

# ceruloplasmin (H-3): sc-365205

## BACKGROUND

Ceruloplasmin (CP) is a blue plasma glycoprotein that is synthesized in hepatocytes and transports copper throughout the body. Also known as ferroxidase, ceruloplasmin is the product of an intragenic triplication and is composed of three homologous domains. Two splice variants, CP-1 and CP-2, have differential expression in specific tissues. Ceruloplasmin mRNAs are expressed in human liver, macrophages and lymphocytes. Ceruloplasmin binds copper and has six or seven cupric ions per molecule. It is involved in peroxidation of Fe(II) transferrin to form Fe(III) transferrin. Ceruloplasmin is proteolytically degraded to a short form, which still possesses ferroxidase activity. However, only the intact long form is able to catalyze iron loading into ferritin, indicating that the structural integrity of ceruloplasmin is essential for the enzyme to effectively catalyze iron loading into ferritin. Ceruloplasmin also induces low density lipoprotein oxidation *in vitro*, an action that depends on the presence of a single, chelatable Cu atom. A glycosyl phosphatidylinositol (GPI)-anchored form of ceruloplasmin is expressed by Sertoli cells, which may be the dominant form in Sertoli cells.

## REFERENCES

1. Takahashi, N., et al. 1984. Single-chain structure of human ceruloplasmin: the complete amino acid sequence of the whole molecule. *Proc. Natl. Acad. Sci. USA* 81: 390-394.
2. Yang, F., et al. 1986. Characterization, mapping, and expression of the human ceruloplasmin gene. *Proc. Natl. Acad. Sci. USA* 83: 3257-3261.
3. Royle, N.J., et al. 1987. Human genes encoding prothrombin and ceruloplasmin map to 11p11-q12 and 3q21-24, respectively. *Somat. Cell Mol. Genet.* 13: 285-292.
4. Yang, F.M., et al. 1990. Human ceruloplasmin. Tissue-specific expression of transcripts produced by alternative splicing. *J. Biol. Chem.* 265: 10780-10785.

## CHROMOSOMAL LOCATION

Genetic locus: CP (human) mapping to 3q24; Cp (mouse) mapping to 3 A2.

## SOURCE

ceruloplasmin (H-3) is a mouse monoclonal antibody raised against amino acids 121-180 of ceruloplasmin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ceruloplasmin (H-3) is available conjugated to agarose (sc-365205 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365205 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365205 PE), fluorescein (sc-365205 FITC), Alexa Fluor® 488 (sc-365205 AF488), Alexa Fluor® 546 (sc-365205 AF546), Alexa Fluor® 594 (sc-365205 AF594) or Alexa Fluor® 647 (sc-365205 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365205 AF680) or Alexa Fluor® 790 (sc-365205 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

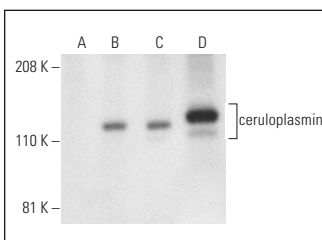
ceruloplasmin (H-3) is recommended for detection of ceruloplasmin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ceruloplasmin siRNA (h): sc-41194, ceruloplasmin siRNA (m): sc-41195, ceruloplasmin shRNA Plasmid (h): sc-41194-SH, ceruloplasmin shRNA Plasmid (m): sc-41195-SH, ceruloplasmin shRNA (h) Lentiviral Particles: sc-41194-V and ceruloplasmin shRNA (m) Lentiviral Particles: sc-41195-V.

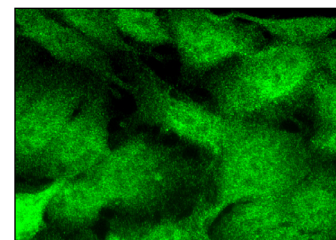
Molecular Weight of ceruloplasmin: 132 kDa.

Positive Controls: ceruloplasmin (h): 293T Lysate: sc-112652, NTERA-2 cl.D1 whole cell lysate: sc-364181 or SK-BR-3 cell lysate: sc-2218.

## DATA



ceruloplasmin (H-3): sc-365205. Western blot analysis of ceruloplasmin expression in non-transfected 293T: sc-117752 (A), human ceruloplasmin transfected 293T: sc-112652 (B), human ceruloplasmin transfected 293T: sc-112825 (C) whole cell lysates and human plasma (D). Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



ceruloplasmin (H-3): sc-365205. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cell surface localization.

## SELECT PRODUCT CITATIONS

1. Ferrin, G., et al. 2015. Plasma protein biomarkers of hepatocellular carcinoma in HCV-infected alcoholic patients with cirrhosis. *PLoS ONE* 10: e0118527.
2. Camino, T., et al. 2022. Brown adipose tissue sheds extracellular vesicles that carry potential biomarkers of metabolic and thermogenesis activity which are affected by high fat diet intervention. *Int. J. Mol. Sci.* 23: 10826.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.