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TRNT1 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP56580

Product Information

Application	IHC-P, IHC-F, IF, ICC, E
Primary Accession	Q96Q11
Reactivity	Rat, Pig, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	50128
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human TRNT1
Epitope Specificity	351-434/434
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Mitochondrial
SIMILARITY	Belongs to the tRNA nucleotidyltransferase/poly(A) polymerase family.
SUBUNIT	Monomer, and homodimer; disulfide-linked.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The CCA-adding enzyme TRNT1 (EC 2.7.7.25) is an essential enzyme that catalyzes the addition of the CCA terminus to the 3-prime end of tRNA precursors. This reaction is a fundamental prerequisite for mature tRNAs to become aminoacylated and to participate in protein biosynthesis (Lizano et al., 2007 [PubMed 17204286]).[supplied by OMIM, Aug 2009]

Additional Information

Gene ID	51095
Other Names	CCA tRNA nucleotidyltransferase 1, mitochondrial, 2.7.7.72, Mitochondrial tRNA nucleotidyl transferase, CCA-adding, mt CCA-adding enzyme, mt tRNA CCA-diphosphorylase, mt tRNA CCA-pyrophosphorylase, mt tRNA adenylyltransferase, TRNT1
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	TRNT1 {ECO:0000303|PubMed:25193871, ECO:0000312|HGNC:HGNC:17341}
Function	Nucleotidyltransferase that catalyzes the addition and repair of the essential 3'-terminal CCA sequence in tRNAs, which is necessary for the attachment of amino acids to the 3' terminus of tRNA molecules, using CTP and ATP as substrates (PubMed:11504732, PubMed:25193871, PubMed:25640237, PubMed:25652405, PubMed:29454993, PubMed:30959222, PubMed:31011209, PubMed:34023389). tRNA 3'-terminal CCA addition is required both for tRNA processing and repair (PubMed:22076379, PubMed:25640237). Promotes tRNA repair and recycling downstream of the ribosome-associated quality control (RQC) pathway by mediating addition of the tRNA 3'-terminal CCA following cleavage by ANKZF1 and repair by ELAC1 (PubMed:31011209). Also involved in tRNA surveillance by mediating tandem CCA addition to generate a CCACCA at the 3' terminus of unstable tRNAs and tRNA-like transcripts (PubMed:22076379, PubMed:25640237). While stable tRNAs receive only 3'-terminal CCA, unstable tRNAs beginning with GG are marked with CCACCA and rapidly degraded (PubMed:22076379, PubMed:25640237). The structural flexibility of RNA controls the choice between CCA versus CCACCA addition: following the first CCA addition cycle, nucleotide-binding to the active site triggers a clockwise screw motion, producing torque on the RNA (PubMed:25640237). This ejects stable RNAs, whereas unstable RNAs are refolded while bound to the enzyme and subjected to a second CCA catalytic cycle (PubMed:25640237).
Cellular Location	Mitochondrion. Cytoplasm. Nucleus