SANTA CRUZ BIOTECHNOLOGY, INC.

XRN1 (C-1): sc-165985

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.

CHROMOSOMAL LOCATION

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

SOURCE

XRN1 (C-1) 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.

XRN1 (C-1) is available conjugated to agarose (sc-165985 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-165985 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-165985 PE), fluorescein (sc-165985 FITC), Alexa Fluor® 488 (sc-165985 AF488), Alexa Fluor® 546 (sc-165985 AF546), Alexa Fluor® 594 (sc-165985 AF594) or Alexa Fluor® 647 (sc-165985 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-165985 AF680) or Alexa Fluor® 790 (sc-165985 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

XRN1 (C-1) 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.

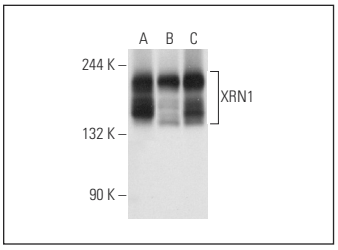
Molecular Weight of XRN1: 175 kDa.

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

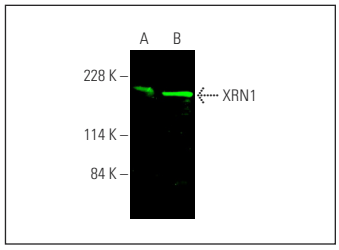
RECOMMENDED SUPPORT REAGENTS

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 (C-1): sc-165985. Western blot analysis of XRN1 expression in HeLa (**A**), K-562 (**B**) and BT-20 (**C**) whole cell lysates.



XRN1 (C-1): sc-165985. Near-infrared western blot analysis of XRN1 expression in HeLa (**A**) and IMR-32 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Rzeczkowski, K., et al. 2011. c-Jun N-terminal kinase phosphorylates DCP1a to control formation of P bodies. J. Cell Biol. 194: 581-596.
2. Baird, N.L., et al. 2012. Arenavirus infection induces discrete cytosolic structures for RNA replication. J. Virol. 86: 11301-11310.
3. Bhowmick, R., et al. 2015. Rotavirus disrupts cytoplasmic P bodies during infection. Virus Res. 210: 344-354.
4. Balinsky, C.A., et al. 2017. IRAV (FLJ11286), an interferon stimulated gene with antiviral activity against dengue virus, interacts with MOV10. J. Virol. 91: e01606-16.
5. Roithová, A., et al. 2020. DIS3L2 and LSm proteins are involved in the surveillance of Sm ring-deficient snRNAs. Nucleic Acids Res. 48: 6184-6197.
6. Hou, Y., et al. 2021. YTHDC1-mediated augmentation of miR-30d in repressing pancreatic tumorigenesis via attenuation of RUNX1-induced transcriptional activation of Warburg effect. Cell Death Differ. 28: 3105-3124.
7. Balaratnam, S., et al. 2022. Decay of piwi-interacting RNAs in human cells is primarily mediated by 5' to 3' exoribonucleases. ACS Chem. Biol. 17: 1723-1732.

RESEARCH USE

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