

# MPST (D-8): sc-374326

## BACKGROUND

MPST (mercaptopyruvate sulfurtransferase), also known as MST or TST2, is a 297 amino acid protein that localizes to the cytoplasm and contains two rhodanese domains. Existing as a monomer or as a disulfide-linked homodimer, MPST functions to catalyze the transfer of a sulfur ion to select thiol compounds, such as cyanide, and is thought to be involved in cyanide detoxification and cysteine degradation. MPST deficiency may be associated with the pathogenesis of the rare disorder mercaptolactate-cysteine disulfiduria (MCDU). The gene encoding MPST maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome. Mutations in several of the genes that map to chromosome 22 are involved in the development of Phelan-McDermid syndrome, neurofibromatosis type 2, autism and schizophrenia.

## REFERENCES

1. Pallini, R., et al. 1991. Cloning and sequence analysis of the human liver rhodanese: comparison with the bovine and chicken enzymes. *Biochem. Biophys. Res. Commun.* 180: 887-893.
2. Aita, N., et al. 1997. Cloning and expression of human liver rhodanese cDNA. *Biochem. Biophys. Res. Commun.* 231: 56-60.

## CHROMOSOMAL LOCATION

Genetic locus: MPST (human) mapping to 22q12.3; Mpst (mouse) mapping to 15 E1.

## SOURCE

MPST (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 31-63 within an internal region of MPST of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MPST (D-8) is available conjugated to agarose (sc-374326 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374326 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374326 PE), fluorescein (sc-374326 FITC), Alexa Fluor<sup>®</sup> 488 (sc-374326 AF488), Alexa Fluor<sup>®</sup> 546 (sc-374326 AF546), Alexa Fluor<sup>®</sup> 594 (sc-374326 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-374326 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-374326 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-374326 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374326 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

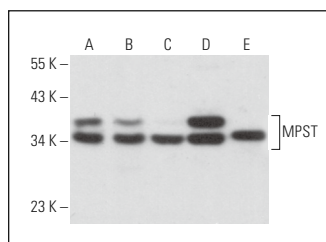
MPST (D-8) is recommended for detection of MPST of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 MPST siRNA (h): sc-75821, MPST siRNA (m): sc-149542, MPST shRNA Plasmid (h): sc-75821-SH, MPST shRNA Plasmid (m): sc-149542-SH, MPST shRNA (h) Lentiviral Particles: sc-75821-V and MPST shRNA (m) Lentiviral Particles: sc-149542-V.

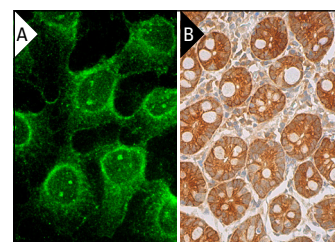
Molecular Weight of MPST: 33 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, A-431 whole cell lysate: sc-2201 or Hep G2 cell lysate: sc-2227.

## DATA



MPST (D-8): sc-374326. Western blot analysis of MPST expression in Hep G2 (A), HEK293 (B), A-431 (C), K-562 (D) and NIH/3T3 (E) whole cell lysates.



MPST (D-8): sc-374326. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Veeranki, S. and Tyagi, S.C. 2015. Mechanisms of hyperhomocysteinemia induced skeletal muscle myopathy after ischemia in the CBS<sup>+/+</sup> mouse model. *Int. J. Mol. Sci.* 16: 1252-1265.
2. Shan, H., et al. 2017. Neuroprotective effects of hydrogen sulfide on sodium azide-induced autophagic cell death in PC12 cells. *Mol. Med. Rep.* 16: 5938-5946.
3. Lin, Z., et al. 2018. Hydrogen sulfide attenuates oxidative stress-induced NLRP3 inflammasome activation via S-sulhydrating c-Jun at Cys269 in macrophages. *Biochim. Biophys. Acta* 1864: 2890-2900.
5. Zhang, J., et al. 2019. Protective effects of hydrogen sulfide on a cell culture model of traumatic scratch injury involving suppression of oxidative stress and upregulation of Nrf-2. *Int. J. Biochem. Cell Biol.* 117: 105636.
6. Ichinoseki-Sekine, N., et al. 2021. Hydrogen sulfide donor protects against mechanical ventilation-induced atrophy and contractile dysfunction in the rat diaphragm. *Clin. Transl. Sci.* 14: 2139-2145.

## RESEARCH USE

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