SANTA CRUZ BIOTECHNOLOGY, INC.

ACSL3 (H-9): sc-166374

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Acyl-CoA synthetases, also known as long-chain fatty-acid CoA synthases (FACL) or palmitoyl-CoA ligases, include ACSL1-6, which are all single-pass membrane proteins localizing to the mitochondrion, microsome or peroxisome. ACSL proteins are important for synthesis of cellular lipids and for β-oxidation degradation. Specifically, ACSL proteins catalyze the activation of long-chain fatty acids to acyl-CoAs, which can be metabolized to form CO_2, triacylglycerol (TAG), phospholipids (PL) and cholesteryl esters (CE). ACSL3 preferentially utilizes laurate, myristate, arachidonate and eicosapentaenoate among saturated and unsaturated long chain fatty acids. ACSL3 is expressed as two isoforms in various tissues, including brain, heart, placenta, prostate, skeletal muscle, testis and thymus. ACSL4 preferentially utilizes arachidonate and is abundant in steroidogenic tissues. ACSL4 may modulate female fertility and uterine prostaglandin production.

REFERENCES

1. Fujino, T., et al. 1996. Molecular characterization and expression of rat acyl-CoA synthetase 3. J. Biol. Chem. 271: 16748-16752.
2. Fujino, T., et al. 1997. Alternative translation initiation generates acyl-CoA synthetase 3 isoforms with heterogeneous amino termini. J. Biochem. 122: 212-216.

CHROMOSOMAL LOCATION

Genetic locus: ACSL3 (human) mapping to 2q36.1; Acsl3 (mouse) mapping to 1 C4.

SOURCE

ACSL3 (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 645-672 at the C-terminus of ACSL3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACSL3 (H-9) is available conjugated to agarose (sc-166374 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166374 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166374 PE), fluorescein (sc-166374 FITC), Alexa Fluor® 488 (sc-166374 AF488), Alexa Fluor® 546 (sc-166374 AF546), Alexa Fluor® 594 (sc-166374 AF594) or Alexa Fluor® 647 (sc-166374 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166374 AF680) or Alexa Fluor® 790 (sc-166374 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166374 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ACSL3 (H-9) is recommended for detection of ACSL3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

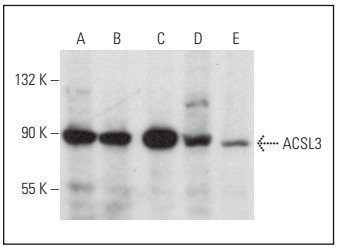
ACSL3 (H-9) is also recommended for detection of ACSL3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ACSL3 siRNA (h): sc-60617, ACSL3 siRNA (m): sc-60618, ACSL3 shRNA Plasmid (h): sc-60617-SH, ACSL3 shRNA Plasmid (m): sc-60618-SH, ACSL3 shRNA (h) Lentiviral Particles: sc-60617-V and ACSL3 shRNA (m) Lentiviral Particles: sc-60618-V.

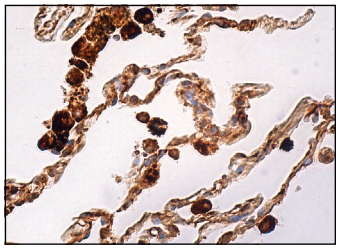
Molecular Weight of ACSL3: 79/80 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, RT-4 whole cell lysate: sc-364257 or TE671 cell lysate: sc-2416.

DATA



ACSL3 (H-9): sc-166374. Western blot analysis of ACSL3 expression in TE671 (**A**), A-431 (**B**), RT-4 (**C**), C2C12 (**D**) and C6 (**E**) whole cell lysates.



ACSL3 (H-9): sc-166374. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing cytoplasmic staining of pneumocytes and macrophages.

SELECT PRODUCT CITATIONS

1. Soupene, E., et al. 2012. Eukaryotic protein recruitment into the *Chlamydia* inclusion: implications for survival and growth. PLoS ONE 7: e36843.
2. Eck, F., et al. 2020. ACSL3 is a novel GABARAPL2 interactor that links ufmylation and lipid droplet biogenesis. J. Cell Sci. 133: jcs243477.
3. Tang, S., et al. 2022. Olaparib synergizes with arsenic trioxide by promoting apoptosis and ferroptosis in platinum-resistant ovarian cancer. Cell Death Dis. 13: 826.
4. Yang, X., et al. 2023. Regulation of VKORC1L1 is critical for p53-mediated tumor suppression through Vitamin K metabolism. Cell Metab. 35: 1474-1490.e8.
5. Sae-Fung, A., et al. 2024. ACSL3 is an unfavorable prognostic marker in cholangiocarcinoma patients and confers ferroptosis resistance in cholangiocarcinoma cells. NPJ Precis. Oncol. 8: 284.

RESEARCH USE

For research use only, not for use in diagnostic procedures.