

# CPTI (A-14): sc-31128

## 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 muscle and liver isoforms. The human liver CPTI gene is located to chromosome 11q and 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 catalytic activity.

## CHROMOSOMAL LOCATION

Genetic locus: CPT1B (human) mapping to 22q13.33, CPT1A (human) mapping to 11q13.2; Cpt1b (mouse) mapping to 15 E3, Cpt1a (mouse) mapping to 19 A.

## SOURCE

CPTI (A-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of CPTI of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31128 P, (100  $\mu$ g 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.

## APPLICATIONS

CPTI (A-14) is recommended for detection of CPTI, liver isoform (CPTI-L) and muscle isoform (CPTI-M) of mouse, rat 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)], 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).

CPTI (A-14) is also recommended for detection of CPTI, liver isoform (CPTI-L) and muscle isoform (CPTI-M) in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CPTI siRNA (h): sc-40376, CPTI siRNA (m): sc-40377, CPTI shRNA Plasmid (h): sc-40376-SH, CPTI shRNA Plasmid (m): sc-40377-SH, CPTI shRNA (h) Lentiviral Particles: sc-40376-V and CPTI shRNA (m) Lentiviral Particles: sc-40377-V.

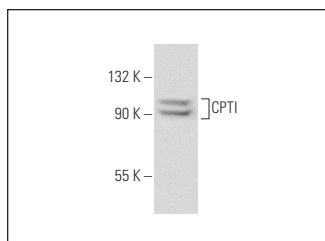
Molecular Weight of CPTI: 86/90-94 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



CPTI (A-14): sc-31128. Western blot analysis of CPTI expression in Hep G2 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Hyti, 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.
2. Vila-Bedmar, R., et al. 2012. GRK2 contribution to the regulation of energy expenditure and brown fat function. *FASEB J.* 26: 3503-3514.
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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **CPTI (E-7): sc-393070**, our highly recommended monoclonal alternative to CPTI (A-14).