



## TRNT1 (P-16): sc-103295

### BACKGROUND

TRNT1 (tRNA nucleotidyl transferase, CCA-adding, 1), also known as CCA1, MtCCA or CGI-47, is a 434 amino acid mitochondrial protein belonging to the tRNA nucleotidyltransferase/poly(A) polymerase family. Considered a CCA-adding enzyme, TRNT1 is essential for catalyzing the addition of the CCA terminus to the 3' end of tRNA precursors, a reaction which is a fundamental prerequisite for mature tRNAs to become aminoacylated and to participate in protein biosynthesis. Existing as three isoforms produced by alternative splicing events, TRNT1 binds manganese as a cofactor and is subject to homodimerization by disulfid linkage. TRNT1 is encoded by a gene located on human chromosome 3, which houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci.

### REFERENCES

1. Reichert, A.S., et al. 2001. A eubacterial origin for the human tRNA nucleotidyltransferase? *Biol. Chem.* 382: 1431-1438.
2. Nagaïke, T., et al. 2001. Identification and characterization of mammalian mitochondrial tRNA nucleotidyltransferases. *J. Biol. Chem.* 276: 40041-40049.
3. Tomari, Y., et al. 2002. tRNA recognition by CCA-adding enzyme. *Nucleic Acids Res. Suppl.* 2: 77-78.
4. Augustin, M.A., et al. 2003. Crystal structure of the human CCA-adding enzyme: insights into template-independent polymerization. *J. Mol. Biol.* 328: 985-994.
5. Higgins, J.J., et al. 2004. Candidate genes for recessive non-syndromic mental retardation on chromosome 3p (MRT2A). *Clin. Genet.* 65: 496-500.
6. Xiong, Y. and Steitz, T.A. 2004. Mechanism of transfer RNA maturation by CCA-adding enzyme without using an oligonucleotide template. *Nature* 430: 640-645.
7. Xiong, Y. and Steitz, T.A. 2006. A story with a good ending: tRNA 3'-end maturation by CCA-adding enzymes. *Curr. Opin. Struct. Biol.* 16: 12-17.
8. Lizano, E., et al. 2007. A splice variant of the human CCA-adding enzyme with modified activity. *J. Mol. Biol.* 366: 1258-1265.
9. Müller, C. and Distl, O. 2009. Scanning 17 candidate genes for association with primary cataracts in the wire-haired Dachshund. *Vet. J.* 182: 342-345.

### CHROMOSOMAL LOCATION

Genetic locus: TRNT1 (human) mapping to 3p26.3; Trnt1 (mouse) mapping to 6 E1.

### SOURCE

TRNT1 (P-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of TRNT1 of human origin.

### STORAGE

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

### PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103295 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

TRNT1 (P-16) is recommended for detection of TRNT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with isoform TRNT1-3.

Suitable for use as control antibody for TRNT1 siRNA (h): sc-78516, TRNT1 siRNA (m): sc-154687, TRNT1 shRNA Plasmid (h): sc-78516-SH, TRNT1 shRNA Plasmid (m): sc-154687-SH, TRNT1 shRNA (h) Lentiviral Particles: sc-78516-V and TRNT1 shRNA (m) Lentiviral Particles: sc-154687-V.

Molecular Weight of TRNT1: 50 kDa.

Positive Controls: human fetal brain tissue extract.

### 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) 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.

### 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.