

Ferrochelatase (D-7): sc-271434

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. Elder, G., et al. 2005. Normal dermal Ferrochelatase activity does not protect human skin from protoporphyrin-induced photosensitivity. *J. Invest. Dermatol.* 125: 580.
3. 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.

CHROMOSOMAL LOCATION

Genetic locus: FECH (human) mapping to 18q21.31.

SOURCE

Ferrochelatase (D-7) is a mouse monoclonal antibody raised against amino acids 124-423 mapping at the C-terminus of Ferrochelatase of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Ferrochelatase (D-7) is recommended for detection of mitochondrial precursor and mature Ferrochelatase of human origin by Western Blotting (starting dilution 1:100, 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 Ferrochelatase siRNA (h): sc-60631, Ferrochelatase shRNA Plasmid (h): sc-60631-SH and Ferrochelatase shRNA (h) Lentiviral Particles: sc-60631-V.

Molecular Weight of Ferrochelatase homodimer: 86 kDa.

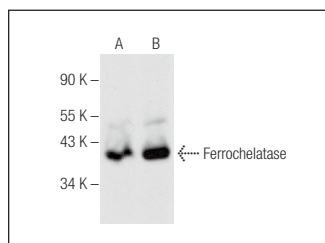
Molecular Weight of Ferrochelatase monomer: 40-43 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, K-562 whole cell lysate: sc-2203 or HEL 92.1.7 cell lysate: sc-2270.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Ferrochelatase (D-7): sc-271434. Western blot analysis of Ferrochelatase expression in K-562 (A) and HEL 92.1.7 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Klaeger, S., et al. 2016. Chemical proteomics reveals Ferrochelatase as a common off-target of kinase inhibitors. *ACS Chem. Biol.* 11: 1245-1254.
2. Kronstein-Wiedemann, R., et al. 2022. SARS-CoV-2 infects red blood cell progenitors and dysregulates hemoglobin and iron metabolism. *Stem Cell Rev. Rep.* 18: 1809-1821.

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 for detailed protocols and support products.



See **Ferrochelatase (A-3): sc-377377** for Ferrochelatase antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.