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Anti-MPI Picoband™ Antibody (monoclonal, 5G5)

Catalog # ABO15000

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	P34949
Host	Mouse
Isotype	Mouse IgG2a
Reactivity	Rat, Human
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-MPI Picoband™ Antibody (monoclonal, 5G5) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human, Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	4351
Other Names	Mannose-6-phosphate isomerase, 5.3.1.8, Phosphohexomutase, Phosphomannose isomerase, PMI, MPI (HGNC:7216), PMI1
Calculated MW	46656
Application Details	Western blot, 0.25-0.5 □g/ml, Human, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5 □g/ml, Human Immunocytochemistry/Immunofluorescence, 5 □g/ml, Human Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl and 0.2mg Na2HPO4.
Clone Names	Clone: 5G5
Immunogen	E. coli-derived human MPI recombinant protein (Position: A2-K99). Human MPI shares 88.8% and 86.7% amino acid (aa) sequence identity with mouse and rat MPI, respectively.
Purification	Immunogen affinity purified.
Storage	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.

Protein Information

Name	MPI (HGNC:7216)
Synonyms	PMI1
Function	Isomerase that catalyzes the interconversion of fructose-6-P and mannose-6-P and has a critical role in the supply of D-mannose derivatives required for many eukaryotic glycosylation reactions.
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:Q924M7}.
Tissue Location	Expressed in all tissues, but more abundant in heart, brain and skeletal muscle.

Background

Mannose-6 phosphate isomerase (MPI), alternately phosphomannose isomerase (PMI), is an enzyme which facilitates the interconversion of fructose 6-phosphate (F6P) and mannose-6-phosphate (M6P). It also plays a critical role in maintaining the supply of D-mannose derivatives, which are required for most glycosylation reactions. Mutations in the MPI gene were found in patients with carbohydrate-deficient glycoprotein syndrome, type Ib. Alternative splicing results in multiple transcript variants. This MPI gene is mapped to 15q24.1.

Images

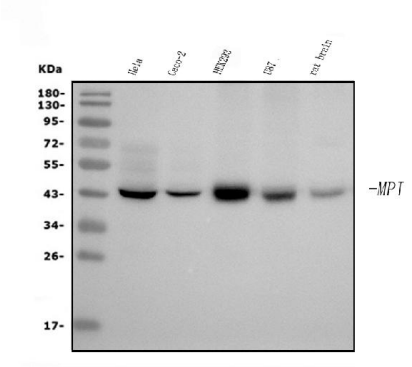


Figure 1. Western blot analysis of MPI using anti-MPI antibody (M00175-2).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human HELA whole cell lysates,
Lane 2: human CACO-2 whole cell lysates,
Lane 3: human HEK293 whole cell lysates,
Lane 4: human U87 whole cell lysates,
Lane 5: rat brain tissue lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-MPI antigen affinity purified monoclonal antibody (Catalog # M00175-2) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for MPI at approximately 45KD. The expected band size for MPI is at 45KD.

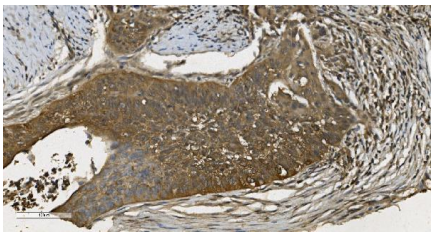


Figure 2. IHC analysis of MPI using anti-MPI antibody (M00175-2).
MPI was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated

with 2 µg/ml mouse anti-MPI Antibody (M00175-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

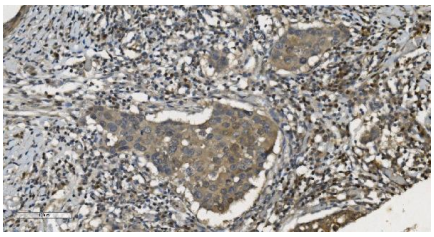


Figure 3. IHC analysis of MPI using anti-MPI antibody (M00175-2).
MPI was detected in paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-MPI Antibody (M00175-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

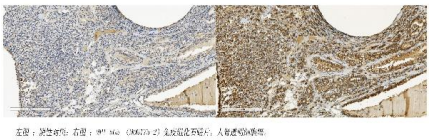


Figure 4. IHC analysis of MPI using anti-MPI antibody (M00175-2).
MPI was detected in paraffin-embedded section of human renal clear cell carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-MPI Antibody (M00175-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

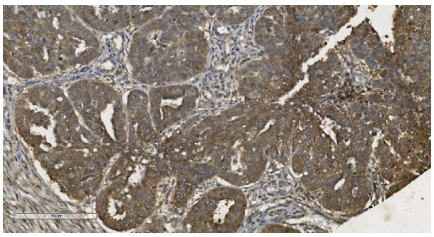
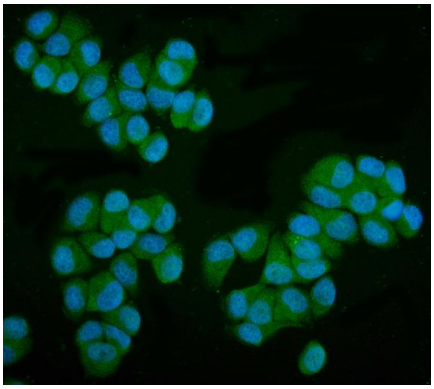


Figure 5. IHC analysis of MPI using anti-MPI antibody (M00175-2).
MPI was detected in paraffin-embedded section of human ovarian serous adenocarcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-MPI Antibody (M00175-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

Figure 6. IF analysis of MPI using anti-MPI antibody (M00175-2).
MPI was detected in immunocytochemical section of T-47D cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 µg/mL mouse anti-MPI Antibody (M00175-2) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for



30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

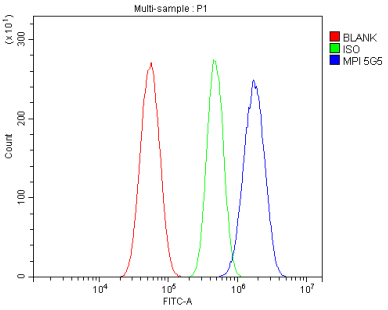


Figure 7. Flow Cytometry analysis of U87 cells using anti-MPI antibody (M00175-2).
Overlay histogram showing U87 cells stained with M00175-2 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-MPI Antibody (M00175-2, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.