

# ACSL1 (C-16): sc-49008

## 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  $\beta$ -oxidation degradation. Specifically, ACSL proteins catalyze the activation of long-chain fatty acids to acyl-CoAs, which can be metabolized to form CO<sub>2</sub>, triacylglycerol (TAG), phospholipids (PL) and cholesteryl esters (CE). ACSL1 is highly expressed in liver and preferentially utilizes palmitoleate, oleate and linoleate.

## REFERENCES

1. Iijima, H., Fujino, T., Minekura, H., Suzuki, H., Kang, M.J. and Yamamoto, T. 1996. Biochemical studies of two rat acyl-CoA synthetases, ACS1 and ACS2. *Eur. J. Biochem.* 242: 186-190.
2. Sevoz, C., Benoit, E. and Buronfosse, T. 2000. Thioesterification of 2-aryl-propionic acids by recombinant acyl-coenzyme A synthetases (ACS1 and ACS2). *Drug Metab. Dispos.* 28: 398-402.
3. Muoio, D.M., Lewin, T.M., Wiedmer, P. and Coleman, R.A. 2000. Acyl-CoAs are functionally channeled in liver: potential role of acyl-CoA synthetase. *Am. J. Physiol. Endocrinol. Metab.* 279: E1366-E1373.
4. Lewin, T.M., Kim, J.H., Granger, D.A., Vance, J.E. and Coleman, R.A. 2001. Acyl-CoA synthetase isoforms 1, 4 and 5 are present in different subcellular membranes in rat liver and can be inhibited independently. *J. Biol. Chem.* 276: 24674-24679.
5. Coleman, R.A., Lewin, T.M., Van Horn, C.G. and Gonzalez-Baró, M.R. 2002. Do long-chain acyl-CoA synthetases regulate fatty acid entry into synthetic versus degradative pathways? *J. Nutr.* 132: 2123-2126.
6. Hall, A.M., Smith, A.J. and Bernlohr, D.A. 2003. Characterization of the acyl-CoA synthetase activity of purified murine fatty acid transport protein 1. *J. Biol. Chem.* 278: 43008-43013.

## CHROMOSOMAL LOCATION

Genetic locus: ACSL1 (human) mapping to 4q35.1; Acsl1 (mouse) mapping to 8 B1.1.

## SOURCE

ACSL1 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of ACSL1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-49008 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

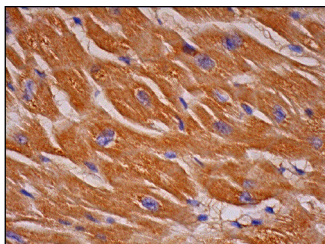
ACSL1 (C-16) is recommended for detection of ACSL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ACSL1 (C-16) is also recommended for detection of ACSL1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ACSL1 siRNA (h): sc-60615, ACSL1 siRNA (m): sc-60616, ACSL1 shRNA Plasmid (h): sc-60615-SH, ACSL1 shRNA Plasmid (m): sc-60616-SH, ACSL1 shRNA (h) Lentiviral Particles: sc-60615-V and ACSL1 shRNA (m) Lentiviral Particles: sc-60616-V.

Molecular Weight of ACSL1: 78/83 kDa.

## DATA



ACSL1 (C-16): sc-49008. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## SELECT PRODUCT CITATIONS

1. Bogazzi, F., Raggi, F., Ultimieri, F., Russo, D., D'Alessio, A., Manariti, A., Brogioni, S., Manetti, L. and Martino, E. 2009. Regulation of cardiac fatty acids metabolism in transgenic mice overexpressing bovine GH. *J. Endocrinol.* 201: 419-427.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **ACSL1 (3G4): sc-293281**, our highly recommended monoclonal alternative to ACSL1 (C-16).