SANTA CRUZ BIOTECHNOLOGY, INC.

Reg Iα siRNA (h): sc-76382

BACKGROUND

The regeneration (Reg) family consists of secretory proteins involved in liver, pancreatic, gastric and intestinal cell proliferation or differentiation. Members of the Reg family are divided into four subclasses, designated types I, II, III and IV. They have been implicated in the regulation of cell growth, tumorigenesis and the progression of cancer. Reg Iα (regenerating islet-derived I α), also known as Lithostathine-1α, PSPS, Reg, P19 or PTP, is a 166 amino acid protein that contains one C-type lectin domain and belongs to the Reg family of secretory proteins. Expressed at high levels in pancreas and fetal brain and at lower levels in adult brain, Reg Iα is thought to inhibit spontaneous calcium carbonate precipitation and may also be associated with regeneration of brain and pancreas tissue, as well as with neuronal sprouting. The gene encoding Reg Iα is tandemly clustered with other Reg proteins on a region of human chromosome 2p12, suggesting that several Reg proteins may have arisen from a gene duplication event.

REFERENCES

1. Stewart, T.A. 1989. The human Reg gene encodes pancreatic stone protein. Biochem. J. 260: 622-623.
2. Watanabe, T., et al. 1990. Complete nucleotide sequence of human Reg gene and its expression in normal and tumoral tissues. The Reg protein, pancreatic stone protein, and pancreatic thread protein are one and the same product of the gene. J. Biol. Chem. 265: 7432-7439.
3. Gharib, B., et al. 1993. Human regeneration protein/lithostathine genes map to chromosome 2p12. Ann. Hum. Genet. 57: 9-16.
4. Miyashita, H., et al. 1995. Human Reg family genes are tandemly ordered in a 95-kilobase region of chromosome 2p12. FEBS Lett. 377: 429-433.
5. Sanchez, D., et al. 2001. Preferential expression of Reg Iβ gene in human adult pancreas. Biochem. Biophys. Res. Commun. 284: 729-737.
6. Sasaki, Y., et al. 2008. REG1A expression is an independent factor predictive of poor prognosis in patients with breast cancer. Ann. Surg. Oncol. 15: 3244-3251.
7. Hayashi, K., et al. 2008. REG I enhances chemo- and radiosensitivity in squamous cell esophageal cancer cells. Cancer Sci. 99: 2491-2495.

CHROMOSOMAL LOCATION

Genetic locus: REG1A (human) mapping to 2p12.

PRODUCT

Reg Iα 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 Reg Iα shRNA Plasmid (h): sc-76382-SH and Reg Iα shRNA (h) Lentiviral Particles: sc-76382-V as alternate gene silencing products.

For independent verification of Reg Iα (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-76382A, sc-76382B and sc-76382C.

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

Reg Iα siRNA (h) is recommended for the inhibition of Reg Iα 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 Reg Iα gene expression knockdown using RT-PCR Primer: Reg Iα (h)-PR: sc-76382-PR (20 µl). 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.