucleotide sequence homology with the mouse gene. Human Peg1, the protein encoded by the MEST gene, is thought to consist of 335 amino acid residues and contains a potential N-linked glycosylation site. Expression of Peg1 is demonstrated in human placental trophoblast and endothelium and may be involved in the modulation of placental and fetal growth. Studies show that Peg1 expression increases significantly in the white adipose tissue of mice with diet-induced and genetically caused obesity/diabetes, but not with streptozotocin-induced diabetes.

REFERENCES

1. Kaneko-Ishino, T., et al. 1995. Peg1/Mest imprinted gene on chromosome 6 identified by cDNA subtraction hybridization. Nat. Genet. 11: 52-59.
2. Kotzot, D., et al. 1995. Uniparental disomy 7 in Silver-Russell syndrome and primordial growth retardation. Hum. Mol. Genet. 4: 583-587.
3. Kobayashi, S., et al. 1997. Human PEG1/MEST, an imprinted gene on chromosome 7. Hum. Mol. Genet. 6: 781-786.
4. Lefebvre, L., et al. 1998. Genomic structure and parent-of-origin-specific methylation of Peg1. Hum. Mol. Genet. 6: 1907-1915.
5. Lefebvre, L., et al. 1998. Abnormal maternal behaviour and growth retardation associated with loss of the imprinted gene Mest. Nat. Genet. 20: 163-169.
6. Kosaki, K., et al. 2000. Isoform-specific imprinting of the human PEG1/MEST gene. Am. J. Hum. Genet. 66: 309-312.
7. Kobayashi, S., et al. 2001. No evidence of PEG1/MEST gene mutations in Silver-Russell syndrome patients. Am. J. Med. Genet. 104: 225-231.
8. Nakabayashi, K., et al. 2002. Identification and characterization of an imprinted antisense RNA (MESTIT1) in the human MEST locus on chromosome 7q32. Hum. Mol. Genet. 11: 1743-1756.

CHROMOSOMAL LOCATION

Genetic locus: MEST (human) mapping to 7q32.2.

PRODUCT

Peg1 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 Peg1 shRNA Plasmid (h): sc-61315-SH and Peg1 shRNA (h) Lentiviral Particles: sc-61315-V as alternate gene silencing products.

For independent verification of Peg1 (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-61315A, sc-61315B and sc-61315C.

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

Peg1 siRNA (h) is recommended for the inhibition of Peg1 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 Peg1 gene expression knockdown using RT-PCR Primer: Peg1 (h)-PR: sc-61315-PR (20 µl, 560 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.