SANTA CRUZ BIOTECHNOLOGY, INC.

Pol III RPC32 (C32-1): sc-21754

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Eukaryotes produce three distinct classes of RNA polymerase, Pol I, II and III. Each polymerase is responsible for the synthesis of a different class of RNA. RNA polymerase I (Pol I) transcribes the rRNA (ribosomal RNA) genes for the precursor of the 28S, 18S and 5.8S molecules of the ribosome. RNA polymerase II (Pol II) transcribes protein-encoding genes into mRNA (messenger RNA) and snRNA (small nuclear RNA) genes into snRNAs that influence the processing of other classes of RNA. RNA polymerase III (Pol III) transcribes the 5S rRNA genes and all of the tRNA (transfer RNA) genes.

CHROMOSOMAL LOCATION

Genetic locus: POLR3G (human) mapping to 5q14.3; Polr3g (mouse) mapping to 13 C3.

SOURCE

Pol III RPC32 (C32-1) is a mouse monoclonal antibody raised against recombinant human RPC32 subunit of RNA polymerase III.

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.

Pol III RPC32 (C32-1) is available conjugated to agarose (sc-21754 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21754 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21754 PE), fluorescein (sc-21754 FITC), Alexa Fluor® 488 (sc-21754 AF488), Alexa Fluor® 546 (sc-21754 AF546), Alexa Fluor® 594 (sc-21754 AF594) or Alexa Fluor® 647 (sc-21754 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-21754 AF680) or Alexa Fluor® 790 (sc-21754 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Pol III RPC32 (C32-1) is recommended for detection of RPC 32 subunit of RNA polymerase III of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Pol III RPC32 siRNA (h): sc-43507, Pol III RPC32 siRNA (m): sc-45840, Pol III RPC32 shRNA Plasmid (h): sc-43507-SH, Pol III RPC32 shRNA Plasmid (m): sc-45840-SH, Pol III RPC32 shRNA (h) Lentiviral Particles: sc-43507-V and Pol III RPC32 shRNA (m) Lentiviral Particles: sc-45840-V.

Molecular Weight (predicted) of Pol III RPC32: 26 kDa.

Molecular Weight (observed) of Pol III RPC32: 32 kDa.

Positive Controls: Pol III RPC32 (m): 293T Lysate: sc-122682, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

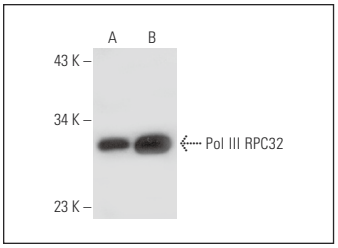
STORAGE

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

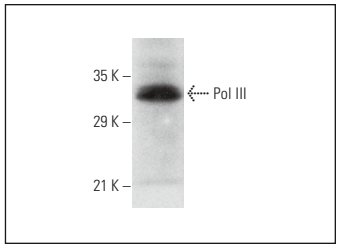
RESEARCH USE

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

DATA



Pol III RPC32 (C32-1): sc-21754. Western blot analysis of Pol III RPC32 expression in non-transfected: sc-117752 (**A**) and mouse Pol III RPC32 transfected: sc-122682 (**B**) 293T whole cell lysates.



Pol III (C32): sc-21754. Western blot analysis of Pol III expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Oler, A.J., et al. 2010. Human RNA polymerase III transcriptomes and relationships to Pol II promoter chromatin and enhancer-binding factors. Nat. Struct. Mol. Biol. 17: 620-628.
2. Pulakanti, K., et al. 2013. Enhancer transcribed RNAs arise from hypomethylated, Tet-occupied genomic regions. Epigenetics 8: 1303-1320.
3. Miyazawa, N., et al. 2014. Human cell growth regulator Ly-1 antibody reactive homologue accelerates processing of preribosomal RNA. Genes Cells 19: 273-286.
4. Sutani, T., et al. 2015. Condensin targets and reduces unwound DNA structures associated with transcription in mitotic chromosome condensation. Nat. Commun. 6: 7815.
5. Savell, K.E., et al. 2016. Extra-coding RNAs regulate neuronal DNA methylation dynamics. Nat. Commun. 7: 12091.
6. Nabet, B.Y., et al. 2017. Exosome RNA unshielding couples stromal activation to pattern recognition receptor signaling in cancer. Cell 170: 352-366.e13.
7. Cheng, R., et al. 2023. A combinatorial regulatory platform determines expression of RNA polymerase III subunit RPC7α (POLR3G) in cancer. Cancers 15: 4995.
8. Gao, L., et al. 2024. Selective gene expression maintains human tRNA anticodon pools during differentiation. Nat. Cell Biol. 26: 100-112.

PROTOCOLS

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