Revision 1

#13760 Store at -20C

XRN2 (D6L5F) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M R Mk	Endogenous	110	Rabbit IgG	#Q9H0D6	22803

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

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

XRN2 (D6L5F) Rabbit mAb recognizes endogenous levels of total XRN2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human XRN2 protein.

Background

5'-3' exoribonuclease 2 (XRN2) is a nuclear exonuclease that degrades RNA containing a 5'-monophosphate to component mononucleotides. XRN2 also plays an important role in the termination of transcription at the 3'-end of genes by displacing RNA polymerase II (RNAPII) from the DNA strand (1,2). According to the 'torpedo' model of transcription termination, XRN2 gains access to the 5' phosphate of the nascent RNA during co-transcriptional polyadenylation site cleavage. XRN2 degrades RNA at a faster rate than RNAPII-mediated RNA synthesis, resulting in the eviction of RNAPII from the template (3-5). In addition, XRN2 is essential for maturation of 5.8S and 28S ribosomal RNA and small nucleolar RNA molecules (2). Several research studies suggest that XRN2 plays a role in the quality control check of RNA molecules. XRN2 co-transcriptionally degrades aberrant nuclear mRNA transcripts that result from defective 5'mRNA capping, splicing, or 3'end formation (6). XRN2 exonuclease rapidly degrades hypomodified tRNA and excess miRNA molecules, indicating that XRN2 likely regulates tRNA and miRNA quality control as well (7-9).

Background References

1. Miki, T.S. and Großhans, H. (2013) *Biochem Soc Trans* 41, 825-30.
2. Kilchert, C. and Vasiljeva, L. (2013) *Biochem Soc Trans* 41, 1666-72.
3. Kim, M. et al. (2004) *Nature* 432, 517-22.
4. West, S. et al. (2004) *Nature* 432, 522-5.
5. Skourti-Stathaki, K. et al. (2011) *Mol Cell* 42, 794-805.
6. Boisvert, F.M. et al. (2007) *Nat Rev Mol Cell Biol* 8, 574-85.
7. Alexandrov, A. et al. (2006) *Mol Cell* 21, 87-96.
8. Chernyakov, I. et al. (2008) *Genes Dev* 22, 1369-80.
9. Großhans, H. and Chatterjee, S. (2011) *Adv Exp Med Biol* 700, 140-55.

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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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