abcam

ab197013

Anti-ABCD1/ALD antibody [EPR15929]

Anti-ABCD1/ALD antibody [EPR15929] (ab197013) is a rabbit monoclonal antibody detecting ABCD1/ALD in **Western Blot, Flow Cytometry (Intra), ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR15929
Purification technique	Affinity purification Protein A
Concentration	0.68 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Rat
Dilution info	1/10000

Notes	-

Species	Human
Dilution info	1/10000
Notes	-

Species	Mouse
Dilution info	1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Notes	-

Target data

See full target information ABCD1

Function	ATP-dependent transporter of the ATP-binding cassette (ABC) family involved in the transport of very long chain fatty acid (VLCFA)-CoA from the cytosol to the peroxisome lumen (PubMed:11248239, PubMed:15682271, PubMed:16946495, PubMed:18757502, PubMed:21145416, PubMed:23671276, PubMed:29397936, PubMed:33500543). Coupled to the ATP-dependent transporter activity also has a fatty acyl-CoA thioesterase activity (ACOT) and hydrolyzes VLCFA-CoA into VLCFA prior their ATP-dependent transport into peroxisomes, the ACOT activity is essential during this transport process (PubMed:29397936, PubMed:33500543). Thus, plays a role in regulation of VLCFAs and energy metabolism namely, in the degradation and biosynthesis of fatty acids by beta-oxidation, mitochondrial function and microsomal fatty acid elongation (PubMed:21145416, PubMed:23671276). Involved in several processes; namely, controls the active myelination phase by negatively regulating the microsomal fatty acid elongation activity and may also play a role in axon and myelin maintenance. Also controls the cellular response to oxidative stress by regulating mitochondrial functions such as mitochondrial oxidative phosphorylation and depolarization. And finally controls the inflammatory response by positively regulating peroxisomal beta-oxidation of VLCFAs (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
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

What is this antibody validated in?
Anti-ABCD1/ALD antibody [EPR15929] (ab197013) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunocytochemistry/immunofluorescence (ICC/IF) in Human,

Mouse, Rat samples.

What is the molecular weight of ABCD1/ALD?
Anti-ABCD1/ALD [EPR15929] (ab197013) specifically detects a band for ABCD1/ALD (UniProt: P33897) at a molecular weight of 83kDa.

Other related products
We have a range of other formats of antibody clone [EPR15929] also available for your convenience: ab197013, Alexa Fluor® 647 - ab225409, Alexa Fluor® 488 - ab225410, Carrier free - ab238989

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	ABCD1 also known as the ABCD1 protein or ALD protein is encoded by the ABCD1 gene and belongs to the ATP-binding cassette (ABC) transporter family. It functions mechanically by transporting very long-chain fatty acids (VLCFAs) into peroxisomes where they can be metabolized. ABCD1 has a mass of approximately 80 kDa. Expression of ABCD1 is significant in tissues such as the liver adrenal glands and brain where it plays a role in lipid metabolism and cellular detoxification processes.
Biological function summary	ABCD1 contributes to the maintenance of normal fatty acid levels within cells. It is not known as part of a larger protein complex but it cooperates closely with other peroxisomal enzymes to facilitate the beta-oxidation of VLCFAs. This action ensures the breakdown of toxic compounds and has a significant role in maintaining cellular homeostasis. The proper function of ABCD1 is essential for preventing the accumulation of VLCFAs which can affect cellular function and viability.
Pathways	ABCD1 is integral to the metabolic pathway of peroxisomal beta-oxidation. This pathway is important for the degradation of excess VLCFAs which are otherwise difficult to break down in mitochondria. ABCD1 works in concert with related proteins such as ABCD2 and ABCD3 playing differentiated yet sometimes

overlapping roles in lipid transport and metabolism. This cooperation is important for maintaining normal cellular metabolism and preventing lipid accumulation.

