

COPT2 (K-14): sc-104852

BACKGROUND

The activity of a diverse subset of enzymes relies on the essential nutrient copper to perform important processes including signaling to the transcription and protein trafficking machinery, oxidative phosphorylation, iron mobilization, neuropeptide maturation, and normal development. Copper uptake requires tight regulation to ensure that sufficient copper is present in the cell to drive vital cellular processes, while avoiding the accumulation of copper to toxic levels. The copper transporter 2 (COPT2), also designated CTR2 or Solute carrier family 31 member 2 (SLC31A2), is a 143 amino acid protein mediates the uptake of copper in mammalian cells. COPT2 has been shown to localize to the plasma membrane, endosomes and lysosomes, where it plays a role in maintaining copper homeostasis. COPT2 also mediates the uptake of the chemotherapeutic drugs cisplatin and carboplatin and may modulate the sensitivity and toxicity of these drugs.

REFERENCES

- Peña, M.M., et al. 1998. Dynamic regulation of copper uptake and detoxification genes in *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 18: 2514-2523.
- Rees, E.M., et al. 2004. Mobilization of intracellular copper stores by the CTR2 vacuolar copper transporter. *J. Biol. Chem.* 279: 54221-54229.
- van den Berghe, P.V., et al. 2007. Human copper transporter 2 is localized in late endosomes and lysosomes and facilitates cellular copper uptake. *Biochem. J.* 407: 49-59.
- Rees, E.M. and Thiele, D.J. 2007. Identification of a vacuole-associated metalloredutase and its role in CTR2-mediated intracellular copper mobilization. *J. Biol. Chem.* 282: 21629-21638.
- Bertinato, J., et al. 2008. CTR2 is partially localized to the plasma membrane and stimulates copper uptake in COS-7 cells. *Biochem. J.* 409: 731-740.
- Blair, B.G., et al. 2009. Copper transporter 2 regulates the cellular accumulation and cytotoxicity of Cisplatin and Carboplatin. *Clin. Cancer Res.* 15: 4312-4321.

CHROMOSOMAL LOCATION

Genetic locus: Slc31a2 (mouse) mapping to 4 B3.

SOURCE

COPT2 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of COPT2 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-104852 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

COPT2 (K-14) is recommended for detection of COPT2 of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for COPT2 siRNA (m): sc-142512, COPT2 shRNA Plasmid (m): sc-142512-SH and COPT2 shRNA (m) Lentiviral Particles: sc-142512-V.

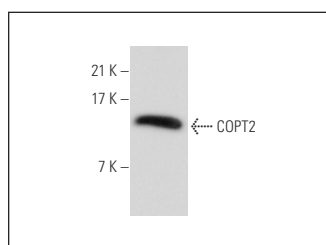
Molecular Weight of COPT2: 16 kDa.

Positive Controls: rat placenta extract: sc-364808.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



COPT2 (K-14): sc-104852. Western blot analysis of COPT2 expression in rat placenta tissue extract.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.