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MIER3 siRNA (m): sc-149431

BACKGROUND

The mesoderm induction early response (MIER) protein family is also known as fibroblast growth factor (FGF)-regulated immediate-early protein family. Activated by FGF, it is likely that the MIER proteins may play a significant role in FGF-regulated cellular activities, suggesting a potential influence in the progression of certain cancers. MIER proteins contain one SANT domain, a domain that has been characterized to be involved in transcriptional activation and repression, and one ELM2 domain, a domain which was first characterized in EGL-27, a gene that is critically involved in embryonic patterning of *C. elegans*. Mesoderm induction early response protein 3 (MIER3) is a 550 amino acid protein that is localized to the nucleus and primarily functions as a transcriptional repressor. There are five known isoforms of MIER3 that are produced as a result of alternative splicing.

REFERENCES

1. Paterno, G.D., et al. 1997. cDNA cloning of a novel, developmentally regulated immediate early gene activated by fibroblast growth factor and encoding a nuclear protein. *J. Biol. Chem.* 272: 25591-25595.
2. Paterno, G.D., et al. 1998. Molecular cloning of human ER1 cDNA and its differential expression in breast tumours and tumour-derived cell lines. *Gene* 222: 77-82.
3. Paterno, G.D., et al. 2002. Genomic organization of the human MIER1 gene and characterization of alternatively spliced isoforms: regulated use of a facultative intron determines subcellular localization. *Gene* 295: 79-88.
4. Ding, Z., et al. 2003. Human MIER1 α and β function as transcriptional repressors by recruitment of histone deacetylase 1 to their conserved ELM2 domain. *Mol. Cell. Biol.* 23: 250-258.
5. Ding, Z., et al. 2004. The SANT domain of human MIER1 interacts with Sp1 to interfere with GC box recognition and repress transcription from its own promoter. *J. Biol. Chem.* 279: 28009-28016.
6. Thorne, L.B., et al. 2005. Cloning and characterization of the mouse ortholog of MIER1. *DNA Seq.* 16: 237-240.
7. Post, J.N., et al. 2005. Developmentally regulated cytoplasmic retention of the transcription factor XMIER1 requires sequence in the acidic activation domain. *Int. J. Biochem. Cell Biol.* 37: 463-477.
8. Blackmore, T.M., et al. 2008. The transcriptional cofactor MIER1- β negatively regulates histone acetyltransferase activity of the CREB-binding protein. *BMC Res. Notes* 1: 68.

CHROMOSOMAL LOCATION

Genetic locus: Mier3 (mouse) mapping to 13 D2.2.

PRODUCT

MIER3 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 MIER3 shRNA Plasmid (m): sc-149431-SH and MIER3 shRNA (m) Lentiviral Particles: sc-149431-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

MIER3 siRNA (m) is recommended for the inhibition of MIER3 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 MIER3 gene expression knockdown using RT-PCR Primer: MIER3 (m)-PR: sc-149431-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.

PROTOCOLS

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