Associated diseases and disorders

Defects in ABCD1 are directly associated with X-linked adrenoleukodystrophy (X-ALD) a neurodegenerative disorder characterized by the accumulation of VLCFAs in tissues. This condition leads to severe neurological impairment due to the toxic buildup of these lipids which disrupts normal brain function. Additionally the ABCD1 protein's dysfunction can indirectly affect the function of other proteins involved in lipid metabolism potentially exacerbating conditions related to peroxisomal 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

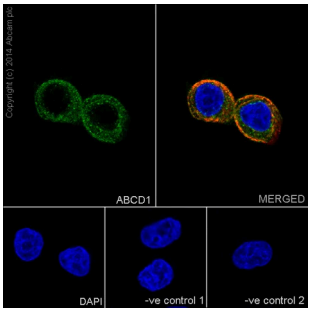
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images

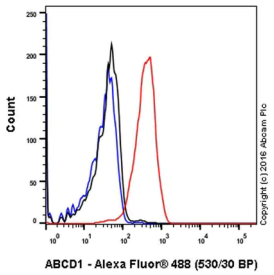


Immunocytochemistry/ Immunofluorescence - Anti-ABCD1/ALD antibody [EPR15929] (ab197013)

ABCD1/ALD Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ABCD1/ALD antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized MCF7 (Human breast adenocarcinoma cell line) cells labeling ABCD1 / ALD with ab197013 at 1/100 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at

1/500 dilution (green). Cytoplasm staining on MCF7 cell line is observed. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:
-ve control 1: ab197013 at 1/100 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/500 dilution.

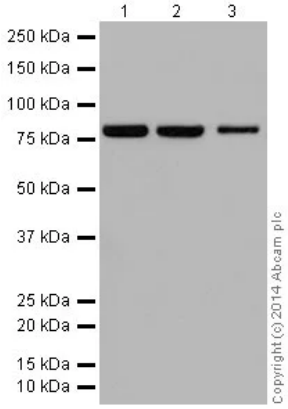


Flow Cytometry (Intracellular) - Anti-ABCD1/ALD antibody [EPR15929] (ab197013)

ABCD1/ALD Flow Cytometry (Intracellular) staining using rabbit Anti-ABCD1/ALD antibody

ab197013 staining ABCD1/ ALD in the human cell line HeLa (human cervix adenocarcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. The sample was incubated with the primary antibody at a dilution of 1/70. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody. Isoytype control: Rabbit monoclonal IgG (Black)

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Western blot - Anti-ABCD1/ALD antibody [EPR15929] (ab197013)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-ABCD1/ALD antibody [EPR15929] (ab197013) at 1/10000 dilution

Lane 1:
HepG2 (Human liver hepatocellular carcinoma) whole cell lysate at 20 µg

Lane 2:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate at 20 µg

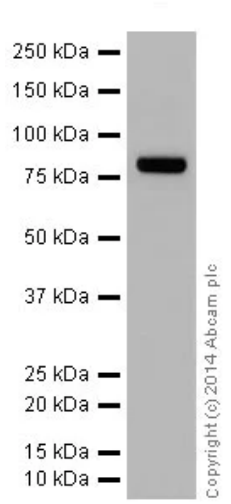
Lane 3:
Human fetal liver lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 82 kDa

Observed band size: 83 kDa



Western blot - Anti-ABCD1/ALD antibody [EPR15929] (ab197013)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-ABCD1/ALD antibody [EPR15929] (ab197013) at 1/10000 dilution

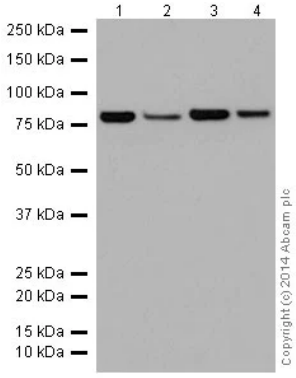
All lanes:
JAR (Human placenta choriocarcinoma cell line) whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 82 kDa

Observed band size: 83 kDa



Western blot - Anti-ABCD1/ALD antibody [EPR15929] (ab197013)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-ABCD1/ALD antibody [EPR15929] (ab197013) at 1/10000 dilution

Lane 1:
C6 (Rat glial tumor cells) whole cell lysate at 10 µg

Lane 2:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 3:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate at 10 µg

Lane 4:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 82 kDa

Observed band size: 83 kDa

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