

# ACSL4 (H-53): sc-134507

## 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). 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.
3. Cho, Y.Y., et al. 2000. Regulation by adrenocorticotrophic hormone and arachidonate of the expression of Acyl-CoA synthetase 4, an arachidonate-preferring enzyme expressed in steroidogenic tissues. *Biochem. Biophys. Res. Commun.* 274: 741-745.
4. Minekura, H., et al. 2001. Genomic organization and transcription units of the human Acyl-CoA synthetase 3 gene. *Gene* 278: 185-192.
5. Muoio, D.M., et al. 2001. Acyl-CoAs are functionally channeled in liver: potential role of Acyl-CoA synthetase. *Am. J. Physiol. Endocrinol. Metab.* 279: E1366-E1373.
6. Cho, Y.Y., et al. 2001. Abnormal uterus with polycysts, accumulation of uterine prostaglandins, and reduced fertility in mice heterozygous for Acyl-CoA synthetase 4 deficiency. *Biochem. Biophys. Res. Commun.* 284: 993-997.

## CHROMOSOMAL LOCATION

Genetic locus: ACSL4 (human) mapping to Xq23; *Acs14* (mouse) mapping to X F2.

## SOURCE

ACSL4 (H-53) is a rabbit polyclonal antibody raised against amino acids 623-675 mapping near the C-terminus of ACSL4 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.

## RESEARCH USE

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

## APPLICATIONS

ACSL4 (H-53) is recommended for detection of short isoform and long isoform of ACSL4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

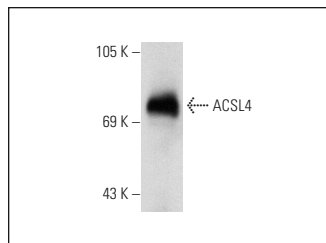
ACSL4 (H-53) is also recommended for detection of short isoform and long isoform of ACSL4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ACSL4 siRNA (h): sc-60619, ACSL4 siRNA (m): sc-60620, ACSL4 shRNA Plasmid (h): sc-60619-SH, ACSL4 shRNA Plasmid (m): sc-60620-SH, ACSL4 shRNA (h) Lentiviral Particles: sc-60619-V and ACSL4 shRNA (m) Lentiviral Particles: sc-60620-V.

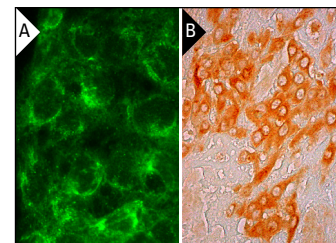
Molecular Weight of ACSL4: 75 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

## DATA



ACSL4 (H-53): sc-134507. Western blot analysis of ACSL4 expression in Hep G2 whole cell lysate.



ACSL4 (H-53): sc-134507. Immunofluorescence staining of formalin-fixed Hep G2 cells showing mitochondrial localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of decidual cells (B).

## SELECT PRODUCT CITATIONS

1. Gubern, C., et al. 2013. miRNA expression is modulated over time after focal ischaemia: up-regulation of miR-347 promotes neuronal apoptosis. *FEBS J.* 280: 6233-46.

## STORAGE

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

**MONOS**  
Satisfaction  
Guaranteed

Try **ACSL4 (F-4): sc-365230** or **ACSL4 (A-5): sc-271800**, our highly recommended monoclonal alternatives to ACSL4 (H-53).