abcam

ab251419

Anti-FACL4 antibody [EPR17587-42] - 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	EPR17587-42
Concentration	1.001 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IP

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information ACSL4

Function	Catalyzes the conversion of long-chain fatty acids to their active form acyl-CoA for both synthesis of cellular lipids, and degradation via beta-oxidation (PubMed:21242590, PubMed:22633490, PubMed:24269233, PubMed:31061331, PubMed:38720107). Preferentially activates arachidonate and eicosapentaenoate as substrates (PubMed:21242590). Preferentially activates 8,9-EET > 14,15-EET > 5,6-EET > 11,12-EET (PubMed:21242590). Modulates glucose-stimulated insulin secretion by regulating the levels of unesterified EETs (By similarity). Modulates prostaglandin E2 secretion (PubMed:21242590). Acts as an activator of ferroptosis by activating polyunsaturated fatty acids, especially arachidonate and adrenate, to their active form, generating the primary lipid-peroxidation substrates that contribute to ferroptosis (PubMed:27842070, PubMed:35027735, PubMed:38720107).

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

ab251419 is the carrier-free version of ab205199.

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	FACL4 also known as ACSL4 is a member of the long-chain acyl-CoA synthetase (ACSL) family. This enzyme catalyzes the activation of long-chain fatty acids by forming a thioester bond with coenzyme A. FACL4 plays a critical role in lipid

	metabolism. The molecular weight of FACL4 is approximately 80 kDa. This protein is expressed in various tissues with a higher presence in the brain and testis reflecting its important function in lipid-related processes in these areas.
Biological function summary	FACL4 contributes significantly to lipid metabolism and is involved in the synthesis of complex lipids. It facilitates the integration of long-chain fatty acids into phospholipids and triglycerides. FACL4 often functions as part of larger lipid synthesis and modification complexes working closely with other enzymes to maintain membrane integrity and signal transduction. Its activity influences cellular responses to changes in lipid availability and metabolic demands.
Pathways	FACL4 functions within the arachidonic acid metabolism and glycerophospholipid metabolic pathways. In these pathways other proteins such as COX and LOX interact with FACL4 to regulate inflammatory responses and membrane lipid composition. The enzyme's role in these pathways highlights its contribution to managing the balance between pro-inflammatory and anti-inflammatory metabolites which are essential for cell signaling and homeostasis.
Associated diseases and disorders	FACL4 is implicated in several neuropsychiatric conditions including X-linked adrenoleukodystrophy and breast cancer. In the context of these diseases FACL4 interacts with proteins like ALDP in adrenoleukodystrophy. Disrupted FACL4 activity can lead to abnormal lipid accumulation or impaired lipid signaling underlying the pathophysiology of these conditions. Understanding the role of FACL4 in these disorders highlights its potential as a therapeutic target for correcting lipid metabolism dysfunction.

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

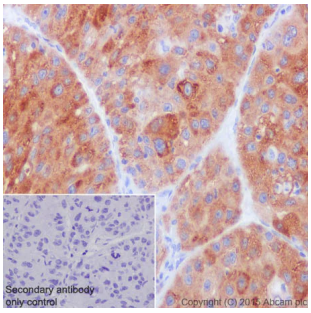
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images



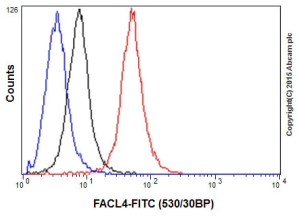
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

FACL4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-FACL4 antibody

This data was developed using ab205199, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human liver carcinoma tissue labeling FACL4 with ab205199 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution. Cytoplasmic staining on Human hepatocellular carcinoma tissue is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

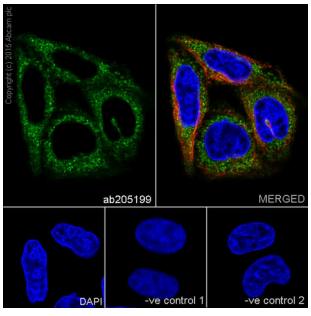
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

FACL4 Flow Cytometry (Intracellular) staining using rabbit Anti-FACL4 antibody

This data was developed using ab205199, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling FACL4 with ab205199 at 1/120 dilution (red) compared with a rabbit monoclonal IgG 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.

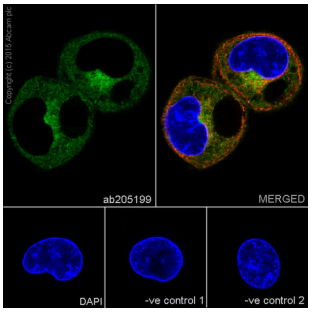


Immunocytochemistry/ Immunofluorescence - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

FACL4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-FACL4 antibody

This data was developed using ab205199, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling FACL4 with ab205199 at 1/50 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HeLa cell line. 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 1/1000 dilution

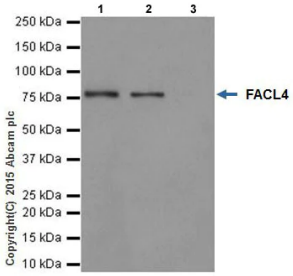
(red).
The negative controls are as follows;
-ve control 1: ab205199 at 1/50 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/1000 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

FACL4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-FACL4 antibody

This data was developed using ab205199, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HepG2 (Human liver hepatocellular carcinoma) cells labeling FACL4 with ab205199 at 1/50 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HepG2 cell line. 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 1/1000 dilution (red).
The negative controls are as follows;
-ve control 1: ab205199 at 1/50 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 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 1/1000 dilution.



