Anti-CPT1A Antibody [PSH04-00] - BSA and Azide free

HA750923

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse
Applications:	WB, IHC-P, IP
Molecular Wt:	Predicted band size: 88 kDa
Clone number:	PSH04-00

Description: Carnitine palmitoyltransferase I (CPT1) also known as carnitine acyltransferase I, CPTI, CAT1, CoA:carnitine acyl transferase (CCAT), or palmitoylCoA transferase I, is a mitochondrial enzyme responsible for the formation of acyl carnitines by catalyzing the transfer of the acyl group of a long-chain fatty acyl-CoA from coenzyme A to l-carnitine. The product is often Palmitoylcarnitine (thus the name), but other fatty acids may also be substrates. It is part of a family of enzymes called carnitine acyltransferases. This "preparation" allows for subsequent movement of the acyl carnitine from the cytosol into the intermembrane space of mitochondria. Three isoforms of CPT1 are currently known: CPT1A, CPT1B, and CPT1C. CPT1 is associated with the outer mitochondrial membrane. This enzyme can be inhibited by malonyl CoA, the first committed intermediate produced during fatty acid synthesis. Its role in fatty acid metabolism makes CPT1 important in many metabolic disorders such as diabetes. Since its crystal structure is not known, its exact mechanism of action remains to be determined.

Immunogen: Recombinant protein within human CPT1A aa 201-773 / 773.

Positive control: 293T cell lysate, HeLa cell lysate, SK-OV-3 cell lysate, MCF7 cell lysate, HepG2 cell lysate, A549 cell lysate, Human kidney tissue lysate, human kidney tissue, human ovary cancer tissue, mouse brain tissue, mouse hippocampus tissue, mouse kidney tissue.

Subcellular location: Mitochondrion outer membrane.

Database links: SwissProt: P50416 Human | P97742 Mouse

Recommended Dilutions:

WB	1:2,000
IHC-P	1:500-1:2,000
IP	1-2μg/sample

Storage Buffer: 1*PBS (pH7.4).

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

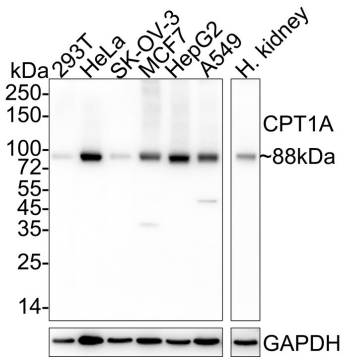

Fig1: Western blot analysis of CPT1A on different lysates with Rabbit anti-CPT1A antibody (HA750923) at 1/2,000 dilution.

Lane 1: 293T cell lysate
Lane 2: HeLa cell lysate
Lane 3: SK-OV-3 cell lysate
Lane 4: MCF7 cell lysate
Lane 5: HepG2 cell lysate
Lane 6: A549 cell lysate
Lane 7: Human kidney tissue lysate

Lysates/proteins at 20 µg/Lane.

Predicted band size: 88 kDa
Observed band size: 88 kDa

Exposure time: 30 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA750923) at 1/2,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

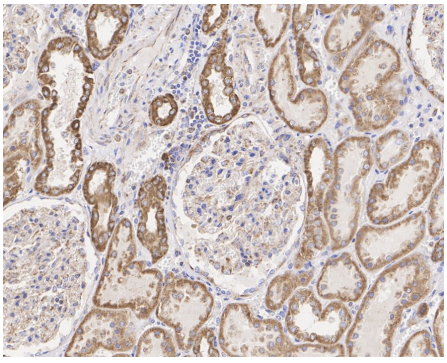

Fig2: Immunohistochemical analysis of paraffin-embedded human kidney tissue with Rabbit anti-CPT1A antibody (HA750923) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750923) at 1/2,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

