abcam

ab137057

Anti-Mitofilin antibody [EPR8749]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR8749
Purification technique	Affinity purification Protein A
Concentration	0.13 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

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).

Storage

Shipped at conditions	Conditional Ambient

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

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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.

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

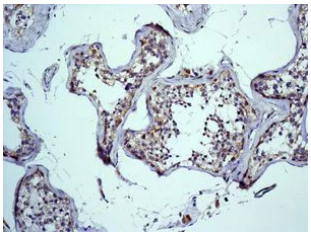
We do not recommend this combination. It is not covered by our product promise.

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.

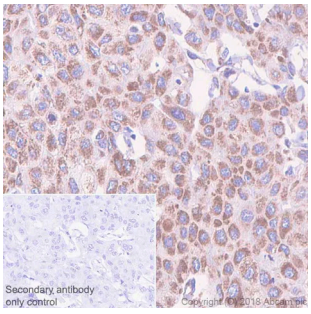
11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Mitofilin antibody [EPR8749] (ab137057)

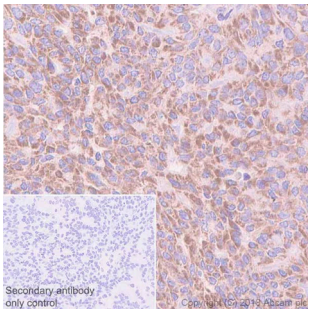
Mitofilin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Mitofilin antibody

Immunohistochemical analysis of paraffin embedded Human testis tissue labelling Mitofilin with ab137057 (unpurified) at 1/100 dilution.
Heat mediated antigen retrieval was performed with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Mitofilin antibody [EPR8749] (ab137057)

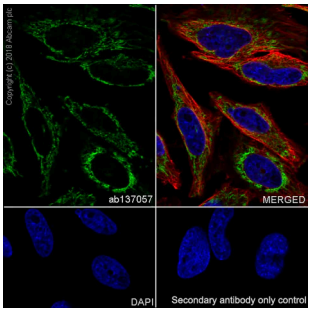
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human hepatocellular cancer tissue sections labeling Mitofilin with purified ab137057 at 1/250 dilution (0.508 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Mitofilin antibody [EPR8749] (ab137057)

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

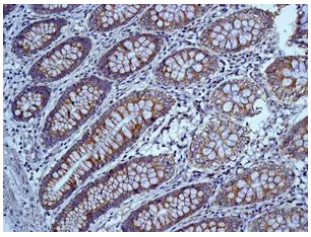
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human thyroid cancer tissue sections labeling Mitofilin with purified ab137057 at 1/250 dilution (0.508 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunocytochemistry/ Immunofluorescence - Anti-Mitofilin antibody [EPR8749] (ab137057)

Mitofilin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Mitofilin antibody

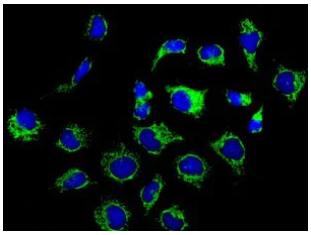
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Mitofilin with purified ab137057 at 1/100 dilution (1.3 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at 1/200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Mitofilin antibody [EPR8749] (ab137057)

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

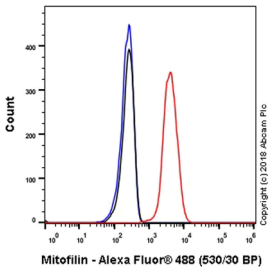
Immunohistochemical analysis of paraffin embedded Human colon tissue labelling Mitofilin with ab137057 (unpurified) at 1/100 dilution.
Heat mediated antigen retrieval was performed with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Mitofilin antibody [EPR8749] (ab137057)

Mitofilin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Mitofilin antibody

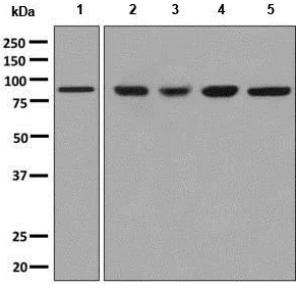
Immunofluorescent staining of HeLa cells labelling Mitofilin with ab137057 (unpurified) at 1/250 dilution.



