

CUTC (A-15): sc-160260

BACKGROUND

Copper is an essential micronutrient used as a co-factor for several essential enzymes in all living organisms. Due to the high toxicity of copper, its metabolism is tightly regulated and defects in this regulation can cause Menkes (deficiency) or Wilson (accumulation) disease in various tissue. CUTC (cutC copper transporter homolog [*E. coli*]), also known as CGI-32, is a 273 amino acid protein belonging to the cutC family. CUTC is involved in copper homeostasis and is encoded by a gene located on human chromosome 10, which contains over 800 genes and 135 million nucleotides. PTEN is an important tumor suppressor gene located on chromosome 10 and, when defective, causes a genetic predisposition to cancer development known as Cowden syndrome. Other chromosome 10 associated disorders include Cockayne syndrome, tetrahydrobiopterin deficiency and trisomy 10.

REFERENCES

- Gupta, S.D., et al. 1995. Identification of CUTC and CUTF (nlpE) genes involved in copper tolerance in *Escherichia coli*. *J. Bacteriol.* 177: 4207-4215.
- Li, J., et al. 2005. Identification and characterization of a novel Cut family cDNA that encodes human copper transporter protein CUTC. *Biochem. Biophys. Res. Commun.* 337: 179-183.
- Teresi, R.E., et al. 2007. Cowden syndrome-affected patients with PTEN promoter mutations demonstrate abnormal protein translation. *Am. J. Hum. Genet.* 81: 756-767.
- Yin, Y. and Shen, W.H. 2008. PTEN: a new guardian of the genome. *Oncogene* 27: 5443-5453.
- Laugel, V., et al. 2010. Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome. *Hum. Mutat.* 31: 113-126.
- Li, Y., et al. 2010. Crystal structure of human copper homeostasis protein CUTC reveals a potential copper-binding site. *J. Struct. Biol.* 169: 399-405.

CHROMOSOMAL LOCATION

Genetic locus: CUTC (human) mapping to 10q24.2; Cutc (mouse) mapping to 19 C3.

SOURCE

CUTC (A-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CUTC 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.

Blocking peptide available for competition studies, sc-160260 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

CUTC (A-15) is recommended for detection of CUTC 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CUTC (A-15) is also recommended for detection of CUTC in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CUTC siRNA (h): sc-90475, CUTC siRNA (m): sc-142636, CUTC shRNA Plasmid (h): sc-90475-SH, CUTC shRNA Plasmid (m): sc-142636-SH, CUTC shRNA (h) Lentiviral Particles: sc-90475-V and CUTC shRNA (m) Lentiviral Particles: sc-142636-V.

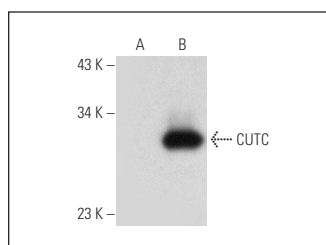
Molecular Weight of CUTC: 29 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or CUTC (m): 293T Lysate: sc-119529.

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



CUTC (A-15): sc-160260. Western blot analysis of CUTC expression in non-transfected: sc-117752 (A) and mouse CUTC transfected: sc-119529 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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