## SANTA CRUZ BIOTECHNOLOGY, INC.

# 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 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.
- 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  $\mu g\, lgG_{2b}$  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  $\mu$ g per 100-500  $\mu$ g 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> 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. Ferrochelatase (D-7): sc-271434. Western blot analysis of Ferrochelatase expression in K-562 (A) and HCT-116 (B) whole cell lysates. Detection reagent used: m-IgG<sub>2b</sub> BP-HPP: sc-542741.

#### **SELECT PRODUCT CITATIONS**

- Klaeger, S., et al. 2016. Chemical proteomics reveals Ferrochelatase as a common off-target of kinase inhibitors. ACS Chem. Biol. 11: 1245-1254.
- 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, \*\*D0 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<sup>®</sup> 488, 546, 594, 647, 680 and 790.