SANTA CRUZ BIOTECHNOLOGY, INC.

# PTPMT1 (B-3): sc-390901

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Protein tyrosine phosphatases, or PTPs, are type I transmembrane proteins, membrane associated proteins or proteins localized in nuclei. Examples of transmembrane PTPs are LAR, PTPα, PTPβ, PTPγ, PTPδ, PTPε, PTPω, PTPκ and PTPμ. Transmembrane PTPs play diverse roles in a variety of cellular processes during development and in adult tissues. PTPMT1 (protein tyrosine phosphatase mitochondrial 1), also known as MOSP or PLIP (phosphoinositide lipid phosphatase) and previously known as DUSP23, is a widely expressed PTP membrane protein with high expression levels in pancreatic β cells. PTPMT1 exclusively localizes to the matrix face of the inner membrane of the mitochondrion. It is responsible for dephosphorylating mitochondrial proteins and therefore plays a significant role in the production of ATP and secretion of Insulin. For its substrate, PTPMT1 displays a specific preference for the lipid signaling molecule, phosphatidylinositol 5-phosphate (PI(5)P).

## REFERENCES


1. Merlot, S., et al. 2003. A PTEN-related 5-phosphatidylinositol phosphatase localized in the Golgi. J. Biol. Chem. 278: 39866-39873.
2. Pagliarini, D.J., et al. 2004. A PTEN-like phosphatase with a novel substrate specificity. J. Biol. Chem. 279: 38590-38596.


## CHROMOSOMAL LOCATION

Genetic locus: PTPMT1 (human) mapping to 11p11.2; Ptpmt1 (mouse) mapping to 2 E1.

## SOURCE

PTPMT1 (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 77-139 within an internal region of PTPMT1 of human origin.

## PRODUCT

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

PTPMT1 (B-3) is available conjugated to agarose (sc-390901 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390901 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390901 PE), fluorescein (sc-390901 FITC), Alexa Fluor® 488 (sc-390901 AF488), Alexa Fluor® 546 (sc-390901 AF546), Alexa Fluor® 594 (sc-390901 AF594) or Alexa Fluor® 647 (sc-390901 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390901 AF680) or Alexa Fluor® 790 (sc-390901 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390901 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.

## APPLICATIONS

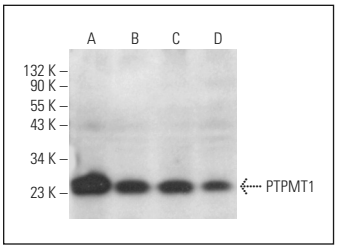
PTPMT1 (B-3) is recommended for detection of PTPMT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 PTPMT1 siRNA (h): sc-62906, PTPMT1 siRNA (m): sc-62907, PTPMT1 shRNA Plasmid (h): sc-62906-SH, PTPMT1 shRNA Plasmid (m): sc-62907-SH, PTPMT1 shRNA (h) Lentiviral Particles: sc-62906-V and PTPMT1 shRNA (m) Lentiviral Particles: sc-62907-V.

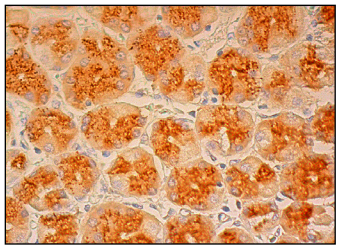
Molecular Weight of PTPMT1: 23 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or NAMALWA cell lysate: sc-2234.

## DATA




PTPMT1 (B-3): sc-390901. Western blot analysis of PTPMT1 expression in HeLa (**A**), NAMALWA (**B**), Hep G2 (**C**) and Raji (**D**) whole cell lysates.



PTPMT1 (B-3): sc-390901. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS


1. Russomanno, G., et al. 2021. miR-150-PTPMT1-cardiolipin signaling in pulmonary arterial hypertension. Mol. Ther. Nucleic Acids 23: 142-153.
2. Houston, R., et al. 2021. Discovery of bactericides as an acute mitochondrial membrane damage inducer. Mol. Biol. Cell 32: ar32.
3. Muselli, F., et al. 2023. Repurposing the bis-biguanide alexidine in combination with tyrosine kinase inhibitors to eliminate leukemic stem/ progenitor cells in chronic myeloid leukemia. Cancers 15: 995.


## 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.