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Histamine H4 Receptor shRNA (m) Lentiviral Particles: sc-45274-V

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 H1 receptor maps to chromosome 3p25 and is expressed in highest abundance in placenta, with lower levels in lung, skeletal muscle, kidney and brain. The murine Histamine H2 receptor gene maps to chromosome 13 and is highly expressed in stomach with moderate expression in brain and heart. The gene encoding the human Histamine H3 receptor is located on chromosome 20 and is expressed as six alternative splice variants in thalamus. The human Histamine H4 receptor gene maps to chromosome 18q11 and is expressed most abundantly in bone marrow and spleen in addition to peripheral blood leukocytes, thymus, small intestine, and colon. The histamine receptors respond to several agonists and antagonists, which make them potential therapeutic targets for several diseases, such as asthma, epilepsy and cardiac ischemia.

REFERENCES

1. Parsons, M.E. 1991. Histamine receptors: an overview. *Scand. J. Gastroenterol. Suppl.* 180: 46-52.
2. Fukui, H., Fujimoto, K., Mizuguchi, H., Sakamoto, K., Horio, Y., Takai, S., Yamada, K. and Ito, S. 1994. Molecular cloning of the human histamine H1 receptor gene. *Biochem. Biophys. Res. Commun.* 201: 894-901.
3. Kobayashi, T., Inoue, I., Jenkins, N.A., Gilbert, D.J., Copeland, N.G. and Watanabe, T. 1996. Cloning, RNA expression, and chromosomal location of a mouse histamine H2 receptor gene. *Genomics* 37: 390-394.

CHROMOSOMAL LOCATION

Genetic locus: Hrh4 (mouse) mapping to 18 A1.

PRODUCT

Histamine H4 Receptor shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see Histamine H4 Receptor siRNA (m): sc-45274 and Histamine H4 Receptor shRNA Plasmid (m): sc-45274-SH as alternate gene silencing products.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

APPLICATIONS

Histamine H4 Receptor shRNA (m) Lentiviral Particles is recommended for the inhibition of Histamine H4 Receptor expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

Histamine H4 Receptor (Y-19): sc-33967 is recommended as a control antibody for monitoring of Histamine H4 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Histamine H4 Receptor gene expression knockdown using RT-PCR Primer: Histamine H4 Receptor (m)-PR: sc-45274-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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