

PRMT8 siRNA (h): sc-95787

BACKGROUND

A class of proteins termed type 1 protein arginine N-methyltransferase (PRMT) enzymes contribute to posttranslational modification of RNA-binding proteins, but differ in substrate specificities, oligomerization properties and subcellular localization. PRMT8, also known as HRMT1L3 or HRMT1L4 (heterogenous nuclear ribonucleoprotein methyltransferase-like protein 4), is a distinct member of the type 1 PRMT family with tissue-specific expression and plasma membrane localization. PRMT8 is specifically expressed in the brain where it functions as an arginine methyltransferase with a possible role in neuronal differentiation. It is most closely related to PRMT1 and may have arisen through a gene duplication. PRMT8 can heterodimerize with PRMT1 and has similar substrate preference. Distinguishing PRMT8 from other PRMT enzymes is its unique N-terminal myristoylation motif, which is responsible for its plasma membrane localization.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610086. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Hung, C.M. and Li, C. 2004. Identification and phylogenetic analyses of the protein arginine methyltransferase gene family in fish and ascidians. *Gene* 340: 179-187.
3. Lee, J., et al. 2005. PRMT8, a new membrane-bound tissue-specific member of the protein arginine methyltransferase family. *J. Biol. Chem.* 280: 32890-32896.
4. Dong, C.W., et al. 2007. Molecular characterisation and inductive expression of a fish protein arginine methyltransferase 1 gene in response to virus infection. *Fish Shellfish Immunol.* 22: 380-393.
5. Taneda, T., et al. 2007. Specific regional distribution of protein arginine methyltransferase 8 (PRMT8) in the mouse brain. *Brain Res.* 1155: 1-9.
6. Sayegh, J., et al. 2007. Regulation of protein arginine methyltransferase 8 (PRMT8) activity by its N-terminal domain. *J. Biol. Chem.* 282: 36444-36453.
7. Brink, T.C., et al. 2008. The origins of human embryonic stem cells: a biological conundrum. *Cells Tissues Organs* 188: 9-22.
8. Pahlich, S., et al. 2008. Identification of proteins interacting with protein arginine methyltransferase 8: The Ewing sarcoma (EWS) protein binds independent of its methylation state. *Proteins* 72: 1125-1137.

CHROMOSOMAL LOCATION

Genetic locus: PRMT8 (human) mapping to 12p13.32.

RESEARCH USE

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

PROTOCOLS

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

PRODUCT

PRMT8 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PRMT8 shRNA Plasmid (h): sc-95787-SH and PRMT8 shRNA (h) Lentiviral Particles: sc-95787-V as alternate gene silencing products.

For independent verification of PRMT8 (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-95787A, sc-95787B and sc-95787C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PRMT8 siRNA (h) is recommended for the inhibition of PRMT8 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 μ M in 66 μ l. 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 PRMT8 gene expression knockdown using RT-PCR Primer: PRMT8 (h)-PR: sc-95787-PR (20 μ l, 499 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.