

CPT1-C (E-19): sc-139480

BACKGROUND

The mitochondrial β -oxidation of long-chain fatty acids is initiated by the sequential action of CPT (carnitine palmitoyltransferase) I and II, together with carnitine carrier. CPTI catalyzes the first reaction in the transport of long-chain fatty acids from the cytoplasm to mitochondria, a rate-limiting step in β -oxidation. CPT1-C (carnitine palmitoyltransferase 1C), also known as CATL1, CPT1P, CPTIC or CPTI-B, is an 803 amino acid multi-pass membrane protein involved in lipid metabolism. Expressed primarily in testis and brain, CPT1-C belongs to the carnitine/choline acetyltransferase family and catalyzes the conversion of palmitoyl-CoA and L-Carnitine to CoA and L-palmitoylcarnitine. CPT1-C exists as three alternatively spliced isoforms that are encoded by a gene that maps to human chromosome 19q13.33.

REFERENCES

- Price, N., van der Leij, F., Jackson, V., Corstorphine, C., Thomson, R., Sorensen, A. and Zammit, V. 2002. A novel brain-expressed protein related to carnitine palmitoyltransferase I. *Genomics* 80: 433-442.
- Bonnefont, J.P., Djouadi, F., Prip-Buus, C., Gobin, S., Munnich, A. and Bastin, J. 2004. Carnitine palmitoyltransferases 1 and 2: biochemical, molecular and medical aspects. *Mol. Aspects Med.* 25: 495-520.
- Wolfgang, M.J. and Lane, M.D. 2006. The role of hypothalamic malonyl-CoA in energy homeostasis. *J. Biol. Chem.* 281: 37265-37269.
- Wolfgang, M.J., Kurama, T., Dai, Y., Suwa, A., Asaumi, M., Matsumoto, S., Cha, S.H., Shimokawa, T. and Lane, M.D. 2006. The brain-specific carnitine palmitoyltransferase-1c regulates energy homeostasis. *Proc. Natl. Acad. Sci. USA* 103: 7282-7287.
- Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 608846. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Sierra, A.Y., Gratacós, E., Carrasco, P., Clotet, J., Ureña, J., Serra, D., Asins, G., Hegardt, F.G. and Casals, N. 2008. CPT1c is localized in endoplasmic reticulum of neurons and has carnitine palmitoyltransferase activity. *J. Biol. Chem.* 283: 6878-6885.
- Schreurs, M., Kuipers, F. and van der Leij, F.R. 2010. Regulatory enzymes of mitochondrial β -oxidation as targets for treatment of the metabolic syndrome. *Obes. Rev.* 11: 380-388.

CHROMOSOMAL LOCATION

Genetic locus: CPT1C (human) mapping to 19q13.33; Cpt1c (mouse) mapping to 7 B4.

SOURCE

CPT1-C (E-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of CPT1-C 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 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-139480 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CPT1-C (E-19) is recommended for detection of CPT1-C of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with CPTI or CPTI-M.

CPT1-C (E-19) is also recommended for detection of CPT1-C in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CPT1-C siRNA (h): sc-97702, CPT1-C siRNA (m): sc-142550, CPT1-C shRNA Plasmid (h): sc-97702-SH, CPT1-C shRNA Plasmid (m): sc-142550-SH, CPT1-C shRNA (h) Lentiviral Particles: sc-97702-V and CPT1-C shRNA (m) Lentiviral Particles: sc-142550-V.

Molecular Weight of CPT1-C isoforms 1/2/3: 91/90/81 kDa.

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) 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.

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.



Try **CPT1-C (B-1): sc-514555**, our highly recommended monoclonal alternative to CPT1-C (E-19).