SANTA CRUZ BIOTECHNOLOGY, INC.

Ferrochelatase (G-16): sc-49664

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 2 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

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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.
9. Sobotka, R., et al. 2005. Photosystem II assembly in CP47 mutant of Synechocystis sp. PCC 6803 is dependent on the level of chlorophyll precursors regulated by ferrochelatase. J. Biol. Chem. 280: 31595-31602.

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 (G-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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-49664 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ferrochelatase (G-16) 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), 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).

Ferrochelatase (G-16) 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: Jurkat whole cell lysate: sc-2204.

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.

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.