

MNS1 siRNA (m): sc-149488

BACKGROUND

MNS1 (meiosis-specific nuclear structural 1) is a 495 amino acid nuclear protein that is thought to play a role in meiotic division and germ cell differentiation. In mice, MNS1 is expressed during the pachytene stage of spermatogenesis and is a member of the MNS1 family. The gene encoding MNS1 maps to human chromosome 15q21.3 and mouse chromosome 9 D. Encoding more than 700 genes, chromosome 15 is made up of approximately 106 million base pairs and is about 3% of the human genome. Angelman and Prader-Willi syndromes are associated with loss of function or deletion of genes in the 15q11-q13 region. In the case of Angelman syndrome, this loss is due to inactivity of the maternal 15q11-q13 encoded UBE3A gene in the brain by either chromosomal deletion or mutation. In cases of Prader-Willi syndrome, there is a partial or complete deletion of this region from the paternal copy of chromosome 15. Tay-Sachs disease is a lethal disorder associated with mutations of the HEXA gene, which is encoded by chromosome 15. Marfan syndrome is associated with chromosome 15 through the FBN1 gene.

REFERENCES

1. Hurowitz, G.I., Silver, J.M., Brin, M.F., Williams, D.T. and Johnson, W.G. 1993. Neuropsychiatric aspects of adult-onset Tay-Sachs disease: two case reports with several new findings. *J.Neuropsychiatry Clin. Neurosci.* 5: 30-36.
2. Furukawa, K., Inagaki, H., Naruge, T., Tabata, S., Tomida, T., Yamaguchi, A., Yoshikuni, M., Nagahama, Y. and Hotta, Y. 1994. cDNA cloning and functional characterization of a meiosis-specific protein (MNS1) with apparent nuclear association. *Chromosome Res.* 2: 99-113.
3. Hotta, Y., Furukawa, K. and Tabata, S. 1995. Meiosis specific transcription and functional proteins. *Adv. Biophys.* 31: 101-115.
4. Midla, G.S. 2008. Diagnosis and management of patients with Marfan syndrome. *JAAPA* 21: 21-25.
5. Dan, B. 2009. Angelman syndrome: current understanding and research prospects. *Epilepsia* 50: 2331-2339.
6. Ferrer-Bolufer, I., Dalmau, J., Quiroga, R., Oltra, S., Orellana, C., Monfort, S., Roselló, M., De La Osa, A. and Martinez, F. 2009. Tyrosinemia type 1 and Angelman syndrome due to paternal uniparental isodisomy 15. *J. Inherit. Metab. Dis.* 32: S349-S353.
7. Wawrzik, M., Unmehopa, U.A., Swaab, D.F., van de Nes, J., Buiting, K. and Horsthemke, B. 2010. The C15orf2 gene in the Prader-Willi syndrome region is subject to genomic imprinting and positive selection. *Neurogenetics* 11: 153-161.

CHROMOSOMAL LOCATION

Genetic locus: Mns1 (mouse) mapping to 9 D.

PROTOCOLS

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

PRODUCT

MNS1 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MNS1 shRNA Plasmid (m): sc-149488-SH and MNS1 shRNA (m) Lentiviral Particles: sc-149488-V as alternate gene silencing 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 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

MNS1 siRNA (m) is recommended for the inhibition of MNS1 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 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 MNS1 gene expression knockdown using RT-PCR Primer: MNS1 (m)-PR: sc-149488-PR (20 μ l). 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.