Flow Cytometry (Intracellular) - Anti-Mitofilin antibody [EPR8749] (ab137057)

Mitofilin Flow Cytometry (Intracellular) staining using rabbit Anti-Mitofilin antibody

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Mitofilin with purified ab137057 at 1/20 dilution (10µg/ml) (red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Western blot - Anti-Mitofilin antibody [EPR8749] (ab137057)

All lanes:
Western blot - Anti-Mitofilin antibody [EPR8749] (ab137057) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
Human fetal heart tissue lysate at 10 µg

Lane 3:
Human fetal muscle tissue lysate at 10 µg

Lane 4:
A673 cell lysate at 10 µg

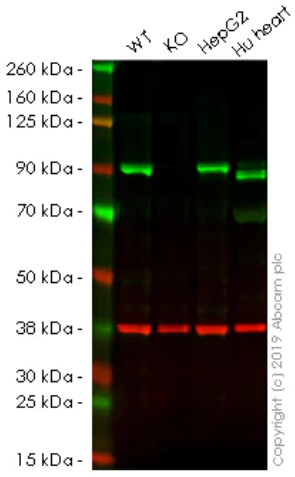
Lane 5:
Saos 2 cell lysate at 10 µg

Secondary

All lanes:

HRP labelled Goat anti-Rabbit IgG at 1/2000 dilution

Predicted band size: 84 kDa



Western blot - Anti-Mitofilin antibody [EPR8749] (ab137057)

Mitofilin Western blot staining using rabbit Anti-Mitofilin antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab137057 observed at 84 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab137057 was shown to specifically react with IMMT in wild-type HAP1 cells as signal was lost in IMMT knockout cells. Wild-type and IMMT knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3% Milk. ab137057 and ab8245 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Mitofilin antibody [EPR8749] (ab137057) at 1/1000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

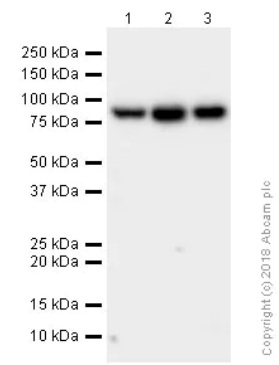
Lane 2:
IMMT knockout HAP1 whole cell lysate at 20 µg

Lane 3:
HepG2 whole cell lysate at 20 µg

Lane 4:
Human Heart whole cell lysate at 20 µg

Predicted band size: 84 kDa

Observed band size: 84 kDa



Western blot - Anti-Mitofilin antibody [EPR8749] (ab137057)

All lanes:
Western blot - Anti-Mitofilin antibody [EPR8749] (ab137057) at 1/10000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Human fetal heart lysates at 20 µg

Lane 3:
Human skeletal muscle lysates at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 84 kDa

Observed band size: 84 kDa

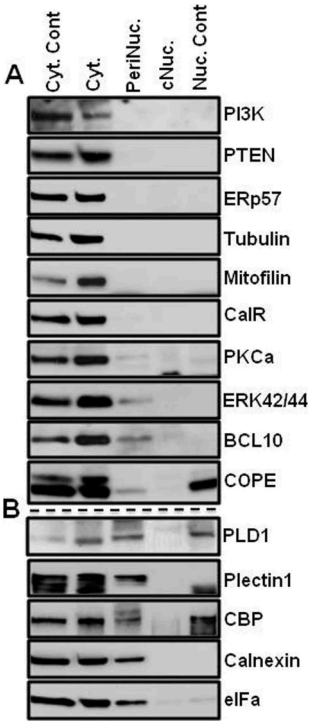


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Western blot - Anti-Mitofilin antibody [EPR8749] (ab137057)

Mitofilin western blot using anti-Mitofilin antibody [EPR8749] ab137057. Publication image and figure legend from Shaiken, T. E. & Opekun, A. R., 2014, Sci Rep, PubMed 24815916.

ab137057 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 ab137057 please see the product overview.

Patterns of protein distribution in HeLa cells.Cyt. Cont is a control for cytosolic proteins obtained with the 0.3% Chaps buffer cell lysis (far left panel of bands) for the CDS method; Nuc. Cont is a control for nuclear proteins obtained with the classical method of nuclei isolation in hypotonic buffer (far right panel of bands) for the CDS method. (A) Proteins of cytosol: proteins extracted by regular lysis buffer and Buffer A from the cytoplasm. They are not detected in the perinuclear and the nuclear fractions. Nuclear fractions were obtained with new and classical nuclei extraction techniques (B) Proteins detected in the cytosol and the perinuclear fraction: proteins were detected as cytosolic proteins with both cellular lysis technique; in addition, these proteins also appeared in the perinuclear fraction by extraction with Buffer B. (C) Proteins of perinuclear fraction: proteins are detected only in perinuclear fraction by buffer B extraction. p53 protein was detected with long exposure. (D) Proteins detected in the nuclear and the perinuclear fractions: transcription factor CREB appeared in both fractions. (E) Nuclear proteins: proteins were detected in nuclear fraction. Nuclear proteins were obtained with new and classical nuclei isolation techniques. The PVDF membranes were cropped into two halves and the high and low molecular weight proteins were shown correspondingly.

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