

MTSS1 siRNA (h): sc-77651

BACKGROUND

MTSS1 (metastasis suppressor 1), also known as MIM, MIMA or MIMB, is a 755 amino acid protein that contains one Actin-binding WH2 (Wiskott-Aldrich syndrome protein homology-2) domain and one IMD domain. Expressed in a variety of tissues including testis, thymus, prostate, spleen, colon, uterus and blood, MTSS1 is thought to bind to Actin and, via this binding, may affect the dynamics of the cytoskeleton. Through its association with the cytoskeleton, MTSS1 plays a role in controlling the progression and metastasis of carcinomas in various organ sites throughout the body and, when expressed at normal levels, functions as a tumor suppressor. Overexpression of MTSS1 results in the formation of abnormal Actin structures, an event that may lead to tumorigenesis. Three isoforms of MTSS1 exist due to alternative splicing events.

REFERENCES

1. Lee, Y.G., et al. 2002. MIM, a potential metastasis suppressor gene in bladder cancer. *Neoplasia* 4: 291-294.
2. Woodings, J.A., et al. 2003. MIM-B, a putative metastasis suppressor protein, binds to Actin and to protein tyrosine phosphatase δ . *Biochem. J.* 371: 463-471.
3. Mattila, P.K., et al. 2003. Mouse MIM, a tissue-specific regulator of cytoskeletal dynamics, interacts with ATP-Actin monomers through its C-terminal WH2 domain. *J. Biol. Chem.* 278: 8452-8459.
4. Nixdorf, S., et al. 2004. Expression and regulation of MIM (missing in metastasis), a novel putative metastasis suppressor gene, and MIM-B, in bladder cancer cell lines. *Cancer Lett.* 215: 209-220.

CHROMOSOMAL LOCATION

Genetic locus: MTSS1 (human) mapping to 8q24.13.

PRODUCT

MTSS1 siRNA (h) 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 MTSS1 shRNA Plasmid (h): sc-77651-SH and MTSS1 shRNA (h) Lentiviral Particles: sc-77651-V as alternate gene silencing products.

For independent verification of MTSS1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-77651A, sc-77651B and sc-77651C.

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

MTSS1 siRNA (h) is recommended for the inhibition of MTSS1 expression in human 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

MTSS1 (M7-P3A7): sc-101390 is recommended as a control antibody for monitoring of MTSS1 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 MTSS1 gene expression knockdown using RT-PCR Primer: MTSS1 (h)-PR: sc-77651-PR (20 μ l, 535 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Maddugoda, M.P., et al. 2011. cAMP signaling by anthrax edema toxin induces transendothelial cell tunnels, which are resealed by MIM via Arp2/3-driven Actin polymerization. *Cell Host Microbe* 10: 464-474.
2. Gonzalez-Rodriguez, D., et al. 2012. Cellular dewetting: opening of macroapertures in endothelial cells. *Phys. Rev. Lett.* 108: 218105.

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.