Revision 1

Store at -20C

#35797

NOP2 (L221) Antibody

Cell Signaling TECHNOLOGY®

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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	H M R	Endogenous	110	Rabbit	#P46087	4839

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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

Specificity/Sensitivity

NOP2 (L221) Antibody recognizes endogenous levels of total NOP2 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu221 of human NOP2 protein. Antibodies are purified by peptide affinity chromatography.

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.

NOP2, also known as NSUN1, is an 89 kDa member of the NSUN protein family that specifically targets and methylates 28S rRNA (3). In humans, methylation of C4413 in the 28S rRNA by NOP2 is thought to increase stability of the ribosome. NOP2 is strongly overexpressed in many cancers, including colorectal and lung cancer, where it may contribute to tumorigenesis by recruiting telomerase to the cyclin D1 promoter and activating gene expression (4-6). NOP2 also interacts with BRD4 and RNA polymerase II, suggesting additional roles for NOP2 in regulating transcription (1,7).

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. Ueki, T. et al. (1997) *Hum Pathol* 28, 74-9.
5. Uchiyama, B. et al. (1997) *Clin Cancer Res* 3, 1873-7.
6. Hong, J. et al. (2016) *J Cell Sci* 129, 1566-79.
7. Cheng, J.X. et al. (2018) *Nat Commun* 9, 1163.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

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

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Limited Uses

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