SANTA CRUZ BIOTECHNOLOGY, INC.

MTAP (42-T): sc-100782

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

5'-deoxy-5'-methylthioadenosine phosphorylase (MTAP, MSAP) catalyzes the reversible phosphorolysis of methylthioadenosine, which is important in polyamine metabolism and for the salvage of adenine and methionine. The gene encoding MTAP maps to human chromosome 9p21.3 and is linked to the tumor suppressor gene, $p16^{INK4A}$. Deficient levels of MTAP can occur in cancers primarily through codeletion of the MTAP gene and the $p16^{INK4A}$ gene. Cells expressing MTAP and possessing adenine salvage pathway activity may be less susceptible to malignancy due to growth-inhibitory actions of agents (e.g. antifolates), whose mechanism of action, in part, involves this *de novo* purine pathway.

CHROMOSOMAL LOCATION

Genetic locus: MTAP (human) mapping to 9p21.3; Mtap (mouse) mapping to 4 C4.

SOURCE

MTAP (42-T) is a mouse monoclonal antibody raised against recombinant MTAP of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MTAP (42-T) is recommended for detection of MTAP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MTAP siRNA (h): sc-60006, MTAP siRNA (m): sc-60007, MTAP shRNA Plasmid (h): sc-60006-SH, MTAP shRNA Plasmid (m): sc-60007-SH, MTAP shRNA (h) Lentiviral Particles: sc-60006-V and MTAP shRNA (m) Lentiviral Particles: sc-60007-V.

Molecular Weight of MTAP: 31 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, RAW 264.7 whole cell lysate: sc-2211 or MTAP (m): 293T Lysate: sc-125650.

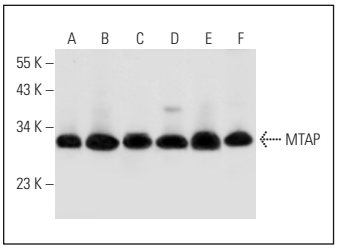
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

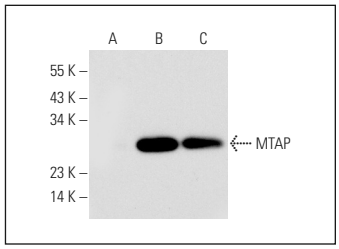
STORAGE

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

DATA



MTAP (42-T): sc-100782. Western blot analysis of MTAP expression in HEK293 (**A**), HT-29 (**B**), RAW 264.7 (**C**), A-431 (**D**) and PC-12 (**E**) whole cell lysates and rat liver tissue extract (**F**).



MTAP (42-T): sc-100782. Western blot analysis of MTAP expression in non-transfected 293T: sc-117752 (**A**), mouse MTAP transfected 293T: sc-125650 (**B**) and NIH/3T3 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Bertino, J.R., et al. 2012. Lack of expression of MTAP in uncommon T-cell lymphomas. Clin. Lymphoma Myeloma Leuk. 12: 306-309.
2. Chidlow, G., et al. 2013. Ocular expression and distribution of products of the POAG-associated chromosome 9p21 gene region. PLoS ONE 8: e75067.
3. Tedeschi, P.M., et al. 2015. Methylthioadenosine phosphorylase (MTAP)-deficient T-cell all xenografts are sensitive to pralatrexate and 6-thioguanine alone and in combination. Cancer Chemother. Pharmacol. 75: 1247-1252.
4. Williams, E.G., et al. 2018. Quantifying and localizing the mitochondrial proteome across five tissues in a mouse population. Mol. Cell. Proteomics 17: 1766-1777.
5. Cader, M.Z., et al. 2020. FAMIN is a multifunctional purine enzyme enabling the purine nucleotide cycle. Cell 180: 278-295.e23.
6. 2020. Abstracts from USCAP 2020: Cytopathology (317-458). Mod. Pathol. 33: 460-601.
7. Acosta, A.M., et al. 2021. Intestinal metaplasia of the urinary tract harbors potentially oncogenic genetic variants. Mod. Pathol. 34: 457-468.
8. Kalev, P., et al. 2021. MAT2A inhibition blocks the growth of MTAP-deleted cancer cells by reducing PRMT5-dependent mRNA splicing and inducing DNA damage. Cancer Cell 39: 209-224.e11.
9. Mulvaney, K.M., et al. 2021. Molecular basis for substrate recruitment to the PRMT5 methylosome. Mol. Cell 81: 3481-3495.e7.
10. Chapel, D.B., et al. 2021. Correlation of methylthioadenosine phosphorylase (MTAP) protein expression with MTAP and CDKN2A copy number in malignant pleural mesothelioma. Histopathology 78: 1032-1042.

RESEARCH USE

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