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QTRT1 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP17592b

Specification

QTRT1 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession Q9BXR0

QTRT1 Antibody (C-term) Blocking Peptide - Additional Information

Gene ID 81890

Other Names
Queuine tRNA-ribosyltransferase, Guanine insertion enzyme, tRNA-guanine transglycosylase, QTRT1, TGT, TGUT

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

QTRT1 Antibody (C-term) Blocking Peptide - Protein Information

Name QTRT1 {ECO:0000255|HAMAP-Rule:MF_03218}

Synonyms TGT, TGUT

Function
Catalytic subunit of the queuine tRNA-ribosyltransferase (TGT) that catalyzes the base-exchange of a guanine (G) residue with queuine (Q) at position 34 (anticodon wobble position) in tRNAs with GU(N) anticodons (tRNA-Asp, -Asn, -His and -Tyr), resulting in the hypermodified nucleoside queuosine (7-(((4,5-cis-dihydroxy-2- cyclopenten-1-yl)amino)methyl)-7-deazaguanosine) (PubMed:11255023, PubMed:20354154, PubMed:34009357, PubMed:34241577). Catalysis occurs through a double-displacement mechanism. The nucleophile active site attacks the C1' of nucleotide 34 to detach the guanine base from the RNA, forming a covalent enzyme-RNA intermediate. The proton acceptor active site deprotonates the incoming queuine, allowing a nucleophilic attack on the C1' of the ribose to form the product (By similarity). Modification of cytoplasmic tRNAs with queuosine controls the elongation speed of cognate codons, thereby ensuring the correct folding of nascent proteins to maintain proteome integrity (PubMed:30093495).

Cellular Location
Cytoplasm {ECO:0000255|HAMAP-Rule:MF_03218}. Mitochondrion outer membrane {ECO:0000255|HAMAP-Rule:MF_03218}; Peripheral membrane protein {ECO:0000255|HAMAP-Rule:MF_03218}; Cytoplasmic side {ECO:0000255|HAMAP-Rule:MF_03218}. Note=Weakly associates with mitochondria, possibly via QTRT2. {ECO:0000255|HAMAP- Rule:MF_03218}

QTRT1 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

QTRT1 Antibody (C-term) Blocking Peptide - Images

QTRT1 Antibody (C-term) Blocking Peptide - Background

tRNA-guanine transglycosylase (TGT; EC 2.4.2.29)synthesizes queuosine (Q), which is found in tRNAs that recognizeNAU and NAC codons, encoding tyr, asn, asp, and his. ProkaryoticTGT is a single protein of 43 kD. In contrast, mammalian TGTappears to be a heterodimer consisting of a 60-kD subunit (USP14;MIM 607274) and a 43-kD catalytic subunit (QTRT1) (Deshpande andKatze, 2001 [PubMed 11255023]).

QTRT1 Antibody (C-term) Blocking Peptide - References

Chen, Y.C., et al. RNA 16(5):958-968(2010)Deshpande, K.L., et al. Gene 265 (1-2), 205-212 (2001) :