abcam

ab110301

Anti-HADHB antibody [5C3AB7]

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	5C3AB7
Purification technique	Affinity purification Immunogen
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab110301 was produced in vitro using hybridomas grown in serum-free medium, and then purified by affinity purification.

Reactivity data

ICC

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

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.

WB

Tested

Species	Human
Dilution info	0.5 µg/mL
Notes	-

Target data

See full target information HADHB

Function Mitochondrial trifunctional enzyme catalyzes the last three of the four reactions of the mitochondrial beta-oxidation pathway (PubMed:29915090, PubMed:30850536, PubMed:8135828). The mitochondrial beta-oxidation pathway is the major energy-producing process in tissues and is performed through four consecutive reactions breaking down fatty acids into acetyl-CoA (PubMed:29915090). Among the enzymes involved in this pathway, the trifunctional enzyme exhibits specificity for long-chain fatty acids (PubMed:30850536). Mitochondrial trifunctional enzyme is a heterotetrameric complex composed of two proteins, the trifunctional enzyme subunit alpha/HADHA carries the 2,3-enoyl-CoA hydratase and the 3-hydroxyacyl-CoA dehydrogenase activities, while the trifunctional enzyme subunit beta/HADHB described here bears the 3-ketoacyl-CoA thiolase activity (PubMed:29915090, PubMed:30850536, PubMed:8135828).

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	The protein HADHB also called the beta subunit of the Mitochondrial Trifunctional Protein is a part of the enzyme system that breaks down fatty acids. It has an approximate molecular mass of 51 kDa. This protein performs mechanical functions that include enoyl-CoA hydratase hydroxyacyl-CoA dehydrogenase and thiolase activities which facilitate the conversion of fatty acids into acetyl-CoA units. HADHB is expressed in tissues with high energy demands especially in the liver heart and skeletal muscle where it plays an essential role in energy production.
Biological function summary	The HADHB protein forms a complex with HADHA creating the Mitochondrial Trifunctional Protein. This complex is involved in the inner mitochondrial membrane's beta-oxidation of long-chain fatty acids. Long-chain fatty acids serve as a vital energy source and the HADHB-HADHA complex makes their metabolism more efficient. This process provides ATP essential for maintaining cellular energy homeostasis especially during fasting and intense exercise.
Pathways	HADHB participates in the fatty acid beta-oxidation pathway a critical component of lipid metabolism. Through this pathway HADHB interacts with proteins like ACADVL and ACADM which catalyze different stages of fatty acid breakdown. Beta-oxidation plays an important role in producing acetyl-CoA subsequently entering the citric acid cycle linking HADHB to energy metabolism. These interactions emphasize the importance of HADHB in maintaining metabolic balance within cells.
Associated diseases and disorders	HADHB mutations can lead to mitochondrial trifunctional protein deficiency which results in metabolic disorders like fatty acid oxidation disorders and peripheral neuropathy. These conditions impair the body's ability to break down fatty acids

affecting energy homeostasis. Disorders related to HADHB may also involve proteins such as CPT1A which transfers fatty acids into mitochondria highlighting the interconnectedness of these metabolic pathways. Understanding HADHB's role in these diseases enhances the potential for targeted therapeutic strategies.

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

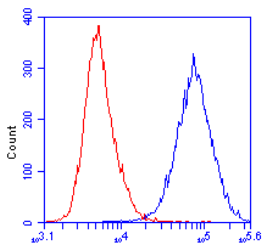
We do not recommend this combination. It is not covered by our product promise.

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.

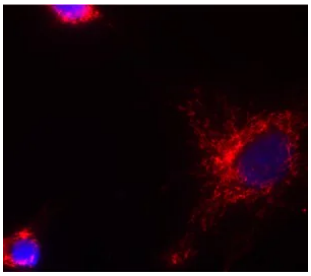
5 product images



Flow Cytometry - Anti-HADHB antibody [5C3AB7] (ab110301)

HADHB Flow Cytometry staining using mouse Anti-HADHB antibody

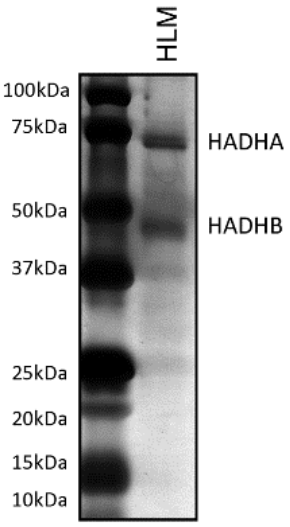
Flow cytometric analysis using ab110301 at 1µg/ml staining HADHB in HeLa cells (blue). Isotype control antibody (red).



Immunocytochemistry - Anti-HADHB antibody [5C3AB7] (ab110301)

HADHB Immunocytochemistry staining using mouse Anti-HADHB antibody

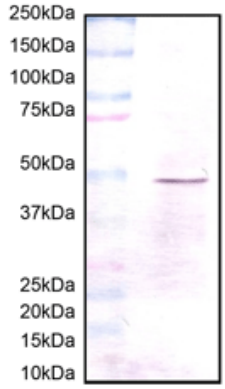
Immunocytochemistry analysis using ab110301 at 1µg/ml staining HADHB in HDFn cells (paraformaldehyde fixed and Triton X-100 permeabilized).
The secondary antibody was (red) Alexa Fluor® 594 goat anti-mouse IgG (H+L) used at a 1/1000 dilution. DAPI was used to stain the cell nuclei (blue).



Immunoprecipitation - Anti-HADHB antibody [5C3AB7] (ab110301)

As an IP antibody, MS733 works with human samples.
All lanes:
Immunoprecipitation - Anti-HADHB antibody [5C3AB7] (ab110301)

Predicted band size: 51 kDa



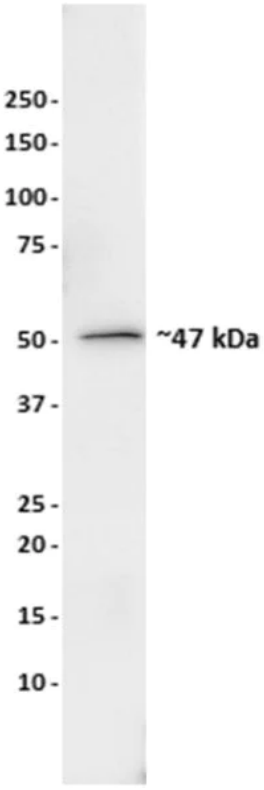
Western blot - Anti-HADHB antibody [5C3AB7] (ab110301)

HADHB Western blot staining of HepG2 cell lysate using mouse Anti-HADHB antibody

As a Western blot antibody, ab110301 works with HepG2 (human) cells.
All lanes:
Western blot - Anti-HADHB antibody [5C3AB7] (ab110301) at 0.5 µg/mL

All lanes:
HepG2 cell lysate

Predicted band size: 51 kDa



Western blot - Anti-HADHB antibody [5C3AB7] (ab110301)

All lanes:
Western blot - Anti-HADHB antibody [5C3AB7] (ab110301) at 0.5 µg/mL

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 51 kDa

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