abcam

ab240135

Anti-FACL4 antibody [EPR8640] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR8640
Purification technique	Affinity purification Protein A
Concentration	1.019 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

Species	Mouse, Rat
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

ab240135 is the carrier-free version of ab155282.

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

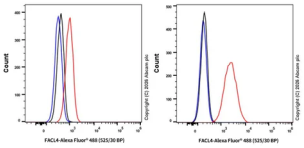
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images

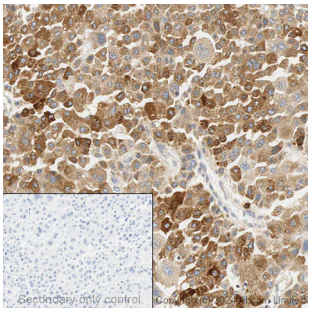


Flow Cytometry (Intracellular) - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

FACL4 Flow Cytometry (Intracellular) 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 (ab155282).

Intracellular flow cytometric analysis of 90% methanol permeabilized SK-BR-2 and HepG2 cells labelling FACL4 with ab155282 at a dilution of 1/5000 (red). Cells were fixed with 4% paraformaldehyde. Goat anti-Rabbit IgG H&L (Alexa Fluor® 488, ab150081) preadsorbed (1/5000) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG (ab172730). Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.

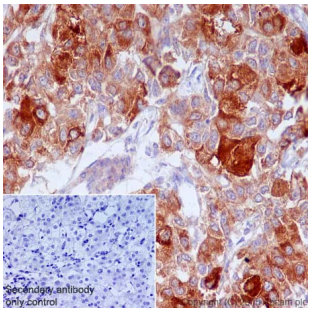


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab155282).
Immunohistochemical analysis of formalin fixed paraffin embedded Human liver carcinoma labelling FACL4 with ab155282 at a concentration of 0.5 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

ab155282 anti FACL4 antibody EPR8640 was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

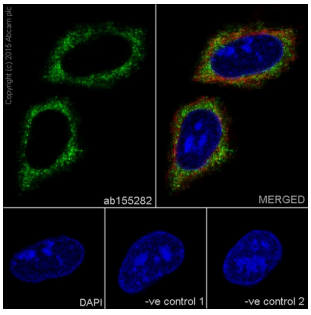
Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human hepatocellular carcinoma tissue labelling FACL4 with purified ab155282 at 1/200. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051, a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab155282).



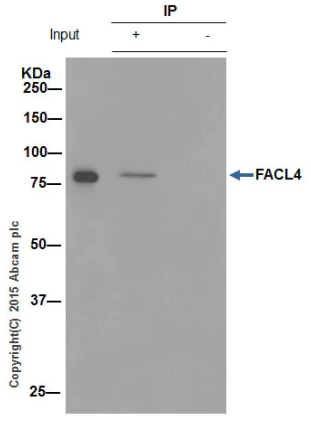
Immunocytochemistry/ Immunofluorescence - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

FACL4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-FACL4 antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa cells labelling FACL4 with purified ab155282 at 1/200. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291, a mouse anti-tubulin (1/1000) and ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) were also used.
Control 1: primary antibody (1/200) and secondary antibody, ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000).

Control 2: ab7291 (1/1000) and secondary antibody, ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab155282).



Immunoprecipitation - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

ab155282 (purified) at 1/30 immunoprecipitating FACL4 in HepG2 whole cell lysate.
Lane 1 (input): HepG2 whole cell lysate (10µg)

Lane 2 (+): ab155282 + HepG2 whole cell lysate.

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab155282 in HepG2 whole cell lysate.

For western blotting, a HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG was used as the secondary antibody (1/1500).

Blocking buffer and concentration: 5% NFDM/TBST.

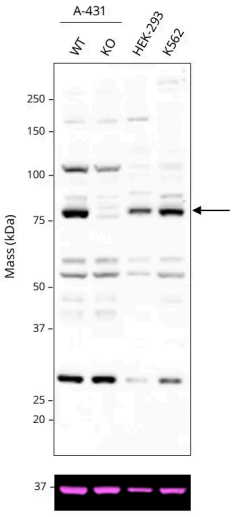
Diluting buffer and concentration: 5% NFDM /TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab155282).

All lanes:
Immunoprecipitation - Anti-FACL4 antibody [EPR8640] (ab155282)

Predicted band size: 79 kDa

Observed band size: 79 kDa



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Western blot - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

FACL4 Western blot staining using rabbit Anti-FACL4 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab305646).

