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NSUN2 Antibody (Center) Blocking peptide
Synthetic peptide
Catalog # BP10813c

Specification

NSUN2 Antibody (Center) Blocking peptide - Product Information

Primary Accession Q08J23

NSUN2 Antibody (Center) Blocking peptide - Additional Information

Gene ID 54888

Other Names
tRNA (cytosine(34)-C(5))-methyltransferase, Myc-induced SUN domain-containing protein, Misu, NOL1/NOP2/Sun domain family member 2, Substrate of AIM1/Aurora kinase B, tRNA (cytosine-5-)-methyltransferase, tRNA methyltransferase 4 homolog, hTrm4, NSUN2, SAKI, TRM4

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.

NSUN2 Antibody (Center) Blocking peptide - Protein Information

Name NSUN2 {ECO:0000303|PubMed:17215513, ECO:0000312|HGNC:HGNC:25994}

Function
RNA cytosine C(5)-methyltransferase that methylates cytosine to 5-methylcytosine (m5C) in various RNAs, such as tRNAs, mRNAs and some long non-coding RNAs (lncRNAs) (PubMed:17071714, PubMed:22995836, PubMed:31358969, PubMed:31199786). Involved in various processes, such as epidermal stem cell differentiation, testis differentiation and maternal to zygotic transition during early development: acts by increasing protein synthesis; cytosine C(5)-methylation promoting tRNA stability and preventing mRNA decay (PubMed:31199786). Methylates cytosine to 5-methylcytosine (m5C) at positions 34 and 48 of intron- containing tRNA(Leu)(CAA) precursors, and at positions 48, 49 and 50 of tRNA(Gly)(GCC) precursors (PubMed:17071714, PubMed:22995836, PubMed:31199786). tRNA methylation is required generation of RNA fragments derived from tRNAs (tRFs) (PubMed:<a

href="http://www.uniprot.org/citations/31199786" target="_blank">31199786). Also mediates C(5)-methylation of mitochondrial tRNAs (PubMed:31276587). Catalyzes cytosine C(5)-methylation of mRNAs, leading to stabilize them and prevent mRNA decay: mRNA stabilization involves YBX1 that specifically recognizes and binds m5C-modified transcripts (PubMed:22395603, PubMed:31358969, PubMed:34556860). Cytosine C(5)-methylation of mRNAs also regulates mRNA export: methylated transcripts are specifically recognized by THOC4/ALYREF, which mediates mRNA nucleo-cytoplasmic shuttling (PubMed:28418038). Also mediates cytosine C(5)-methylation of non-coding RNAs, such as vault RNAs (vtRNAs), promoting their processing into regulatory small RNAs (PubMed:23871666). Cytosine C(5)- methylation of vtRNA VTRNA1.1 promotes its processing into small-vault RNA4 (svRNA4) and regulates epidermal differentiation (PubMed:31186410). May act downstream of Myc to regulate epidermal cell growth and proliferation (By similarity). Required for proper spindle assembly and chromosome segregation, independently of its methyltransferase activity (PubMed:19596847).

Cellular Location
Nucleus, nucleolus. Cytoplasm Mitochondrion. Cytoplasm, cytoskeleton, spindle. Secreted, extracellular exosome {ECO:0000250|UniProtKB:Q1HFZ0}. Note=Concentrated in the nucleolus during interphase and translocates to the spindle during mitosis as an RNA-protein complex that includes 18S ribosomal RNA (PubMed:19596847) In testis, localizes to the chromatoid body (By similarity) {ECO:0000250|UniProtKB:Q1HFZ0, ECO:0000269|PubMed:19596847}

Tissue Location
Expressed in adult and fetal brain and in lymphoblastoid cells.

NSUN2 Antibody (Center) Blocking peptide - Protocols

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

- Blocking Peptides

NSUN2 Antibody (Center) Blocking peptide - Images

NSUN2 Antibody (Center) Blocking peptide - Background

Maturation of cytoplasmic tRNAs includes splicing ofintrons, which are located 1 nucleotide 3-prime from the anticodonin all intron-containing tRNA genes. In tRNA-leu(CAA), the firstposition of the anticodon, C34, is converted to 5-methylcytosine, amodification necessary to stabilize the anticodon-codon pairing andcorrectly translate the mRNA. NSUN2 encodes a methyltransferasethat catalyzes the intron-dependent formation of 5-methylcytosineat C34 of tRNA-leu(CAA) (Brzezicha et al., 2006 [PubMed17071714]).

NSUN2 Antibody (Center) Blocking peptide - References

Bailey, S.D., et al. Diabetes Care (2010) In press :Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010) :Frye, M., et al. Cancer Lett. 289(1):71-80(2010)Talmud, P.J., et al. Am. J. Hum. Genet. 85(5):628-642(2009)Hussain, S., et al. J. Cell Biol. 186(1):27-40(2009)