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Anti-Mitofusin 1 MFN1 Antibody Picoband™ (monoclonal, 3H3)

Catalog # ABO14924

Product Information

Application	WB, IF, ICC
Primary Accession	Q8IWA4
Host	Mouse
Isotype	Mouse IgG2b
Reactivity	Human
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-Mitofusin 1 MFN1 Antibody Picoband™ (monoclonal, 3H3) . Tested in IF, ICC, WB applications. This antibody reacts with Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500 □g/ml.

Additional Information

Gene ID	55669
Other Names	Mitofusin-1, 3.6.5.-, Fzo homolog, Transmembrane GTPase MFN1, MFN1
Calculated MW	84160
Application Details	Western blot, 0.1-0.5 □g/ml, Human Immunocytochemistry/Immunofluorescence, 2 □g/ml, Human
Subcellular Localization	Mitochondrion outer membrane ; Multi- pass membrane protein.
Tissue Specificity	Ubiquitous.Expressed at slightly higher level in kidney and heart.Isoform 2 may be overexpressed in some tumors,such as lung cancers.
Source	Eukaryota
Protein Name	Mitofusin-1
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Clone Names	Clone: 3H3
Immunogen	A synthetic peptide corresponding to a sequence at the N-terminal of human Mitofusin 1, different from the related mouse and rat sequences by one amino acid.
Purification	Immunogen affinity purified.

Cross Reactivity	No cross-reactivity with other proteins.
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	MFN1
Function	Mitochondrial outer membrane GTPase that mediates mitochondrial clustering and fusion (PubMed:12475957, PubMed:12759376, PubMed:27920125, PubMed:28114303). Membrane clustering requires GTPase activity (PubMed:27920125). It may involve a major rearrangement of the coiled coil domains (PubMed:27920125, PubMed:28114303). Mitochondria are highly dynamic organelles, and their morphology is determined by the equilibrium between mitochondrial fusion and fission events (PubMed:12475957, PubMed:12759376). Overexpression induces the formation of mitochondrial networks (in vitro) (PubMed:12759376). Has low GTPase activity (PubMed:27920125, PubMed:28114303).
Cellular Location	Mitochondrion outer membrane; Multi-pass membrane protein
Tissue Location	Detected in kidney and heart (at protein level) (PubMed:12759376). Ubiquitous (PubMed:11950885, PubMed:12759376) Expressed at slightly higher level in kidney and heart (PubMed:12759376). Isoform 2 may be overexpressed in some tumors, such as lung cancers (PubMed:11751411).

Background

Mitofusin-1 is a protein that in humans is encoded by the MFN1 gene. It is an 8090 kDa mitochondrial member of the dynamin family of molecules. It is ubiquitously expressed, and found in the outer mitochondrial membrane. The protein encoded by this gene is a mediator of mitochondrial fusion, and thereby contribute to the dynamic balance between fusion and fission that determines mitochondria morphology. MFN1 is known to form oligomers, either with itself or MFN2, and to undergo ubiquitination by MARCH5. MFN1 has two key domains. One is a coiledcoil region that mediates MFN1: MFN1/2 binding, and a second is a GTPase domain whose cleavage of GTP is necessary for membrane fusion. Overexpression of MFN1 caused perinuclear mitochondrial clustering.

Images

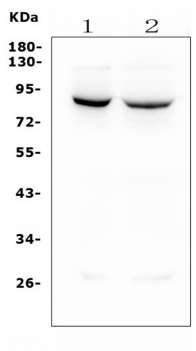

Figure 1. Western blot analysis of MFN1 using anti-MFN1 antibody (M02172-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours.
The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human Hela tissue lysates,
Lane 2: human HepG2 whole cell 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-MFN1antigen affinity purified polyclonal antibody (Catalog # M02172-1) 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 MFN1 at approximately 84KD. The expected band size for MFN1 is at 84KD.

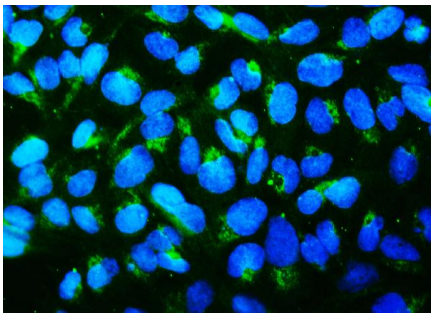

Figure 2. IF analysis of MFN1 using anti-MFN1 antibody (M02172-1).
MFN1 was detected in immunocytochemical section of U2OS cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2 µg/mL mouse anti-MFN1 Antibody (M02172-1) 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.

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