

CYBRD1 (S-13): sc-161025

BACKGROUND

CYBRD1 (cytochrome b reductase 1), also known as DCYTB (duodenal cytochrome b) or FRRS3 (ferric-chelate reductase 3), is a 286 amino acid ferric-chelate reductase and multi-pass membrane protein that reduces Fe³⁺ to Fe²⁺. A member of the cytochrome b561 family, CYBRD1 is expressed in respiratory epithelium and duodenal brush border membrane, where it is suggested to assist in the transport of dietary iron into mucosal cells. CYBRD1 is also hypothesized to function as a ferrireductase in airway epithelial cells and may participate in erythrocyte membrane ascorbate recycling. CYBRD1 is encoded by a gene located on human chromosome 2q31.1, variations of which may contribute to modifications in iron overload expression.

REFERENCES

- Zoller, H., et al. 2003. Duodenal cytochrome b and hephaestin expression in patients with iron deficiency and hemochromatosis. *Gastroenterology*. 125: 746-754.
- Zaahl, M.G., et al. 2004. Analysis of genes implicated in iron regulation in individuals presenting with primary iron overload. *Hum. Genet.* 115: 409-417.
- Gunshin, H., et al. 2005. Cybrd1 (duodenal cytochrome b) is not necessary for dietary iron absorption in mice. *Blood* 106: 2879-2883.
- Zaahl, M.G., et al. 2005. Gene symbol: DCYTB/CYBRD1. Disease: primary iron overload. *Hum. Genet.* 118: 546.
- Turi, J.L., et al. 2006. Duodenal cytochrome b: a novel ferrireductase in airway epithelial cells. *Am. J. Physiol. Lung Cell Mol. Physiol.* 291: L272-L280.
- Li, A.C., et al. 2006. Immunolocalization of duodenal cytochrome B: a relationship with circulating markers of iron status. *Eur. J. Clin. Invest.* 36: 890-898.
- Su, D., et al. 2006. Human erythrocyte membranes contain a cytochrome b561 that may be involved in extracellular ascorbate recycling. *J. Biol. Chem.* 281: 39852-39859.
- Constantine, C.C., et al. 2009. A novel association between a SNP in CYBRD1 and serum ferritin levels in a cohort study of HFE hereditary haemochromatosis. *Br. J. Haematol.* 147: 140-149.

CHROMOSOMAL LOCATION

Genetic locus: CYBRD1 (human) mapping to 2q31.1.

SOURCE

CYBRD1 (S-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CYBRD1 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-161025 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYBRD1 (S-13) is recommended for detection of CYBRD1 of human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CYBRD1 siRNA (h): sc-94877, CYBRD1 shRNA Plasmid (h): sc-94877-SH and CYBRD1 shRNA (h) Lentiviral Particles: sc-94877-V.

Molecular Weight of CYBRD1: 30-35 kDa.

Positive Controls: mouse lung extract: sc-2390.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.