SANTA CRUZ BIOTECHNOLOGY, INC.

CPTII (C-14): sc-20527

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.

REFERENCES

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4. Britton, C.H., et al. 1995. Human liver mitochondrial carnitine palmitoyltransferase I: characterization of its cDNA and chromosomal localization and partial analysis of the gene. Proc. Natl. Acad. Sci. USA 92: 1984-1988.
5. Yamazaki, N., et al. 1996. Isolation and characterization of cDNA and genomic clones encoding human muscle type carnitine palmitoyltransferase I. Biochim. Biophys. Acta 1307: 157-161.
6. Zhu, H., et al. 1997. Functional studies of yeast-expressed human heart muscle carnitine palmitoyltransferase I. Arch. Biochem. Biophys. 347: 53-61.
7. Yamazaki, N., et al. 1997. Structural features of the gene encoding human muscle type carnitine palmitoyltransferase I. FEBS Lett. 409: 401-406.
8. Woldegiorgis, G., et al. 2000. Functional characterization of mammalian mitochondrial carnitine palmitoyltransferases I and II expressed in the yeast *Pichia pastoris*. J. Nutr. 130: 310-314.

CHROMOSOMAL LOCATION

Genetic locus: CPT2 (human) mapping to 1p32.3; Cpt2 (mouse) mapping to 4 C7.

SOURCE

CPTII (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CPTII of human origin.

STORAGE

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

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-20527 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CPTII (C-14) is recommended for detection of CPTII of mouse, rat and 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).

CPTII (C-14) is also recommended for detection of CPTII in additional species, including equine and canine.

Suitable for use as control antibody for CPTII siRNA (h): sc-40378, CPTII siRNA (m): sc-40379, CPTII shRNA Plasmid (h): sc-40378-SH, CPTII shRNA Plasmid (m): sc-40379-SH, CPTII shRNA (h) Lentiviral Particles: sc-40378-V and CPTII shRNA (m) Lentiviral Particles: sc-40379-V.

Molecular Weight of CPTII: 67 kDa.

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

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) 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.

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.