

MBTD1 siRNA (m): sc-149312

BACKGROUND

The transcriptional repressing Polycomb-group (PcG) family is a part of a cellular memory system responsible for the stable inheritance of gene activity. PcG proteins assemble into multimeric protein complexes, which are involved in maintaining the transcriptional repressive state of genes over successive cell generations. MBTD1 (malignant brain tumor domain containing 1) is a 628 amino acid nuclear protein that belongs to the PcG family of proteins. Existing as a monomer, MBTD1 undergoes alternative splicing events to produce three isoforms. MBTD1 contains one FCS-type zinc finger and four MBT repeats, and is encoded by a gene that maps to human chromosome 17q21.33. Chromosome 17 comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1.

REFERENCES

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2. Piura, B., et al. 2001. Three primary malignancies related to BRCA mutation successively occurring in a BRCA1 185delAG mutation carrier. *Eur. J. Obstet. Gynecol. Reprod. Biol.* 97: 241-244.
3. Minamoto, T., et al. 2001. Distinct pattern of p53 phosphorylation in human tumors. *Oncogene* 20: 3341-3347.
4. Brandenberger, R., et al. 2004. Transcriptome characterization elucidates signaling networks that control human ES cell growth and differentiation. *Nat. Biotechnol.* 22: 707-716.
5. Eryilmaz, J., et al. 2009. Structural studies of a four-MBT repeat protein MBTD1. *PLoS ONE* 4: e7274.
6. Sawarkar, R. and Paro, R. 2010. Interpretation of developmental signaling at chromatin: the polycomb perspective. *Dev. Cell* 19: 651-661.
7. Köhler, C. and Aichinger, E. 2010. Antagonizing Polycomb group-mediated gene repression by chromatin remodelers. *Epigenetics* 5: 20-23.

CHROMOSOMAL LOCATION

Genetic locus: Mbtd1 (mouse) mapping to 11 D.

PRODUCT

MBTD1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MBTD1 shRNA Plasmid (m): sc-149312-SH and MBTD1 shRNA (m) Lentiviral Particles: sc-149312-V as alternate gene silencing products.

For independent verification of MBTD1 (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-149312A, sc-149312B and sc-149312C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

MBTD1 siRNA (m) is recommended for the inhibition of MBTD1 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.

GENE EXPRESSION MONITORING

MBTD1 (H-6): sc-514535 is recommended as a control antibody for monitoring of MBTD1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 MBTD1 gene expression knockdown using RT-PCR Primer: MBTD1 (m)-PR: sc-149312-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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