SANTA CRUZ BIOTECHNOLOGY, INC.

CPTII (H-300): sc-20671

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

1. Pande, S.V., et al. 1976. Characterization of carnitine acylcarnitine translocase system of heart mitochondria. J. Biol. Chem. 251: 6683-6691.
2. McGarry, J.D., et al. 1989. Regulation of ketogenesis and the renaissance of carnitine palmitoyltransferase. Diabetes Metab. Rev. 5: 271-284.

CHROMOSOMAL LOCATION

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

SOURCE

CPTII (H-300) is a rabbit polyclonal antibody raised against amino acids 51-350 of CPTII 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

CPTII (H-300) 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), 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).

CPTII (H-300) is also recommended for detection of CPTII in additional species, including equine, canine, bovine and porcine.

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 siRNA (m): sc-40379-SH, CPTII shRNA (h) Lentiviral Particles: sc-40378-V and CPTII siRNA (m) Lentiviral Particles: sc-40379-V.

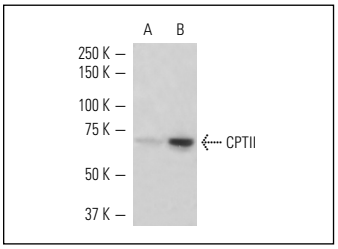
Molecular Weight of CPTII: 67 kDa.

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

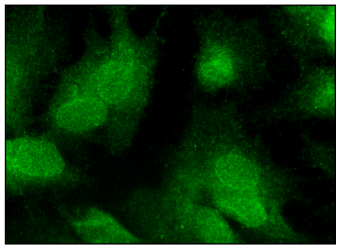
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



CPTII (H-300): sc-20671. Western blot analysis of CPTII expression in Hep G2 whole cell lysate (**A**) and mouse liver tissue extract (**B**).



CPTII (H-300): sc-20671. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yao, M., et al. 2011. Bezafibrate upregulates carnitine palmitoyltransferase II expression and promotes mitochondrial energy crisis dissipation in fibroblasts of patients with influenza-associated encephalopathy. Mol. Genet. Metab. 104: 265-272.
2. Yao, D., et al. 2011. Characterization of compound missense mutation and deletion of carnitine palmitoyltransferase II in a patient with adenovirus-associated encephalopathy. J. Med. Invest. 58: 210-218.
3. McIntosh, A.L., et al. 2013. Liver fatty acid binding protein gene-ablation exacerbates weight gain in high-fat fed female mice. Lipids 48: 435-448.

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.