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CPT1A Antibody (N-term) Blocking Peptide

Synthetic peptide
Catalog # BP2524a

Specification

CPT1A Antibody (N-term) Blocking Peptide - Product Information

Primary Accession	P50416
Other Accession	NP_001867

CPT1A Antibody (N-term) Blocking Peptide - 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
The synthetic peptide sequence used to generate the antibody AP2524a was selected from the N-term region of human CPT1A . A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

CPT1A Antibody (N-term) Blocking Peptide - 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 (N-term) Blocking Peptide - Protocols

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

- Blocking Peptides

CPT1A Antibody (N-term) Blocking Peptide - Images

CPT1A Antibody (N-term) Blocking Peptide - 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 (N-term) Blocking Peptide - 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).