SANTA CRUZ BIOTECHNOLOGY, INC.

HNMT siRNA (m): sc-146060

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.

CHROMOSOMAL LOCATION

Genetic locus: Hnmt (mouse) mapping to 2 A3.

PRODUCT

HNMT siRNA (m) 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 HNMT shRNA Plasmid (m): sc-146060-SH and HNMT shRNA (m) Lentiviral Particles: sc-146060-V as alternate gene silencing products.

For independent verification of HNMT (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146060A, sc-146060B and sc-146060C.

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 (m) is recommended for the inhibition of HNMT expression in mouse 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 HNMT gene expression knockdown using RT-PCR Primer: HNMT (m)-PR: sc-146060-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.