abcam

ab326161

Alexa Fluor® 488 Anti-MFN2 antibody [EPR19796]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR19796
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human

Dilution info	1/12500
Notes	-

Target data

See full target information MFN2

Function	Mitochondrial outer membrane GTPase that mediates mitochondrial clustering and fusion (PubMed:11181170, PubMed:11950885, PubMed:19889647, PubMed:26214738, PubMed:28114303). Mitochondria are highly dynamic organelles, and their morphology is determined by the equilibrium between mitochondrial fusion and fission events (PubMed:28114303). Overexpression induces the formation of mitochondrial networks (PubMed:28114303). Membrane clustering requires GTPase activity and may involve a major rearrangement of the coiled coil domains (Probable). Plays a central role in mitochondrial metabolism and may be associated with obesity and/or apoptosis processes (By similarity). Plays an important role in the regulation of vascular smooth muscle cell proliferation (By similarity). Involved in the clearance of damaged mitochondria via selective autophagy (mitophagy) (PubMed:23620051). Is required for PRKN recruitment to dysfunctional mitochondria (PubMed:23620051). Involved in the control of unfolded protein response (UPR) upon ER stress including activation of apoptosis and autophagy during ER stress (By similarity). Acts as an upstream regulator of EIF2AK3 and suppresses EIF2AK3 activation under basal conditions (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For

details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Alexa Fluor® is a registered trademark of Molecular Probes, Inc, a Thermo Fisher Scientific Company. The Alexa Fluor® dye included in this product is provided under an intellectual property license from Life Technologies Corporation. As this product contains the Alexa Fluor® dye, the purchase of this product conveys to the buyer the non-transferable right to use the purchased product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). As this product contains the Alexa Fluor® dye the sale of this product is expressly conditioned on the buyer not using the product or its components, or any materials made using the product or its components, in any activity to generate revenue, which may include, but is not limited to use of the product or its components: in manufacturing; (ii) to provide a service, information, or data in return for payment (iii) for therapeutic, diagnostic or prophylactic purposes; or (iv) for resale, regardless of whether they are sold for use in research. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, 5781 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@thermofisher.com.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Mitofusin 2 also known as MFN2 is a protein involved in the regulation of mitochondrial fusion. The MFN2 molecular weight is roughly 86 kDa. It plays an important role in connecting and merging the outer membranes of mitochondria which is vital for maintaining mitochondrial function and integrity. Mitofusin 2 proteins are expressed in many tissues but they are abundantly present in energy-demanding tissues like skeletal muscle heart and the brain.
Biological function summary	Mitofusin 2 ensures the proper distribution of mitochondria within cells and regulates mitochondrial metabolism. It is a critical component of the mitochondrial fusion machinery and works closely with its homolog Mitofusin 1 (MFN1). Together they form a complex that facilitates the physical merging of mitochondrial membranes. This process is essential for mitochondrial dynamics which include not only fusion but also fission and biogenesis.
Pathways	The protein part of the fusion machinery integrates into multiple essential biological pathways including energy metabolism and apoptosis regulation. It participates in the mitochondrial fusion pathway and the PGC-1¦Б pathway for mitochondrial biogenesis. Mitofusin 2 interacts with proteins such as PINK1 and Parkin that are known to play roles in mitophagy a process that targets damaged mitochondria for degradation indicating its involvement in maintaining mitochondrial quality control.

Associated diseases and disorders	Mutations in Mitofusin 2 have been linked to Charcot-Marie-Tooth disease type 2A (CMT2A) a neuropathy that affects peripheral nerves. This protein also shows connections to metabolic disorders such as obesity and type 2 diabetes. In these conditions its interaction with other proteins like OPA1 involved in mitochondrial inner membrane fusion influences mitochondrial dysfunction a recognized feature contributing to disease pathogenesis. Understanding MFN2's function and role in disease can help develop targeted therapies for these conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

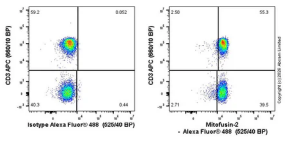
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

2 product images



Flow Cytometry (Intracellular) - Alexa Fluor® 488 Anti-MFN2 antibody [EPR19796] (ab326161)

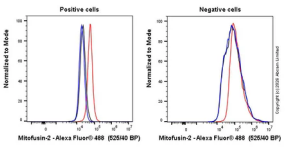
MFN2 Flow Cytometry (Intracellular) staining of human peripheral mononuclear cells (PBMCs) using rabbit Anti-MFN2 antibody

Flow cytometry scatter plots showing human peripheral mononuclear cells (PBMCs), either stained with ab326161 (right) or isotype control (left). The cells were fixed and permeabilised using BD CytoFix/CytoPerm™ (20 min). The cells were incubated in 1x PBS containing 10 µg/ml human IgG and 10% normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab326161) (1x 10^6 in 100µl at 0.2 µg/ml (1/2500)) for 30min

on ice. Isotype control antibody was Recombinant Alexa Fluor® 488 Rabbit IgG, monoclonal [EPR25A] - Isotype Control. The cells were simultaneously stained with CD3.

Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

This data was acquired using a Beckman Coulter CytoFlexLX flow cytometer.



Flow Cytometry (Intracellular) - Alexa Fluor® 488 Anti-MFN2 antibody [EPR19796] (ab326161)

MFN2 Flow Cytometry (Intracellular) staining of flow cyt: hek293t wt using rabbit Anti-MFN2 antibody

Flow cytometry overlay histogram showing left wild-type HEK293T positive cells and right negative MFN2 knockout HEK293T stained with ab326161 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab326161) (1x 106 in 100µl at 0.04 µg/ml (1/12500)) for 30min at 22°C. Isotype control antibody was Alexa Fluor® 488 Rabbit IgG, monoclonal [EPR25A] - Isotype Control (black line) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control. Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter. This data was acquired using a Beckman Coulter CytoFlexLX flow cytometer.

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