SANTA CRUZ BIOTECHNOLOGY, INC.

ferritin heavy chain (H-53): sc-25617

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 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 (H-53) is a rabbit polyclonal antibody raised against amino acids 131-183 of ferritin heavy chain of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-25617 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

ferritin heavy chain (H-53) is recommended for detection of ferritin heavy chain of mouse, rat and human 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).

ferritin heavy chain (H-53) is also recommended for detection of ferritin heavy chain in additional species, including canine.

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.

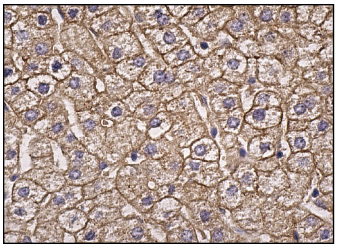
STORAGE

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

RESEARCH USE

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

DATA



ferritin heavy chain (H-53): sc-25617. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing membrane and cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Tsuji, Y. 2005. JunD activates transcription of the human ferritin H gene through an antioxidant response element during oxidative stress. Oncogene 24: 7567-7578.
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4. Al-Rousan, R.M., et al. 2009. Deferasirox removes cardiac iron and attenuates oxidative stress in the iron-overloaded gerbil. Am. J. Hematol. 84: 565-570.
5. Butt, O.I., et al. 2010. Differential induction of renal heme oxygenase and ferritin in ascorbate and nonascorbate producing species transfused with modified cell-free hemoglobin. Antioxid. Redox Signal. 12: 199-208.
6. Roperto, S., et al. 2010. Ferritin heavy chain (FHC) is up-regulated in papillomavirus-associated urothelial tumours of the urinary bladder in cattle. J. Comp. Pathol. 142: 9-18.
7. Halon, M., et al. 2010. Up-regulation of ferritin ubiquitination in skeletal muscle of transgenic rats bearing the G93A hmSOD1 gene mutation. Neuromuscul. Disord. 20: 29-33.
8. Sakamoto, K., et al. 2010. Regulation of genotoxic stress response by homeodomain-interacting protein kinase 2 through phosphorylation of cyclic AMP response element-binding protein at serine 271. Mol. Biol. Cell 21: 2966-2974.
9. Wang, Y., et al. 2011. Iron-induced cardiac damage: role of apoptosis and deferasirox intervention. J. Pharmacol. Exp. Ther. 336: 56-63.
10. Hegde, N.V., et al. 2011. Interrelationships between tissue iron status and erythropoiesis during postweaning development following neonatal iron deficiency in rats. Am. J. Physiol. Gastrointest. Liver Physiol. 300: G470-G476.