

# ceruloplasmin (E-9): sc-365206

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: CP (human) mapping to 3q24.

## SOURCE

ceruloplasmin (E-9) is a mouse monoclonal antibody raised against amino acids 121-180 of ceruloplasmin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ceruloplasmin (E-9) is available conjugated to agarose (sc-365206 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365206 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365206 PE), fluorescein (sc-365206 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365206 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365206 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365206 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365206 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365206 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365206 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

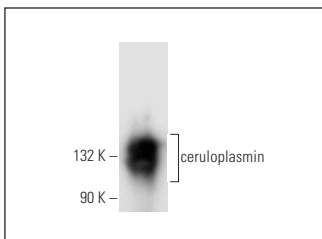
ceruloplasmin (E-9) is recommended for detection of ceruloplasmin of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 shRNA Plasmid (h): sc-41194-SH and ceruloplasmin shRNA (h) Lentiviral Particles: sc-41194-V.

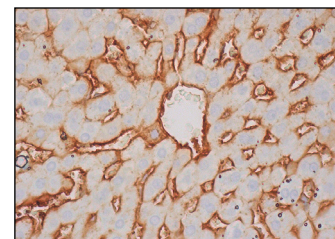
Molecular Weight of ceruloplasmin: 132 kDa.

Positive Controls: human plasma extract: sc-364374, NTERA-2 cl.D1 whole cell lysate: sc-364181 or SK-BR-3 cell lysate: sc-2218.

## DATA



ceruloplasmin (E-9): sc-365206. Western blot analysis of ceruloplasmin in human plasma.



ceruloplasmin (E-9): sc-365206. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing membrane staining of hepatocytes and sinusoids.

## SELECT PRODUCT CITATIONS

1. Srivastava, R., et al. 2012. Serum profiling of leptospirosis patients to investigate proteomic alterations. J. Proteomics 76: 56-68.
2. Sharma, S., et al. 2014. Quantitative proteomic analysis of meningiomas for the identification of surrogate protein markers. Sci. Rep. 4: 7140.
3. Vaiopoulou, A., et al. 2015. Serum protein profiling of adults and children with Crohn disease. J. Pediatr. Gastroenterol. Nutr. 60: 42-47.
4. Wang, P.W., et al. 2018. Integrated proteome and cytokine profiles reveal ceruloplasmin eliciting liver allograft tolerance via antioxidant cascades. Front. Immunol. 9: 2216.
5. Benabdelkamel, H., et al. 2021. Proteomics profiling of the urine of patients with hyperthyroidism after anti-thyroid treatment. Molecules 26: 1991.
6. Pascual-Mancho, J., et al. 2021. Influence of cerebral vasodilation on blood reelin levels in growth restricted fetuses. Diagnostics 11: 1036.

## STORAGE

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