

Hephaestin (C-8): sc-393701

BACKGROUND

Hephaestin is a single-pass type I membrane protein that belongs to the multi-copper oxidase family of proteins. Hephaestin, a copper-dependant ferroxidase protein, is crucial for iron exiting intestinal enterocytes into the circulation. It mediates the movement of iron across the basolateral membrane in conjunction with ferroportin 1. This is an important link between iron and copper metabolism in mammalian systems, as copper deficiency leads to reduced Hephaestin and reduced iron absorption resulting in anemia. Hephaestin can bind six copper ions per monomer and is regulated by the homeobox transcription factor CDX2. Increased levels of iron leads to an increase in CDX2 expression and thus Hephaestin. Hephaestin is primarily detected in the intestine, but is also expressed in colon, breast, bone trabecular cells and fibroblasts.

REFERENCES

- Anderson, G.J., et al. 2005. Recent advances in intestinal iron transport. *Curr. Gastroenterol. Rep.* 7: 365-372.
- Anderson, G.J., et al. 2005. Mechanisms of haem and non-haem iron absorption: lessons from inherited disorders of iron metabolism. *Biometals* 18: 339-348.
- Petrak, J., et al. 2005. Hephaestin—a ferroxidase of cellular iron export. *Int. J. Biochem. Cell Biol.* 37: 1173-1178.
- Gleeson, F., et al. 2005. Duodenal Dcytb and Hephaestin mRNA expression are not significantly modulated by variations in body iron homeostasis. *Blood Cells Mol. Dis.* 35: 303-308.

CHROMOSOMAL LOCATION

Genetic locus: Heph (mouse) mapping to X C3.

SOURCE

Hephaestin (C-8) is a mouse monoclonal antibody raised against amino acids 331-420 mapping within an N-terminal extracellular domain of Hephaestin of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Hephaestin (C-8) is available conjugated to agarose (sc-393701 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393701 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393701 PE), fluorescein (sc-393701 FITC), Alexa Fluor[®] 488 (sc-393701 AF488), Alexa Fluor[®] 546 (sc-393701 AF546), Alexa Fluor[®] 594 (sc-393701 AF594) or Alexa Fluor[®] 647 (sc-393701 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393701 AF680) or Alexa Fluor[®] 790 (sc-393701 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

Hephaestin (C-8) is recommended for detection of Hephaestin of mouse 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 Hephaestin siRNA (m): sc-60781, Hephaestin shRNA Plasmid (m): sc-60781-SH and Hephaestin shRNA (m) Lentiviral Particles: sc-60781-V.

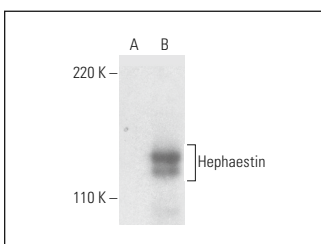
Molecular Weight of Hephaestin: 160 kDa.

Positive Controls: Hephaestin (m): 293T Lysate: sc-120751.

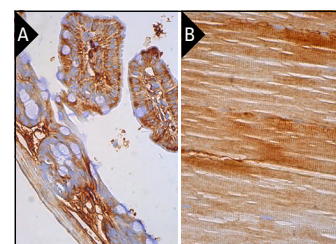
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BPFITC: sc-516140 or m-IgGκ BPE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BPHRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Hephaestin (C-8): sc-393701. Western blot analysis of Hephaestin expression in non-transfected: sc-117752 (A) and mouse Hephaestin transfected: sc-120751 (B) 293T whole cell lysates.



Hephaestin (C-8): sc-393701. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse small intestine tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

SELECT PRODUCT CITATIONS

- Harder, N.H.O., et al. 2022. Fatty acid uptake in liver hepatocytes induces relocalization and sequestration of intracellular copper. *Front. Mol. Biosci.* 9: 863296.

RESEARCH USE

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