SANTA CRUZ BIOTECHNOLOGY, INC.

CPTI-M (H-120): sc-20670

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mitochondrial β-oxidation of long-chain fatty acids is initiated by the sequential action of carnitine palmitoyltransferase (CPT) I (outer membrane and detergent labile) and II (inner membrane and detergent stable), together with carnitine carrier. CPTI catalyzes the first reaction in the transport of long-chain fatty acids from the cytoplasm to the mitochondrion, a rate-limiting step in β-oxidation. Two types of CPTI are known, the liver (CPTIA) and muscle (CPTIB) isoforms. The muscle type protein is specially expressed in heart and skeletal muscle. Membrane-bound CPTI, but not CPTII, is inhibited reversibly by malonyl-coenzyme A (CoA). Unlike CPTII, CPTI requires membrane integrity for catalytic function. In addition, glutamic acid 3 and histidine 5 are necessary for malonyl CoA inhibition and binding to liver CPTI, but not for catalytic activity.

CHROMOSOMAL LOCATION

Genetic locus: CPT1B (human) mapping to 22q13.33; Cpt1b (mouse) mapping to 15 E3.

SOURCE

CPTI-M (H-120) is a rabbit polyclonal antibody raised against amino acids 16-135 mapping near the N-terminus of CPTI-M 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.

APPLICATIONS

CPTI-M (H-120) is recommended for detection of CPTI-M 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), 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).

CPTI-M (H-120) is also recommended for detection of CPTI-M in additional species, including equine and canine.

Suitable for use as control antibody for CPTI-M siRNA (h): sc-40382, CPTI-M siRNA (m): sc-40383, CPTI-M shRNA Plasmid (h): sc-40382-SH, CPTI-M shRNA Plasmid (m): sc-40383-SH, CPTI-M shRNA (h) Lentiviral Particles: sc-40382-V and CPTI-M shRNA (m) Lentiviral Particles: sc-40383-V.

Molecular Weight of CPTI-M: 75 kDa

Positive Controls: mouse heart extract: sc-2254 or rat skeletal muscle extract: sc-364810.

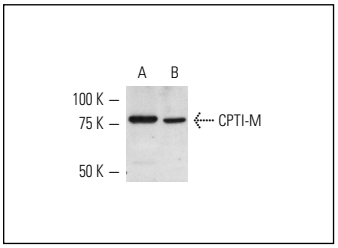
STORAGE

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

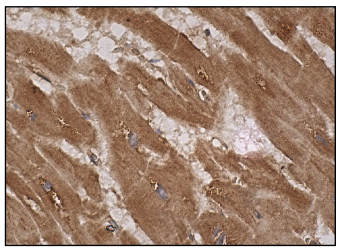
RESEARCH USE

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

DATA



CPTI-M (H-120): sc-20670. Western blot analysis of CPTI-M expression in mouse heart (**A**) and rat skeletal muscle (**B**) tissue extracts.



CPTI-M (H-120): sc-20670. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Schenk, S., et al. 2006. Coimmunoprecipitation of FAT/CD36 and CPT I in skeletal muscle increases proportionally with fat oxidation after endurance exercise training. Am. J. Physiol. Endocrinol. Metab. 291: E254-E260.
2. Bogazzi, F., et al. 2009. Regulation of cardiac fatty acids metabolism in transgenic mice overexpressing bovine GH. J. Endocrinol. 201: 419-427.
3. Sangiao-Alvarellos, S., et al. 2009. Central ghrelin regulates peripheral lipid metabolism in a growth hormone-independent fashion. Endocrinology 150: 4562-4574.
4. Hyyti, O.M., et al. 2010. Aging impairs myocardial fatty acid and ketone oxidation and modifies cardiac functional and metabolic responses to Insulin in mice. Am. J. Physiol. Heart Circ. Physiol. 299: H868-H875.
5. Sangiao-Alvarellos, S., et al. 2010. Influence of ghrelin and growth hormone deficiency on AMP-activated protein kinase and hypothalamic lipid metabolism. J. Neuroendocrinol. 22: 543-556.
6. Chen, W.L., et al. 2011. Metformin regulates hepatic lipid metabolism through activating AMP-activated protein kinase and inducing ATGL in laying hens. Eur. J. Pharmacol. 671: 107-112.
7. Qi, Z., et al. 2012. Increased Insulin sensitivity and distorted mitochondrial adaptations during muscle unloading. Int. J. Mol. Sci. 13: 16971-16985.

PROTOCOLS

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