SANTA CRUZ BIOTECHNOLOGY, INC.

RPA194 (H-300): sc-28714

BACKGROUND

RNA polymerases transcribe nuclear genes for ribosomal RNA, thus representing ribosomal biogenesis. RNA polymerase I (Pol I) is located in the nucleolus and transcribes class I genes, which code for large ribosomal RNA. Different subunits of the Pol I transcription machinery are targets of various physiological stimuli, which suggests that multiple signaling pathways are involved in carrying out Pol I transcription. RPA40 and RPA16 are subunits of Pol I that associate with each other at an early stage of RNA polymerase I assembly. RPA40 is essential for the function and integrity of the complex and is also an essential subunit of RNA polymerase III (Pol III). RPA40, RPA16 and RPA135 encode the three subunits of RNA polymerase I, respectively. RPA194 is the largest subunit of RNA Pol I and is not a component of Pol II and Pol III.

REFERENCES

1. Nogi, Y., et al. 1991. An approach for isolation of mutants defective in 35S ribosomal RNA synthesis in *Saccharomyces cerevisiae*. Proc. Natl. Acad. Sci. USA 16: 7026-7030.
2. Yao, Y., et al. 1996. Mouse RNA polymerase I 16 kDa subunit able to associate with 40 kDa subunit is a homolog of yeast AC19 subunit of RNA polymerases I and III. J. Biol. Chem. 51: 32881-32885.
3. Seither, P., et al. 1997. Molecular cloning and characterization of the cDNA encoding the largest subunit of mouse RNA polymerase I. Mol. Gen. Genet. 2: 180-186.
4. Hoeger, H., et al. 1998. Deficient transcription of subunit RPA 40 of RNA polymerase I and III in heart of rats with neonatal asphyxia. Life Sci. 4: 275-282.
5. Grummt, I. 1999. Regulation of mammalian ribosomal gene transcription by RNA polymerase I. Prog. Nucleic Acid Res. Mol. Biol. 62: 109-154.
6. Chen, H.K., et al. 1999. Human Nopp140, which interacts with RNA polymerase I: implications for rRNA gene transcription and nucleolar structural organization. Mol. Cell. Biol. 12: 8536-8546.
7. Mosgoeller, W., et al. 2000. Brain RNA polymerase and nucleolar structure in perinatal asphyxia of the rat. Exp. Neurol. 1: 174-182.

CHROMOSOMAL LOCATION

Genetic locus: POLR1A (human) mapping to 2p11.2; Polr1a (mouse) mapping to 6 C1.

SOURCE

RPA194 (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of RPA194 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

RPA194 (H-300) is recommended for detection of RPA194 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)], 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).

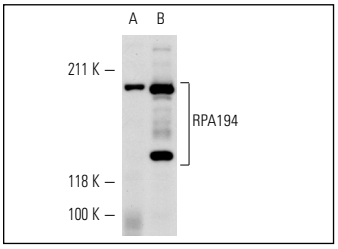
RPA194 (H-300) is also recommended for detection of RPA194 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for RPA194 siRNA (h): sc-38244, RPA194 siRNA (m): sc-38245, RPA194 shRNA Plasmid (h): sc-38244-SH, RPA194 shRNA Plasmid (m): sc-38245-SH, RPA194 shRNA (h) Lentiviral Particles: sc-38244-V and RPA194 shRNA (m) Lentiviral Particles: sc-38245-V.

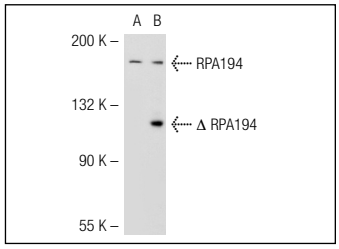
Molecular Weight of RPA194: 194 kDa.

Positive Controls: RPA194 (h): 293T Lysate: sc-111445, KNRK nuclear extract: sc-2141 or HeLa nuclear extract: sc-2120.

DATA



RPA194 (H-300): sc-28714. Western blot analysis of RPA194 expression in KNRK (**A**) and HeLa (**B**) nuclear extracts. Note presence of proteolytically cleaved forms.



RPA194 (H-300): sc-28714. Western blot analysis of RPA194 expression in non-transfected: sc-117752 (**A**) and truncated human RPA194 transfected: sc-111445 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhang, S., et al. 2007. Basonuclin regulates a subset of ribosomal RNA genes in HaCaT cells. PLoS ONE 2: e902.
2. Zhang, Y., et al. 2011. Identification of DHX33 as a mediator of rRNA synthesis and cell growth. Mol. Cell. Biol. 31: 4676-4691.
3. Shen, M., et al. 2013. The chromatin remodeling factor CSB recruits histone acetyltransferase PCAF to rRNA gene promoters in active state for transcription initiation. PLoS ONE 8: e62668.

STORAGE

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