

Ferrochelatase (D-24): sc-133579

BACKGROUND

Ferrochelatase, also designated heme synthetase or protoheme ferro-lyase, is the terminal enzyme of protoheme biosynthesis that catalyzes the ferrous form of iron insertion into protoporphyrin IX. Mature Ferrochelatase is a homodimeric, mitochondrial membrane-associated protein translated downstream of an N-terminal 54 amino acid transit peptide. Ferrochelatase contains two nitric oxide (NO)-sensitive clusters and coordinated 2FE-2S clusters which may potentially serve as a nitric oxide sensor. Defects in the gene encoding the Ferrochelatase enzyme, FECH, cause erythropoietic protoporphyria (EPP), which is a dominantly inherited disease of porphyrin metabolism characterized by photosensitivity and hepatobiliary disease.

REFERENCES

1. Davies, R., et al. 2005. Hepatic gene expression in protoporphyric Fech mice is associated with cholestatic injury but not a marked depletion of the heme regulatory pool. *Am. J. Pathol.* 166: 1041-1053.
2. Di Pierro, E., et al. 2005. A point mutation affecting an Sp1 binding site in the promoter of the Ferrochelatase gene impairs gene transcription and causes erythropoietic protoporphyria. *Exp. Hematol.* 33: 584-591.
3. Elder, G., et al. 2005. Normal dermal Ferrochelatase activity does not protect human skin from protoporphyrin-induced photosensitivity. *J. Invest. Dermatol.* 125: 580.
4. Franco, R., et al. 2005. Porphyrin-substrate binding to murine Ferrochelatase: effect on the thermal stability of the enzyme. *Biochem. J.* 386: 599-605.
5. Najahi-Missaoui, W., et al. 2005. Production and characterization of erythropoietic protoporphyric heterodimeric ferrochelatases. *Blood* 106: 1098-1104.
6. Goodwin, R.G., et al. 2005. Photosensitivity and acute liver injury in myeloproliferative disorder secondary to late-onset protoporphyria caused by deletion of a Ferrochelatase gene in hematopoietic cells. *Blood* 107: 60-62.
7. Ohgari, Y., et al. 2005. Ferrochelatase consisting of wildtype and mutated subunits from patients with a dominant-inherited disease, erythropoietic protoporphyria, is an active but unstable dimer. *Hum. Mol. Genet.* 14: 327-334.
8. Shipovskov, S., et al. 2005. Metallation of the transition-state inhibitor N-methyl mesoporphyrin by Ferrochelatase: implications for the catalytic reaction mechanism. *J. Mol. Biol.* 352: 1081-1090.

CHROMOSOMAL LOCATION

Genetic locus: FECH (human) mapping to 18q21.31; Fech (mouse) mapping to 18 E1.

STORAGE

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

SOURCE

Ferrochelatase (D-24) is a Protein A purified rabbit polyclonal antibody raised against synthetic Ferrochelatase peptide of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

Ferrochelatase (D-24) is recommended for detection of Ferrochelatase of mouse, rat and 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Ferrochelatase siRNA (h): sc-60631, Ferrochelatase siRNA (m): sc-60632, Ferrochelatase shRNA Plasmid (h): sc-60631-SH, Ferrochelatase shRNA Plasmid (m): sc-60632-SH, Ferrochelatase shRNA (h) Lentiviral Particles: sc-60631-V and Ferrochelatase shRNA (m) Lentiviral Particles: sc-60632-V.

Molecular Weight of Ferrochelatase homodimer: 86 kDa.

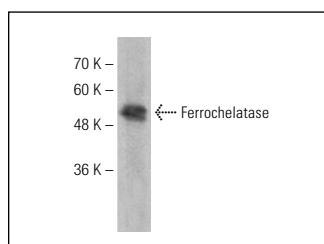
Molecular Weight of Ferrochelatase monomer: 40-43 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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).

DATA



Ferrochelatase (D-24): sc-133579. Western blot analysis of Ferrochelatase expression in Jurkat whole cell lysate.

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