abcam

ab110293

Anti-CPT2 antibody [1C2AE6]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	1C2AE6
Purification technique	Precipitation Ammonium Sulphate
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purity near homogeneity as judge by SDS-PAGE. The antibody was produced in-vitro using hybridomas grown in serum-free medium and then purified by biochemical fractionation.

Reactivity data

IP

Tested

Species	Mouse, Rat, Human, Cow
Dilution info	-

Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1 µg/mL
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Not recommended

Species	Mouse, Rat, Human, Cow
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	4 µg/mL
Notes	-

Expected

Species	Mouse, Rat, Cow
Dilution info	Use at an assay dependent concentration.

Notes	-

IHC-P

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Expected

Species	Mouse, Rat, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information CPT2

Function	Involved in the intramitochondrial synthesis of acylcarnitines from accumulated acyl-CoA metabolites (PubMed:20538056, PubMed:24780397). Reconverts acylcarnitines back into the respective acyl-CoA esters that can then undergo beta-oxidation, an essential step for the mitochondrial uptake of long-chain fatty acids and their subsequent beta-oxidation in the mitochondrion. Active with medium (C8-C12) and long-chain (C14-C18) acyl-CoA esters (PubMed:20538056).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Carnitine palmitoyltransferase 2 (CPT2) also known as CPT-2 is an enzyme located mainly in the mitochondria of liver muscle and heart tissues. This enzyme has a molecular mass of approximately 68 kDa. CPT2 plays a mechanical role in the transfer of long-chain fatty acids from the cytosol into the mitochondrial matrix completing the process initiated by CPT1 on the outer mitochondrial membrane. CPT2 acts on the inner mitochondrial membrane converting acylcarnitine back into acyl-CoA which is an essential step in beta-oxidation. Expression of CPT2 is higher in tissues with elevated fatty acid oxidation rates.
Biological function summary	CPT2 is integral to the mitochondrial pathway of fatty acid metabolism. It functions as part of the carnitine shuttle system a complex important for the conversion of acylcarnitine to acyl-CoA inside the mitochondria. This role is vital for the full oxidation of long-chain fatty acids. Through its action CPT2 aids in maintaining energy homeostasis and producing ketone bodies especially during periods of fasting or strenuous exercise.
Pathways	CPT2 is involved in both the beta-oxidation and the carnitine shuttle pathways. These pathways facilitate the energy production from fatty acids particularly during states of low carbohydrate availability. CPT2 works closely with CPT1 as both enzymes form the gateway for the entry of long-chain fatty acids into mitochondria. Together with enzymes from the tricarboxylic acid cycle CPT2 helps sustain ATP production under such metabolic conditions.
Associated diseases and disorders	Defects in CPT2 can lead to disorders like CPT2 deficiency which present with symptoms of muscle weakness and recurrent rhabdomyolysis especially during prolonged fasting or significant exercise. This deficiency can also result in hypoketotic hypoglycemia and liver dysfunction. CPT2-related disorders often involve altered interactions with proteins such as the acyl-CoA dehydrogenases impacting the normal fatty acid oxidation process and causing metabolic disturbances.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

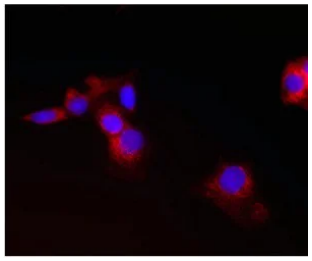
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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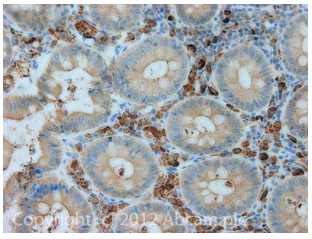
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-CPT2 antibody [1C2AE6] (ab110293)

CPT2 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-CPT2 antibody

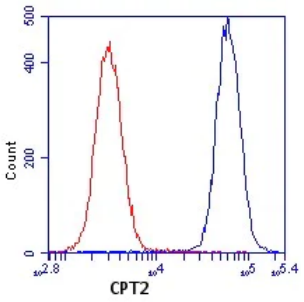
Immunocytochemistry image of ab110293 stained Human HepG2 cells. The cells were paraformaldehyde fixed (4%, 20 min) and Triton X-100 permeabilized (0.1%, 15 min). The cells were incubated with ab110293 at 4 µg/ml for 2h at room temperature, or over night at 4°C. The secondary antibody was (red) Alexa Fluor® 594 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. 10% Goat serum was used as the blocking agent for all blocking steps. DAPI was used to stain the cell nuclei (blue). Target protein locates mainly in mitochondria.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CPT2 antibody [1C2AE6] (ab110293)

CPT2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-CPT2 antibody

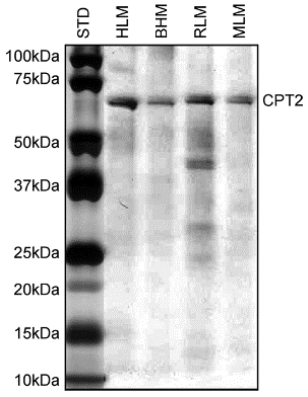
IHC image of CPT2 staining in Human normal colon formalin fixed paraffin embedded tissue section, performed on a Leica BondTM system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab110293, 10µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Flow Cytometry - Anti-CPT2 antibody [1C2AE6] (ab110293)

CPT2 Flow Cytometry staining using mouse Anti-CPT2 antibody

HL-60 cells were stained with 1 µg/mL of ab110293 (blue) or an equal amount of an isotype control antibody (red) and analyzed by flow cytometry.



Immunoprecipitation - Anti-CPT2 antibody [1C2AE6] (ab110293)

SDS-PAGE analysis of IP samples. As an IP antibody, ab110293 works with human, bovine, rat, and mouse samples.
Lane STD: Molecular weight ladder

Lane HLM: Human liver mitochondria

Lane BHM: Bovine heart mitochondria

Lane RLM: Rat liver mitochondria

Lane MLM: Mouse liver mitochondria

All lanes:
Immunoprecipitation - Anti-CPT2 antibody [1C2AE6] (ab110293)

Predicted band size: 74 kDa

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