



# Msi1 siRNA (h): sc-106836

## BACKGROUND

Musashi1 (Msi1) is an RNA-binding protein expressed in neural progenitor cells and neural stem cells. Msi1 is the mammalian homolog of *Drosophila* Musashi. The gene encoding human Msi1 encodes a 362 amino acid protein. In murine embryonic neural progenitor cells, Msi1 localizes to the cytoplasm and is downregulated during differentiation. Msi1 binds to NUMB, which encodes a membrane-associated antagonist of Notch signaling. Msi1 appears to function in the proliferation and maintenance of stem cell populations of the central nervous system. In addition to its usefulness as a marker for neural progenitor cells in normal human brains, Msi1 is also a marker for human gliomas. In rats, Msi1 is expressed in Sertoli cells of the testis and granulosa cells of the ovary.

## REFERENCES

- Good, P., et al. 1998. The human Musashi homolog 1 (MSI1) gene encoding the homologue of Musashi/Nrp-1, a neural RNA-binding protein putatively expressed in CNS stem cells and neural progenitor cells. *Genomics* 52: 382-384.
- Kaneko, Y., et al. 2000. Msi1: evolutionarily conserved markers for CNS progenitor cells including neural stem cells. *Dev. Neurosci.* 22: 138-152.
- Imai, T., et al. 2001. The neural RNA-binding protein Msi1 translationally regulates mammalian NUMB gene expression by interacting with its mRNA. *Mol. Cell. Biol.* 21: 3888-3900.
- Kanemura, Y., et al. 2001. Msi1, an evolutionarily conserved neural RNA-binding protein, is a versatile marker of human glioma cells in determining their cellular origin, malignancy, and proliferative activity. *Differentiation* 68: 141-152.

## CHROMOSOMAL LOCATION

Genetic locus: MSI1 (human) mapping to 12q24.31.

## PRODUCT

Msi1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Msi1 shRNA Plasmid (h): sc-106836-SH and Msi1 shRNA (h) Lentiviral Particles: sc-106836-V as alternate gene silencing products.

For independent verification of Msi1 (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-106836A, sc-106836B and sc-106836C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Msi1 siRNA (h) is recommended for the inhibition of Msi1 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  $\mu$ M in 66  $\mu$ 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

Msi1 (69-Q): sc-135721 is recommended as a control antibody for monitoring of Msi1 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 Msi1 gene expression knockdown using RT-PCR Primer: Msi1 (h)-PR: sc-106836-PR (20  $\mu$ l, 531 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Lang, Y., et al. 2017. Musashi1 promotes non-small cell lung carcinoma malignancy and chemoresistance via activating the Akt signaling pathway. *Cell. Physiol. Biochem.* 44: 455-466.
- Chen, X., et al. 2023. Zika virus RNA structure controls its unique neurotropism by bipartite binding to Musashi-1. *Nat. Commun.* 14: 1134.
- Sun, K., et al. 2024. A novel interaction between the 5' untranslated region of the Chikungunya virus genome and Musashi RNA binding protein is essential for efficient virus genome replication. *Nucleic Acids Res.* 52: 10654-10667.

## RESEARCH USE

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