SANTA CRUZ BIOTECHNOLOGY, INC.

Histamine H3 Receptor siRNA (h): sc-40023

BACKGROUND

Histamine is an inflammatory mediator that is ubiquitously expressed and has a broad range of pharmacologic effects. Specifically, it plays a role in the central nervous, gastrointestinal, respiratory and immune systems. The effects of histamine are mediated by a family of G protein-coupled receptors, the histamine H1, H2, H3 and H4 receptors. The gene encoding the human histamine H3 receptor is located on chromosome 20q13.33 and is expressed as six alternative splice variants in thalamus. These isoforms contain either a deletion in the second transmembrane domain or a variable deletion in the third intracellular loop. The existence of multiple H3 receptor isoforms suggests that H3-mediated effects may be regulated through alternative splicing mechanisms. The H3 receptor acts as an autoreceptor in the central nervous system (CNS) and modulates histamine synthesis and release. It also acts as a heteroreceptor in the CNS and cardiovascular, gastrointestinal and respiratory systems to regulate the release of a variety of neurotransmitters. The histamine H3 receptor responds to several agonists and antagonists, which make it a potential therapeutic target for several diseases, such as asthma, epilepsy and cardiac ischemia.

REFERENCES

1. Parsons, M.E., et al. 1991. Histamine receptors: an overview. Scand. J. Gastroenterol. Suppl. 180: 46-52.
2. Bissonnette, E.Y., et al. 1996. Histamine inhibits tumor necrosis factor α release by mast cells through H2 and H3 Receptors. Am. J. Respir. Cell Mol. Biol. 14: 620-626.
3. Malinowska, B., et al. 1998. Histamine H3 Receptors—general characterization and their function in the cardiovascular system. J. Physiol. Pharmacol. 49: 191-211.
4. Onodera, K., et al. 1999. The roles of Histamine H3 Receptors in the behavioral disorders and neuropsychopharmacological aspects of its ligands in the brain. Nippon Yakurigaku Zasshi 114: 89-106.
5. Nguyen, T., et al. 2001. Discovery of a novel member of the histamine receptor family. Mol. Pharmacol. 59: 427-433.
6. Coge, F., et al. 2001. Genomic organization and characterization of splice variants of the human histamine H3 receptor. Biochem. J. 355: 279-288.

CHROMOSOMAL LOCATION

Genetic locus: HRH3 (human) mapping to 20q13.33.

PRODUCT

Histamine H3 Receptor 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 Histamine H3 Receptor shRNA Plasmid (h): sc-40023-SH and Histamine H3 Receptor shRNA (h) Lentiviral Particles: sc-40023-V as alternate gene silencing products.

For independent verification of Histamine H3 Receptor (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-40023A, sc-40023B and sc-40023C.

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

Histamine H3 Receptor siRNA (h) is recommended for the inhibition of Histamine H3 Receptor 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

Histamine H3 Receptor (D-5): sc-390140 is recommended as a control antibody for monitoring of Histamine H3 Receptor 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 Histamine H3 Receptor gene expression knockdown using RT-PCR Primer: Histamine H3 Receptor (h)-PR: sc-40023-PR (20 µl, 508 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.