

RPA 70 kDa subunit (C-21): sc-14696

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 an 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 kDa subunit 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.

CHROMOSOMAL LOCATION

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

SOURCE

RPA 70 kDa subunit (C-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of RPA 70 kDa subunit 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.

Blocking peptide available for competition studies, sc-14696 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-14696 X, 200 µg/0.1 ml.

APPLICATIONS

RPA 70 kDa subunit (C-21) 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)], 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).

RPA 70 kDa subunit (C-21) is also recommended for detection of RPA 70 kDa subunit in additional species, including canine and bovine.

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.

RPA 70 kDa subunit (C-21) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

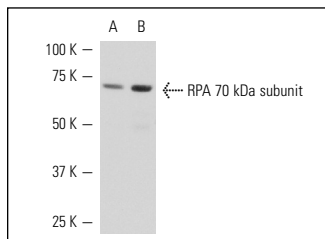
Molecular Weight of RPA 70 kDa subunit: 70 kDa.

Positive Controls: SW480 nuclear extract: sc-2155.

STORAGE

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

DATA



RPA 70 kDa subunit (C-21): sc-14696. Western blot analysis of RPA 70 kDa subunit expression in A-431 (A) and SW480 (B) nuclear extracts.

SELECT PRODUCT CITATIONS

- Dart, D.A., et al. 2004. Recruitment of the cell cycle checkpoint kinase ATR to chromatin during S-phase. *J. Biol. Chem.* 279: 16433-16440.
- Yoshihara, T., et al. 2004. XRCC3 deficiency results in a defect in recombination and increased endoreduplication in human cells. *EMBO J.* 23: 670-680.
- Zhu, Y., et al. 2004. Intra-S-phase checkpoint activation by direct CDK2 inhibition. *Mol. Cell. Biol.* 24: 6268-6277.
- Kinoshita, Y., et al. 2008. Colocalization of MCM8 and MCM7 with proteins involved in distinct aspects of DNA replication. *Microsc. Res. Tech.* 71: 288-297.
- Rodriguez, R., et al. 2008. Apoptosis induced by replication inhibitors in Chk1-depleted cells is dependent upon the helicase cofactor Cdc45. *Cell Death Differ.* 15: 889-898.
- Lu, L. and Wang, Y. 2008. Immunoprecipitation alert: DNA binding proteins directly bind to protein A/G without any antibody as the bridge. *Cell Cycle* 7: 417-418.
- Mohni, K.N., et al. 2013. Efficient herpes simplex virus 1 replication requires cellular ATR pathway proteins. *J. Virol.* 87: 531-542.

RESEARCH USE

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



Try **RPA 70 kDa subunit (H-7): sc-48425** or **RPA 70 kDa subunit (B-6): sc-28304**, our highly recommended monoclonal alternatives to RPA 70 kDa subunit (C-21). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **RPA 70 kDa subunit (H-7): sc-48425**.