SANTA CRUZ BIOTECHNOLOGY, INC.

MTA1 (E-12): sc-373765

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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; Mta1 (mouse) mapping to 12 F1.

SOURCE

MTA1 (E-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 669-703 near the C-terminus of MTA1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MTA1 (E-12) is available conjugated to agarose (sc-373765 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373765 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373765 PE), fluorescein (sc-373765 FITC), Alexa Fluor® 488 (sc-373765 AF488), Alexa Fluor® 546 (sc-373765 AF546), Alexa Fluor® 594 (sc-373765 AF594) or Alexa Fluor® 647 (sc-373765 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373765 AF680) or Alexa Fluor® 790 (sc-373765 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373765 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

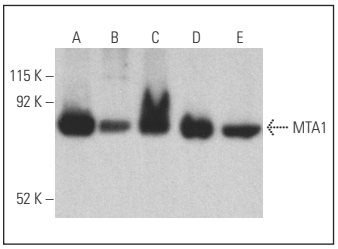
MTA1 (E-12) is recommended for detection of MTA1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

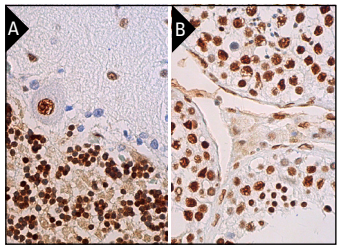
Molecular Weight of MTA1: 80 kDa.

Positive Controls: T-47D cell lysate: sc-2293, ZR-75-1 cell lysate: sc-2241 or L8 cell lysate: sc-3807.

DATA



MTA1 (E-12) HRP: sc-373765 HRP. Direct western blot analysis of MTA1 expression in T-47D (**A**), SW480 (**B**), ZR-75-1 (**C**), L8 (**D**) and AMJ2-C8 (**E**) whole cell lysates.



MTA1 (E-12): sc-373765. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of Purkinje cells, cells in granular cells and cells in molecular layer (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Liu, C., et al. 2014. A chromatin activity-based chemoproteomic approach reveals a transcriptional repressome for gene-specific silencing. Nat. Commun. 5: 5733.
2. Pantier, R., et al. 2021. SALL4 controls cell fate in response to DNA base composition. Mol. Cell 81: 845-858.e8.
3. Yang, J., et al. 2021. TRPS1 drives heterochromatic origin refiring and cancer genome evolution. Cell Rep. 34: 108814.
4. Kusakabe, M., et al. 2022. Histone deacetylation regulates nucleotide excision repair through an interaction with the XPC protein. iScience 25: 104040.
5. Deng, X., et al. 2023. Nicotinic acid-mediated modulation of metastasis-associated protein 1 methylation and inflammation in brain arteriovenous malformation. Biomolecules 13: 1495.

RESEARCH USE

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