

# RPA 70 kDa subunit (MA70-2): sc-53497

## BACKGROUND

The single-stranded-DNA-binding proteins (SSBs) are essential for DNA function in prokaryotic and eukaryotic cells, mitochondria, phages and viruses. Replication protein A (RPA), a highly conserved eukaryotic protein, is a heterotrimeric SSB. RPA plays an important role in DNA replication, recombination and repair. The binding of human RPA (hRPA) to DNA involves molecular polarity in which initial hRPA binding occurs on the 5' side of a ssDNA substrate and then extends in the 3' direction to create a stably bound hRPA. RPA is a major damage-recognition protein involved in the early stages of nucleotide excision repair. It can also play a role in telomere maintenance. The RPA 70 kDa subunit binds to ssDNA and mediates interactions with many cellular and viral proteins. The DNA binding domain lies in the middle of RPA 70 and comprises two structurally homologous subdomains oriented in tandem. RPA contains a conserved four cysteine-type zinc-finger motif, which mediates the transition of RPA-ssDNA interaction to a stable RPA-ssDNA complex in a redox-dependent manner.

## REFERENCES

1. Erdile, L.F., et al. 1990. The primary structure of the 32 kDa subunit of human replication protein A. *J. Biol. Chem.* 265: 3177-3182.
2. Erdile, L.F., et al. 1991. Characterization of a cDNA encoding the 70-kDa single-stranded DNA-binding subunit of human replication protein A and the role of the protein in DNA replication. *J. Biol. Chem.* 266: 12090-12098.
3. Bochkarev, A., et al. 1997. Structure of the single-stranded-DNA-binding domain of replication protein A bound to DNA. *Nature* 385: 176-181.

## CHROMOSOMAL LOCATION

Genetic locus: RPA1 (human) mapping to 17p13.3.

## SOURCE

RPA 70 kDa subunit (MA70-2) is a mouse monoclonal antibody raised against RPA 70 kDa subunit of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

RPA 70 kDa subunit (MA70-2) is recommended for detection of RPA 70 kDa subunit of 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 RPA 70 kDa subunit siRNA (h): sc-37163, RPA 70 kDa subunit shRNA Plasmid (h): sc-37163-SH and RPA 70 kDa subunit shRNA (h) Lentiviral Particles: sc-37163-V.

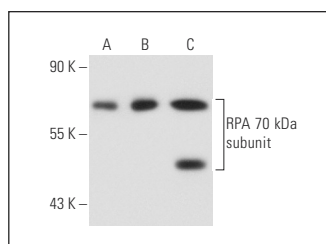
Molecular Weight of RPA 70 kDa subunit: 70 kDa.

Positive Controls: RPA 70 kDa subunit (h): 293 Lysate: sc-113188, A-431 nuclear extract: sc-2122 or SW480 nuclear extract: sc-2155.

## 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



RPA 70 kDa subunit (MA70-2): sc-53497. Western blot analysis of RPA 70 kDa subunit expression in non-transfected: sc-110760 (A) and human RPA 70 kDa subunit transfected: sc-113188 (B) 293 whole cell lysates and A-431 nuclear extract (C).

## SELECT PRODUCT CITATIONS

1. Chai, G., et al. 2008. HDAC inhibitors act with 5-aza-2'-deoxycytidine to inhibit cell proliferation by suppressing removal of incorporated abases in lung cancer cells. *PLoS ONE* 3: e2445.
2. Pond, K.W., et al. 2019. Rescue of collapsed replication forks is dependent on NSMCE2 to prevent mitotic DNA damage. *PLoS Genet.* 15: e1007942.

## 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](http://www.scbt.com) for detailed protocols and support products.



See **RPA 70 kDa subunit (H-7): sc-48425** for RPA 70 kDa subunit antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.