

Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker

Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329) is a mouse monoclonal antibody detecting Mitofilin in **Western Blot, Flow Cytometry, IHC-P, ICC/IF**. Suitable for **Cow, Human, Mouse, Rat**.

- Over 50 publications

Lab Essentials

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Clone number	2E4AD5
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab110329 was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation.Purity: >95% by SDS-PAGE.

Reactivity data

Flow Cyt

Tested

Species	Human
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Dilution info	1 µg/mL
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Human
Dilution info	2 µg/mL
Notes	-

Species	Mouse
Dilution info	2 µg/mL
Notes	-

Species	Rat
Dilution info	2 µg/mL
Notes	-

Species	Cow
Dilution info	2 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1-5 µg/mL
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval via the microwave method before commencing with IHC staining protocol.

Expected

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

Target data

[See full target information IMMT](#) 

Function	Component of the MICOS complex, a large protein complex of the mitochondrial inner membrane that plays crucial roles in the maintenance of crista junctions, inner membrane architecture, and formation of contact sites to the outer membrane (PubMed:22114354, PubMed:25781180, PubMed:32567732, PubMed:33130824). Plays an important role in the maintenance of the MICOS complex stability and the mitochondrial cristae morphology (PubMed:22114354, PubMed:25781180, PubMed:32567732, PubMed:33130824).
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Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions +4°C

Storage information Do Not Freeze

Notes

What is this antibody validated in?

Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Cow, Human, Mouse, Rat samples.

What is the molecular weight of Mitofilin?

Anti-Mitofilin [2E4AD5] - Mitochondrial Marker (ab110329) specifically detects a band for Mitofilin (UniProt: Q16891) at a molecular weight of 84kDa.

Trusted by the scientific community

Anti-Mitofilin [2E4AD5] - Mitochondrial Marker (ab110329) was first used in a scientific publication in 2011 and has been cited over 50 times in peer-reviewed journals.

Other related products

We have a range of other formats of antibody clone [2E4AD5] also available for your convenience: ab110329, Alexa Fluor® 488 - ab198028, Alexa Fluor® 647 - ab198036, HRP - ab198037

Want a custom formulation?

This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

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

Activity summary

Mitofilin also known as mitofilin or MIM is a protein with a mass of approximately 88 kDa. This protein is integral to the inner mitochondrial membrane. Mitofilin is found in various tissues with high expression in the heart and skeletal muscle indicating its significant role in energy-demanding tissues. It is the central component of the mitochondrial inner membrane organizing system (MINOS) which plays a fundamental role in maintaining the mitochondrial architecture.

Biological function summary

Within the mitochondrial environment mitofilin contributes to maintaining cristae morphology which is essential for optimal mitochondrial respiration and energy production. As part of the MINOS complex mitofilin interacts with other proteins such as Mic60 and Mic10 stabilizing the structure of crista junctions. This process ensures efficient electron transport chain function ultimately supporting ATP synthesis. Without effective shaping of the cristae cellular energy metabolism deteriorates.

Pathways

Research has highlighted the importance of mitofilin in apoptosis and bioenergetics pathways. It interacts with proteins like OPA1 a dynamin-related

GTPase important for mitochondrial fusion and energy metabolism. Additionally mitofilin influences the release of cytochrome c an important step in the initiation of apoptosis. Proper functioning of these pathways is critical for cellular balance and survival showing mitofilin's broad impact on cellular processes.

Associated diseases and disorders

Mitofilin has links to mitochondrial myopathies and cardiomyopathies. These disorders stem from impaired mitochondrial function significantly affecting muscle tissues and heart performance. Disruption in mitofilin expression or function can lead to compromised energy production contributing to these conditions. Furthermore mitofilin has associations with proteins like Drp1 involved in mitochondrial dynamics and this relationship can influence the progression and severity of mitochondrial-related diseases.

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](#).

6 product images

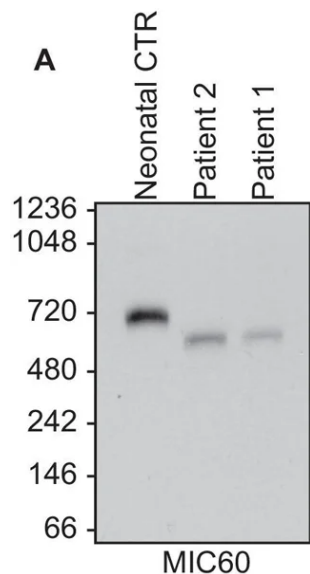


Image from Guarani V et al., Elife. 2016;5:e17163. Fig 5(A).; doi: 10.7554/eLife.17163. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

Western blot - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329)

Mitofilin Western blot staining using mouse Anti-Mitofilin antibody

Clinical findings for patients 1 & 2 suggest human neonatal onset mitochondrial encephalopathy with recurrent bouts of liver disease.