Western blot: HRP Anti-FACL4 antibody [EPR8640] ab305646 staining at 1/1000 dilution, shown in black; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 79 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 antibody used was Goat anti-Mouse 680RD at 1/20,000 dilution.

All lanes:
Western blot - HRP Anti-FACL4 antibody [EPR8640] (ab305646) at 1/1000 dilution

Lane 1:
Wild-type A431 at 20 µg

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

Lane 3:
HEK-293 at 20 µg

Lane 4:
K562 at 20 µg

Secondary

All lanes:
Goat anti-Mouse 680RD at 1/20000 dilution

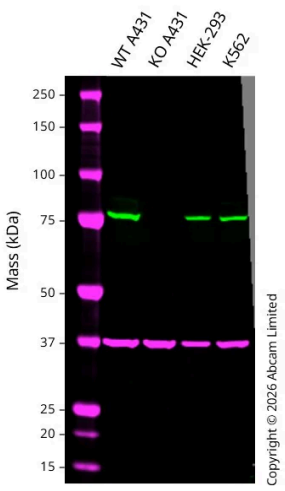
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 79 kDa

Observed band size: 79 kDa

Exposure time: 0.5s



Western blot - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

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 and sodium azide (ab155282).

Western blot: Anti-FACL4 antibody [EPR8640] ab155282 staining at 1/10000 dilution, shown in green; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 79 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 [EPR8640] (ab155282) at 1/10000 dilution

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

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

Lane 3:
HEK-293 cell lysates at 20 µg

Lane 4:
K562 cell lysates at 20 µg

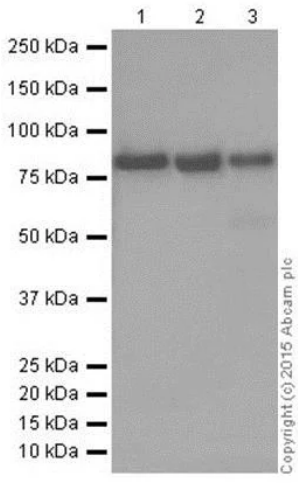
Secondary

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: 79 kDa



Western blot - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

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 (ab155282).
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-FACL4 antibody [EPR8640] (ab155282) at 1/10000 dilution

Lane 1:
HeLa whole cell lysate at 20 µg

Lane 2:
HEK293 whole cell lysate at 20 µg

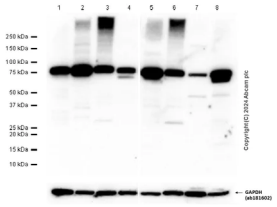
Lane 3:
Human fetal kidney tissue lysate at 20 µg

Secondary

All lanes:
Peroxidase-conjugate goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 79 kDa

Observed band size: 79 kDa



Western blot - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

FACL4 Western blot staining using rabbit Anti-FACL4 antibody

This data was developed using ab155282, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/1000000 dilution.

Smear bands above the 79 kDa position is acceptable, as FACL4 contains multiple ubiquitination sites.

All lanes:
Western blot - Anti-FACL4 antibody [EPR8640] (ab155282) at 1/1000 dilution

Lane 1:
Human brainstem tissue lysate at 20 µg

Lane 2:
SH-SY5Y (human neuroblastoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Mouse brain tissue lysate at 20 µg

Lane 4:
Mouse heart tissue lysate at 20 µg

Lane 5:
Mouse kidney tissue lysate at 20 µg

Lane 6:
Rat brain tissue lysate at 20 µg

Lane 7:
Rat heart tissue lysate at 20 µg

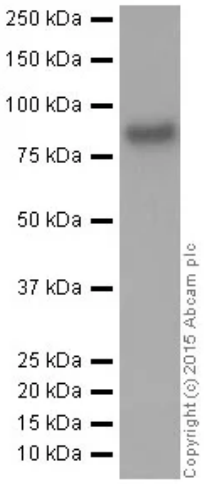
Lane 8:
Rat kidney tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 79 kDa

Exposure time: 100s



Western blot - Anti-FACL4 antibody [EPR8640] - BSA and Azide free (ab240135)

FACL4 Western blot staining of HepG2 whole cell lysate 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 (ab155282).
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-FACL4 antibody [EPR8640] (ab155282) at 1/50000 dilution

All lanes:
HepG2 whole cell lysate at 20 µg

Secondary

All lanes:
Peroxidase-conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 79 kDa

Observed band size: 79 kDa

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