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METRNL siRNA (m): sc-149378

BACKGROUND

Meteorin, also known as METRN or RJD6, is a secreted protein belonging to the Meteorin family that contains 293 amino acids and promotes axonal extension, axonal network formation and regulates glial cell differentiation. Glia are the most numerous cells in the brain and are essential in the nervous system. Meteorin is expressed in radial glia and undifferentiated neural progenitors of the central and peripheral nervous system. METRNL (Meteorin-like protein), also known as glial cell differentiation regulator-like, is a 311 amino acid secreted protein belonging to the Meteorin family and may have similar roles to that of the Meteorin protein. METRNL is encoded by a gene located on human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes, some of which are involved in tumor suppression and in the pathogenesis of Li-Fraumeni syndrome, early onset breast cancer and a predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Evans, S.C. and Lozano, G. 1997. The Li-Fraumeni syndrome: an inherited susceptibility to cancer. *Mol. Med. Today* 3: 390-395.
2. Doetsch, F. 2003. The glial identity of neural stem cells. *Nat. Neurosci.* 6: 1127-1134.
3. Nishino, J., et al. 2004. Meteorin: a secreted protein that regulates glial cell differentiation and promotes axonal extension. *EMBO J.* 23: 1998-2008.
4. Park, J.A., et al. 2008. Meteorin regulates angiogenesis at the gliovascular interface. *Glia* 56: 247-258.
5. Shlien, A., et al. 2008. Excessive genomic DNA copy number variation in the Li-Fraumeni cancer predisposition syndrome. *Proc. Natl. Acad. Sci. USA* 105: 11264-11269.
6. Kriegstein, A. and Alvarez-Buylla, A. 2009. The glial nature of embryonic and adult neural stem cells. *Annu. Rev. Neurosci.* 32: 149-184.
7. Gonzalez, K.D., et al. 2009. High frequency of *de novo* mutations in Li-Fraumeni syndrome. *J. Med. Genet.* 46: 689-693.
8. Jorgensen, J.R., et al. 2009. Characterization of Meteorin—an evolutionary conserved neurotrophic factor. *J. Mol. Neurosci.* 39: 104-116.

CHROMOSOMAL LOCATION

Genetic locus: *Metrl* (mouse) mapping to 11 E2.

PRODUCT

METRNL 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 METRNL shRNA Plasmid (m): sc-149378-SH and METRNL shRNA (m) Lentiviral Particles: sc-149378-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 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

METRNL siRNA (m) is recommended for the inhibition of METRNL 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 METRNL gene expression knockdown using RT-PCR Primer: METRNL (m)-PR: sc-149378-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.