

Anti-DMT1 Antibody [PSH09-20]

HA723078



Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	WB, IHC-P, FC
Molecular Wt:	Predicted band size: 62 kDa
Clone number:	PSH09-20

Description: Natural resistance-associated macrophage protein 2 (NRAMP 2), also known as divalent metal transporter 1 (DMT1) and divalent cation transporter 1 (DCT1), is a protein that in humans is encoded by the SLC11A2 (solute carrier family 11, member 2) gene. DMT1 represents a large family of orthologous metal ion transporter proteins that are highly conserved from bacteria to humans. As its name suggests, DMT1 binds a variety of divalent metals including cadmium (Cd²⁺), copper (Cu²⁺), and zinc (Zn²⁺); however, it is best known for its role in transporting ferrous iron (Fe²⁺). DMT1 expression is regulated by body iron stores to maintain iron homeostasis. DMT1 is also important in the absorption and transport of manganese (Mn²⁺). In the digestive tract, it is located on the apical membrane of enterocytes, where it carries out H⁺-coupled transport of divalent metal cations from the intestinal lumen into the cell. Iron is not only essential for the human body, it is required for all organisms in order for them to be able to grow. Iron also participates in many metabolic pathways. Iron deficiency can lead to iron-deficiency anemia thus iron regulation is very crucial in the human body.

Immunogen: Recombinant protein within human DMT1 aa 1-400.

Positive control: HEK-293 cell lysate, HepG2 cell lysate, HeLa cell lysate, human brain tissue, SH-SH5Y.

Subcellular location: Mitochondrion outer membrane, Golgi apparatus, trans-Golgi network membrane, Recycling endosome membrane.

Database links: SwissProt: P49281 Human

Recommended Dilutions:

WB	1:2,000
IHC-P	1:1,000
FC	1:1,000

Storage Buffer: PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4°C. Store at +4°C short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20°C long term.

Purity: Protein A affinity purified.

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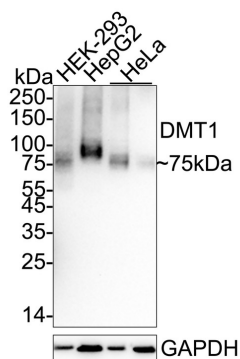
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Applications: WB=Western blot IHC-P=Immunohistochemistry (paraffin) IF-Cell=Immunofluorescence (Cell) IF-Tissue=Immunofluorescence (Tissue) FC=Flow cytometry IP=Immunoprecipitation

Images

Fig1: Western blot analysis of DMT1 on different lysates with Rabbit anti-DMT1 antibody (HA723078) at 1/2,000 dilution.

Lane 1: HEK-293 cell lysate (no heat)
 Lane 2: HepG2 cell lysate (no heat)
 Lane 3: HeLa cell lysate (no heat)
 Lane 4: HeLa cell lysate (hot lysis)



Notice: no heat means the lysate is not boiled.

Lysates/proteins at 20 µg/Lane.

Predicted band size: 62 kDa

Observed band size: 75 kDa

Exposure time: 3 minutes; ECL: K1801;
 4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA723078) at 1/2,000 dilution was used in 5% NFDM/TBST at 4°C overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

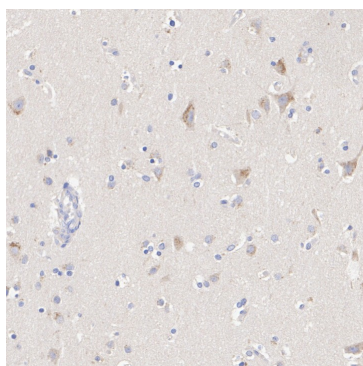


Fig2: Immunohistochemical analysis of paraffin-embedded human brain tissue with Rabbit anti-DMT1 antibody (HA723078) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (HA723078) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

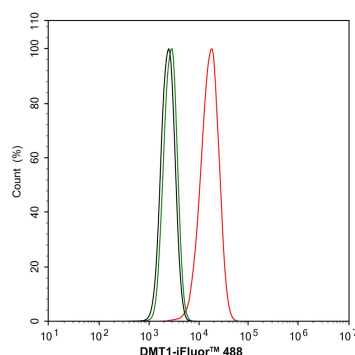


Fig3: Flow cytometric analysis of SH-SH5Y cells labeling DMT1.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA723078, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4°C for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4°C. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

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Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Tan Q et al. DMT1 differentially regulates mitochondrial complex activities to reduce glutathione loss and mitigate ferroptosis. *Free Radic Biol Med.* 2023 Oct
2. Lv B et al. DMT1 ubiquitination by Nedd4 protects against ferroptosis after intracerebral hemorrhage. *CNS Neurosci Ther.* 2024 Apr

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