abcam

ab123450

Anti-ECH1 antibody [3B7CF2AC8]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: 99% HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Clone number	3B7CF2AC8
Purity	IgG fraction
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purity is near homogeneity as judged by SDS-PAGE. ab123450 was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation.

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Expected

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

Flow Cyt

Tested

Species	Human
Dilution info	1 µg/mL
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Rat
Dilution info	1 µg/mL
Notes	-

Species	Cow
Dilution info	1 µg/mL
Notes	-

Species	Human
Dilution info	1 µg/mL
Notes	-

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

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

Target data

See full target information Delta(3,5)-Delta(2,4)-dienoyl-CoA isomerase, mitochondrial

Function	Isomerization of 3-trans,5-cis-dienoyl-CoA (3E,5Z-dienoyl-CoA) to 2-trans,4-trans-dienoyl-CoA (2E,4E-dienoyl-CoA), a crucial step in the beta-oxidation of unsaturated fatty acids with double bonds at odd position.

Storage

Shipped at conditions	Blue Ice
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

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	ECH1 also known as Delta(35)-Delta(24)-dienoyl-CoA isomerase is a mitochondrial protein with a mass of approximately 31 kDa. It is expressed in a wide variety of tissues including high levels in the liver heart and muscle. This protein plays an important role in the beta-oxidation of unsaturated fatty acids inside mitochondria by catalyzing the conversion of 35-dienoyl-CoA to 24-dienoyl-CoA. Because of this function ECH1 contributes to the efficient metabolism of fatty acids.
Biological function summary	The ECH1 protein facilitates the breakdown and utilization of unsaturated fatty acids thereby providing energy for cellular processes. It acts independently and is not a part of a large protein complex. Mitochondria rely on ECH1 to handle specific intermediates in fatty acid metabolism which impacts how cells manage their energy resources. This makes ECH1 essential for maintaining energy homeostasis particularly during periods of increased metabolic demand.
Pathways	ECH1 is integral to the mitochondrial fatty acid beta-oxidation pathway. This pathway is important for converting fatty acids into acetyl-CoA units which then enter the Krebs cycle for further energy production. ECH1 interacts with other proteins like ACAA2 which contributes to the final step of fatty acid degradation. Alongside this it aligns with the peroxisomal biogenesis pathway influencing the balance between metabolic processes within mitochondria and peroxisomes.
Associated diseases and disorders	ECH1 activity impacts conditions such as metabolic syndrome and inherited disorders of mitochondrial fatty acid oxidation including Medium-chain acyl-CoA dehydrogenase (MCAD) deficiency. Changes in the function or expression of ECH1 can lead to accumulation of fatty acid intermediates causing cellular dysfunction. In diseases where energy balance is disrupted like metabolic syndrome ECH1's interaction with proteins like HADHA which assists in the final steps of beta-oxidation becomes significant for understanding and potentially targeting treatments.

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

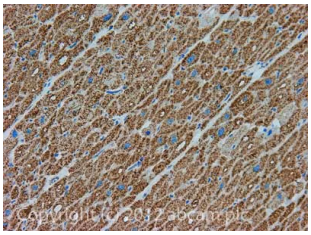
We do not recommend this combination. It is not covered by our product promise.

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.

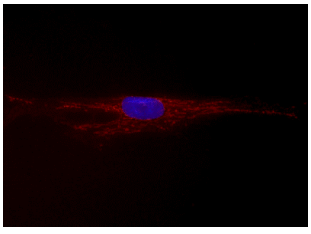
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ECH1 antibody [3B7CF2AC8] (ab123450)

ECH1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-ECH1 antibody

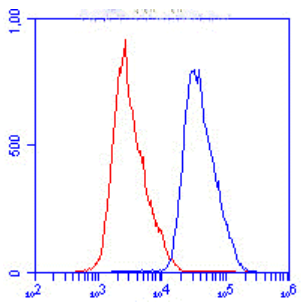
IHC image of ECH1 staining in Human normal heart muscle formalin fixed paraffin embedded tissue section, performed on a Leica BondTM system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab123450, 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.



Immunocytochemistry/ Immunofluorescence - Anti-ECH1 antibody [3B7CF2AC8] (ab123450)

ECH1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-ECH1 antibody

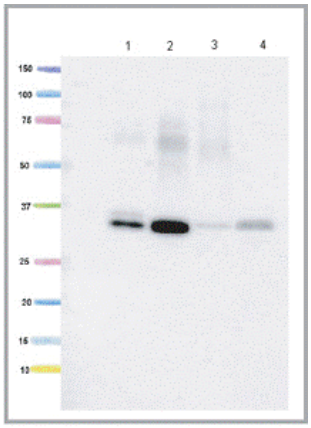
ab123450 at 1µg/ml staining ECH1 in 4% paraformaldehyde fixed and 0.1% Triton X-100 permeabilized HDFn cells by Immunocytochemistry followed by Alexa Fluor® 594 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1 hour (red). DAPI was used to stain the cell nuclei (blue).



Flow Cytometry - Anti-ECH1 antibody [3B7CF2AC8] (ab123450)

ECH1 Flow Cytometry staining using mouse Anti-ECH1 antibody

ab123450 at 1µg/ml staining ECH1 in HDFn cells by Flow Cytometry (blue) or no primary antibody control (red).



Western blot - Anti-ECH1 antibody [3B7CF2AC8] (ab123450)

ECH1 Western blot staining using mouse Anti-ECH1 antibody

All lanes:
Western blot - Anti-ECH1 antibody [3B7CF2AC8] (ab123450) at 1 µg/mL

Lane 1:
Human heart homogenate at 10 µg/mL

Lane 2:
Human liver homogenate at 10 µg/mL

Lane 3:
Rat heart homogenate at 10 µg/mL

Lane 4:
Cow heart homogenate at 10 µg/mL

Secondary

All lanes:
Goat-anti-Mouse HRP at 1/3000 dilution

Predicted band size: 36 kDa

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