SANTA CRUZ BIOTECHNOLOGY, INC.

MBD3L1 siRNA (h): sc-97409

BACKGROUND

Methylation of DNA contributes to the regulation of gene transcription in both mammalian and invertebrate systems. DNA methylation requires the enzymatic activity of DNA methyltransferase and predominates on cytosine residues that are present in dinucleotide motifs consisting of a 5' cytosine followed by guanosine (CpG), which results in transcriptional repression of the methylated gene. Several proteins have been identified that associate with the methyl-CpG sites, and they include methyl-CpG binding protein-1 (MBD1), MBD2, MBD3, MBD4 and MeCP2. MBD3L1 (MBD3-like 1), also known as MBD3L, is a 194 amino acid nuclear protein that functions as a transcriptional repressor. Unlike other members of the MBD family, MBD3L1 does not bind methylated DNA. MBD3L1 is highly expressed in testis and is encoded by a gene that maps to human chromosome 19p13.2.

REFERENCES

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2. Ballestar, E., et al. 2001. Methyl-CpG-binding proteins. Targeting specific gene repression. Eur. J. Biochem. 268: 1-6.
3. Jiang, C.L., et al. 2002. MBD3L1 and MBD3L2, two new proteins homologous to the methyl-CpG-binding proteins MBD2 and MBD3: characterization of MBD3L1 as a testis-specific transcriptional repressor. Genomics 80: 621-629.
4. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607963. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Goshima, N., et al. 2008. Human protein factory for converting the transcriptome into an *in vitro*-expressed proteome. Nat. Methods. 5: 1011-1017.
6. Defossez, P.A., et al. 2011. Biological Functions of Methyl-CpG-Binding Proteins. Prog. Mol. Biol. Transl. Sci. 101: 377-398.

CHROMOSOMAL LOCATION

Genetic locus: MBD3L1 (human) mapping to 19p13.2.

PRODUCT

MBD3L1 siRNA (h) is a pool of 2 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 MBD3L1 shRNA Plasmid (h): sc-97409-SH and MBD3L1 shRNA (h) Lentiviral Particles: sc-97409-V as alternate gene silencing products.

For independent verification of MBD3L1 (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-97409A and sc-97409B.

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

MBD3L1 siRNA (h) is recommended for the inhibition of MBD3L1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MBD3L1 gene expression knockdown using RT-PCR Primer: MBD3L1 (h)-PR: sc-97409-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.