

ceruloplasmin (C-20): sc-21242

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

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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.
5. Terada, K., et al. 1995. Copper incorporation into ceruloplasmin in rat livers. *Biochim. Biophys. Acta* 1270: 58-62.
6. Mukhopadhyay, C.K., et al. 1997. Identification of the prooxidant site of human ceruloplasmin: a model for oxidative damage by copper bound to protein surfaces. *Proc. Natl. Acad. Sci. USA* 94: 11546-11551.
7. Fortna, R.R., et al. 1999. Glycosyl phosphatidylinositol-anchored ceruloplasmin is expressed by rat Sertoli cells and is concentrated in detergent-insoluble membrane fractions. *Biol. Reprod.* 61: 1042-1049.
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CHROMOSOMAL LOCATION

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

STORAGE

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

SOURCE

ceruloplasmin (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ceruloplasmin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21242 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ceruloplasmin (C-20) is recommended for detection of ceruloplasmin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

ceruloplasmin (C-20) is also recommended for detection of ceruloplasmin in additional species, including equine, canine and porcine.

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: NTERA-2 cl.D1 whole cell lysate: sc-364181, rat testis extract: sc-2400 or SK-BR-3 cell lysate: sc-2218.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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



Try **ceruloplasmin (E-9): sc-365206** or **ceruloplasmin (H-3): sc-365205**, our highly recommended monoclonal alternatives to ceruloplasmin (C-20).