SANTA CRUZ BIOTECHNOLOGY, INC.

Menin siRNA (m): sc-35923

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Menin (multiple endocrine neoplasia I, MEN1, MEAI, SCG2) is a nuclear tumor suppressor that is mutated in patients with multiple endocrine neoplasia type I (MEN1). Menin can activate the transcription of differentiation-regulating genes by covalent histone modification. In osteoblasts, the interaction of Menin and the TGFβ/Smad3 pathway negatively regulates BMP2/Smad1/5- and RUNX2-dependent transcription activities leading to inhibition of late-stage differentiation. Menin regulates the expression of IGFBP-2 by influencing the IGFBP-2 promoter. Ectopic overexpression of Menin via adenoviruses induces apoptosis in murine embryonic fibroblasts in a Bax/Bak-dependent manner. Two mRNA exist and two variants of the shorter mRNA have alternative splicing that changes the CDS. Five variants where alternative splicing takes place in the 5' UTR have been identified.

REFERENCES

1. Obungu, V.H., et al. 2003. Menin, a tumor suppressor, associates with non-muscle Myosin IIA heavy chain. Oncogene 22: 6347-6358.
2. Schnepp, R.W., et al. 2004. Menin induces apoptosis in murine embryonic fibroblasts. J. Biol. Chem. 279: 10685-10691.
3. Hughes, C.M., et al. 2004. Menin associates with a trithorax family histone methyltransferase complex and with the HoxC8 locus. Mol. Cell 13: 587-597.
4. La, P., et al. 2004. Tumor suppressor Menin regulates expression of Insulin-like growth factor binding protein 2. Endocrinology 145: 3443-3450.
5. Sowa, H., et al. 2004. Menin is required for bone morphogenetic protein 2- and transforming growth factor β-regulated osteoblastic differentiation through interaction with Smads and RUNX2. J. Biol. Chem. 279: 40267-40275.
6. La, P., et al. 2004. Direct binding of DNA by tumor suppressor menin. J. Biol. Chem. 279: 49045-49054.
7. Naito, J., et al. 2005. Menin suppresses osteoblast differentiation by antagonizing the AP-1 factor, JunD. J. Biol. Chem. 280: 4785-4791.
8. Milne, T.A., et al. 2005. Menin and MLL cooperatively regulate expression of cyclin-dependent kinase inhibitors. Proc. Natl. Acad. Sci. USA 102: 749-754.

CHROMOSOMAL LOCATION

Genetic locus: Men1 (mouse) mapping to 19 A.

PRODUCT

Menin siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Menin shRNA Plasmid (m): sc-35923-SH and Menin shRNA (m) Lentiviral Particles: sc-35923-V as alternate gene silencing products.

For independent verification of Menin (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35923A, sc-35923B and sc-35923C.

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

Menin siRNA (m) is recommended for the inhibition of Menin 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 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.

GENE EXPRESSION MONITORING

Menin (B-9): sc-374371 is recommended as a control antibody for monitoring of Menin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Menin gene expression knockdown using RT-PCR Primer: Menin (m)-PR: sc-35923-PR (20 µl, 430 bp). 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.