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CPT1C Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11459b

Product Information

Application	WB, FC, E
Primary Accession	Q8TCG5
Other Accession	NP_001129524.1, NP_689572.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB19024
Calculated MW	90989
Antigen Region	752-782

Additional Information

Gene ID	126129
Other Names	Carnitine O-palmitoyltransferase 1, brain isoform, CPT1-B, CPT IC, Carnitine O-palmitoyltransferase I, brain isoform, CPTI-B, Carnitine palmitoyltransferase 1C, CPT1C, CATL1
Target/Specificity	This CPT1C antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 752-782 amino acids from the C-terminal region of human CPT1C.
Dilution	WB~~1:1000 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	CPT1C Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CPT1C (HGNC:18540)
Synonyms	CATL1

Function	Palmitoyl thioesterase specifically expressed in the endoplasmic reticulum of neurons. Modulates the trafficking of the glutamate receptor, AMPAR, to plasma membrane through depalmitoylation of GRIA1 (PubMed:30135643). Also regulates AMPR trafficking through the regulation of SACM1L phosphatidylinositol-3-phosphatase activity by interaction in a malonyl-CoA dependent manner (By similarity). Binds malonyl-CoA and couples malonyl-CoA to ceramide levels, necessary for proper spine maturation and contributing to systemic energy homeostasis and appetite control (PubMed:16651524). Binds to palmitoyl-CoA, but does not have carnitine palmitoyltransferase 1 catalytic activity or at very low levels (PubMed:25751282, PubMed:30135643).
Cellular Location	Cell projection, dendrite. Cell projection, axon. Endoplasmic reticulum membrane; Multi-pass membrane protein. Note=Localized in the soma and dendritic and axonal projections.
Tissue Location	Expressed predominantly in brain and testis. Expressed in motor neurons.

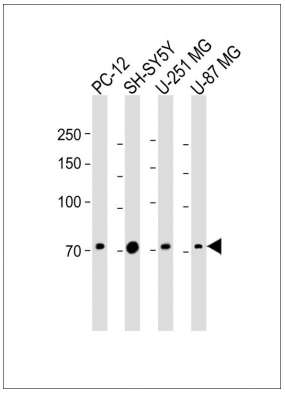
Background

The Cpt1 family of proteins are outer mitochondrial membrane proteins that regulate the entry into, and oxidation of fatty acids by, mitochondria. Malonyl-CoA, an intermediate in fatty acid synthesis, has been implicated as a regulatory component of the energy sensing system that feeds into hypothalmic neurons to impart energy homeostasis. Malonyl-CoA levels in the hypothalamus are dynamically regulated by fasting and feeding, altering subsequent feeding behaviour. Cpt1c, the brain-specific carnitine O-palmitoyltransferase 1, is thought to relay information about malonyl-CoA levels in hypothalamic neurons that express orexigenic and anorexigenic neuropeptides that regulate food intake and peripheral energy expenditure. Unlike other Cpt1 proteins, Cpt1c binds Malonyl-CoA but does not catalyse the transfer of the malonyl group from CoA to carnitine.

References

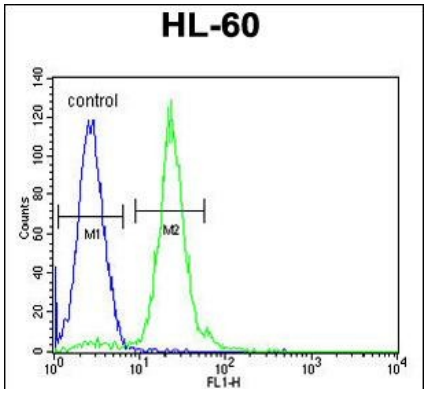
Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
Talmud, P.J., et al. Am. J. Hum. Genet. 85(5):628-642(2009)
Roomets, E., et al. Invest. Ophthalmol. Vis. Sci. 49(4):1660-1664(2008)
Sierra, A.Y., et al. J. Biol. Chem. 283(11):6878-6885(2008)
Price, N., et al. Genomics 80(4):433-442(2002)

Images



All lanes: Anti-CPT1C Antibody (C-term) at 1:1000 dilution Lane 1: PC-12 whole cell lysate Lane 2: SH-SY5Y whole cell lysate Lane 3: U-251 MG whole cell lysate Lane 4: U-87 MG whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 72 KDa Blocking/Dilution buffer: 5% NFDM/TBST.

CPT1C Antibody (C-term) (Cat. #AP11459b) flow cytometric analysis of HL-60 cells (right histogram) compared to a negative control cell (left



histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.