SANTA CRUZ BIOTECHNOLOGY, INC.

# Ferrochelatase (A-3): sc-377377

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 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. 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; Fech (mouse) mapping to 18 E1.

## SOURCE

Ferrochelatase (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 329-369 near the C-terminus of Ferrochelatase of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ferrochelatase (A-3) is available conjugated to agarose (sc-377377 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377377 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377377 PE), fluorescein (sc-377377 FITC), Alexa Fluor® 488 (sc-377377 AF488), Alexa Fluor® 546 (sc-377377 AF546), Alexa Fluor® 594 (sc-377377 AF594) or Alexa Fluor® 647 (sc-377377 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377377 AF680) or Alexa Fluor® 790 (sc-377377 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377377 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## APPLICATIONS

Ferrochelatase (A-3) is recommended for detection of mitochondrial precursor and mature Ferrochelatase of mouse, rat and 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), 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 (A-3) is also recommended for detection of mitochondrial precursor and mature Ferrochelatase in additional species, including equine and bovine.

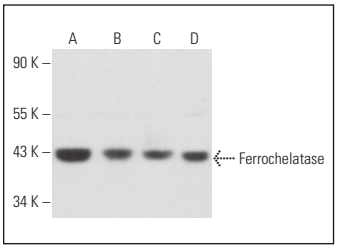
Suitable for use as control antibody for Ferrochelatase siRNA (h): sc-60631, Ferrochelatase siRNA (m): sc-60632, Ferrochelatase shRNA Plasmid (h): sc-60631-SH, Ferrochelatase shRNA Plasmid (m): sc-60632-SH, Ferrochelatase shRNA (h) Lentiviral Particles: sc-60631-V and Ferrochelatase shRNA (m) Lentiviral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

Molecular Weight of Ferrochelatase homodimer: 86 kDa.

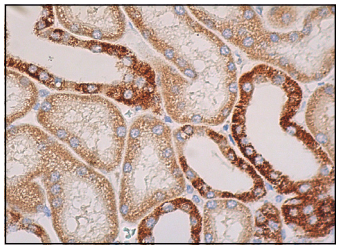
Molecular Weight of Ferrochelatase monomer: 40-43 kDa.

Positive Controls: NCI-H460 whole cell lysate: sc-364235, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

## DATA




Ferrochelatase (A-3): sc-377377. Western blot analysis of Ferrochelatase expression in NCI-H460 (**A**), HeLa (**B**), MCF7 (**C**) and NIH/3T3 (**D**) whole cell lysates.



Ferrochelatase (A-3): sc-377377. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

## SELECT PRODUCT CITATIONS


1. Campbell, M.R., et al. 2013. Novel hematopoietic target genes in the Nrf2-mediated transcriptional pathway. Oxid. Med. Cell. Longev. 2013: 120305.
2. Halloy, F., et al. 2020. Delivery of oligonucleotides to bone marrow to modulate Ferrochelatase splicing in a mouse model of erythropoietic protoporphyria. Nucleic Acids Res. 48: 4658-4671.
3. Gillissen, B., et al. 2021. Alectinib treatment improves photodynamic therapy in cancer cell lines of different origin. BMC Cancer 21: 971.


## RESEARCH USE

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