SANTA CRUZ BIOTECHNOLOGY, INC.

Rrn3 (D-9): sc-390464

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In eukaryotes, ribosomal RNA genes are transcribed by RNA polymerase (pol I). In *Saccharomyces cerevisiae,* transcription of rRNA genes requires at least three transcription factors, which include the two multisubunit factors Core factor and UAF that function in the assembly of the preinitiation complex. The third factor, Rrn3, functions as a single subunit and is not required for the preinitiation complex assembly. Unlike other pol I transcription factors, Rrn3 is functionally conserved between yeast and mammals as an rRNA gene transcription regulator. Human Rrn3 is 21% homologous to the yeast Rrn3 protein and is a member of a conserved gene family spanning the fungi, plant and animal kingdoms. hRrn3 is highly expressed in the lung, retina, thymus, and prostate. Rrn3 may be identical to the transcription factor TIF-IA, since both TIF-IA and Rrn3 associate with pol I and their activities are growth rate dependent.

CHROMOSOMAL LOCATION

Genetic locus: RRN3 (human) mapping to 16p13.11; Rrn3 (mouse) mapping to 16 A1.

SOURCE

Rrn3 (D-9) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Rrn3 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.

Rrn3 (D-9) is available conjugated to agarose (sc-390464 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390464 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390464 PE), fluorescein (sc-390464 FITC), Alexa Fluor® 488 (sc-390464 AF488), Alexa Fluor® 546 (sc-390464 AF546), Alexa Fluor® 594 (sc-390464 AF594) or Alexa Fluor® 647 (sc-390464 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390464 AF680) or Alexa Fluor® 790 (sc-390464 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Rrn3 (D-9) is recommended for detection of Rrn3 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 Rrn3 siRNA (h): sc-106866, Rrn3 siRNA (m): sc-153128, Rrn3 shRNA Plasmid (h): sc-106866-SH, Rrn3 shRNA Plasmid (m): sc-153128-SH, Rrn3 shRNA (h) Lentiviral Particles: sc-106866-V and Rrn3 shRNA (m) Lentiviral Particles: sc-153128-V.

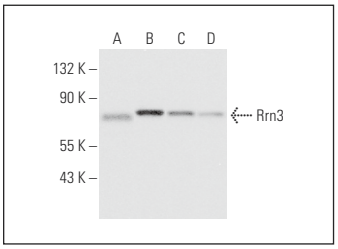
Molecular Weight of Rrn3: 74 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

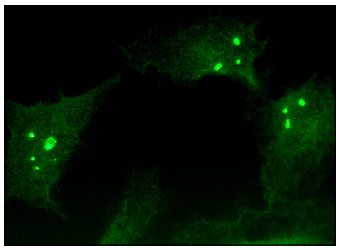
RECOMMENDED SUPPORT REAGENTS

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



Rrn3 (D-9): sc-390464. Western blot analysis of Rrn3 expression in Jurkat (**A**), HeLa (**B**), K-562 (**C**) and Hep G2 (**D**) whole cell lysates.



Rrn3 (D-9): sc-390464. Immunofluorescence staining of methanol-fixed HeLa cells showing nucleolar and nuclear localization.

SELECT PRODUCT CITATIONS

1. Chen, J., et al. 2018. Identification of a novel TIF-IA-NFκB nucleolar stress response pathway. Nucleic Acids Res. 46: 6188-6205.
2. Szaflarski, W., et al. 2022. Early rRNA processing is a stress-dependent regulatory event whose inhibition maintains nucleolar integrity. Nucleic Acids Res. 50: 1033-1051.
3. Kotani, T., et al. 2022. Percutaneous electrical stimulation-induced muscle contraction prevents the decrease in ribosome RNA and ribosome protein during pelvic hindlimb suspension. J. Appl. Physiol. 133: 822-833.
4. Uno, H., et al. 2024. Belt electrode tetanus muscle stimulation reduces denervation-induced atrophy of rat multiple skeletal muscle groups. Sci. Rep. 14: 5848.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.