

## HFE (44-H): sc-130375

### BACKGROUND

The features of hemochromatosis include cirrhosis of the liver, diabetes, hypermelanotic pigmentation of the skin, and heart failure. Since hemochromatosis is a relatively easily treated disorder if diagnosed, this is a form of preventable cancer. The HFE protein, which is defective in hereditary hemochromatosis, normally is expressed in crypt enterocytes of the duodenum where it has a unique, predominantly intracellular localization. In placenta, the HFE protein co-localizes with and forms a stable association with the transferrin receptor (TFR), providing a link between the HFE protein and iron transport. Immunocytochemistry shows that the HFE protein and TFR both are expressed in the crypt enterocytes. Western blots show that, as is the case in human placenta, the HFE protein in crypt enterocytes is physically associated with the TFR and with  $\beta_2$ -microglobulin. It is proposed that HFE has two mutually exclusive activities in cells: inhibition of uptake or inhibition of release of iron and that the balance between serum transferrin saturation and serum transferrin-receptor concentrations determines which of these functions predominates. The gene which encodes HFE maps to human chromosome 6p22.2.

### REFERENCES

1. Cragg, S.J., Drysdale, J. and Worwood, M. 1985. Genes for the 'H' subunit of human ferritin are present on a number of human chromosomes. *Hum. Genet.* 71: 108-112.
2. McGill, J.R., Naylor, S.L., Sakaguchi, A.Y., Moore, C.M., Boyd, D., Barrett, K.J., Shows, T.B. and Drysdale, J.W. 1987. Human ferritin H and L sequences lie on ten different chromosomes. *Hum. Genet.* 76: 66-72.
3. Waheed, A., Parkkila, S., Saarnio, J., Fleming, R.E., Zhou, X.Y., Tomatsu, S., Britton, R.S., Bacon, B.R. and Sly, W.S. 1999. Association of HFE protein with transferrin receptor in crypt enterocytes of human duodenum. *Proc. Natl. Acad. Sci. USA* 96: 1579-1584.
4. Townsend, A. and Drakesmith, H. 2002. Role of HFE in iron metabolism, hereditary haemochromatosis, anaemia of chronic disease, and secondary iron overload. *Lancet* 359: 786-790.
5. LocusLink Report (LocusID: 235200). <http://www.ncbi.nlm.nih.gov/LocusLink/>

### CHROMOSOMAL LOCATION

Genetic locus: HFE (human) mapping to 6p22.2.

### SOURCE

HFE (44-H) is a mouse monoclonal antibody raised against recombinant HFE of human origin.

### PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### STORAGE

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

### APPLICATIONS

HFE (44-H) is recommended for detection of HFE of 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).

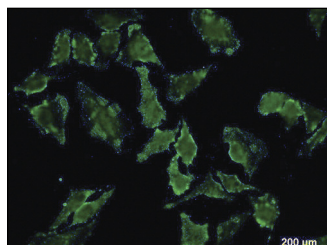
Suitable for use as control antibody for HFE siRNA (h): sc-43832, HFE shRNA Plasmid (h): sc-43832-SH and HFE shRNA (h) Lentiviral Particles: sc-43832-V.

Molecular Weight of HFE: 49 kDa.

### RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

### DATA



HFE (44-H): sc-130375. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

### SELECT PRODUCT CITATIONS

1. Pacurari, M., Addison, J.B., Bondalapati, N., Wan, Y.W., Luo, D., Qian, Y., Castranova, V., Ivanov, A.V. and Guo, N.L. 2013. The microRNA-200 family targets multiple non-small cell lung cancer prognostic markers in H1299 cells and BEAS-2B cells. *Int. J. Oncol.* 43: 548-560.

### 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.