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Anti-FACL4/ACSL4 Antibody Picoband™ (monoclonal, 4I7)

Catalog # ABO15120

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	O60488
Host	Mouse
Isotype	Mouse IgG1
Reactivity	Human
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-FACL4/ACSL4 Antibody Picoband™ (monoclonal, 4I7) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human.
Reconstitution	Adding 0.2 ml of distilled water will yield a concentration of 500 □g/ml.

Additional Information

Gene ID	2182
Other Names	Long-chain-fatty-acid--CoA ligase 4, 6.2.1.3, Arachidonate--CoA ligase, 6.2.1.15, Long-chain acyl-CoA synthetase 4, LACS 4, ACSL4, ACS4, FACL4, LACS4
Calculated MW	79188
Application Details	Western blot, 0.25-0.5 □g/ml, Human Immunohistochemistry(Paraffin-embedded Section), 2-5 □g/ml, Human Immunocytochemistry/Immunofluorescence, 5 □g/ml, Human Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Source	Eukaryota
Contents	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Clone Names	Clone: 4I7
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human FACL4/ACSL4.
Purification	Immunogen affinity purified.
Storage	At -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freezing and thawing.

Protein Information

Name	ACSL4
Synonyms	ACS4, FACL4, LACS4
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).
Cellular Location	Mitochondrion outer membrane; Single-pass type III membrane protein. Endoplasmic reticulum membrane; Single-pass type III membrane protein. Cell membrane; Single-pass type III membrane protein

Background

Long-chain-fatty-acid—CoA ligase 4 is an enzyme that in humans is encoded by the ACSL4 gene. It is mapped to Xq23. The protein encoded by this gene is an isozyme of the long-chain fatty-acid-coenzyme A ligase family. Although differing in substrate specificity, subcellular localization, and tissue distribution, all isozymes of this family convert free long-chain fatty acids into fatty acyl-CoA esters, and thereby play a key role in lipid biosynthesis and fatty acid degradation. This isozyme preferentially utilizes arachidonate as substrate. The absence of this enzyme may contribute to the cognitive disability or Alport syndrome. Alternative splicing of this gene generates multiple transcript variants.

Images

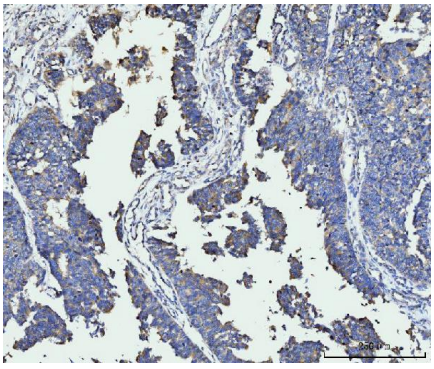
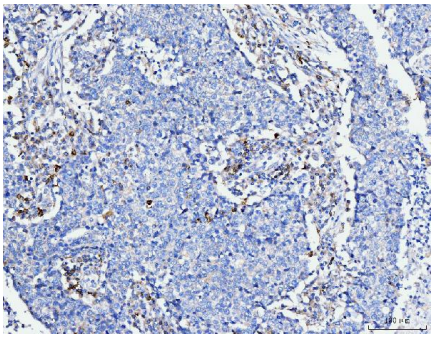


Figure 2. IHC analysis of FACL4/ACSL4 using anti-FACL4/ACSL4 antibody (M04372). FACL4/ACSL4 was detected in a paraffin-embedded section of human bladder epithelial carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-FACL4/ACSL4 Antibody (M04372) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

Figure 3. IHC analysis of FACL4/ACSL4 using anti-FACL4/ACSL4 antibody (M04372). FACL4/ACSL4 was detected in a paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked



with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-FACL4/ACSL4 Antibody (M04372) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

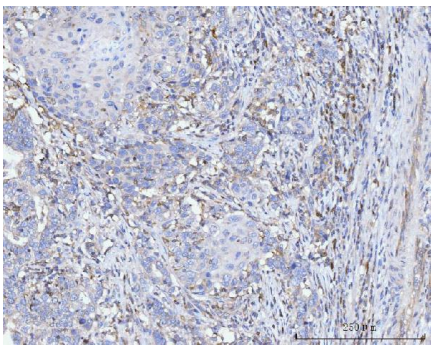


Figure 4. IHC analysis of FACL4/ACSL4 using anti-FACL4/ACSL4 antibody (M04372).
FACL4/ACSL4 was detected in a paraffin-embedded section of human metaplasia of squamous cells of the renal pelvis tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-FACL4/ACSL4 Antibody (M04372) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

