

Store at
-20C
#52901**NSUN2 (E9Y5E) Rabbit Monoclonal Antibody**
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IHC-P, IF-F, IF-IC	H M R Mk	Endogenous	100	Rabbit IgG	#Q08J23	54888

Product Usage Information**Application**

Western Blotting
Immunohistochemistry (Paraffin)
Immunofluorescence (Frozen)
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:200 - 1:800
1:1600 - 1:3200
1:3200 - 1:12800

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA, 50% glycerol, and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibody.*

Specificity/Sensitivity

NSUN2 (E9Y5E) Rabbit Monoclonal Antibody recognizes endogenous levels of total NSUN2 protein. Species reactivity for IHC-P is human only.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the amino terminus of human NSUN2 protein.

Background

Chemical modifications of RNA regulate many cellular processes. One particular RNA modification, 5-methylcytosine (5-mC), regulates ribosome assembly, translation, and RNA stability (1). In eukaryotes, this modification is added to RNA by the DNA methyltransferase homologue 2 protein (DNMT2; also known as TRDMT1), and also by members of the NOL1/NOP2/SUN domain (NSUN) family of proteins. NSUN proteins are putative S-adenosylmethionine (SAM)-dependent methyltransferases that carry out their enzymatic activity by utilizing two cysteine residues in their active sites (2). There are currently seven known members of this family, consisting of NOP2 (NSUN1) and NSUN2-7.

NSUN2 is an 86 kDa member of the NSUN family that is predominantly localized to the nucleus and methylates a variety of tRNAs and other RNA substrates (3). NSUN2 has been found to play a role in the methylation of pre-tRNA^{Leu}, tRNA^{Gly}, tRNA^{Val}, tRNA^{Leu}, and tRNA^{Asp} (1,4,5). It has also been found to methylate mRNAs and several ncRNAs, such as vtRNAs (6-8). Elevated NSUN2 protein levels have been reported in multiple types of human cancers, including breast, prostate, kidney, bladder, and liver, among others (9). The methyltransferase activity of NSUN2 is reduced upon Aurora B kinase-mediated phosphorylation at Ser139 (10), and there is potential for NSUN2 to be used as a therapeutic target or diagnostic marker for Aurora B linked cancers (9).

Background References

1. Trixl, L. and Lusser, A. (2019) *Wiley Interdiscip Rev RNA* 10, e1510.
2. Bohnsack, K.E. et al. (2019) *Genes (Basel)* 10, pii: E102. doi: 10.3390/genes10020102.
3. Bourgeois, G. et al. (2015) *PLoS One* 10, e0133321.
4. Brzezicha, B. et al. (2006) *Nucleic Acids Res* 34, 6034-43.
5. Tuorto, F. et al. (2012) *Nat Struct Mol Biol* 19, 900-5.
6. Tang, H. et al. (2015) *Aging (Albany NY)* 7, 1143-58.
7. Xing, J. et al. (2015) *Mol Cell Biol* 35, 4043-52.
8. Hussain, S. et al. (2013) *Cell Rep* 4, 255-61.
9. Okamoto, M. et al. (2012) *DNA Cell Biol* 31, 660-71.
10. Sakita-Suto, S. et al. (2007) *Mol Biol Cell* 18, 1107-17.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IHC-P:** Immunohistochemistry (Paraffin) **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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