SANTA CRUZ BIOTECHNOLOGY, INC.

MTA1 (D-19): sc-26654

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The Power to Question

BACKGROUND

MTA1 (metastasis-associated protein 1) is a component of the NURD (for 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. Elevated MTA1 levels in these tumors appears to enhance the metastases to lymph nodes, increase mammary cell motility and potentiate growth; MTA1 may, therefore, be an indicator for assessing the potential malignancies of various tumors. A similar protein, MTA1-L1 (MTA1-like protein 1), shares more than 55% sequence homology with MTA1 and is ubiquitously expressed.

REFERENCES

1. Toh, Y., et al. 1994. A novel candidate metastasis-associated gene, MTA1, differentially expressed in highly metastatic mammary adenocarcinoma cell lines. cDNA cloning, expression, and protein analyses. J. Biol. Chem. 269: 22958-22963.
2. Toh, Y., et al. 1995. Analysis of the complete sequence of the novel metastasis-associated candidate gene, MTA1, differentially expressed in mammary adenocarcinoma and breast cancer cell lines. Gene 159: 97-104.
3. Toh, Y., et al. 1997. Overexpression of the MTA1 gene in gastrointestinal carcinomas: correlation with invasion and metastasis. Int. J. Cancer 74: 459-463.
4. Heinzel, T., et al. 1997. A complex containing N-CoR, mSin3 and histone deacetylase mediates transcriptional repression. Nature 387: 43-48.
5. Paterno, G.D., et al. 1997. cDNA cloning of a novel, developmentally regulated immediate early gene activated by fibroblast growth factor and encoding a nuclear protein. J. Biol. Chem. 272: 25591-25595.
6. Xue, Y., et al. 1998. NURD, a novel complex with both ATP-dependent chromatin-remodeling and histone deacetylase activities. Mol. Cell 2: 851-861.
7. Futamura, M., et al. 1999. Molecular cloning, mapping, and characterization of a novel human gene, MTA1-L1, showing homology to a metastasis-associated gene, MTA1. J. Hum. Genet. 44: 52-56.

CHROMOSOMAL LOCATION

Genetic locus: MTA1 (human) mapping to 14q32.33; Mta1 (mouse) mapping to 12 F1.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

SOURCE

MTA1 (D-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MTA1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26654 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MTA1 (D-19) is recommended for detection of MTA1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MTA1 (D-19) is also recommended for detection of MTA1 in additional species, including equine and canine.

Suitable for use as control antibody for MTA1 siRNA (h): sc-35981, MTA1 siRNA (m): sc-35982, MTA1 shRNA Plasmid (h): sc-35981-SH, MTA1 shRNA Plasmid (m): sc-35982-SH, MTA1 shRNA (h) Lentiviral Particles: sc-35981-V and MTA1 shRNA (m) Lentiviral Particles: sc-35982-V.

Molecular Weight of MTA1: 80 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, T47D cell lysate: sc-2293 or ZR-75-1 cell lysate: sc-2241.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kamimura, K., et al. 2007. Lack of Bcl11b tumor suppressor results in vulnerability to DNA replication stress and damages. Oncogene 26: 5840-5850.

RESEARCH USE

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

PROTOCOLS

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