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CPT1A Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP14666b

Product Information

Application	WB, E
Primary Accession	P50416
Other Accession	NP_001027017.1, NP_001867.2
Reactivity	Human
Predicted	Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34353
Calculated MW	88368
Antigen Region	728-756

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 728-756 amino acids from the C-terminal region of human CPT1A.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
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.

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

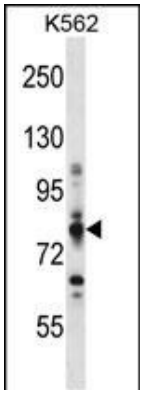
Background

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. Alternatively spliced transcript variants encoding different isoforms have been found for this gene.

References

Gessner, B.D., et al. Pediatrics 126(5):945-951(2010)
Collins, S.A., et al. Mol. Genet. Metab. 101 (2-3), 200-204 (2010) :
Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
Song, S., et al. Mol. Cell. Endocrinol. 325 (1-2), 54-63 (2010) :
Ruano, G., et al. Pharmacogenomics 11(7):959-971(2010)

Images



CPT1A Antibody (C-term) (Cat. #AP14666b) western blot analysis in K562 cell line lysates (35ug/lane).This demonstrates the CPT1A antibody detected the CPT1A protein (arrow).

Citations

- IMM-H007, a new therapeutic candidate for nonalcoholic fatty liver disease, improves hepatic steatosis in hamsters

fed a high-fat diet.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.