

Hephaestin (N-20): sc-49970

BACKGROUND

Hephaestin is a single-pass type I membrane protein that belongs to the multicopper 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 the 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. *Biomaterials* 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.
- Reeves, P.G., et al. 2005. Repletion of copper-deficient rats with dietary copper restores duodenal Hephaestin protein and iron absorption. *Exp. Biol. Med.* 230: 320-325.
- Hinoi, T., et al. 2005. CDX2-regulated expression of iron transport protein Hephaestin in intestinal and colonic epithelium. *Gastroenterology* 128: 946-961.

CHROMOSOMAL LOCATION

Genetic locus: HEPH (human) mapping to Xq12; Heph (mouse) mapping to X C3.

SOURCE

Hephaestin (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Hephaestin 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-49970 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Hephaestin (N-20) is recommended for detection of Hephaestin 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).

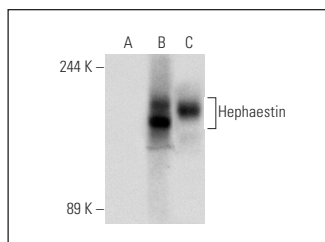
Hephaestin (N-20) is also recommended for detection of Hephaestin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Hephaestin siRNA (h): sc-60780, Hephaestin siRNA (m): sc-60781, Hephaestin shRNA Plasmid (h): sc-60780-SH, Hephaestin shRNA Plasmid (m): sc-60781-SH, Hephaestin shRNA (h) Lentiviral Particles: sc-60780-V and Hephaestin shRNA (m) Lentiviral Particles: sc-60781-V.

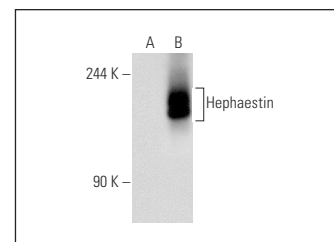
Molecular Weight of Hephaestin: 160 kDa.

Positive Controls: Hephaestin (h2): 293T Lysate: sc-171063, T84 whole cell lysate: sc-364797 or K-562 whole cell lysate: sc-2203.

DATA



Hephaestin (N-20): sc-49970. Western blot analysis of Hephaestin expression in non-transfected 293T: sc-117752 (A), human Hephaestin transfected 293T: sc-177340 (B) and T84 (C) whole cell lysates.



Hephaestin (N-20): sc-49970. Western blot analysis of Hephaestin expression in non-transfected: sc-117752 (A) and human Hephaestin transfected: sc-171063 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Wang, J., et al. 2009. Differential gene expression in normal esophagus and Barrett's esophagus. *J. Gastroenterol.* 44:897-911.
- Balusikova, K., et al. 2009. Differing expression of genes involved in non-transferrin iron transport across plasma membrane in various cell types under iron deficiency and excess. *Mol. Cell. Biochem.* 321: 123-133.

RESEARCH USE

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

MONOS
Satisfaction
Guaranteed

Try **Hephaestin (C-8): sc-393701** or **Hephaestin (C-7): sc-365365**, our highly recommended monoclonal alternatives to Hephaestin (N-20).