

# CTR1 (FL-190): sc-66847

## BACKGROUND

The activity of a diverse subset of enzymes relies on the essential nutrient copper. 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. In *Saccharomyces cerevisiae*, copper regulation involves several proteins. Fre1, a surface reductase, reduces and mobilizes copper outside the cell, while the CTR1 and CTR3 proteins function as copper transport proteins within the plasma membrane. Regulation of these proteins occurs at the transcriptional level. Under copper-deficient conditions, Mac1 binds to copper response elements (CuREs) within promoters, which contain the consensus sequence GCTC, to activate the transcription of CTR1, CTR3 and Fre1. Mac1 also mediates CTR1 degradation. In human, CTR1 also mediates the uptake of cisplatin, a chemotherapeutic drug, and may modulate the sensitivity and toxicity of this drug.

## CHROMOSOMAL LOCATION

Genetic locus: SLC31A1 (human) mapping to 9q32; Slc31a1 (mouse) mapping to 4 B3.

## SOURCE

CTR1 (FL-190) is a rabbit polyclonal antibody raised against amino acids 1-190 representing full length CTR1 of human origin.

## PRODUCT

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

## STORAGE

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

## APPLICATIONS

CTR1 (FL-190) is recommended for detection of CTR1 of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CTR1 (FL-190) is also recommended for detection of CTR1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CTR1 siRNA (h): sc-105249, CTR1 siRNA (m): sc-77370, CTR1 shRNA Plasmid (h): sc-105249-SH, CTR1 shRNA Plasmid (m): sc-77370-SH, CTR1 shRNA (h) Lentiviral Particles: sc-105249-V and CTR1 shRNA (m) Lentiviral Particles: sc-77370-V.

Molecular Weight of CTR1 precursor: 28 kDa.

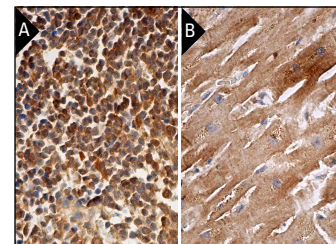
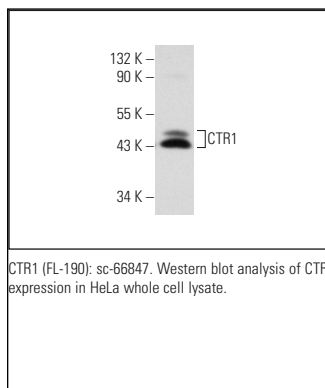
Molecular Weight of mature CTR1: 35 kDa.

Positive Controls: CTR1 (h2): HeLa whole cell lysate: sc-2200.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



CTR1 (FL-190): sc-66847. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic staining of cells in germinal and non-germinal centers (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (B).

## SELECT PRODUCT CITATIONS

1. Yu, L., et al. 2011. Celecoxib antagonizes the cytotoxicity of cisplatin in human esophageal squamous cell carcinoma cells by reducing intracellular cisplatin accumulation. *Mol. Pharmacol.* 79: 608-617.
2. Getz, J., et al. 2011. The cardiac copper chaperone proteins Sco1 and CCS are up-regulated, but Cox 1 and Cox4 are down-regulated, by copper deficiency. *Biol. Trace Elem. Res.* 143: 368-377.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.