

CTR1/SLC31A1 Antibody

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications: W, IP	Reactivity: H M R	Sensitivity: Endogenous	MW (kDa): 26-34	Source/Isotype: Rabbit	UniProt ID: #O15431	Entrez-Gene Id: 1317
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Product Usage Information**Application**

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:50

Storage

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

Specificity/Sensitivity

CTR1/SLC31A1 Antibody recognizes endogenous levels of total CTR1 (SLC31A1) protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro107 of human CTR1 (SLC31A1) protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

The high affinity copper uptake protein 1 (CTR1, SLC31A1) helps maintain copper homeostasis by mediating dietary copper intake chiefly in the small intestine (1). A series of methionine-rich repeats and other residues are conserved among CTR1 genes across taxa, and are thought to be important for copper transport (2,3). In mammalian cells, CTR1 is localized to the plasma membrane and intracellular vesicles (3). Upon copper uptake via plasma membrane into cells, CTR1 is down regulated by clathrin-dependent endocytosis and degradation of CTR1 protein (4). Research studies suggest that the CTR1 copper transporter also mediates uptake of the anticancer drug cisplatin in yeast and mammals and that decreased CTR1 can result in the development of cisplatin resistance (5,6). Treatment of cancer cells with cisplatin can result in reduced CTR1 expression, which reduces cisplatin accumulation within cells and leads to cisplatin resistance in some human cancer cells (7-9).

Background References

1. Lee, J. et al. (2001) *Proc Natl Acad Sci U S A* 98, 6842-7.
2. Kim, B.E. et al. (2008) *Nat Chem Biol* 4, 176-85.
3. Lee, J. et al. (2002) *J Biol Chem* 277, 4380-7.
4. Petris, M.J. et al. (2003) *J Biol Chem* 278, 9639-46.
5. Ishida, S. et al. (2002) *Proc Natl Acad Sci U S A* 99, 14298-302.
6. Kuo, M.T. et al. (2007) *Cancer Metastasis Rev* 26, 71-83.
7. Abada, P. and Howell, S.B. (2010) *Met Based Drugs* 2010, 317581.
8. Yu, L. et al. (2011) *Nan Fang Yi Ke Da Xue Xue Bao* 31, 801-4.
9. Kalayda, G.V. et al. (2012) *J Inorg Biochem* 116, 1-10.

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 **IP:** Immunoprecipitation

Cross-Reactivity Key

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

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