abcam

ab110289

Anti-ACAA1/Beta-ketothiolase antibody [2H6BE7]

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	2H6BE7
Purification technique	Precipitation Ammonium Sulphate
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purity near homogeneity as judge by SDS-PAGE. The antibody was produced in-vitro using hybridomas grown in serum-free medium and then purified by biochemical fractionation.

Reactivity data

ICC

Tested

Species	Human
Dilution info	5 µg/mL
Notes	Heat-induced antigen retrieval improves signal

Expected

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

IP

Tested

Species	Mouse
Dilution info	5 µg/mL
Notes	-

Expected

Species	Human, Rat
Dilution info	Use at an assay dependent concentration.
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.

Expected

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

WB

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Species	Mouse
Dilution info	1 µg/mL
Notes	-

Species	Rat
Dilution info	1 µg/mL
Notes	-

Target data

See full target information ACAA1

Function	Responsible for the thiolytic cleavage of straight chain 3-keto fatty acyl-CoAs (3-oxoacyl-CoAs) (PubMed:11734571, PubMed:2882519). Plays an important role in fatty acid peroxisomal beta-oxidation (PubMed:11734571, PubMed:2882519). Catalyzes the cleavage of short, medium, long, and very long straight chain 3-oxoacyl-CoAs (PubMed:11734571, PubMed:2882519).

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	ACAA1 also known as Beta-ketothiolase is an enzyme involved in key metabolic processes. This enzyme with a molecular mass of approximately 41 kDa plays a pivotal role in the thiolytic cleavage of 3-ketoacyl-CoA an essential step in both fatty acid beta-oxidation and ketogenesis. ACAA1 is expressed in various tissues notably liver and muscle where high rates of fatty acid metabolism occur. As part of the peroxisome it functions effectively to maintain cellular lipid homeostasis.
Biological function summary	ACAA1 facilitates the metabolic breakdown of fatty acids by participating in the final steps of beta-oxidation. It does not form part of a larger enzymatic complex but it operates alongside enzymes like acyl-CoA oxidase and enoyl-CoA hydratase that contribute to the fatty acid oxidation pathway. Through its enzymatic activity ACAA1 directly influences energy production and metabolic rate which are important for maintaining cellular energy balance.
Pathways	Beta-ketothiolase plays an integral role in the fatty acid beta-oxidation and ketogenesis pathways. These pathways are critical for the breakdown of fatty acids into acetyl-CoA which enters the citric acid cycle for energy production. ACAA1 works closely with enzymes such as acetoacetyl-CoA thiolase and HMG-CoA lyase in these processes highlighting its involvement in converting fatty acids into usable energy forms.
Associated diseases and disorders	Malfunction or deficiency in ACAA1 can lead to issues like ketoacidosis and metabolic dysregulation disorders. The enzyme's dysfunction can result in improper fatty acid metabolism and accumulation of toxic intermediates. ACAA1 shares a connection with HMG-CoA synthase in ketogenesis and any disruption in these pathways may contribute to metabolic diseases impacting energy homeostasis and leading to serious health conditions.

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

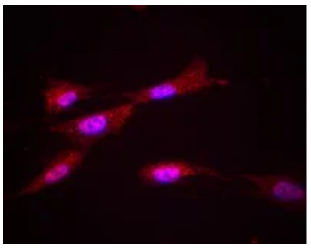
We do not recommend this combination. It is not covered by our product promise.

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.

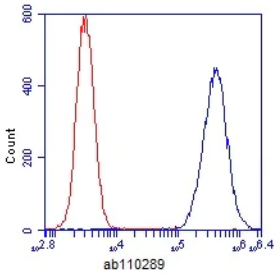
4 product images



Immunocytochemistry - Anti-ACAA1/Beta-ketothiolase antibody [2H6BE7] (ab110289)

ACAA1/Beta-ketothiolase Immunocytochemistry staining using mouse Anti-ACAA1/Beta-ketothiolase antibody

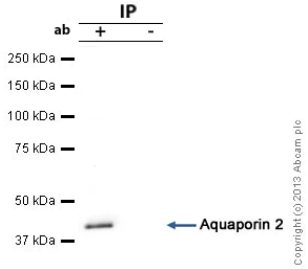
ab110289, at 5 µg/mL, staining ACAA1/Beta-ketothiolase in Human HepG2 cells. DAPI was used to stain the cell nuclei (blue).



Flow Cytometry - Anti-ACAA1/Beta-ketothiolase antibody [2H6BE7] (ab110289)

ACAA1/Beta-ketothiolase Flow Cytometry staining using mouse Anti-ACAA1/Beta-ketothiolase antibody

ab110289, at 1 µg/mL, staining ACAA1/Beta-ketothiolase in HL-60 cells (blue) or using an isotype control (red).



Immunoprecipitation - Anti-ACAA1/Beta-ketothiolase antibody [2H6BE7] (ab110289)

ACAA1/Beta-ketothiolase was immunoprecipitated using 0.5mg Mouse Liver tissue lysate, 5µg of Mouse monoclonal to ACAA1/Beta-ketothiolase and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).
The antibody was incubated under agitation with Protein G beads for 10min, Mouse Liver tissue lysate lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.

Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70°C; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab110289.

Secondary: Goat polyclonal to mouse IgG light chain specific (HRP) at 1/20,000 dilution.

Band: 44kDa; ACAA1/Beta-ketothiolase

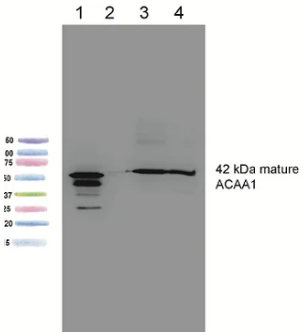
All lanes:
Immunoprecipitation - Anti-ACAA1/Beta-ketothiolase antibody [2H6BE7] (ab110289)

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 44 kDa

Exposure time: 4min



Western blot - Anti-ACAA1/Beta-ketothiolase antibody [2H6BE7] (ab110289)

All lanes:
Western blot - Anti-ACAA1/Beta-ketothiolase antibody [2H6BE7] (ab110289) at 1 µg/mL

Lane 1:
Human liver at 10 µg

Lane 2:
HepG2 at 10 µg

Lane 3:
Rat liver at 10 µg

Lane 4:
Mouse liver at 10 µg

Predicted band size: 44 kDa

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