All lanes:

Western blot - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329)

Lane 1:

Control neonatal mitochondria from skin fibroblasts

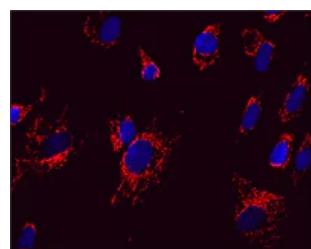
Lane 2:

Patient 2 (male) mitochondria from skin fibroblasts

Lane 3:

Patient 1 (female) mitochondria from skin fibroblasts

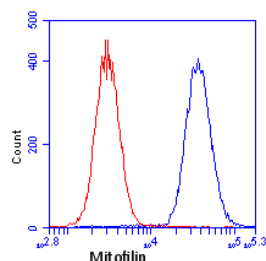
Predicted band size: 84 kDa



Immunocytochemistry/ Immunofluorescence - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329)

Mitofilin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Mitofilin antibody

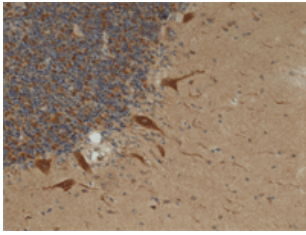
Immunocytochemistry analysis using ab110329 at 5µg/ml staining Mitofilin in Cultured Human fibroblasts. (Fixed and permeabilized) followed by a fluorescent goat-anti-mouse IgG.



Flow Cytometry - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329)

Mitofilin Flow Cytometry staining using mouse Anti-Mitofilin antibody

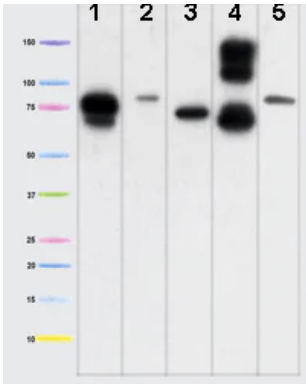
Flow cytometric analysis using ab110329 at 1µg/ml staining Mitofilin in HL60 cells (blue). Isotype control antibody (red).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329)

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

Immunohistological analysis using ab110329 at 1/100 dilution staining Mitofilin in Human cerebellum tissue (Formalin-fixed, Paraffin-embedded).



Western blot - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329)

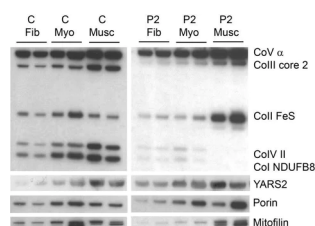
Mitofilin Western blot staining using mouse Anti-Mitofilin antibody

Extra bands in the mouse sample (lane 4) are due to the reaction of the IgG-specific goat anti-mouse secondary antibody with residual mouse blood in the heart tissue, as it is very difficult to entirely remove the blood from these small organs.

All lanes:

Western blot - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329) at 2 µg/mL

- Lane 1:
Isolated mitochondria from Human heart at 5 µg
 - Lane 2:
Isolated mitochondria from Bovine heart at 1 µg
 - Lane 3:
Isolated mitochondria from Rat heart at 10 µg
 - Lane 4:
Isolated mitochondria from Mouse heart at 10 µg
 - Lane 5:
HepG2 cell lysate at 20 µg
- Predicted band size: 84 kDa



Western blot - Anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker (ab110329)

Mitofilin western blot using anti-Mitofilin antibody [2E4AD5] - Mitochondrial Marker ab110329. Publication image and figure legend from Riley, L. G., Menezes, M. J., et al., 2013, Orphanet J Rare Dis, PubMed 24344687.

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ab110329 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab110329 please see the product overview.

RC complex levels are dysregulated on myogenesis in patient muscle cells. Control (C) MyoD-forced myotubes (Myo) and muscle (Musc) have higher RC complex levels than fibroblasts (Fib) while patient (P2) MyoD-forced myotubes and muscle are deficient in Complex I (CoI NDUFB8), and IV (CoIV II).

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