

FTH1 (D1D4) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, W-S, IP, IHC-P	H M R Mk	Endogenous	21	Rabbit IgG	#P02794	2495

Product Usage Information**Application**

Western Blotting
Simple Western™
Immunoprecipitation
Immunohistochemistry (Paraffin)

Dilution

1:1000
1:10 - 1:50
1:50
1:200 - 1:800

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

FTH1 (D1D4) Rabbit mAb recognizes endogenous levels of total FTH1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human FTH1 protein.

Background

Ferritin is a ubiquitous and highly conserved protein that plays a major role in iron homeostasis by sequestering and storing iron in a non-toxic and bioavailable form (1). The assembled ferritin molecule, often referred to as a nanocage, can store up to 4,500 atoms of iron (2,3). It forms a holoenzyme of ~450 kDa, consisting of 24 subunits made up of two types of polypeptide chains: ferritin heavy chain (FTH) and ferritin light chain (FTL), each having unique functions. FTHs catalyze the first step in iron storage, the oxidation of Fe(II), whereas FTLs promote the nucleation of ferrihydrite, enabling storage of Fe(III) (4). In addition to iron buffering, FTH also enhances thymidine biosynthesis (5). Serum ferritin levels indicate the amount of iron stored in the body and is the most sensitive test for anemia. It is markedly elevated in inflammation, malignancy, and iron overload disorders (6). Research studies have found that defects in ferritin proteins are also associated with several neurodegenerative diseases (7).

Background References

1. Munro, H.N. et al. (1988) *Ann N Y Acad Sci* 526, 113-23.
2. Theil, E.C. (2004) *Annu Rev Nutr* 24, 327-43.
3. Theil, E.C. et al. (2006) *J Biol Inorg Chem* 11, 803-10.
4. Treffry, A. et al. (1992) *FEBS Lett* 302, 108-12.
5. Oppenheim, E.W. et al. (2001) *J Biol Chem* 276, 19855-61.
6. Tarnag, D.C. (2009) *Nat Clin Pract Nephrol* 5, 66-7.
7. Fischer, P. et al. (1997) *Life Sci* 60, 2273-8.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **W-S:** Simple Western™ **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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