

ACSL4 (K-12): sc-47996

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 CO₂, 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: E1366-7133.
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.
7. Minekura, H., et al. 2001. Exon/intron organization and transcription units of the human acyl-CoA synthetase 4 gene. *Biochem. Biophys. Res. Commun.* 286: 80-86.
8. Coleman, R.A., et al. 2002. Do long-chain acyl-CoA synthetases regulate fatty acid entry into synthetic versus degradative pathways? *J. Nutr.* 132: 2123-2126.

CHROMOSOMAL LOCATION

Genetic locus: ACSL4 (human) mapping to Xq23; Acsl4 (mouse) mapping to X F2.

SOURCE

ACSL4 (K-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ACSL4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-47995 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ACSL4 (K-12) 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), immunofluorescence (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 (K-12) is also recommended for detection of short isoform and long isoform of ACSL4 in additional species, including canine.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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



Try **ACSL4 (F-4): sc-365230** or **ACSL4 (A-5): sc-271800**, our highly recommended monoclonal alternatives to ACSL4 (K-12).