SANTA CRUZ BIOTECHNOLOGY, INC.

ferritin light chain (D-1): sc-390558

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 overexpressed, and oxidative stress, an important factor in the development of ageing-related cataracts. The gene encoding human ferritin heavy chain maps to chromosome 11q12.3 and the human ferritin light chain gene maps to chromosome 19q13.33.

CHROMOSOMAL LOCATION

Genetic locus: FTL (human) mapping to 19q13.33; Ftl2-ps (mouse) mapping to 4 D2.2.

SOURCE

ferritin light chain (D-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 104-129 of ferritin light chain 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.

Blocking peptide available for competition studies, sc-390558 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ferritin light chain (D-1) is recommended for detection of ferritin light 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 light chain siRNA (h): sc-40577, ferritin light chain siRNA (m): sc-40578, ferritin light chain shRNA Plasmid (h): sc-40577-SH, ferritin light chain shRNA Plasmid (m): sc-40578-SH, ferritin light chain shRNA (h) Lentiviral Particles: sc-40577-V and ferritin light chain shRNA (m) Lentiviral Particles: sc-40578-V.

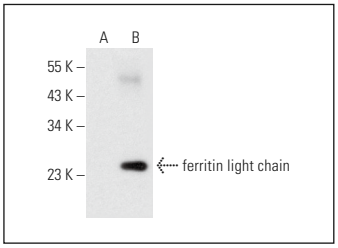
Molecular Weight of ferritin light chain: 19-25 kDa.

Positive Controls: ferritin light chain (h): 293T Lysate: sc-159647 or human spleen extract: sc-363779.

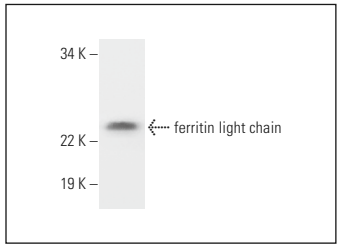
STORAGE

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-1): sc-390558. Western blot analysis of ferritin light chain expression in non-transfected: sc-117752 (**A**) and human ferritin light chain transfected: sc-159647 (**B**) 293T whole cell lysates.



ferritin light chain (D-1): sc-390558. Western blot analysis of ferritin light chain expression in human spleen tissue extract.

SELECT PRODUCT CITATIONS

1. Shi, Z.H., et al. 2015. Mitochondrial ferritin, a new target for inhibiting neuronal tumor cell proliferation. Cell. Mol. Life Sci. 72: 983-997.
2. Wang, Y.Q., et al. 2016. The protective role of mitochondrial ferritin on erastin-induced ferroptosis. Front. Aging Neurosci. 8: 308.
3. Gaschler, M.M., et al. 2018. FINO2 initiates ferroptosis through GPX4 inactivation and iron oxidation. Nat. Chem. Biol. 14: 507-515.
4. Lee, D.G., et al. 2020. Peroxiredoxin 5 deficiency exacerbates iron overload-induced neuronal death via ER-mediated mitochondrial fission in mouse hippocampus. Cell Death Dis. 11: 204.
5. Fernández-Mendívil, C., et al. 2020. Protective role of microglial HO-1 blockade in aging: implication of iron metabolism. Redox Biol. 38: 101789.
6. Yi, J., et al. 2021. Berberine alleviates liver fibrosis through inducing ferrous redox to activate ROS-mediated hepatic stellate cells ferroptosis. Cell Death Discov. 7: 374.
7. Choi, D.H., et al. 2021. Treadmill exercise alleviates brain iron dyshomeostasis accelerating neuronal amyloid-β production, neuronal cell death, and cognitive impairment in transgenic mice model of Alzheimer's disease. Mol. Neurobiol. 58: 3208-3223.
8. Vulinovic, M.P., et al. 2022. Light and heavy ferritin chain expression in the liver and kidneys of Wistar rats: aging, sex differences, and impact of gonadectomy. Arh. Hig. Rada Toksikol. 73: 48-61.
9. You, J., et al. 2023. The suppression of hyperlipid diet-induced ferroptosis of vascular smooth muscle cells protests against atherosclerosis independent of p53/SCL7A11/GPX4 axis. J. Cell. Physiol. 238: 1891-1908.

RESEARCH USE

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