

Pol III RPC39 (C39-2): sc-23913

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.

REFERENCES

1. Bushnell, D.A., et al. 2004. Structural basis of transcription: an RNA polymerase II-TFIIB cocrystal at 4.5 Angstroms. *Science* 303: 983-988.
2. Palangat, M., et al. 2004. Downstream DNA selectively affects a paused conformation of human RNA polymerase II. *J. Mol. Biol.* 341: 429-442.
3. Zhong, S., et al. 2004. Epidermal growth factor enhances cellular TATA binding protein levels and induces RNA polymerase I- and III-dependent gene activity. *Mol. Cell. Biol.* 24: 5119-5129.
4. Hirsch, H.A., et al. 2004. Distinct mechanisms for repression of RNA polymerase III transcription by the retinoblastoma tumor suppressor protein. *Mol. Cell. Biol.* 24: 5989-5999.
5. White, R.J. 2004. RNA polymerase III transcription and cancer. *Oncogene* 23: 3208-3216.
6. Cabart, P., et al. 2004. BRCA1 cooperates with NUFIP and P-TEFb to activate transcription by RNA polymerase II. *Oncogene* 23: 5316-5329.
7. Svejstrup, J.Q. 2004. The RNA polymerase II transcription cycle: cycling through chromatin. *Biochim. Biophys. Acta* 1677: 64-73.

CHROMOSOMAL INFORMATION

Genetic locus: POLR2A (human) mapping to 17p13.1; Polr3f (mouse) mapping to 2 G1.

SOURCE

Pol III RPC39 (C39-2) is a mouse monoclonal antibody raised against recombinant human RPC39 subunit of RNA polymerase III.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Pol III RPC39 (C39-2) is available conjugated to agarose (sc-23913 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23913 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23913 PE), fluorescein (sc-23913 FITC), Alexa Fluor® 488 (sc-23913 AF488), Alexa Fluor® 546 (sc-23913 AF546), Alexa Fluor® 594 (sc-23913 AF594) or Alexa Fluor® 647 (sc-23913 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23913 AF680) or Alexa Fluor® 790 (sc-23913 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Pol III RPC39 (C39-2) is recommended for detection of the RPC 39 subunit of RNA polymerase III of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Pol III RPC39 siRNA (h): sc-36292, Pol III RPC39 siRNA (m): sc-45839, Pol III RPC39 shRNA Plasmid (h): sc-36292-SH, Pol III RPC39 shRNA Plasmid (m): sc-45839-SH, Pol III RPC39 shRNA (h) Lentiviral Particles: sc-36292-V and Pol III RPC39 shRNA (m) Lentiviral Particles: sc-45839-V.

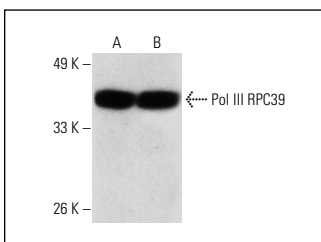
Molecular Weight of Pol III RPC39: 39 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HeLa whole cell lysate: sc-2200 or A-431 nuclear extract: sc-2122.

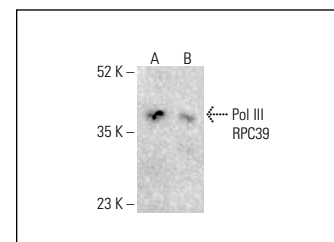
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Pol III RPC39 (C39-2): sc-23913. Western blot analysis of Pol III RPC39 expression in HeLa (A) and A-431 (B) nuclear extracts.



Pol III RPC39 (C39-2): sc-23913. Western blot analysis of Pol III RPC39 expression in K-562 (A) and HCT-116 (B) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Shor, B., et al. 2010. Requirement of the mTOR kinase for the regulation of MAF1 phosphorylation and control of RNA polymerase III-dependent transcription in cancer cells. *J. Biol. Chem.* 285: 15380-15392.
2. Suspène, R., et al. 2017. Self-cytoplasmic DNA upregulates the mutator enzyme APOBEC3A leading to chromosomal DNA damage. *Nucleic Acids Res.* 45: 3231-3241.

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.