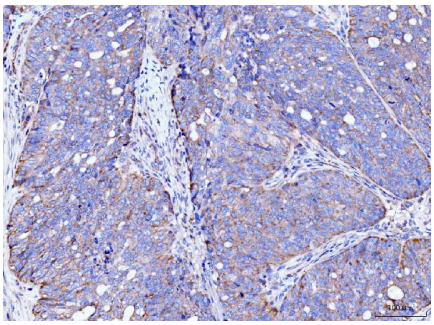


Figure 5. IHC analysis of FACL4/ACSL4 using anti-FACL4/ACSL4 antibody (M04372).
FACL4/ACSL4 was detected in a paraffin-embedded section of human ovarian cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-FACL4/ACSL4 Antibody (M04372) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

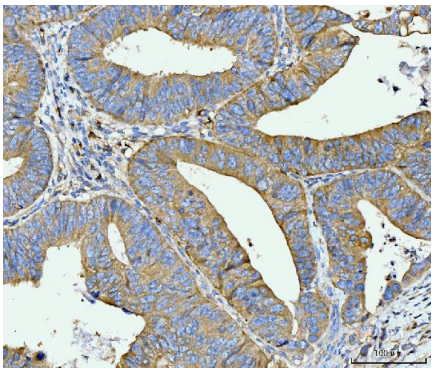
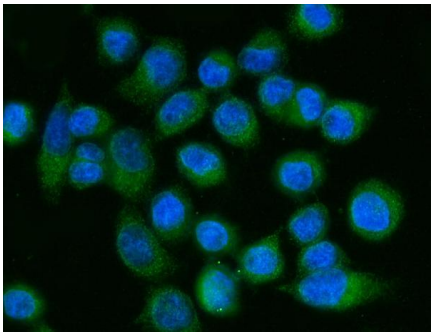


Figure 6. IHC analysis of FACL4/ACSL4 using anti-FACL4/ACSL4 antibody (M04372).
FACL4/ACSL4 was detected in a paraffin-embedded section of human rectal moderately differentiated adenocarcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-FACL4/ACSL4 Antibody (M04372) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

Figure 7. IF analysis of FACL4/ACSL4 using anti-FACL4/ACSL4 antibody (M04372).
FACL4/ACSL4 was detected in an immunocytochemical section of SiHa cells. Enzyme antigen retrieval was



performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 µg/mL mouse anti-FACL4/ACSL4 Antibody (M04372) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

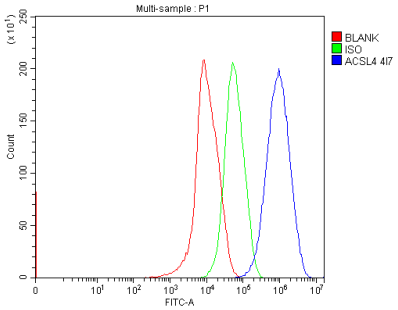


Figure 8. Flow Cytometry analysis of HepG2 cells using anti-FACL4/ACSL4 antibody (M04372).
Overlay histogram showing HepG2 cells stained with M04372 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-FACL4/ACSL4 Antibody (M04372, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

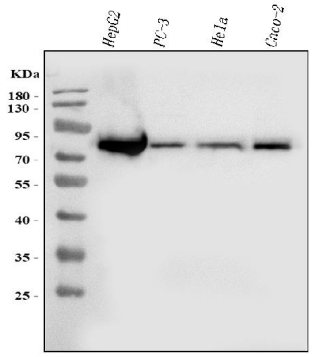


Figure 1. Western blot analysis of FACL4/ACSL4 using anti-FACL4/ACSL4 antibody (M04372).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.
Lane 1: human HepG2 whole cell lysates,
Lane 2: human PC-3 whole cell lysates,
Lane 3: human Hela whole cell lysates,
Lane 4: human Caco-2 whole cell lysates.
After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-FACL4/ACSL4 antigen affinity purified monoclonal antibody (Catalog # M04372) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for FACL4/ACSL4 at approximately 79 kDa. The expected band size for FACL4/ACSL4 is at 68 kDa.

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