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MTA3 siRNA (h): sc-43948

BACKGROUND

Metastasis-associated protein 3 (MTA3) is a subunit of the Mi-2/NuRD transcriptional corepressor complex. MTA3 and the Mi-2/NuRD complex mediate repression of Snail in breast cancer cells where MTA3 works to maintain a differentiated, epithelial status. The protein is involved in gene expression regulation by covalent modifications of histone proteins. There are two known isoforms of MTA3, a short and a long form. The short isoform binds to ER and sequesters it to the cytoplasm and better non-genomic responses, whereas the long form is found in the nucleus. MTA3 is widely expressed with highest expression in brain, adrenal glands, ovaries and virgin mammary glands. It has been found to be expressed in higher levels in tumors than in adjacent normal tissue in the same individual.

REFERENCES

1. Fujita, N., et al. 2003. MTA3, a Mi-2/NuRD complex subunit, regulates an invasive growth pathway in breast cancer. *Cell* 113: 207-219.
2. Yao, Y.L., et al. 2003. The metastasis-associated proteins 1 and 2 form distinct protein complexes with histone deacetylase activity. *J. Biol. Chem.* 278: 42560-42568.
3. Fujita N., et al. 2004. Hormonal regulation of metastasis-associated protein 3 transcription in breast cancer cells. *Mol. Endoc.* 18: 2937-2949.
4. Fujita, N., et al. 2004. MTA3 and the Mi-2/NuRD complex regulate cell fate during B lymphocyte differentiation. *Cell* 119: 75-86.
5. Mishra, S.K., et al. 2004. Upstream determinants of estrogen receptor- α regulation of metastatic tumor antigen 3 pathway. *J. Biol. Chem.* 279: 32709-32715.
6. SWISS-PROT/TrEMBL (Q9BTC8). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: MTA3 (human) mapping to 2p21.

PRODUCT

MTA3 siRNA (h) is a target-specific 19-25 nt siRNA 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 MTA3 shRNA Plasmid (h): sc-43948-SH and MTA3 shRNA (h) Lentiviral Particles: sc-43948-V as alternate gene silencing 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

MTA3 siRNA (h) is recommended for the inhibition of MTA3 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

MTA3 (428C2a): sc-81325 is recommended as a control antibody for monitoring of MTA3 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 MTA3 gene expression knockdown using RT-PCR Primer: MTA3 (h)-PR: sc-43948-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.

PROTOCOLS

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