abcam

ab110321

Anti-Aconitase 2 antibody [6F12BD9]

KO Validated

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	6F12BD9
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab110321 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
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
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1 µg/mL
Notes	-

Species	Human
Dilution info	1 µg/mL
Notes	-

Species	Rat
Dilution info	1 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	for 2 hours.

Expected

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

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

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

Target data

See full target information ACO2

Function	Catalyzes the isomerization of citrate to isocitrate via cis-aconitate.

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

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	Aconitase 2 also known as ACO2 is an enzyme involved in the citric acid cycle which plays an important role in energy production within the cell. This enzyme converts citrate to isocitrate via a cis-aconitate intermediate an essential step in the cycle that generates ATP. Aconitase 2 has a molecular mass of approximately 83 kDa and is primarily expressed in the mitochondria of eukaryotic cells where it functions optimally due to the organelle's environment.
Biological function summary	Aconitase 2 supports cellular energy metabolism by facilitating the conversion of citrate derivatives. It is an iron-sulfur protein integral to both the cytosolic aconitase and mitochondrial varieties that functions as part of the mitochondrial aconitase complex. The enzyme's iron-sulfur cluster gets oxidized under different conditions causing the enzyme to act as a regulatory factor in response to iron levels further linking it with cellular iron metabolism.
Pathways	Aconitase 2 plays a significant role in the tricarboxylic acid (TCA) cycle commonly known as the Krebs cycle and the iron regulatory pathway. In the TCA cycle aconitase 2 acts after citrate synthase and before isocitrate dehydrogenase establishing its role in the middle of the cycle. It is functionally related to iron regulatory proteins particularly IRP1 which can interchangeably bind to iron-responsive elements or possess aconitase activity in its Fe-containing form.
Associated diseases and disorders	Disruptions in aconitase 2 activity are linked to conditions like Friedreich's ataxia and cancer. Friedreich's ataxia involves mitochondrial dysfunction wherein the decreased activity of aconitase 2 leads to impaired energy metabolism contributing to neurodegeneration. In cancers altered aconitase 2 function can impact cellular proliferation by modifying energy metabolism pathways. Aconitase 2 also interacts with the protein frataxin in the context of these conditions underlining its involvement in disease mechanisms related to mitochondrial dysfunction and iron metabolism.

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

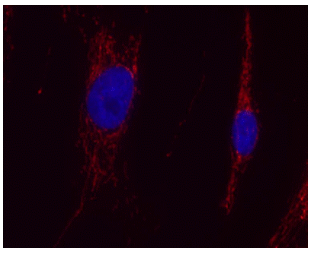
We do not recommend this combination. It is not covered by our product promise.

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.

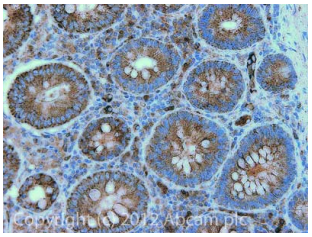
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-Aconitase 2 antibody [6F12BD9] (ab110321)

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

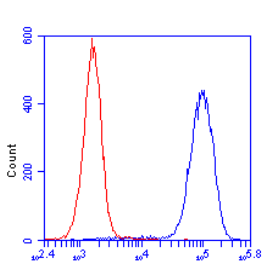
ab110321 at 1µg/ml staining Aconitase 2 in HDFn cells by Immunocytochemistry (4% paraformaldehyde fixed and 0.1% Triton X-100 permeabilized) followed by Alexa Fluor® 594 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1 hour (red).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aconitase 2 antibody [6F12BD9] (ab110321)

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

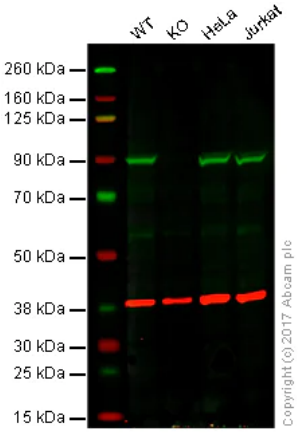
IHC image of Aconitase 2 staining in Human normal colon formalin fixed paraffin embedded tissue section, performed on a Leica BondTM system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab110321, 5µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Flow Cytometry - Anti-Aconitase 2 antibody [6F12BD9] (ab110321)

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

ab110321 at 1µg/ml staining Aconitase 2 in HeLa cells by Flow Cytometry (blue). Isotype control antibody (red).



Western blot - Anti-Aconitase 2 antibody [6F12BD9] (ab110321)

Aconitase 2 Western blot staining using mouse Anti-Aconitase 2 antibody

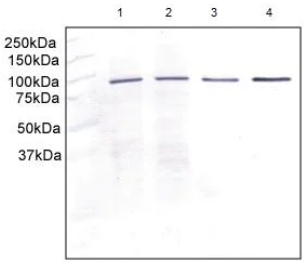
Lane 1: Wild-type HAP1 whole cell lysate (20 µg)
Lane 2: Aconitase 2 knockout HAP1 whole cell lysate (20 µg)
Lane 3: HeLa whole cell lysate (20 µg)
Lane 4: Jurkat whole cell lysate (20 µg)

Lanes 1 - 4: Merged signal (red and green). Green - ab110321 observed at 90 kDa. Red - loading control, ab181602, observed at 37 kDa.

ab110321 was shown to specifically react with Aconitase 2 in wild-type HAP1 cells as signal was lost in Aconitase 2 knockout cells. Wild-type and Aconitase 2 knockout samples were subjected to SDS-PAGE. ab110321 and ab181602 (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at 1 µg/ml and 1/20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed ab216772 and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed ab216777 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Aconitase 2 antibody [6F12BD9] (ab110321)

Predicted band size: 85 kDa



Western blot - Anti-Aconitase 2 antibody [6F12BD9] (ab110321)

All lanes:
Western blot - Anti-Aconitase 2 antibody [6F12BD9] (ab110321) at 1 µg/mL

Lane 1:
HepG2 (human) at 20 µg

Lane 2:
HeLa (human) at 20 µg

Lane 3:
H9C2 (rat cardiomyocyte) at 20 µg

Lane 4:
MEF (mouse fibroblast) at 20 µg

Predicted band size: 85 kDa

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