

RPA 32 kDa subunit (B-4): sc-271578

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 hetero-trimeric 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 one of the major damage-recognition proteins involved in the early stage of nucleotide excision repair. RPA can also play a role in telomere maintenance. The C-terminus of RPA 32 can specifically interact with the DNA repair enzyme UNG2 and repair factors XPA and Rad52, each of which functions in a different repair pathway. In addition, RPA 32 binds specifically to the SH2 domain of Stat3 *in vivo*, and overexpression of RPA 32 corresponds to the augmented growth factor-stimulated tyrosine phosphorylation and transcription activities of Stat3.

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.
4. Kim, J., et al. 2000. Replication protein a 32 kDa subunit (RPA p32) binds the SH2 domain of Stat3 and regulates its transcriptional activity. *Cell Biol. Int.* 24: 467-473.

CHROMOSOMAL LOCATION

Genetic locus: RPA2 (human) mapping to 1p35.3.

SOURCE

RPA 32 kDa subunit (B-4) is a mouse monoclonal antibody raised against amino acids 155-254 mapping within an internal region of RPA 32 kDa subunit of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271578 X, 200 µg/0.1 ml.

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.

APPLICATIONS

RPA 32 kDa subunit (B-4) is recommended for detection of RPA 32 kDa subunit of 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 RPA 32 kDa subunit siRNA (h): sc-38229, RPA 32 kDa subunit shRNA Plasmid (h): sc-38229-SH and RPA 32 kDa subunit shRNA (h) Lentiviral Particles: sc-38229-V.

RPA 32 kDa subunit (B-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

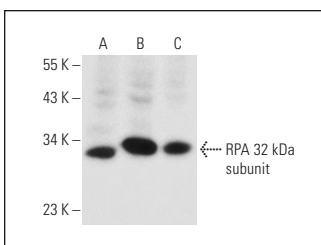
Molecular Weight of RPA 32 kDa subunit: 32 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, H69AR whole cell lysate: sc-364382 or T-47D cell lysate: sc-2293.

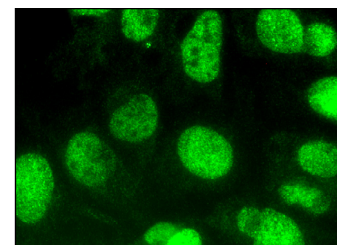
RECOMMENDED SUPPORT REAGENTS

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 32 kDa subunit (B-4): sc-271578. Western blot analysis of RPA 32 kDa subunit expression in HeLa (A), H69AR (B) and T-47D (C) whole cell lysates.



RPA 32 kDa subunit (B-4): sc-271578. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Chai, N., et al. 2019. Spermidine prevents heart injury in neonatal rats exposed to intrauterine hypoxia by inhibiting oxidative stress and mitochondrial fragmentation. *Oxid. Med. Cell. Longev.* 2019: 5406468.



See **RPA 32 kDa subunit (9H8): sc-56770** for RPA 32 kDa subunit antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.