

PRODUCT INFORMATION



Ferritin Light Chain (human, recombinant)

Item No. 32032

Overview and Properties

Synonyms: Epididymis Secretory Sperm Binding Protein, Ferritin L-Chain, Ferritin Light Polypeptide-like 3, Ferritin L Subunit, FTL, L Apoferritin, NBIA3, Neurodegeneration with Brain Iron Accumulation 3

Source: Recombinant human N-terminal His-tagged ferritin light chain expressed in *E. coli*

Amino Acids: 1-175

Molecular Weight: 22.1 kDa

Storage: -80°C (as supplied)

Stability: ≥1 year

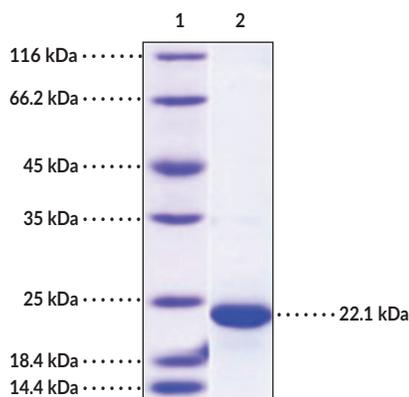
Purity: ≥95% estimated by SDS-PAGE

Supplied in: Lyophilized from sterile 50 mM Tris, pH 9.5, with 20% glycerol

Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: Ferritin Light Chain

SDS-PAGE Analysis of Ferritin Light Chain

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Ferritin is a spherical protein involved in iron storage and biomineralization.^{1,2} It is primarily localized to the cytoplasm, but is also present in the mitochondria and nucleus, and is composed of 24 protein subunits with a tissue-specific ratio of ferritin heavy chains (FTH1s; Item No. 32033) to ferritin light chains (FTLs). FTH1 and FTL are nearly identical in overall conformation but only share approximately 50% sequence homology.³ FTH1 functions as a ferroxidase that catalyzes the oxidation of Fe(II) to Fe(III), and FTL has roles in iron nucleation and protein stability. FTL is overexpressed in acute myeloid leukemia and leukemic stem cells compared with normal hematopoietic stem cells.⁴ Nucleotide duplications in FTL are associated with neuroferritinopathy, an autosomal dominant neurodegenerative disease characterized by the presence of intracellular ferritin inclusion bodies and iron accumulation in glia and neurons throughout the CNS.³ Point mutations in the 5'-UTR of FTL have been found in individuals with hereditary hyperferritinemia-cataract syndrome.⁵ Cayman's Ferritin Light Chain (human, recombinant) protein consists of 191 amino acids and has a calculated molecular weight of 22.1 kDa.

References

1. Carmona, U., Li, L., Zhang, L., *et al.* Ferritin light-chain subunits: Key elements for the electron transfer across the protein cage. *Chem. Commun. (Camb.)* **50(97)**, 15358 (2014).
2. Zarjou, A., Black, L.M., McCullough, K.R., *et al.* Ferritin light chain confers protection against sepsis-induced inflammation and organ injury. *Front. Immunol.* **10(131)**, (2019).
3. Baraibar, M.A., Barbeito, A.G., Muhoberac, B.B., *et al.* A mutant light-chain ferritin that causes neurodegeneration has enhanced propensity toward oxidative damage. *Free Radic. Biol. Med.* **52(9)**, 1692-1697 (2012).
4. Bertoli, S., Paubelle, E., Bérard, E., *et al.* Ferritin heavy/light chain (FTH1/FTL) expression, serum ferritin levels, and their functional as well as prognostic roles in acute myeloid leukemia. *Eur. J. Haematol.* **102(2)**, 131-142 (2019).
5. Yazar, S., Franchina, M., Craig, J.E., *et al.* Ferritin light chain gene mutation in a large Australian family with hereditary hyperferritinemia-cataract syndrome. *Ophthalmic Genet.* **38(2)**, 171-174 (2016).

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