SANTA CRUZ BIOTECHNOLOGY, INC.

Ferrochelatase (C-20): sc-49663

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 protoporhyria (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 protoporphyic 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.

CHROMOSOMAL LOCATION

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

SOURCE

Ferrochelatase (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Ferrochelatase 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-49663 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Ferrochelatase (C-20) is recommended for detection of mitochondrial precursor and mature 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Ferrochelatase (C-20) is also recommended for detection of mitochondrial precursor and mature Ferrochelatase in additional species, including equine, canine, bovine, porcine and avian.

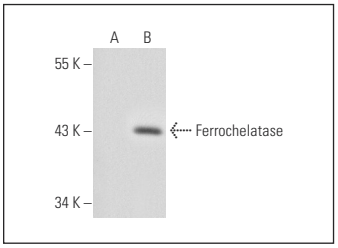
Suitable for use as control antibody for Ferrochelatase siRNA (h): sc-60631, Ferrochelatase siRNA (m): sc-60632, Ferrochelatase shRNA Plasmid (h): sc-60631-SH, Ferrochelatase shRNA Plasmid (m): sc-60632-SH, Ferrochelatase shRNA (h) Lentiviral Particles: sc-60631-V and Ferrochelatase shRNA (m) Lentiviral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

Molecular Weight of Ferrochelatase homodimer: 86 kDa.

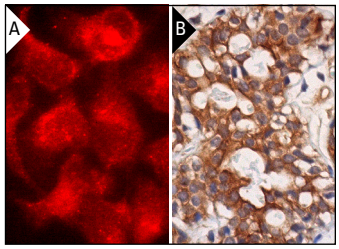
Molecular Weight of Ferrochelatase monomer: 40-43 kDa.

Positive Controls: Ferrochelatase (h): 293T Lysate: sc-115804 or Jurkat whole cell lysate: sc-2204.

DATA



Ferrochelatase (C-20): sc-49663. Western blot analysis of Ferrochelatase expression in non-transfected: sc-117752 (**A**) and human Ferrochelatase transfected: sc-115804 (**B**) 293T whole cell lysates.



Ferrochelatase (C-20): sc-49663. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic and membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Berkovitch-Luria, G., et al. 2012. A multifunctional 5-aminolevulinic acid derivative induces erythroid differentiation of K562 human erythroleukemic cells. Eur. J. Pharm. Sci. 47: 206-214.

STORAGE

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

PROTOCOLS

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