SANTA CRUZ BIOTECHNOLOGY, INC.

# HNMT siRNA (h): sc-94838

## BACKGROUND

Histamine is a biogenic amine that functions as a neurotransmitter in the gut and plays an important role in the immune system, specifically by dilating blood vessels in response to allergic reactions. HNMT (Histamine N-methyltransferase), also known as HMT, HNMT-S1 or HNMT-S2, is a 292 amino acid protein that exists as a monomer and belongs to the methyltransferase superfamily. Localized to the cytoplasm, HNMT catalytically inactivates histamine by N-methylation and, via this inactivation, plays an essential role in the degradation of histamine. Through its ability to regulate and reduce the amount of histamine within the cell, HNMT participates in the airway response and limits the severity of allergic reactions. A common genetic polymorphism in HNMT may be linked to a predisposition to asthma. HNMT is expressed as multiple isoforms due to alternative splicing events.

## REFERENCES


1. Yamauchi, K., et al. 1994. Structure and function of human histamine N-methyltransferase: critical enzyme in histamine metabolism in airway. Am. J. Physiol. 267: L342-L349.
2. Girard, B., et al. 1994. Human histamine N-methyltransferase pharmacogenetics: cloning and expression of kidney cDNA. Mol. Pharmacol. 45: 461-468.
3. Aksoy, S., et al. 1996. Human histamine N-methyltransferase gene: structural characterization and chromosomal location. Biochem. Biophys. Res. Commun. 219: 548-554.
4. Preuss, C.V., et al. 1998. Human histamine N-methyltransferase pharmacogenetics: common genetic polymorphisms that alter activity. Mol. Pharmacol. 53: 708-717.
5. Yan, L., et al. 2000. Histamine N-methyltransferase pharmacogenetics: association of a common functional polymorphism with asthma. Pharmacogenetics 10: 261-266.
6. Horton, J.R., et al. 2001. Two polymorphic forms of human histamine methyltransferase: structural, thermal, and kinetic comparisons. Structure 9: 837-849.


## CHROMOSOMAL LOCATION

Genetic locus: HNMT (human) mapping to 2q22.1.

## PRODUCT

HNMT 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 HNMT shRNA Plasmid (h): sc-94838-SH and HNMT shRNA (h) Lentiviral Particles: sc-94838-V as alternate gene silencing products.

## PROTOCOLS

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

## 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

HNMT siRNA (h) is recommended for the inhibition of HNMT 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

HNMT (D-5): sc-374306 is recommended as a control antibody for monitoring of HNMT 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 HNMT gene expression knockdown using RT-PCR Primer: HNMT (h)-PR: sc-94838-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.