SANTA CRUZ BIOTECHNOLOGY, INC.

XRN1 (G-2): sc-165984

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Degradation of mRNA is a critical aspect of gene expression that occurs via the exoribonuclease. Exoribonuclease I (XRN1), also known as Sep1 or Rar5, is a 1,694-amino acid protein that functions as the major cytoplasmic 5' to 3' exoribonuclease and plays an important role in mRNA turnover. XRN1 may also function in the microtubular cytoskeleton as well as in DNA recombination and replication. XRN1 induces the expression of stress granules (SGs), cytoplasmic aggregates of stalled translational preinitiation complexes that accumulate during stress, and GW bodies/processing bodies (PBs), distinct cytoplasmic sites of mRNA degradation. Loss of XRN1 markedly affects cell growth rates.

REFERENCES

1. Heyer, W.D., et al. 1995. Regulation and intracellular localization of *Saccharomyces cerevisiae* strand exchange protein 1 (Sep1/ XRN1/Kem1), a multifunctional exonuclease. Mol. Cell. Biol. 15: 2728-2736.
2. Bashkirov, V.I., et al. 1996. Identification of functional is required for transition through meiotic prophase in *Saccharomyces cerevisiae*. Chromosoma 104: 215-222.
3. Poole, T.L. and Stevens, A. 1997. Structural modifications of RNA influence the 5' exoribonucleolytic hydrolysis by XRN1 and HKE1 of *Saccharomyces cerevisiae*. Biochem. Biophys. Res. Commun. 235: 799-805.
4. Brown, J.T., et al. 2000. Inhibition of mRNA turnover in yeast by an XRN1 mutation enhances the requirement for eIF4E binding to eIF4G and for proper capping of transcripts by Ceg1p. Genetics 155: 31-42.
5. Stevens, A. 2001. 5'-exoribonuclease 1: XRN1. Meth. Enzymol. 34: 251-259.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607994. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: XRN1 (human) mapping to 3q23; Xrn1 (mouse) mapping to 9 E3.3.

SOURCE

XRN1 (G-2) is a mouse monoclonal antibody raised against amino acids 301-450 mapping within an internal region of XRN1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

XRN1 (G-2) is recommended for detection of XRN1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for XRN1 siRNA (h): sc-61811, XRN1 siRNA (m): sc-61812, XRN1 shRNA Plasmid (h): sc-61811-SH, XRN1 shRNA Plasmid (m): sc-61812-SH, XRN1 shRNA (h) Lentiviral Particles: sc-61811-V and XRN1 shRNA (m) Lentiviral Particles: sc-61812-V.

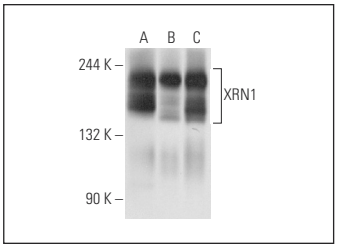
Molecular Weight of XRN1: 175 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or BT-20 whole cell lysate: sc-2223.

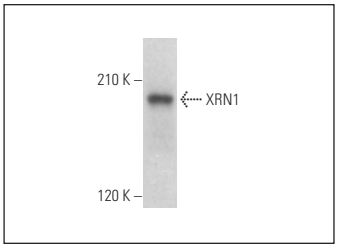
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



XRN1 (G-2): sc-165984. Western blot analysis of XRN1 expression in HeLa (**A**), K-562 (**B**) and BT-20 (**C**) whole cell lysates.



XRN1 (G-2): sc-165984. Western blot analysis of XRN1 expression in IMR-32 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Liang, X.H., et al. 2018. Translation can affect the antisense activity of RNase H1-dependent oligonucleotides targeting mRNAs. Nucleic Acids Res. 46: 293-313.

CONJUGATES

See **XRN1 (C-1): sc-165985** for XRN1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.