

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

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**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:<a href="http://www.uniprot.org/citations/17071714" target="\_blank">17071714</a>, PubMed:<a href="http://www.uniprot.org/citations/22995836" target="\_blank">22995836</a>, PubMed:<a href="http://www.uniprot.org/citations/31358969" target="\_blank">31358969</a>, PubMed:<a href="http://www.uniprot.org/citations/31199786" target="\_blank">31199786</a>). 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:<a href="http://www.uniprot.org/citations/31199786" target="\_blank">31199786</a>). 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:<a href="http://www.uniprot.org/citations/17071714" target="\_blank">17071714</a>, PubMed:<a href="http://www.uniprot.org/citations/22995836" target="\_blank">22995836</a>, PubMed:<a href="http://www.uniprot.org/citations/31199786" target="\_blank">31199786</a>). tRNA methylation is required generation of RNA fragments derived from tRNAs (tRFs) (PubMed:<a

href="http://www.uniprot.org/citations/31199786" target="\_blank">31199786</a>). Also mediates C(5)-methylation of mitochondrial tRNAs (PubMed:<a href="http://www.uniprot.org/citations/31276587" target="\_blank">31276587</a>). 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:<a href="http://www.uniprot.org/citations/22395603" target="\_blank">22395603</a>, PubMed:<a href="http://www.uniprot.org/citations/31358969" target="\_blank">31358969</a>, PubMed:<a href="http://www.uniprot.org/citations/34556860" target="\_blank">34556860</a>). 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:<a href="http://www.uniprot.org/citations/28418038" target="\_blank">28418038</a>). Also mediates cytosine C(5)-methylation of non-coding RNAs, such as vault RNAs (vtRNAs), promoting their processing into regulatory small RNAs (PubMed:<a href="http://www.uniprot.org/citations/23871666" target="\_blank">23871666</a>). Cytosine C(5)- methylation of vtRNA VTRNA1.1 promotes its processing into small-vault RNA4 (svRNA4) and regulates epidermal differentiation (PubMed:<a href="http://www.uniprot.org/citations/31186410" target="\_blank">31186410</a>). 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:<a href="http://www.uniprot.org/citations/19596847" target="\_blank">19596847</a>).

#### **Cellular Location**

Nucleus, nucleolus. Cytoplasm Mitochondrion. Cytoplasm, cytoskeleton, spindle. Secreted, extracellular exosome {ECO:0000250|UniProtKB:Q1HФЗ0}. 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:Q1HФЗ0, 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 of introns, which are located 1 nucleotide 3-prime from the anticodon in all intron-containing tRNA genes. In tRNA-leu(CAA), the first position of the anticodon, C34, is converted to 5-methylcytosine, a modification necessary to stabilize the anticodon-codon pairing and correctly translate the mRNA. NSUN2 encodes a methyltransferase that catalyzes the intron-dependent formation of 5-methylcytosine at C34 of tRNA-leu(CAA) (Brzezicha et al., 2006 [PubMed:17071714]).

### **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)