SANTA CRUZ BIOTECHNOLOGY, INC.

ACADS (B-8): sc-365648



BACKGROUND

ACADS (acyl-Coenzyme A dehydrogenase, C-2 to C-3 short chain), also known as SCAD or ACAD3, is a 412 amino acid homotetrameric mitochondrial flavoprotein that belongs to the acyl-CoA dehydrogenase family. ACADS catalyzes the rate-limiting step of the mitochondrial fatty acid β -oxidation pathway. Mutations of ACADS have been associated with fatty acid oxidation defects and metabolic diseases such as short-chain acyl-CoA dehydrogenase deficiency (SCAD deficiency), an autosomal recessive disorder resulting in acute acidosis and muscle weakness in infants and lipid-storage myopathy in adults. SCADS leads to the accumulation of butyrylcarnitine and ethylmalonic acid in blood and urine. ACADS contains four FAD domains.

REFERENCES

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- Tafti, M., et al. 2003. Deficiency in short-chain fatty acid β-oxidation affects θ oscillations during sleep. Nat. Genet. 34: 320-325.
- Nasser, I., et al. 2004. Thermal unfolding of medium-chain acyl-CoA dehydrogenase and iso(3)valeryl-CoA dehydrogenase: study of the effect of genetic defects on enzyme stability. Biochim. Biophys. Acta 1690: 22-32.
- 4. Ensenauer, R., et al. 2005. Human acyl-CoA dehydrogenase-9 plays a novel role in the mitochondrial β -oxidation of unsaturated fatty acids. J. Biol. Chem. 280: 32309-32316.
- Nagpal, A., et al. 2006. Crystal structures of nitroalkane oxidase: insights into the reaction mechanism from a covalent complex of the flavoenzyme trapped during turnover. Biochemistry 45: 1138-1150.
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- McAndrew, R.P., et al. 2008. Structural basis for substrate fatty acyl chain specificity: crystal structure of human very-long-chain acyl-CoA dehydrogenase. J. Biol. Chem. 283: 9435-9443.

CHROMOSOMAL LOCATION

Genetic locus: ACADS (human) mapping to 12q24.31; Acads (mouse) mapping to 5 F.

SOURCE

ACADS (B-8) is a mouse monoclonal antibody raised against amino acids 104-244 mapping within an internal region of ACADS of human origin.

PRODUCT

Each vial contains 200 μg lgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ACADS (B-8) is recommended for detection of ACADS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

Suitable for use as control antibody for ACADS siRNA (h): sc-96082, ACADS siRNA (m): sc-140792, ACADS shRNA Plasmid (h): sc-96082-SH, ACADS shRNA Plasmid (m): sc-140792-SH, ACADS shRNA (h) Lentiviral Particles: sc-96082-V and ACADS shRNA (m) Lentiviral Particles: sc-140792-V.

Molecular Weight of ACADS: 42 kDa.

Positive Controls: ACADS (h): 293T Lysate: sc-170175, Hep G2 cell lysate: sc-2227 or mouse kidney extract: sc-2255.

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA





ACADS (B-8): sc-365648. Western blot analysis of ACADS expression in non-transfected 2931: sc-117752 (**A**), human ACADS transfected 2931: sc-170175 (**B**) and Hep G2 (**C**) whole cell lysates and mouse kidney tissue extract (**D**). ACADS (B-8): sc-365648. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

 Stomberski, C.T., et al. 2019. Molecular recognition of S-nitrosothiol substrate by its cognate protein denitrosylase. J. Biol. Chem. 294: 1568-1578.

RESEARCH USE

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