SANTA CRUZ BIOTECHNOLOGY, INC.

ferritin heavy chain (C6): sc-517438

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mammalian ferritins consist of 24 subunits made up of 2 types of poly-peptide 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 FeII, whereas ferritin light chains promote the nucleation of ferrihydrite, enabling storage of FeIII. 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.

REFERENCES

1. Worwood, M., et al. 1985. Assignment of human ferritin genes to chromosomes 11 and 19q13.3-19qter. Hum. Genet. 69: 371-374.
2. Hempstead, P.D., et al. 1997. Comparison of the three-dimensional structures of recombinant human H and horse L ferritins at high resolution. J. Mol. Biol. 268: 424-448.
3. Cheng, Q., et al. 2000. High level of ferritin light chain mRNA in lens. Biochem. Biophys. Res. Commun. 270: 349-355.
4. Cassanelli, S. and Moulis, J. 2001. Sulfide is an efficient iron releasing agent for mammalian ferritins. Biochim. Biophys. Acta 1547: 174-182.
5. Oppenheim, E.W., et al. 2001. Heavy chain ferritin enhances serine hydroxymethyltransferase expression and *de novo* thymidine biosynthesis. J. Biol. Chem. 276: 19855-19861.
6. LocusLink Report (LocusID: 2499). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Fth1 (mouse) mapping to 19 A.

SOURCE

ferritin heavy chain (C6) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 1-182 of ferritin heavy chain of mouse origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 1% glycerol.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

ferritin heavy chain (C6) is recommended for detection of ferritin heavy chain of mouse and rat origin by Western Blotting (starting dilution 1:200, 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).

Suitable for use as control antibody for ferritin heavy chain siRNA (m): sc-40576, ferritin heavy chain siRNA (r): sc-72350, ferritin heavy chain shRNA Plasmid (m): sc-40576-SH, ferritin heavy chain shRNA Plasmid (r): sc-72350-SH, ferritin heavy chain shRNA (m) Lentiviral Particles: sc-40576-V and ferritin heavy chain shRNA (r) Lentiviral Particles: sc-72350-V.

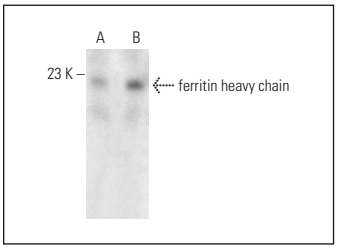
Molecular Weight of ferritin heavy chain: 21 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243 or RAW 264.7 whole cell lysate: sc-2211.

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ferritin heavy chain (C6): sc-517438. Western blot analysis of ferritin heavy chain expression in 3T3-L1 (**A**) and RAW 264.7 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. McCullough, K.R., et al 2022. Functional consequence of myeloid ferritin heavy chain on acute and chronic effects of rhabdomyolysis-induced kidney injury. Front. Med. 9: 894521.

RESEARCH USE

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