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TRNT1 Rabbit pAb

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Catalog # AP56580

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q96Q11
Predicted	Rat, Pig, Human, Mouse, Horse, Sheep
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
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 {ECO:0000303|PubMed:25193871, ECO:0000312|HGNC:HGNC:17341}
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
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

Background

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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.