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CP Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7340a

Product Information

Application	IHC-P, FC, WB, E
Primary Accession	P00450
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	122219
Antigen Region	121-151

Additional Information

Gene ID	1356
Other Names	Ceruloplasmin, Ferroxidase, CP
Target/Specificity	This CP antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 121-151 amino acids from the N-terminal region of human CP.
Dilution	IHC-P~~1:100~500 FC~~1:10~50 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 prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	CP Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CP (HGNC:2295)
Function	Multifunctional blue, copper-binding (6-7 atoms per molecule) glycoprotein. It has ferroxidase activity oxidizing Fe(2+) to Fe(3+) without releasing radical oxygen species. It is involved in iron transport across the cell membrane (PubMed:16150804). Copper ions provide a large number of enzymatic

activities. Oxidizes highly toxic ferrous ions to the ferric state for further incorporation onto apo- transferrins, catalyzes Cu(+) oxidation and promotes the oxidation of biogenic amines such as norepinephrin and serotonin (PubMed:14623105, PubMed:4643313, PubMed:5912351). Provides Cu(2+) ions for the ascorbate-mediated deaminase degradation of the heparan sulfate chains of GPC1 (By similarity). Has glutathione peroxidase-like activity, can remove both hydrogen peroxide and lipid hydroperoxide in the presence of thiols (PubMed:10481051). Acts as an inhibitor of the peroxidase activity of MPO (By similarity). Also shows NO-oxidase and NO2 synthase activities that determine endocrine NO homeostasis (PubMed:16906150).

Cellular Location Secreted. Note=Colocalizes with GCP1 in secretory intracellular compartments {ECO:0000250|UniProtKB:P13635}

Tissue Location Expressed by the liver and secreted in plasma.

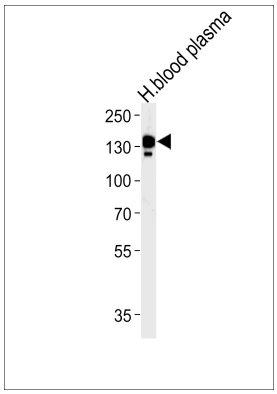
Background

CP is a metalloprotein that binds most of the copper in plasma and is involved in the peroxidation of Fe(II)transferrin to Fe(III) transferrin. Mutations in this protein cause aceruloplasminemia, which results in iron accumulation and tissue damage, and is associated with diabetes and neurologic abnormalities.

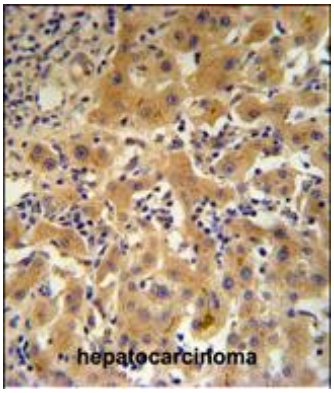
References

Park,Y., Lee,I.S. Arch. Pharm. Res. 32 (5), 693-698 (2009)
Altamura,C., Squitti,R. Stroke 40 (4), 1282-1288 (2009)
Squitti,R., Quattrocchi,C.C. Prion 2 (1), 23-27 (2008)

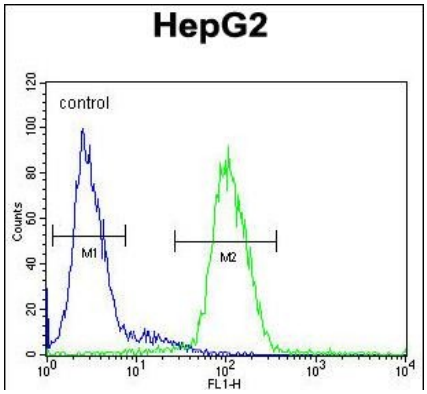
Images



CP Antibody (N-term) (Cat. #AP7340a) western blot analysis in human blood plasma tissue lysates (35ug/lane).This demonstrates the CP antibody detected the CP protein (arrow).



CP Antibody (N-term) (Cat.#AP7340a) IHC analysis in formalin fixed and paraffin embedded human hepatocarcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the CP Antibody (N-term) for immunohistochemistry. Clinical relevance has not been evaluated.



CP Antibody (N-term) (Cat. #AP7340a) flow cytometric analysis of HepG2 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Deletion of hephaestin and ceruloplasmin induces a serious systemic iron deficiency and disrupts iron homeostasis.
- Ceruloplasmin and hephaestin jointly protect the exocrine pancreas against oxidative damage by facilitating iron efflux.
- Ablation of Hephaestin and Ceruloplasmin Results in Iron Accumulation in Adipocytes and Type 2 Diabetes.
- Hephaestin and ceruloplasmin facilitate iron metabolism in the mouse kidney.

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