

Ferrochelata se (A-3): sc-377377

BACKGROUND

Ferrochelata se, 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 Ferrochelata se is a homodimeric, mitochondrial membrane-associated protein translated downstream of an N-terminal 54-amino acid transit peptide. Ferrochelata se 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 Ferrochelata se 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 Ferrochelata se 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 Ferrochelata se 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

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

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ferrochelata se (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

Ferrochelata se (A-3) is recommended for detection of mitochondrial precursor and mature Ferrochelata se 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).

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

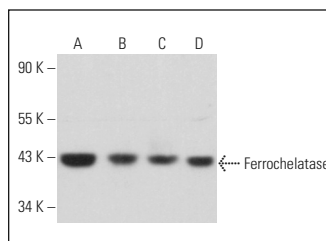
Suitable for use as control antibody for Ferrochelata se siRNA (h): sc-60631, Ferrochelata se siRNA (m): sc-60632, Ferrochelata se shRNA Plasmid (h): sc-60631-SH, Ferrochelata se shRNA Plasmid (m): sc-60632-SH, Ferrochelata se shRNA (h) Lentiviral Particles: sc-60631-V and Ferrochelata se shRNA (m) Lentiviral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

Molecular Weight of Ferrochelata se homodimer: 86 kDa.

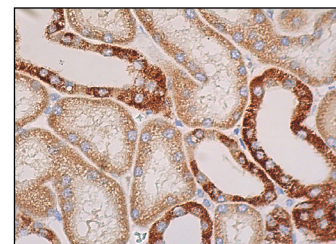
Molecular Weight of Ferrochelata se monomer: 40-43 kDa.

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

DATA



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



Ferrochelata se (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 Ferrochelata se 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.

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