abcam

ab238939

Anti-ACOX1/AOX antibody [EPR19038] - 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	EPR19038
Purification technique	Affinity purification Protein A
Concentration	1.03 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	-

Notes	-

Predicted

Species	Rat, Human
Dilution info	-
Notes	-

WB

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Predicted

Species	Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

Predicted

Species	Rat, Human
Dilution info	-
Notes	-

Target data

See full target information ACOX1

Function	Involved in the initial and rate-limiting step of peroxisomal beta-oxidation of straight-chain saturated and unsaturated very-long-chain fatty acids (PubMed:15060085, PubMed:17458872, PubMed:17603022, PubMed:32169171, PubMed:33234382, PubMed:7876265). Catalyzes the desaturation of fatty acyl-CoAs that have a saturated bond between C2 and C3 (2,3-saturated acyl-CoA) to 2-trans-enoyl-CoAs ((2E)-enoyl-CoAs), and donates electrons directly to molecular oxygen (O(2)), thereby producing hydrogen peroxide (H(2)O(2)) (PubMed:17458872, PubMed:17603022, PubMed:7876265). Isoform 1. Shows highest activity against medium-chain fatty acyl-CoAs. Shows optimum activity with a chain length of 10 carbons (decanoyl-CoA) in vitro. Isoform 2. Is active against a much broader range of substrates and shows activity towards long-chain fatty acyl-CoAs.

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

ab238939 is the carrier-free version of ab184032.

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	ACOX1 also known as AOX or AOX animal plays an important role in peroxisomal beta-oxidation of fatty acids. This enzyme catalyzes the desaturation of acyl-CoAs to 2-trans-enoyl-CoAs. ACOX1 with a mass of approximately 73 kDa is primarily expressed in liver and kidney tissues where it contributes to lipid metabolism. The functionality of this protein is essential for maintaining the balance of fatty acids within the peroxisome which is an important organelle in cellular lipid homeostasis.
Biological function summary	ACOX1 functions as part of the fatty acid oxidation process by ensuring the efficient breakdown of very long-chain fatty acids. This enzyme operates in conjunction with other proteins involved in the beta-oxidation enzyme complex. The activity of ACOX1 is significant for energy production metabolizing long-chain fatty acids which accumulate under normal physiological conditions. Proper function of this enzyme ensures that excessive accumulation of these fatty acids does not occur which can otherwise lead to cellular stress or dysfunction.
Pathways	ACOX1 fits into lipid metabolism pathways specifically the peroxisomal beta-oxidation pathway. This pathway is critical for the breakdown of long and very long-chain fatty acids. ACOX1 functions together with other peroxisomal enzymes such as peroxisomal acyl-coenzyme A oxidase 2 (ACOX2) to complete this metabolic process. Both these enzymes work in tandem to manage fatty acid levels within the peroxisomal pathway ensuring smooth cellular energy homeostasis and overall metabolic function.
Associated diseases and disorders	Mutations or deficiencies in ACOX1 relate closely to conditions like adrenoleukodystrophy and Zellweger syndrome. These disorders arise from impaired peroxisomal function leading to the accumulation of very long-chain fatty acids that are typically processed by ACOX1. Such accumulations can exacerbate neurological and hepatic disorders. Additionally a dysfunctional interaction between ACOX1 and peroxisomal protein peroxin 1 (PEX1) can result in

compromised peroxisome function further contributing to the pathology of these disorders.

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

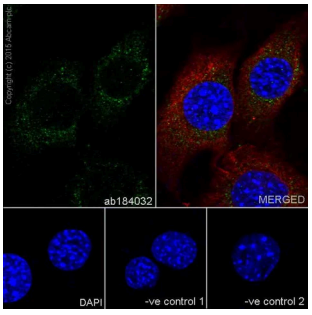
We do not recommend this combination. It is not covered by our product promise.

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



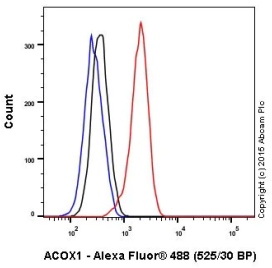
Immunocytochemistry/ Immunofluorescence - Anti-ACOX1/AOX antibody [EPR19038] - BSA and Azide free (ab238939)

ACOX1/AOX Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ACOX1/AOX antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling ACOX1/AOX with ab184032 at 1/250 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on NIH/3T3 cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [EPR19038] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG (AlexaFluor®594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab184032 at 1/250 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.

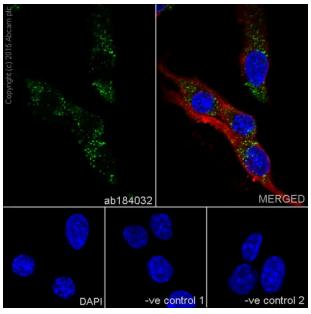
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab184032).



Flow Cytometry (Intracellular) - Anti-ACOX1/AOX antibody [EPR19038] - BSA and Azide free (ab238939)

ACOX1/AOX Flow Cytometry (Intracellular) staining using rabbit Anti-ACOX1/AOX antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed NIH/3T3 (Mouse embryonic fibroblast) cell linelabeling ACOX1/AOX with ab184032 at 1/100 dilution (red) compared with a Rabbit IgG, monoclonal [EPR19038] - Isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (FITC) at 1/500 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab184032).



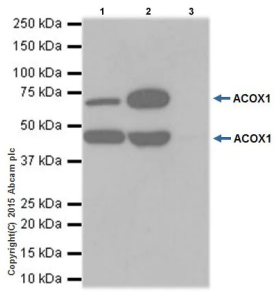
Immunocytochemistry/ Immunofluorescence - Anti-ACOX1/AOX antibody [EPR19038] - BSA and Azide free (ab238939)

ACOX1/AOX Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ACOX1/AOX antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized C6 (Rat glial tumor cell line) cells labeling ACOX1/AOX with ab184032 at 1/250 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on C6 cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [EPR19038] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG (AlexaFluor®594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab184032 at 1/250 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab184032).



Immunoprecipitation - Anti-ACOX1/AOX antibody [EPR19038] - BSA and Azide free (ab238939)

ACOX1/AOX was immunoprecipitated from 1mg of NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate with ab184032 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab184032 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: NIH/3T3 whole cell lysate 10µg (Input).
Lane 2: ab184032 IP in NIH/3T3 whole cell lysate.
Lane 3: Rabbit IgG, monoclonal [EPR19038] - Isotype Control (ab172730) instead of ab184032 in HeLa whole cell lysate.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 30 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab184032).
All lanes:
Immunoprecipitation - Anti-ACOX1/AOX antibody [EPR19038] (ab184032)

Predicted band size: 74 kDa

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