SANTA CRUZ BIOTECHNOLOGY, INC.

CUTC (E-1): sc-515505

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. 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.
2. 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.
3. 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.
4. Yin, Y., et al. 2008. PTEN: a new guardian of the genome. Oncogene 27: 5443-5453.
5. Laugel, V., et al. 2010. Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome. Hum. Mutat. 31: 113-126.

CHROMOSOMAL LOCATION

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

SOURCE

CUTC (E-1) is a mouse monoclonal antibody raised against amino acids 24-126 mapping near the N-terminus of CUTC of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CUTC (E-1) is available conjugated to agarose (sc-515505 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515505 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515505 PE), fluorescein (sc-515505 FITC), Alexa Fluor® 488 (sc-515505 AF488), Alexa Fluor® 546 (sc-515505 AF546), Alexa Fluor® 594 (sc-515505 AF594) or Alexa Fluor® 647 (sc-515505 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515505 AF680) or Alexa Fluor® 790 (sc-515505 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CUTC (E-1) is recommended for detection of CUTC of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 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.

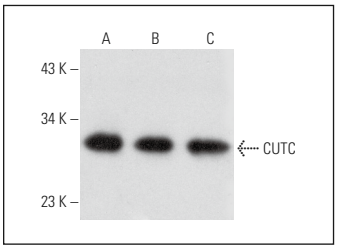
Molecular Weight of CUTC: 29 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

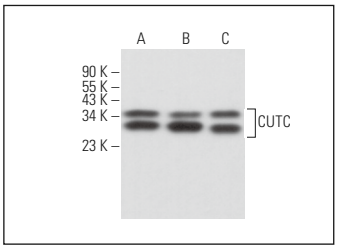
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CUTC (E-1): sc-515505. Western blot analysis of CUTC expression in COLO 320DM (**A**), Jurkat (**B**) and HeLa (**C**) whole cell lysates.



CUTC (E-1): sc-515505. Western blot analysis of CUTC expression in SJRH30 (**A**), A549 (**B**) and PC-3 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Toyoda, S., et al. 2025. Schizophrenia-related Xpo7 haploinsufficiency leads to behavioral and nuclear transport pathologies. EMBO Rep. 26: 948-981.

STORAGE

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

RESEARCH USE

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