SANTA CRUZ BIOTECHNOLOGY, INC.

MCAD (L-14): sc-50587

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Acyl-CoA dehydrogenase is a family of enzymes that localize to the mitochondrion and target acyl chain lengths of 4 to 16 by use of the mitochondrial fatty acid β-oxidation pathway. In mammalian tissue, many straight-chain acyl-CoA dehydrogenases possess different substrate specificities. In rare cases, irregularities in medium-chain acyl-CoA dehydrogenase can cause fasting hypoglycemia, hepatic dysfunction and encephalopathy, often resulting in death in infancy. MCAD, also designated acyl-CoA dehydrogenase, medium-chain (ACADM) and MCADH, is a homotetramer. The MCAD gene encodes a 421 amino acid protein with characteristics of mitochondrial protein transit peptides. The protein shows 88% sequence identity with MCAD of pig origin. Medium-chain acyl-CoA dehydrogenase catalyzes the initial reaction in the β-oxidation of C4 to C12 straight-chain acyl-CoAs.

CHROMOSOMAL LOCATION

Genetic locus: ACADM (human) mapping to 1p31.1; Acadm (mouse) mapping to 3 H3.

SOURCE

MCAD (L-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of MCAD 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-50587 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

MCAD (L-14) is recommended for detection of MCAD 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).

MCAD (L-14) is also recommended for detection of MCAD in additional species, including equine.

Suitable for use as control antibody for MCAD siRNA (h): sc-60996, MCAD siRNA (m): sc-60997, MCAD shRNA Plasmid (h): sc-60996-SH, MCAD shRNA Plasmid (m): sc-60997-SH, MCAD shRNA (h) Lentiviral Particles: sc-60996-V and MCAD shRNA (m) Lentiviral Particles: sc-60997-V.

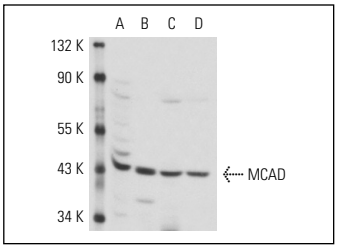
Molecular Weight of MCAD: 45 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, mouse liver extract: sc-2256 or rat liver extract: sc-2395.

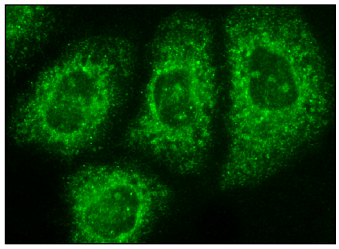
RECOMMENDED SECONDARY REAGENTS

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



MCAD (L-14): sc-50587. Western blot analysis of MCAD expression in Hep G2 (**A**) and HeLa (**B**) whole cell lysates and mouse liver (**C**) and rat liver (**D**) tissue extracts.



MCAD (L-14): sc-50587. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization.

SELECT PRODUCT CITATIONS

1. Hwang, B., et al. 2009. Pyruvate dehydrogenase kinase isoenzyme 4 (PDHK4) deficiency attenuates the long-term negative effects of a high-saturated fat diet. Biochem. J. 423: 243-252.
2. Hwang, B., et al. 2012. Additive effects of clofibric acid and pyruvate dehydrogenase kinase isoenzyme 4 (PDK4) deficiency on hepatic steatosis in mice fed a high saturated fat diet. FEBS J. 279: 1883-1893.

RESEARCH USE

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

PROTOCOLS

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