

ferritin heavy chain (B-12): sc-376594

BACKGROUND

Mammalian ferritins consist of 24 subunits made up of 2 types of polypeptide chains, ferritin heavy chain and ferritin light chain, which each have unique functions. Ferritin heavy chains catalyze the first step in iron storage, the oxidation of Fe^{II}, whereas ferritin light chains promote the nucleation of ferrihydrite, enabling storage of Fe^{III}. The most prominent role of mammalian ferritins is to provide iron-buffering capacity to cells. In addition to iron buffering, heavy chain ferritin is also involved in the regulation of thymidine biosynthesis via increased expression of cytoplasmic serine hydroxymethyltransferase, which is a limiting factor in thymidylate synthesis in MCF-7 cells. Light chain ferritin is involved in cataracts by at least two mechanisms: hereditary hyperferritinemia cataract syndrome, in which light chain ferritin is overexpressed; and oxidative stress, an important factor in the development of aging-related cataracts.

CHROMOSOMAL LOCATION

Genetic locus: FTH1 (human) mapping to 11q12.3; Fth1 (mouse) mapping to 19 A.

SOURCE

ferritin heavy chain (B-12) is a mouse monoclonal antibody raised against amino acids 131-183 of ferritin heavy chain of human origin.

PRODUCT

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

ferritin heavy chain (B-12) is available conjugated to agarose (sc-376594 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376594 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376594 PE), fluorescein (sc-376594 FITC), Alexa Fluor[®] 488 (sc-376594 AF488), Alexa Fluor[®] 546 (sc-376594 AF546), Alexa Fluor[®] 594 (sc-376594 AF594) or Alexa Fluor[®] 647 (sc-376594 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376594 AF680) or Alexa Fluor[®] 790 (sc-376594 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ferritin heavy chain (B-12) is recommended for detection of ferritin heavy chain 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ferritin heavy chain siRNA (h): sc-40575, ferritin heavy chain siRNA (m): sc-40576, ferritin heavy chain shRNA Plasmid (h): sc-40575-SH, ferritin heavy chain shRNA Plasmid (m): sc-40576-SH, ferritin heavy chain shRNA (h) Lentiviral Particles: sc-40575-V and ferritin heavy chain shRNA (m) Lentiviral Particles: sc-40576-V.

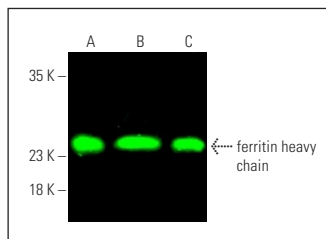
Molecular Weight of ferritin heavy chain: 21 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or A549 cell lysate: sc-2413.

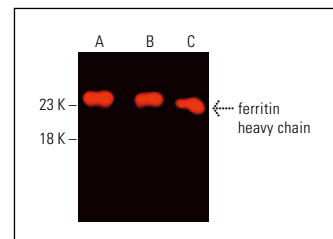
STORAGE

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

DATA



ferritin heavy chain (B-12): sc-376594. Near-infrared western blot analysis of ferritin heavy chain expression in U-87 MG (A), A549 (B) and MCF7 (C) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



ferritin heavy chain (B-12): sc-376594. Near-infrared western blot analysis of ferritin heavy chain expression in U-87 MG (A), Jurkat (B) and MCF7 (C) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

- McNally, A.K. and Anderson, J.M. 2015. Phenotypic expression in human monocyte-derived interleukin-4-induced foreign body giant cells and macrophages *in vitro*: dependence on material surface properties. *J. Biomed. Mater. Res. A* 103: 1380-1390.
- Kawatani, M., et al. 2016. Proteomic profiling reveals that collismycin A is an iron chelator. *Sci. Rep.* 6: 38385.
- Camarena, V., et al. 2017. CAMP signaling regulates DNA hydroxymethylation by augmenting the intracellular labile ferrous iron pool. *Elife* 6: e29750.
- Biamonte, F., et al. 2018. Ferritin heavy subunit enhances apoptosis of non-small cell lung cancer cells through modulation of miR-125b/p53 axis. *Cell Death Dis.* 9: 1174.
- Wilkinson, H.N., et al. 2019. Tissue iron promotes wound repair via M2 macrophage polarization and the chemokine (C-C motif) ligands 17 and 22. *Am. J. Pathol.* 189: 2196-2208.
- Moon, D., et al. 2019. Yeast extract inhibits the proliferation of renal cell carcinoma cells via regulation of iron metabolism. *Mol. Med. Rep.* 20: 3933-3941.
- Braun, J.A., et al. 2020. Effects of the antifungal agent ciclopirox in HPV-positive cancer cells: repression of viral E6/E7 oncogene expression and induction of senescence and apoptosis. *Int. J. Cancer* 146: 461-474.
- Lee, J.J., et al. 2020. Lysosome-associated membrane protein-2 deficiency increases the risk of reactive oxygen species-induced ferroptosis in retinal pigment epithelial cells. *Biochem. Biophys. Res. Commun.* 521: 414-419.

RESEARCH USE

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

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