



MTA1 siRNA (h): sc-35981

BACKGROUND

MTA1 (metastasis-associated protein 1) is a component of the NURD (nucleosome remodeling and histone deacetylation) complex, which is associated with ATP-dependent chromatin-remodeling and histone deacetylase activity. MTA1 functions in conjunction with other components of NURD to mediate transcriptional repression as it facilitates the association of repressor molecules with the chromatin. Structurally, MTA1 contains a single SH3-binding motif and a zinc finger domain, along with a region similar to the co-repressor protein N-Cor. MTA1 is normally expressed at low levels in various tissues and is more highly expressed in testis. Overexpression of MTA1 correlates with tumor invasion and metastasis in various carcinomas including colorectal, gastrointestinal and breast carcinomas. Elevation of MTA1 levels in these tumors appears to enhance the metastases to lymph nodes, increase mammary cell motility and potentiate growth, and therefore may be an indicator for assessing the potential malignancies of various tumors. A similar protein, MTA2, also designated MTA1-L1 (MTA1-like protein 1), shares more than 55% sequence homology with MTA1 and is ubiquitously expressed.

CHROMOSOMAL LOCATION

Genetic locus: MTA1 (human) mapping to 14q32.33.

PRODUCT

MTA1 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 MTA1 shRNA Plasmid (h): sc-35981-SH and MTA1 shRNA (h) Lentiviral Particles: sc-35981-V as alternate gene silencing products.

For independent verification of MTA1 (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-35981A, sc-35981B and sc-35981C.

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

MTA1 siRNA (h) is recommended for the inhibition of MTA1 expression in human cells.

PROTOCOLS

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

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

MTA1 (E-12): sc-373765 is recommended as a control antibody for monitoring of MTA1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MTA1 gene expression knockdown using RT-PCR Primer: MTA1 (h)-PR: sc-35981-PR (20 μ l, 309 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

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- Li, J., et al. 2015. MTA1 is up-regulated in colorectal cancer and is inversely correlated with lymphatic metastasis. *Cancer Genomics Proteomics* 12: 339-345.
- Kumar, A.S., et al. 2016. Molecular mechanism of regulation of MTA1 expression by granulocyte colony-stimulating factor. *J. Biol. Chem.* 291: 12310-12321.
- Liu, J.Z., et al. 2017. Regulation of docetaxel sensitivity in prostate cancer cells by hsa-miR-125a-3p via modulation of metastasis-associated protein 1 signaling. *Urology* 105: 208.e11-208.e17.
- Marzook, H., et al. 2017. Cytoplasmic translocation of MTA1 coregulator promotes de-repression of SGK1 transcription in hypoxic cancer cells. *Oncogene* 36: 5263-5273.
- Deivendran, S., et al. 2017. Metastasis-associated protein 1 is an upstream regulator of DNMT3a and stimulator of Insulin-growth factor binding protein-3 in breast cancer. *Sci. Rep.* 7: 44225.
- Zhang, X., et al. 2023. Inhibition of annexin A10 contributes to ZNF281 mediated aggressiveness of hepatocellular carcinoma. *J. Hepatocell. Carcinoma* 10: 553-571.

RESEARCH USE

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