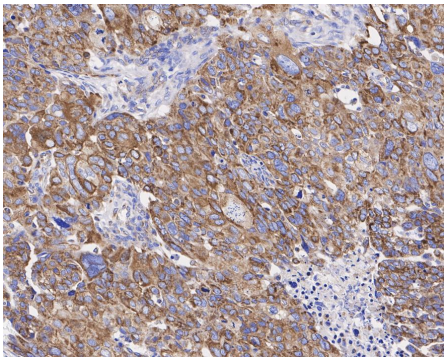

Fig3: Immunohistochemical analysis of paraffin-embedded human ovary cancer tissue with Rabbit anti-CPT1A antibody (HA750923) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750923) at 1/2,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

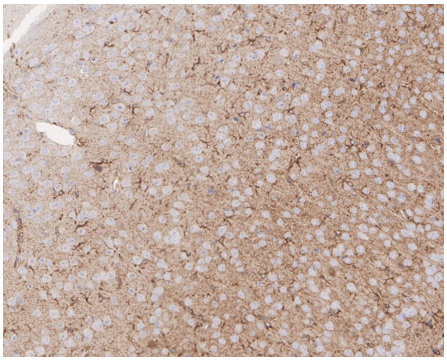

Fig4: Immunohistochemical analysis of paraffin-embedded mouse brain tissue with Rabbit anti-CPT1A antibody (HA750923) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750923) at 1/2,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

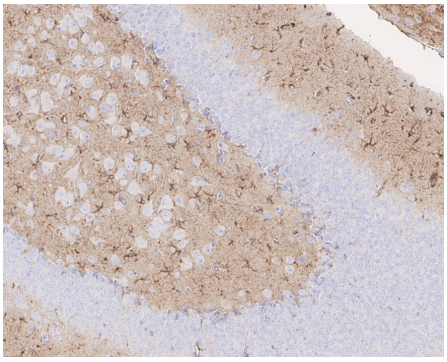

Fig5: Immunohistochemical analysis of paraffin-embedded mouse hippocampus tissue with Rabbit anti-CPT1A antibody (HA750923) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750923) at 1/2,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

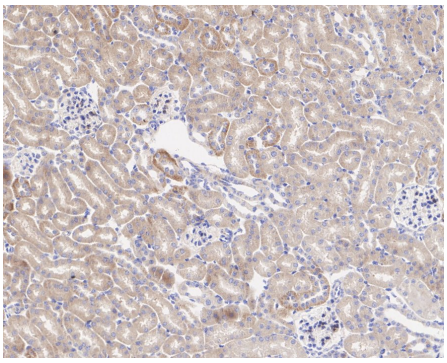

Fig6: Immunohistochemical analysis of paraffin-embedded mouse kidney tissue with Rabbit anti-CPT1A antibody (HA750923) at 1/500 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750923) at 1/500 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

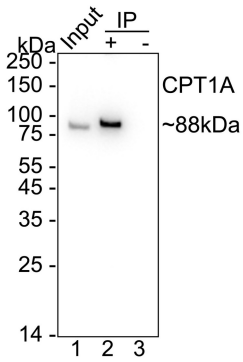

Fig7: CPT1A was immunoprecipitated from 0.2 mg HeLa cell lysate with HA750923 at 2 µg/10 µl beads. Western blot was performed from the immunoprecipitate using HA750923 at 1/2,000 dilution. HRP Conjugated Anti-Rabbit IgG for IP Nano-secondary antibody at 1/5,000 dilution was used for 1 hour at room temperature.

Lane 1: HeLa cell lysate (input)
Lane 2: HA750923 IP in HeLa cell lysate
Lane 3: Rabbit IgG instead of HA750923 in HeLa cell lysate

Blocking/Dilution buffer: 5% NFDM/TBST
Exposure time: 4 seconds; ECL: K1801

Background References

1. Schlaepfer IR et al. CPT1A-mediated Fat Oxidation, Mechanisms, and Therapeutic Potential. Endocrinology. 2020 Feb
2. Miguel V et al. Renal tubule Cpt1a overexpression protects from kidney fibrosis by restoring mitochondrial homeostasis. J Clin Invest. 2021 Mar