SANTA CRUZ BIOTECHNOLOGY, INC.

GSH-1 siRNA (h): sc-75206

BACKGROUND

Growth hormone-releasing hormone (GHRH) stimulates secretion and synthesis of growth hormone (GH), causes somatotroph proliferation and may have direct actions in fetal/placental development, reproduction and immune function. It exerts its action through high-affinity GHRH receptors present in the anterior pituitary. GSH-1 (GS homeobox 1) is a 264 amino acid hypothalamic nuclear protein that functions as a transcription factor responsible for maintaining GHRH expression as well as playing an important role in pituitary development. Coexpression of CBP leads to significantly enhanced GSH-1-induced GHRH expression, which suggest that CBP may function as a co-activator. Knockdown of GSH-1 mRNA in mice causes a dwarf phenotype, which suggests that certain cases of familial dwarfism may be caused by a mutation of the GSH-1 gene.

REFERENCES

1. Mayo, K.E., et al. 1983. Expression-cloning and sequence of a cDNA encoding human growth hormone-releasing factor. Nature 306: 86-88.
2. Mayo, K.E., et al. 1985. Gene encoding human growth hormone-releasing factor precursor: structure, sequence, and chromosomal assignment. Proc. Natl. Acad. Sci. USA 82: 63-67.
3. Boncinelli, E., et al. 1993. Homeobox genes in the developing central nervous system. Ann. Genet. 36: 30-37.
4. Valerius, M.T., et al. 1995. GSH-1: a novel murine homeobox gene expressed in the central nervous system. Dev. Dyn. 203: 337-351.
5. Deschet, K., et al. 1998. Expression domains of the medaka *(Oryzias latipes)* Ol-Gsh 1 gene are reminiscent of those of clustered and orphan homeobox genes. Dev. Genes Evol. 208: 235-244.
6. Li, H., et al. 1999. Novel strategy yields candidate GSH-1 homeobox gene targets using hypothalamus progenitor cell lines. Dev. Biol. 211: 64-76.
7. Mutsuga, N., et al. 2001. Homeobox protein GSH-1-dependent regulation of the rat GHRH gene promoter. Mol. Endocrinol. 15: 2149-2156.
8. Zeevalk, G.D., et al. 2007. Characterization of intracellular elevation of glutathione (GSH) with glutathione monoethyl ester and GSH in brain and neuronal cultures: relevance to Parkinson's disease. Exp. Neurol. 203: 512-520.

CHROMOSOMAL LOCATION

Genetic locus: GSX1 (human) mapping to 13q12.2.

PRODUCT

GSH-1 siRNA (h) is a target-specific 19-25 nt siRNA 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 GSH-1 shRNA Plasmid (h): sc-75206-SH and GSH-1 shRNA (h) Lentiviral Particles: sc-75206-V as alternate gene silencing products.

RESEARCH USE

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

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

GSH-1 siRNA (h) is recommended for the inhibition of GSH-1 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 GSH-1 gene expression knockdown using RT-PCR Primer: GSH-1 (h)-PR: sc-75206-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.