SANTA CRUZ BIOTECHNOLOGY, INC.

RPA 32 kDa subunit (SPM316): sc-56594

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 C-terminus of RPA 32 can specfically intereact 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.

CHROMOSOMAL LOCATION

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

SOURCE

RPA 32 kDa subunit (SPM316) is a mouse monoclonal antibody raised against full length RPA 32 kDa subunit protein 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.

APPLICATIONS

RPA 32 kDa subunit (SPM316) is recommended for detection of RPA 32 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

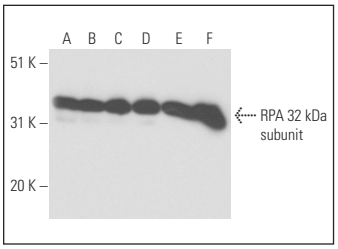
Molecular Weight of RPA 32 kDa subunit: 32 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, T-47D whole cell lysate: sc-2293 or MCF7 whole cell lysate: sc-2206.

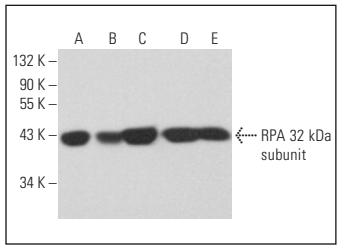
RECOMMENDED SUPPORT REAGENTS

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



RPA 32 kDa subunit (SPM316): sc-56594. Western blot analysis of RPA 32 kDa subunit expression in HeLa (**A**), T-47D (**B**), MCF7 (**C**) and Saos-2 (**D**) whole cell lysates and Ramos (**E**) and HeLa (**F**) nuclear extracts.



RPA 32 kDa subunit (SPM316): sc-56594. Western blot analysis of RPA 32 kDa subunit expression in HeLa nuclear extract (**A**) and A549 (**B**), Jurkat (**C**), HT-29 (**D**) and HEK293 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Shi, Z., et al. 2010. The neuroprotective effect of Batch-2, an aqueous extract from cat's claw *(Uncaria tomentosa)* on 6-OHDA-induced SH-SY5Y cell damage. Prog. Biochem. Biophy. 37: 769-778.
2. Battle, M., et al. 2014. Obesity induced a leptin-Notch signaling axis in breast cancer. Int. J. Cancer 134: 1605-1616.
3. Lanier, V., et al. 2016. Leptin-induced transphosphorylation of vascular endothelial growth factor receptor increases Notch and stimulates endothelial cell angiogenic transformation. Int. J. Biochem. Cell Biol. 79: 139-150.

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.

CONJUGATES

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.