Immunoprecipitation - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

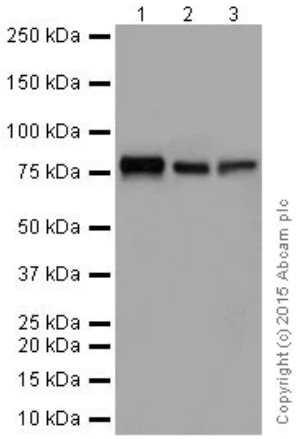
This data was developed using ab205199, the same antibody clone in a different buffer formulation.
FACL4 was immunoprecipitated from 1mg of Mouse brain whole cell lysate with ab205199 at 1/40 dilution. Western blot was performed from the immunoprecipitate using ab205199 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution.

Lane 1: Mouse brain whole cell lysate 10 µg (Input). Lane 2: ab205199 IP in Mouse brain whole cell lysate. Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab205199 in Mouse brain whole cell lysate
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 8 seconds

All lanes:
Immunoprecipitation - Anti-FACL4 antibody [EPR17587-42] (ab205199)

Predicted band size: 79 kDa



Western blot - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

This data was developed using ab205199, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-FACL4 antibody [EPR17587-42] (ab205199) at 1/1000 dilution

Lane 1:
Human fetal brain lysate at 10 µg

Lane 2:
Human fetal heart lysate at 10 µg

Lane 3:
Human fetal kidney lysate at 10 µg

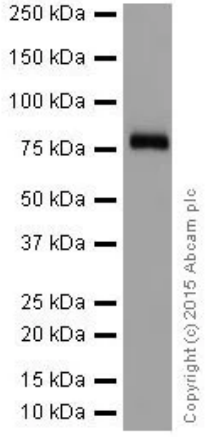
Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 79 kDa

Observed band size: 79 kDa

Exposure time: 1min



Western blot - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

FACL4 Western blot staining of 293 (Human epithelial cells from embryonic kidney) whole cell lysate using rabbit Anti-FACL4 antibody

This data was developed using ab205199, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-FACL4 antibody [EPR17587-42] (ab205199) at 1/5000 dilution

All lanes:
293 (Human epithelial cells from embryonic kidney) whole cell lysate at 20 µg

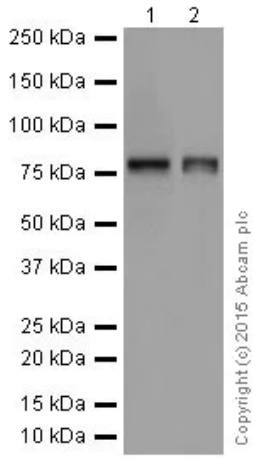
Secondary

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

Predicted band size: 79 kDa

Observed band size: 79 kDa

Exposure time: 3min



Western blot - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

This data was developed using ab205199, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-FACL4 antibody [EPR17587-42] (ab205199) at 1/5000 dilution

Lane 1:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
HepG2 (Human liver hepatocellular carcinoma) whole cell lysate at 20 µg

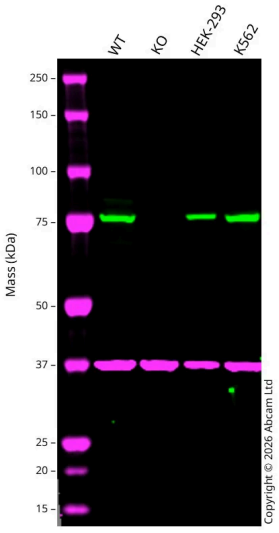
Secondary

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

Predicted band size: 44 kDa, 79 kDa

Observed band size: 24 kDa, 44 kDa, 72 kDa, 79 kDa

Exposure time: 30s



Western blot - Anti-FACL4 antibody [EPR17587-42] - BSA and Azide free (ab251419)

FACL4 Western blot staining using rabbit Anti-FACL4 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205199).

Western blot: Anti-FACL4 antibody [EPR17587-42] ab205199 staining at 1/1000 dilution, shown in green; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 76 kDa in Wild-type A431 cell line with no signal observed at this size in ACSL4 knockout A431 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-FACL4 antibody [EPR17587-42] (ab205199) at 1/1000 dilution

Lane 1:
Wild-type A431 cell lysate at 20 µg

Lane 2:
Western blot - Human ACSL4 (FACL4) knockout A-431 cell line (ab269613) at 20 µg

Lane 3:
HEK-293 cell lysate at 20 µg

Lane 4:
K562 cell lysate at 20 µg

Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 79 kDa

Observed band size: 76 kDa

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