

# CPTII (O-25): sc-130730

## BACKGROUND

The mitochondrial  $\beta$ -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  $\beta$ -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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2. McGarry, J.D., et al. 1989. Regulation of ketogenesis and the renaissance of carnitine palmitoyltransferase. *Diabetes Metab. Rev.* 5: 271-284.
3. Woeltje, K.F., et al. 1990. Inter-tissue and inter-species characteristics of the mitochondrial carnitine palmitoyltransferase enzyme system. *J. Biol. Chem.* 265: 10714-10719.
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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CPTII (O-25) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of CPTII of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

CPTII (O-25) is recommended for detection of CPTII of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

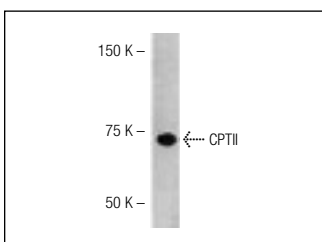
Molecular Weight of CPTII: 67 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, mouse kidney extract: sc-2255 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).

## DATA



CPTII (O-25): sc-130730. Western blot analysis of CPTII expression in mouse kidney tissue extract.

## SELECT PRODUCT CITATIONS

1. Goichon, A., et al. 2013. An enteral leucine supply modulates human duodenal mucosal proteome and decreases the expression of enzymes involved in fatty acid  $\beta$ -oxidation. *J. Proteomics* 78: 535-544.

## RESEARCH USE

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



Try **CPTII (G-5): sc-377294**, our highly recommended monoclonal alternative to CPTII (O-25).