SANTA CRUZ BIOTECHNOLOGY, INC.

RPA40 (H-7): sc-374444

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. RPA16, RPA40 and RPA135 are subunits of Pol I that associate with each other at an early stage of RNA Pol 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).

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 88: 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. 271: 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. 255: 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. 62: 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. 19: 8536-8546.
7. Mosgoeller, W., et al. 2000. Brain RNA polymerase and nucleolar structure in perinatal asphyxia of the rat. Exp. Neurol. 161: 174-182.

CHROMOSOMAL LOCATION

Genetic locus: POLR1C (human) mapping to 6p21.1; Polr1c (mouse) mapping to 17 C.

SOURCE

RPA40 (H-7) is a mouse monoclonal antibody raised against amino acids 1-105 of RPA40 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.

STORAGE

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

APPLICATIONS

RPA40 (H-7) is recommended for detection of RPA40 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 RPA40 siRNA (h): sc-38242, RPA40 siRNA (m): sc-38243, RPA40 shRNA Plasmid (h): sc-38242-SH, RPA40 shRNA Plasmid (m): sc-38243-SH, RPA40 shRNA (h) Lentiviral Particles: sc-38242-V and RPA40 shRNA (m) Lentiviral Particles: sc-38243-V.

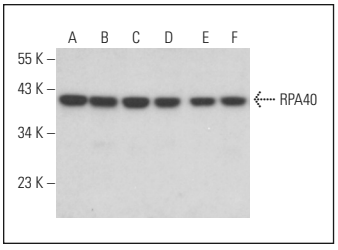
Molecular Weight of RPA40: 40 kDa.

Positive Controls: RT-4 whole cell lysate: sc-364257, MCF7 whole cell lysate: sc-2206 or Hep G2 Cell Lysate: sc-2227.

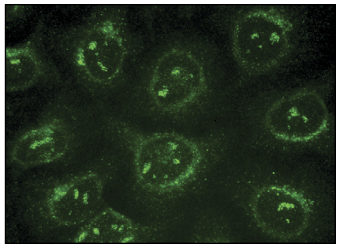
RECOMMENDED SUPPORT REAGENTS

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



RPA40 (H-7): sc-374444. Western blot analysis of RPA40 expression in K-562 (**A**), HL-60 (**B**), U-698-M (**C**), Hep G2 (**D**), MCF7 (**E**) and RT-4 (**F**) whole cell lysates.



RPA40 (H-7): sc-374444. Immunofluorescence staining of methanol-fixed HeLa cells showing nucleolar and perinuclear localization.

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.