SANTA CRUZ BIOTECHNOLOGY, INC.

MCAT (N-14): sc-86727

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The biosynthesis of fatty acids can occur in the cytoplasm, via the type I fatty acid synthase complex, or in mitochondria, via the type II malonyl-CoA-dependent system. MCAT (mitochondrial malonyl CoA:ACP acyltransferase), also known as MT, MCT (mitochondrial malonyltransferase), fabD or FASN2C, is a member of the type II malonyltransferase family of proteins. Localizing to mitochondria, MCAT is encoded by a nuclear gene and, via an N-terminal localization signal, it is subsequently imported into mitochondria. MCAT functions in lipid metabolism and may be a component of a mitochondrial fatty acid synthase complex. More specifically, MCAT catalyzes the transfer of a malonyl group from malonyl-CoA to the mitochondrial acyl carrier protein (NDUFAB1), a subunit of respiratory complex 1. This reaction is essential in the initiation of the type II fatty acid biosynthesis system. Two isoforms of MCAT exist due to alternative splicing events.

REFERENCES

1. Zhang, L., Joshi, A.K. and Smith, S. 2003. Cloning, expression, characterization, and interaction of two components of a human mitochondrial fatty acid synthase. Malonyltransferase and acyl carrier protein. J. Biol. Chem. 278: 40067-40074.
2. Kastaniotis, A.J., Autio, K.J., Sormunen, R.T. and Hiltunen, J.K. 2004. Htd2p/Yhr067p is a yeast 3-hydroxyacyl-ACP dehydratase essential for mitochondrial function and morphology. Mol. Microbiol. 53: 1407-1421.
3. Maier, T., Jenni, S. and Ban, N. 2006. Architecture of mammalian fatty acid synthase at 4.5 A resolution. Science 311: 1258-1262.
4. Zhang, L., Liu, W., Xiao, J., Hu, T., Chen, J., Chen, K., Jiang, H. and Shen, X. 2007. Malonyl-CoA: acyl carrier protein transacylase from *Helicobacter pylori:* Crystal structure and its interaction with acyl carrier protein. Protein Sci. 16: 1184-1192.

CHROMOSOMAL LOCATION

Genetic locus: MCAT (human) mapping to 22q13.31.

SOURCE

MCAT (N-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of MCAT 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-86727 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.

RESEARCH USE

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

APPLICATIONS

MCAT (N-14) is recommended for detection of MCAT of 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).

Suitable for use as control antibody for MCAT siRNA (h): sc-75760, MCAT shRNA Plasmid (h): sc-75760-SH and MCAT shRNA (h) Lentiviral Particles: sc-75760-V.

Molecular Weight of MCAT: 43 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or 293T whole cell lysate.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

PROTOCOLS

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