

Mpi (B-2): sc-393484

BACKGROUND

Mpi (mannose phosphate isomerase), also known as PMI (phosphomannose isomerase) or PMI1, is a 423 amino acid zinc metalloenzyme belonging to the mannose-6-phosphate isomerase type 1 family, and is expressed in all tissues, more abundantly in heart, brain and skeletal muscle. A steady supply of D-mannose derivatives, which are required for most glycosylation reactions, is maintained by Mpi. Localized to the cytoplasm, Mpi utilizes zinc as a cofactor and catalyzes the interconversion of fructose-6-phosphate and mannose-6-phosphate. Mutations in the gene encoding Mpi lead to congenital disorder of glycosylation type 1B (CDG1B), also designated carbohydrate-deficient glycoprotein syndrome type 1b (CDGS1B), which is characterized by protein-losing enteropathy. Congenital disorders of glycosylation are metabolic deficiencies in glycoprotein biosynthesis that usually results in severe mental and psychomotor retardation.

CHROMOSOMAL LOCATION

Genetic locus: MPI (human) mapping to 15q24.1.

SOURCE

Mpi (B-2) is a mouse monoclonal antibody raised against amino acids 1-164 mapping at the N-terminus of Mpi of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mpi (B-2) is available conjugated to agarose (sc-393484 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393484 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393484 PE), fluorescein (sc-393484 FITC), Alexa Fluor® 488 (sc-393484 AF488), Alexa Fluor® 546 (sc-393484 AF546), Alexa Fluor® 594 (sc-393484 AF594) or Alexa Fluor® 647 (sc-393484 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393484 AF680) or Alexa Fluor® 790 (sc-393484 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

Mpi (B-2) is recommended for detection of Mpi of 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 Mpi siRNA (h): sc-90211, Mpi shRNA Plasmid (h): sc-90211-SH and Mpi shRNA (h) Lentiviral Particles: sc-90211-V.

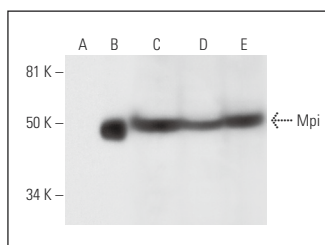
Molecular Weight of Mpi: 47 kDa.

Positive Controls: Mpi (h): 293T Lysate: sc-115944, RT-4 whole cell lysate: sc-364257 or human liver extract: sc-363766.

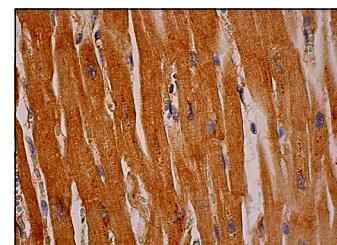
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Mpi (B-2): sc-393484. Western blot analysis of Mpi expression in non-transfected 293T: sc-117752 (A), human Mpi transfected 293T: sc-115944 (B), RT-4 (C) and U-251-MG (D) whole cell lysates and human liver tissue extract (E).



Mpi (B-2): sc-393484. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Jiang, L., et al. 2019. Astrocytes induce proliferation of oligodendrocyte progenitor cells via connexin 47-mediated activation of Chi31 expression. *Eur. Rev. Med. Pharmacol. Sci.* 23: 3012-3020.
- Luo, H., et al. 2022. Mannose enhances the radio-sensitivity of esophageal squamous cell carcinoma with low Mpi expression by suppressing glycolysis. *Discov. Oncol.* 13: 1.

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.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA