abcam

ab248228

Anti-ACAA2 antibody [EPR6732(2)] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR6732(2)
Purification technique	Affinity purification Protein A
Dissociation constant	7.1 x 10^{-11} M
Concentration	1.065 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	-
Notes	Use of a HRP/AP polymerized secondary antibody is recommended.

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information 3-ketoacyl-CoA thiolase, mitochondrial

Function	In the production of energy from fats, this is one of the enzymes that catalyzes the last step of the mitochondrial beta-oxidation pathway, an aerobic process breaking down fatty acids into acetyl-CoA (Probable). Using free coenzyme A/CoA, catalyzes the thiolytic cleavage of medium- to long-chain unbranched 3-oxoacyl-CoAs into acetyl-CoA and a fatty acyl-CoA shortened by two carbon atoms (Probable). Also catalyzes the condensation of two acetyl-CoA molecules into acetoacetyl-CoA and could be involved in the production of ketone bodies (Probable). Also displays hydrolase activity on various fatty acyl-CoAs (PubMed:25478839). Thereby, could be responsible for the production of acetate in a side reaction to beta-oxidation (Probable). Abolishes BNIP3-mediated apoptosis and mitochondrial damage (PubMed:18371312).

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

ab248228 is the carrier-free version of ab128929.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes,

oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	ACAA2 also known as acetyl-CoA acyltransferase 2 or 3-ketoacyl-CoA thiolase plays an important role in the mechanical process of fatty acid oxidation. It functions in the mitochondria where it catalyzes the final step of the beta-oxidation pathway facilitating the conversion of acetoacetyl-CoA to two molecules of acetyl-CoA. This protein has a known mass of approximately 43 kDa. ACAA2 is expressed in tissues with high energy demands such as the liver heart and muscle highlighting its significance in energy metabolism.
Biological function summary	The enzyme catalyzes reactions in energy metabolism by breaking down fatty acids to generate energy. ACAA2 functions as part of the complex mitochondrial fatty acid beta-oxidation machinery. This process supports energy production particularly under conditions of carbohydrate depletion. The production of acetyl-CoA by ACAA2 is important for the TCA cycle through which cells generate ATP the primary energy carrier.
Pathways	Acetyl-CoA acyltransferase 2 plays significant roles in both the fatty acid beta-oxidation and ketogenesis pathways. In the beta-oxidation pathway it works together with other enzymes like CPT1A and HADHB to efficiently break down fatty acids. In ketogenesis acetyl-CoA units produced by ACAA2 are directed towards the formation of ketone bodies which serve as an alternative energy source for the brain and muscles during fasting or prolonged exercise.
Associated diseases and disorders	ACAA2 has connections to metabolic disorders particularly fatty acid oxidation disorders and diabetes. Deficiency in ACAA2 activity can result in accumulation and impaired degradation of fatty acids leading to metabolic imbalances. This enzyme also interacts with related proteins such as ACADM in the context of these metabolic diseases. Disruptions in ACAA2 function can face links to mitochondrial dysfunctions that contribute to diabetes due to its role in energy production and regulation.

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

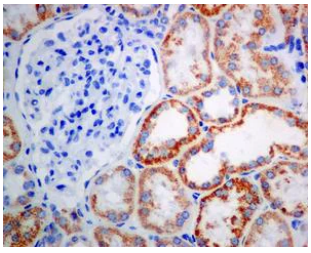
We do not recommend this combination. It is not covered by our product promise.

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.

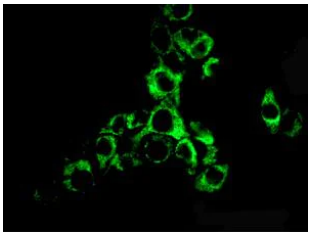
5 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ACAA2 antibody [EPR6732(2)] - BSA and Azide free (ab248228)

ACAA2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ACAA2 antibody

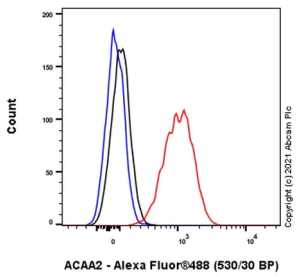
This data was developed using ab128929, the same antibody clone in a different buffer formulation.
ab128929, at a 1/50 dilution, staining Human ACAA2 in kidney, using Immunohistochemistry, Formalin/PFA-fixed paraffin-emebedded tissue. Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-ACAA2 antibody [EPR6732(2)] - BSA and Azide free (ab248228)

ACAA2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ACAA2 antibody

This data was developed using ab128929, the same antibody clone in a different buffer formulation.ab128929, at a 1/250 dilution, staining Human ACAA2 in HepG2 cells, using Immunofluorescence.

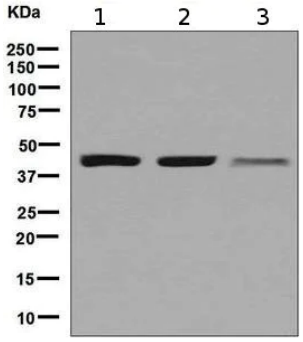


Flow Cytometry (Intracellular) - Anti-ACAA2 antibody [EPR6732(2)] - BSA and Azide free (ab248228)

ACAA2 Flow Cytometry (Intracellular) staining using rabbit Anti-ACAA2 antibody

This data was developed using ab128929, the same antibody clone in a different buffer formulation.

Flow Cytometry analysis of RPMI-8226 (Human plasmacytoma, myeloma B Lymphocyte) cells labeling ACAA2 with purified ab128929 at 1/100 dilution (10 µg/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-ACAA2 antibody [EPR6732(2)] - BSA and Azide free (ab248228)

ACAA2 Western blot staining using rabbit Anti-ACAA2 antibody

This data was developed using ab128929, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-ACAA2 antibody [EPR6732(2)] (ab128929) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

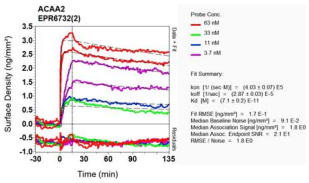
Lane 2:
Caco-2 cell lysate at 10 µg

Lane 3:
HepG2 cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 41 kDa



OI-RD Scanning - Anti-ACAA2 antibody [EPR6732(2)] - BSA and Azide free (ab248228)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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