

ACSF3 (D-14): sc-136561

BACKGROUND

ACSF3 (acyl-CoA synthetase family member 3) is a 576 amino acid protein belonging to the ATP-dependent AMP-binding enzyme family. Encoded by a gene that maps to human chromosome 16q24.3, ACSF3 participates in ATP binding, ligase activity, acid-thiol ligase activity and nucleotide binding. Similar to all enzymatically active acyl-CoA synthetases, ACSF3 contains both motifs I and II. ACSF3 catalyzes the initial reaction in fatty acid metabolism by forming a thioester with CoA. ACSF3 displays a preference for lignoceric acid, a 24 carbon very long-chain fatty acid (VLCFA), but does not significantly activate palmitate, a 6 carbon long-chain fatty acid (LCFA), suggesting ACSF3 may have a preference for very-long-chain substrates. ACSF3 exhibits mitochondrial subcellular localization and exists as two alternatively spliced isoforms.

REFERENCES

1. Fujino, T., et al. 1996. Molecular characterization and expression of rat acyl-CoA synthetase 3. *J. Biol. Chem.* 271: 16748-16752.
2. Pei, Z., et al. 2004. Mouse very long-chain acyl-CoA synthetase 3/fatty acid transport protein 3 catalyzes fatty acid activation but not fatty acid transport in MA-10 cells. *J. Biol. Chem.* 279: 54454-54462.
3. Watkins, P.A., et al. 2007. Evidence for 26 distinct acyl-coenzyme A synthetase genes in the human genome. *J. Lipid Res.* 48: 2736-2750.
4. Bhalla, K., et al. 2008. Alterations in CDH15 and KIRREL3 in patients with mild to severe intellectual disability. *Am. J. Hum. Genet.* 83: 703-713.
5. Zhang, E.E., et al. 2009. A genome-wide RNAi screen for modifiers of the circadian clock in human cells. *Cell* 139: 199-210.
6. Forner, F., et al. 2009. Proteome differences between brown and white fat mitochondria reveal specialized metabolic functions. *Cell Metab.* 10: 324-335.
7. SWISS-PROT/TrEMBL (Q4G176). World Wide Web URL: <http://www.uniprot.org/uniprot/Q4G176>

CHROMOSOMAL LOCATION

Genetic locus: ACSF3 (human) mapping to 16q24.3; Acsf3 (mouse) mapping to 8 E1.

SOURCE

ACSF3 (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ACSF3 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-136561 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

ACSF3 (D-14) is recommended for detection of ACSF3 isoforms 1 and 2 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); non cross-reactive with other ACSF family members.

ACSF3 (D-14) is also recommended for detection of ACSF3 isoforms 1 and 2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for ACSF3 siRNA (h): sc-93074, ACSF3 siRNA (m): sc-140829, ACSF3 shRNA Plasmid (h): sc-93074-SH, ACSF3 shRNA Plasmid (m): sc-140829-SH, ACSF3 shRNA (h) Lentiviral Particles: sc-93074-V and ACSF3 shRNA (m) Lentiviral Particles: sc-140829-V.

Molecular Weight (predicted) of ACSF3: 64 kDa.

Molecular Weight (observed) of ACSF3: 55 kDa.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **ACSF3 (F-5): sc-398650**, our highly recommended monoclonal alternative to ACSF3 (D-14).