

ferritin light chain (D-9): sc-74513

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 MCF7 cells. Light chain ferritin is involved in cataracts by at least two mechanisms, hereditary hyperferritinemia cataract syndrome, in which light chain ferritin is over-expressed, and oxidative stress, an important factor in the development of ageing-related cataracts. The gene encoding human ferritin heavy chain maps to chromosome 11q13.33 and the human ferritin light chain gene maps to chromosome 19q13.33.

CHROMOSOMAL LOCATION

Genetic locus: FTL (human) mapping to 19q13.33.

SOURCE

ferritin light chain (D-9) is a mouse monoclonal antibody raised against amino acids 131-175 of ferritin light 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 light chain (D-9) is available conjugated to agarose (sc-74513 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74513 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74513 PE), fluorescein (sc-74513 FITC), Alexa Fluor® 488 (sc-74513 AF488), Alexa Fluor® 546 (sc-74513 AF546), Alexa Fluor® 594 (sc-74513 AF594) or Alexa Fluor® 647 (sc-74513 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74513 AF680) or Alexa Fluor® 790 (sc-74513 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ferritin light chain (D-9) is recommended for detection of ferritin light chain of 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).

Suitable for use as control antibody for ferritin light chain siRNA (h): sc-40577, ferritin light chain shRNA Plasmid (h): sc-40577-SH and ferritin light chain shRNA (h) Lentiviral Particles: sc-40577-V.

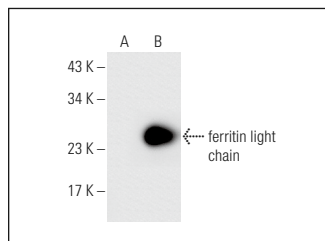
Molecular Weight of ferritin light chain: 19-25 kDa.

Positive Controls: ferritin light chain (h2): 293T Lysate: sc-170823 or HL-60 whole cell lysate: sc-2209.

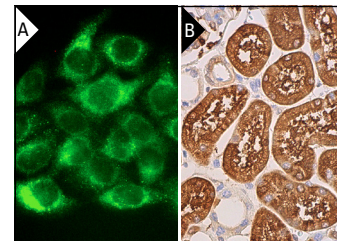
STORAGE

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

DATA



ferritin light chain (D-9): sc-74513. Western blot analysis of ferritin light chain expression in non-transfected: sc-117752 (A) and human ferritin light chain transfected: sc-170823 (B) 293T whole cell lysates.



ferritin light chain (D-9): sc-74513. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

- Swaminathan, S., et al. 2013. Gadolinium contrast agent-induced CD163⁺ ferroportin⁺ osteogenic cells in nephrogenic systemic fibrosis. *Am. J. Pathol.* 183: 796-807.
- Halon, M., et al. 2014. Changes in skeletal muscle iron metabolism outpace amyotrophic lateral sclerosis onset in transgenic rats bearing the G93A hmSOD1 gene mutation. *Free Radic. Res.* 48: 1363-1370.
- Ziolkowski, W., et al. 2015. Prolonged swimming promotes cellular oxidative stress and p66Shc phosphorylation, but does not induce oxidative stress in mitochondria in the rat heart. *Free Radic. Res.* 49: 7-16.
- Karlsson, M. and Kurz, T. 2016. Attenuation of iron-binding proteins in ARPE-19 cells reduces their resistance to oxidative stress. *Acta Ophthalmol.* 94: 556-564.
- Ojha, N.K. and Lole, K.S. 2016. Hepatitis E virus ORF1 encoded macro domain protein interacts with light chain subunit of human ferritin and inhibits its secretion. *Mol. Cell. Biochem.* 417: 75-85.
- Kawatani, M., et al. 2016. Proteomic profiling reveals that collismycin A is an iron chelator. *Sci. Rep.* 6: 38385.
- Kerins, M.J., et al. 2017. Fumarate mediates a chronic proliferative signal in fumarate hydratase-inactivated cancer cells by increasing transcription and translation of ferritin genes. *Mol. Cell. Biol.* 37: e00079-17.
- Zheng, J., et al. 2018. Ablation of hephaestin and ceruloplasmin results in iron accumulation in adipocytes and type 2 diabetes. *FEBS Lett.* 592: 394-401.

RESEARCH USE

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

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