SANTA CRUZ BIOTECHNOLOGY, INC.

HFE (T-15): sc-18810

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 colocalizes 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 β2-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 6p21.3.

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 6p21.3; Hfe (mouse) mapping to 13 15.0 cM (13 A2-A4).

SOURCE

HFE (T-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HFE of mouse 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-18810 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HFE (T-15) is recommended for detection of HFE of mouse and rat 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).

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.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.