SANTA CRUZ BIOTECHNOLOGY, INC.

ACADL (E-20): sc-82466

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The acyl-CoA dehydrogenase (ACAD) family of enzymes are involved in the catabolism of fatty acids and amino acids and they provide a major source of energy for the heart and skeletal muscle. ACADL (acyl-Coenzyme A dehydrogenase, long chain), also known as LCAD or ACAD4, is a 430 amino acid protein that localizes to the mitochondrial matrix and belongs to the acyl-CoA dehydrogenase family. Existing as a homotetramer, ACADL uses FAD as a cofactor to catalyze the initial step of mitochondrial β-oxidation of straight-chain fatty acids. Defects in the gene encoding ACADL are the cause of long-chain acyl-CoA dehydrogenase (LCAD) deficiency, which leads to non-ketotic hypoglycemia and hypotonia.

REFERENCES

1. Indo, Y., et al. 1991. Molecular cloning and nucleotide sequence of cDNAs encoding human long-chain acyl-CoA dehydrogenase and assignment of the location of its gene (ACADL) to chromosome 2. Genomics 11: 609-620.
2. Hinsdale, M.E., et al. 1995. RNA expression and chromosomal location of the mouse long-chain acyl-CoA dehydrogenase gene. Genomics 28: 163-170.
3. Wanders, R.J., et al. 1998. 2,6-Dimethylheptanoyl-CoA is a specific substrate for long-chain acyl-CoA dehydrogenase (LCAD): evidence for a major role of LCAD in branched-chain fatty acid oxidation. Biochim. Biophys. Acta 1393: 35-40.
4. Guerra, C., et al. 1998. Abnormal nonshivering thermogenesis in mice with inherited defects of fatty acid oxidation. J. Clin. Invest. 102: 1724-1731.
5. Kurtz, D.M., et al. 1998. Targeted disruption of mouse long-chain acyl-CoA dehydrogenase gene reveals crucial roles for fatty acid oxidation. Proc. Natl. Acad. Sci. USA 95: 15592-15597.
6. Lea, W., et al. 2000. Long-chain acyl-CoA dehydrogenase is a key enzyme in the mitochondrial β-oxidation of unsaturated fatty acids. Biochim. Biophys. Acta 1485: 121-128.

CHROMOSOMAL LOCATION

Genetic locus: ACADL (human) mapping to 2q34; Acadl (mouse) mapping to 1 C3.

SOURCE

ACADL (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ACADL of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-82466 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

ACADL (E-20) is recommended for detection of ACADL of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

ACADL (E-20) is also recommended for detection of ACADL in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ACADL siRNA (h): sc-72425, ACADL siRNA (m): sc-72426, ACADL shRNA Plasmid (h): sc-72425-SH, ACADL shRNA Plasmid (m): sc-72426-SH, ACADL shRNA (h) Lentiviral Particles: sc-72425-V and ACADL shRNA (m) Lentiviral Particles: sc-72426-V.

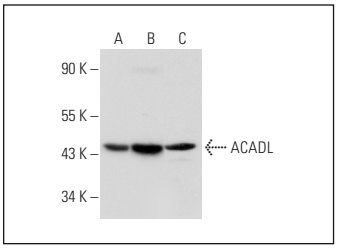
Molecular Weight of ACADL: 48 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, Hep G2 cell lysate: sc-2227 or HCT-116 whole cell lysate: sc-364175.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



ACADL (E-20): sc-82466. Western blot analysis of ACADL expression in Caki-1 (**A**), HCT-116 (**B**) and Hep G2 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Haffar, T., et al. 2015. Cardiomyocyte lipotoxicity is mediated by Il-6 and causes down-regulation of PPARs. Biochem. Biophys. Res. Commun. 459: 54-59.

STORAGE

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