

MsrB3 siRNA (m): sc-149663

BACKGROUND

MSRB3 (methionine-R-sulfoxide reductase B3, mitochondrial) is a 185 amino acid protein that exists as a monomer and belongs to the msrB Met sulfoxide reductase family. As a catalyst for the reduction of free and protein-bound methionine sulfoxide to methionine, MsrB3 is expressed in colon, bone marrow, cerebellum, spinal cord, small intestine, heart, eye lens, kidney. MsrB3 exists as two alternatively spliced isoforms which exhibit different subcellular localizations in human: MsrB3 isoform 1 (MsrB3B) is a mitochondrial protein whereas isoform 2 (MsrB3A) localizes to endoplasmic reticulum. However, in mice, MsrB3 appears to be endoplasmic reticulum protein for which no splice variants have been characterized. The gene encoding MsrB3 maps to human chromosome 12, which is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p.

REFERENCES

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2. Yokoyama, T., et al. 2003. A case of Kniest dysplasia with retinal detachment and the mutation analysis. *Am. J. Ophthalmol.* 136: 1186-1188.
3. Kim, H.Y. and Gladyshev, V.N. 2004. Characterization of mouse endoplasmic reticulum methionine-R-sulfoxide reductase. *Biochem. Biophys. Res. Commun.* 320: 1277-1283.
4. Kim, H.Y. and Gladyshev, V.N. 2004. Methionine sulfoxide reduction in mammals: characterization of methionine-R-sulfoxide reductases. *Mol. Biol. Cell* 15: 1055-1064.
5. Fortna, A., et al. 2004. Lineage-specific gene duplication and loss in human and great ape evolution. *PLoS Biol.* 2: E207.
6. Forzano, F., et al. 2007. A familial case of achondrogenesis type II caused by a dominant COL2A1 mutation and "patchy" expression in the mosaic father. *Am. J. Med. Genet. A* 143A: 2815-2820.

CHROMOSOMAL LOCATION

Genetic locus: MsrB3 (mouse) mapping to 10 D2.

PRODUCT

MsrB3 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 MsrB3 shRNA Plasmid (m): sc-149663-SH and MsrB3 shRNA (m) Lentiviral Particles: sc-149663-V as alternate gene silencing products.

For independent verification of MsrB3 (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-149663A, sc-149663B and sc-149663C.

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

MsrB3 siRNA (m) is recommended for the inhibition of MsrB3 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

MsrB3 (C-4): sc-514897 is recommended as a control antibody for monitoring of MsrB3 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 MsrB3 gene expression knockdown using RT-PCR Primer: MsrB3 (m)-PR: sc-149663-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.