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CPT1A Antibody (C-term)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2524b

Specification

CPT1A Antibody (C-term) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	P50416
Reactivity	**Bovine, Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**88368**
Antigen Region	**606-636**

CPT1A Antibody (C-term) - Additional Information

Gene ID 1374

Other Names
Carnitine O-palmitoyltransferase 1, liver isoform, CPT1-L, Carnitine O-palmitoyltransferase I, liver isoform, CPT I, CPTI-L, Carnitine palmitoyltransferase 1A, CPT1A, CPT1

Target/Specificity
This CPT1A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 606-636 amino acids from the C-terminal region of human CPT1A.

Dilution
WB~~1:1000
IHC-P~~1:50~100
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. 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
CPT1A Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

CPT1A Antibody (C-term) - Protein Information

Name CPT1A (HGNC:2328)

Synonyms CPT1

Function Catalyzes the transfer of the acyl group of long-chain fatty acid-CoA conjugates onto carnitine, an essential step for the mitochondrial uptake of long-chain fatty acids and their subsequent beta-oxidation in the mitochondrion (PubMed:11350182, PubMed:14517221, PubMed:16651524, PubMed:9691089). Also possesses a lysine succinyltransferase activity that can regulate enzymatic activity of substrate proteins such as ENO1 and metabolism independent of its classical carnitine O-palmitoyltransferase activity (PubMed:29425493). Plays an important role in hepatic triglyceride metabolism (By similarity). Also plays a role in inducible regulatory T-cell (iTreg) differentiation once activated by butyryl-CoA that antagonizes malonyl-CoA-mediated CPT1A repression (By similarity). Sustains the IFN-I response by recruiting ZDHCC4 to palmitoylate MAVS at the mitochondria leading to MAVS stabilization and activation (PubMed:38016475). Promotes ROS-induced oxidative stress in liver injury via modulation of NFE2L2 and NLRP3-mediated signaling pathways (By similarity).

Cellular Location
Mitochondrion outer membrane; Multi-pass membrane protein

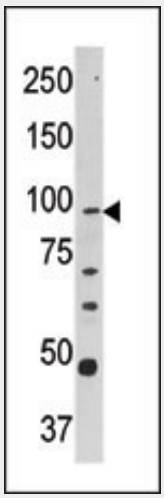
Tissue Location
Strong expression in kidney and heart, and lower in liver and skeletal muscle

CPT1A Antibody (C-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

CPT1A Antibody (C-term) - Images



Western blot analysis of anti-CPT1A Pab (Cat. #AP2524b) in Y79 cell line lysate (35ug/lane). CPT1A(arrow) was detected using the purified Pab.

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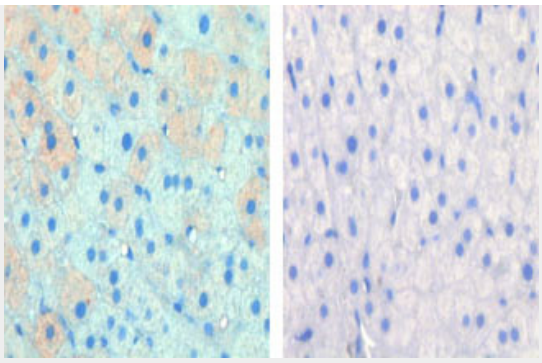

Left image is paraformaldehyde-fixed and paraffin-embedded cow lactating with CPT1A Pab (Cat. #AP2524b), which was peroxidase-conjugated to the secondary antibody, followed by AEC staining, right image is contrast, did not add the antibody. This data was kindly offered by Hideaki Hayashi, University of Bern, Switzerland.

CPT1A Antibody (C-term) - Background

The mitochondrial oxidation of long-chain fatty acids is initiated by the sequential action of carnitine palmitoyltransferase I (which is located in the outer membrane and is detergent-labile) and carnitine palmitoyltransferase II (which is located in the inner membrane and is detergent-stable), together with a carnitine-acylcarnitine translocase. CPT I is the key enzyme in the carnitine-dependent transport across the mitochondrial inner membrane and its deficiency results in a decreased rate of fatty acid beta-oxidation.

CPT1A Antibody (C-term) - References

Rasmussen, B.B., et al., J. Clin. Invest. 110(11):1687-1693 (2002).
Ogawa, E., et al., J. Hum. Genet. 47(7):342-347 (2002).
Cook, G.A., et al., Am. J. Med. Sci. 318(1):43-48 (1999).
IJlst, L., et al., J. Clin. Invest. 102(3):527-531 (1998).
Britton, C.H., et al., Genomics 40(1):209-211 (1997).

CPT1A Antibody (C-term) - Citations

- Molecular adaptation in adipose tissue in response to overfeeding with a high-fat diet under sedentary conditions in South Asian and Caucasian men.