

RPA135 (4H6): sc-293272

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

- 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: POLR1B (human) mapping to 2q13; Polr1b (mouse) mapping to 2 F1.

SOURCE

RPA135 (4H6) is a mouse monoclonal antibody raised against amino acids 963-1072 of RPA135 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

RPA135 (4H6) is recommended for detection of RPA135 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

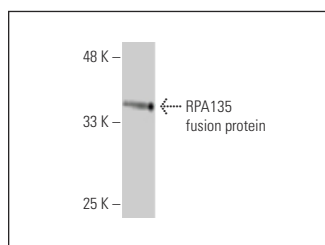
Suitable for use as control antibody for RPA135 siRNA (h): sc-36436, RPA135 siRNA (m): sc-36437, RPA135 shRNA Plasmid (h): sc-36436-SH, RPA135 shRNA Plasmid (m): sc-36437-SH, RPA135 shRNA (h) Lentiviral Particles: sc-36436-V and RPA135 shRNA (m) Lentiviral Particles: sc-36437-V.

Molecular Weight of RPA135: 128 kDa.

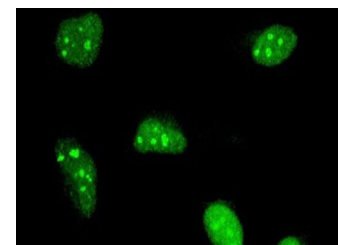
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



RPA135 (4H6): sc-293272. Western blot analysis of human recombinant RPA135 fusion protein.



RPA135 (4H6): sc-293272. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and nucleolar localization.

SELECT PRODUCT CITATIONS

- Wei, T., et al. 2018. Small-molecule targeting of RNA polymerase I activates a conserved transcription elongation checkpoint. Cell Rep. 23: 404-414.
- Mars, J.C., et al. 2020. The chemotherapeutic agent CX-5461 irreversibly blocks RNA polymerase I initiation and promoter release to cause nucleolar disruption, DNA damage and cell inviability. NAR Cancer 2: zcaa032.
- Moudry, P., et al. 2022. RNA-interference screen for p53 regulators unveils a role of WDR75 in ribosome biogenesis. Cell Death Differ. 29: 687-696.
- Ford, B.L., et al. 2023. Expression of RNA polymerase I catalytic core is influenced by RPA12. PLoS ONE 18: e0285660.

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.