SANTA CRUZ BIOTECHNOLOGY, INC.

Somatostatin siRNA (h): sc-39728

BACKGROUND

Somatostatin is a regulatory hormone that is expressed throughout the body and inhibits the release of numerous secondary hormones by binding to high-affinity G protein-coupled somatostatin receptors. This cyclic tetradecapeptide inhibits the secretion of many important hormones, including somatotropin (also designated growth hormone, or GH), Insulin and glucagon. Somatostatin is found in both the hypothalamus and pancreas. Somatostatin is thought to be involved in the regulation of Insulin synthesis. The hormone somatostatin has active 14 amino acid and 28 amino acid forms that are produced by alternate cleavage of the single preproprotein encoded by this gene. In the cerebellum, Somatostatin-14 and Somatostatin-28 are highly expressed at birth and in the adult stage, respectively. Somatostatin affects rates of neurotransmission in the central nervous system and proliferation of both normal and tumorigenic cells. The gene encoding Somatostatin maps to human chromosome 3q27.3.

REFERENCES

1. Za bel, B.U., et al. 1983. High-resolution chromosomal localization of human genes for amylase, proopiomelanocortin, Somatostatin, and a DNA fragment (D3S1) by *in situ* hybridization. Proc. Natl. Acad. Sci. USA 80: 6932-6936.
2. Shen, L.P., et al. 1984. Sequence of the human Somatostatin I gene. Science 224: 168-171.
3. Warren, T.G., et al. 1984. Cell-free biosynthesis of multiple preprosomatostatins: characterization by hybrid selection and amino-terminal sequencing. Biochemistry 23: 2684-2690.
4. Lamberts, S.W., et al. 1990. The clinical use of Somatostatin analogues in the treatment of cancer. Baillieres Clin. Endocrinol. Metab. 4: 29-49.
5. Tsuzaki, S., et al. 1990. Somatostatin inhibits deoxyribonucleic acid synthesis induced by both thyrotropin and Insulin-like growth factor-I in FRTL5 cells. Endocrinology 126: 3131-3138.
6. Fehmann, H.D., et al. 1996. Functional active receptors for insulin-like growth factors-I (IGF-I) and IGF-II on insulin-, glucagon-, and somatostatin-producing cells. Metabolism 45: 759-766.

CHROMOSOMAL LOCATION

Genetic locus: SST (human) mapping to 3q27.3.

PRODUCT

Somatostatin 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 Somatostatin shRNA Plasmid (h): sc-39728-SH and Somatostatin shRNA (h) Lentiviral Particles: sc-39728-V as alternate gene silencing products.

For independent verification of Somatostatin (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-39728A, sc-39728B and sc-39728C.

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

Somatostatin siRNA (h) is recommended for the inhibition of Somatostatin 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.

GENE EXPRESSION MONITORING

Somatostatin (G-10): sc-55565 is recommended as a control antibody for monitoring of Somatostatin 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 reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Somatostatin gene expression knockdown using RT-PCR Primer: Somatostatin (h)-PR: sc-39728-PR (20 µl, 481 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.