Revision 1

#15083 Store at -20C

DMT1/SLC11A2 (D3V8G) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	55, 70-100	Rabbit IgG	#P49281	4891

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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

DMT1/SLC11A2 (D3V8G) Rabbit mAb recognizes endogenous levels of total DMT1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human DMT1 protein.

Background

Divalent metal-ion transporter 1 (DMT1, SLC11A2, NRAMP2) is a transmembrane metal ion transport protein that plays critical roles in non-heme iron absorption in the intestine and iron acquisition by erythroid precursor cells (1,2). Following the cellular uptake of iron, DMT1 transfers ferric iron from the endosomes to the cytoplasm (3,4). The DMT1 protein can transport up to eight different metals, including iron, manganese, cobalt, and cadmium (5). Four mammalian DMT1 isoforms are expressed in various tissues and are differentially regulated at both the transcriptional and post-translational level (6,7). Mutations in the corresponding *SLC11A2* gene can result in hypochromic microcytic anemia and iron overload. Aberrant iron transport in these individuals results in erythroid hyperplasia, high serum iron, and impaired liver function (8-10). Research studies show elevated DMT1 levels and iron accumulation in the substantia nigra of Parkinson's disease patients and the corresponding animal model (11,12).

Background References

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4. Hentze, M.W. et al. (2004) *Cell* 117, 285-97.
5. Garrick, M.D. et al. (2003) *Biometals* 16, 41-54.
6. Mackenzie, B. et al. (2007) *Biochem J* 403, 59-69.
7. Garrick, M.D. et al. (2012) *Biometals* 25, 787-93.
8. Mims, M.P. et al. (2005) *Blood* 105, 1337-42.
9. Iolascon, A. et al. (2006) *Blood* 107, 349-54.
10. Beaumont, C. et al. (2006) *Blood* 107, 4168-70.
11. Salazar, J. et al. (2008) *Proc Natl Acad Sci U S A* 105, 18578-83.
12. Howitt, J. et al. (2014) *PLoS One* 9, e87119.

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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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