abcam

ab56889

Anti-Mitofusin 2 antibody [6A8]

Anti-Mitofusin 2 antibody [6A8] (ab56889) is a mouse monoclonal antibody detecting Mitofusin 2 in **Western Blot, Flow Cytometry, IHC-P, ICC/IF**. Suitable for **Human, Mouse**.

- Clone 6A8 is the most cited clone to Mitofusin 2
- Over 340 publications
- Trusted since 2007

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human MFN2 aa 650 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link O95140
Clone number	6A8
Purification technique	Affinity purification Protein A
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified by protein A from TCS.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
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

Notes

Product Specifications

Anti-Mitofusin 2 antibody [6A8] (ab56889) is a mouse monoclonal antibody and is validated for use in Flow Cyt, ICC/IF, IHC-P, WB in human, mouse samples.
Anti-Mitofusin 2 antibody [6A8] (ab56889) specifically detects Mitofusin 2 (UniProt ID: O95140; Molecular weight: 86kDa) and is sold in 50 µg selling sizes.

Quality and Validation

Abcam's high quality validation processes ensure Anti-Mitofusin 2 antibody [6A8] (ab56889) has high sensitivity and specificity.
Anti-Mitofusin 2 antibody [6A8] (ab56889) has been cited over 348 times in peer reviewed journals and is trusted by the scientific community.
Anti-Mitofusin 2 antibody [6A8] (ab56889) has 11 independent reviews from customers.

This product was changed from ascites to tissue culture supernatant on 15 May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

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-1α 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

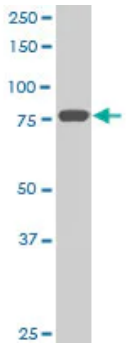
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images



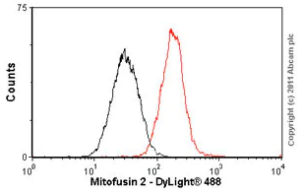
Western blot - Anti-Mitofusin 2 antibody [6A8] (ab56889)

Mitofusin 2 Western blot staining of HeLa cell lysate using mouse Anti-Mitofusin 2 antibody

This image was generated using the ascites version of the product.
All lanes:
Western blot - Anti-Mitofusin 2 antibody [6A8] (ab56889) at 1 µg/mL

All lanes:
HeLa cell lysate at 25 µg

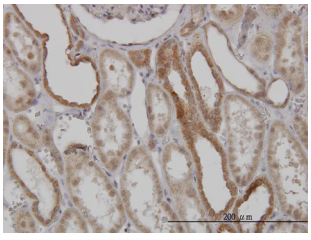
Predicted band size: 86 kDa



Flow Cytometry - Anti-Mitofusin 2 antibody [6A8] (ab56889)

Mitofusin 2 Flow Cytometry staining using mouse Anti-Mitofusin 2 antibody

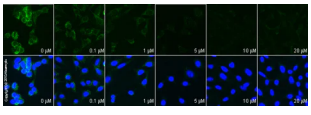
Overlay histogram showing HEK293 cells stained with ab56889 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab56889, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.
This image was generated using the ascites version of the product.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Mitofusin 2 antibody [6A8] (ab56889)

Mitofusin 2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Mitofusin 2 antibody

Mitofusin 2 antibody (ab56889) used in immunohistochemistry at 3ug/ml on formalin fixed and paraffin embedded human kidney.
This image was generated using the ascites version of the product.

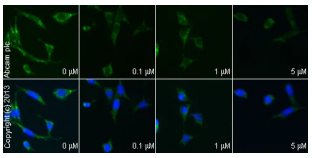


Immunocytochemistry/ Immunofluorescence - Anti-Mitofusin 2 antibody [6A8] (ab56889)

Mitofusin 2 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Mitofusin 2 antibody

ab56889 staining mitofusin2 in MEF1 cells treated with valinomycin from Streptomyces fulvissimus (ab120852), by ICC/IF. Decrease in mitofusin2 expression with increased concentration of withaferin valinomycin from Streptomyces fulvissimus, as described in literature.
The cells were incubated at 37°C for 3h in media containing different concentrations of ab120852

(valinomycin from Streptomyces fulvissimus) in DMSO, fixed with 100% methanol for 5 minutes at -20°C and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab56889 (10 µg/ml) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight® 488 goat anti-mouse polyclonal antibody (ab96879) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.
This image was generated using the ascites version of the product.



Immunocytochemistry/ Immunofluorescence - Anti-Mitofusin 2 antibody [6A8] (ab56889)

Mitofusin 2 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Mitofusin 2 antibody

ab56889 staining mitofusin 2 in MEF1 cells treated with nigericin Na^+ salt (ab120494), by ICC/IF. Decrease in mitofusin 2 expression correlates with increased concentration of nigericin Na^+ salt, as described in literature.
The cells were incubated at 37°C for 3h in media containing different concentrations of ab120494 (nigericin Na^+ salt) in DMSO, fixed with 100% methanol for 5 minutes at -20°C and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab56889 (10 µg/ml) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight® 488 goat anti-mouse polyclonal antibody (ab96879) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.
This image was generated using the ascites version of the product.

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