Human CPT1A Antibody

Monoclonal Mouse IgG_{2B} Clone # 1081618

Catalog Number: MAB11570

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide corresponding to residues surrounding amino acid 501 of human CPT1A protein in direct ELISA.
Source	Monoclonal Mouse IgG_{2B} Clone # 1081618
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	CPT1A containing synthetic peptide Accession # P50416
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

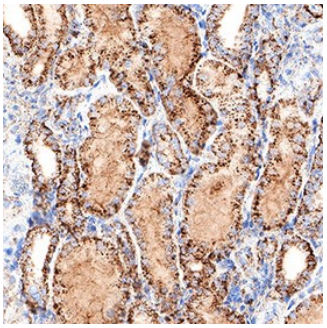
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of human kidney

DATA

Immunohistochemistry



Detection of CPT1A in Human Kidney. CPT1A was detected in immersion fixed paraffin-embedded sections of human kidney using Mouse Anti-Human CPT1A Monoclonal Antibody (Catalog # MAB11570) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001) or the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

CPT1A is one of the isoforms of CPT1. CPT1 is a mitochondrial enzyme responsible for the formation of acyl carnitines. CPT1A is the rate-limiting enzyme in the fatty acid β-oxidation, allowing fatty acids to enter the mitochondrial matrix for oxidation. Deficiency or abnormal regulation in this process can result in diseases like metabolic disorders and cancer including but not limited to: CPT1A deficiency, metabolic syndrome, obesity, type 2 diabetes, vascular disease, heart failure, non-alcoholic fatty liver disease, MS, and renal fibrosis. CPT1A is expressed on the outer mitochondrial membrane of most tissues but predominates in lipogenic tissues such as liver. Genetic, physiological, and dietary modulators are all involved in the regulation of CPT1A.

References:

1. Brown NF, Hill JK, Esser V, Kirkland JL, Corkey BE, Foster DW, McGarry JD. Mouse white adipocytes and 3T3-L1 cells display an anomalous pattern of carnitine palmitoyltransferase (CPT) I isoform expression during differentiation. Inter-tissue and inter-species expression of CPT I and CPT II enzymes. Biochem J. 1997 Oct 1;327 (Pt 1)(Pt 1):225-31. doi: 10.1042/bj3270225. PMID: 9355756; PMCID: PMC1218784.
2. Liang K. Mitochondrial CPT1A: Insights into structure, function, and basis for drug development. Front Pharmacol. 2023 Mar 23;14:1160440. doi: 10.3389/fphar.2023.1160440. PMID: 37033619; PMCID: PMC10076611.

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