

ACSF3 (F-5): sc-398650

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

- Fujino, T., et al. 1996. Molecular characterization and expression of rat acyl-CoA synthetase 3. *J. Biol. Chem.* 271: 16748-16752.
- 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.
- 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.
- 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.
- Zhang, E.E., et al. 2009. A genome-wide RNAi screen for modifiers of the circadian clock in human cells. *Cell* 139: 199-210.
- Fornier, F., et al. 2009. Proteome differences between brown and white fat mitochondria reveal specialized metabolic functions. *Cell Metab.* 10: 324-335.

CHROMOSOMAL LOCATION

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

SOURCE

ACSF3 (F-5) is a mouse monoclonal antibody raised against amino acids 264-560 mapping near the C-terminus of ACSF3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACSF3 (F-5) is available conjugated to agarose (sc-398650 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398650 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398650 PE), fluorescein (sc-398650 FITC), Alexa Fluor® 488 (sc-398650 AF488), Alexa Fluor® 546 (sc-398650 AF546), Alexa Fluor® 594 (sc-398650 AF594) or Alexa Fluor® 647 (sc-398650 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398650 AF680) or Alexa Fluor® 790 (sc-398650 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ACSF3 (F-5) is recommended for detection of ACSF3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

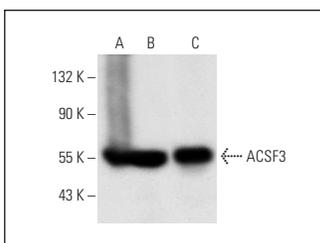
Molecular Weight (observed) of ACSF3: 55 kDa.

Positive Controls: CSMLO whole cell lysate: sc-364369, NIH/3T3 whole cell lysate: sc-2210 or mouse brain extract: sc-2253.

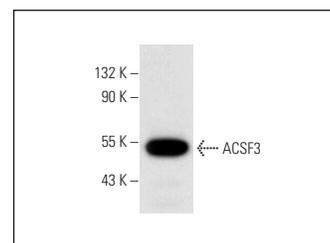
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ACSF3 (F-5): sc-398650. Western blot analysis of ACSF3 expression in CSMLO (A) and NIH/3T3 (B) whole cell lysates and mouse brain tissue extract (C).



ACSF3 (F-5): sc-398650. Western blot analysis of ACSF3 expression in FHs 173We whole cell lysate.

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.

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