SANTA CRUZ BIOTECHNOLOGY, INC.

RPA 32 kDa subunit (9H8): sc-56770

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: RPA2 (human) mapping to 1p35.3; Rpa2 (mouse) mapping to 4 D2.3.

SOURCE

RPA 32 kDa subunit (9H8) is a mouse monoclonal antibody raised against full length RPA 32 kDa subunit 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.

RPA 32 kDa subunit (9H8) is available conjugated to agarose (sc-56770 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56770 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56770 PE), fluorescein (sc-56770 FITC), Alexa Fluor® 488 (sc-56770 AF488), Alexa Fluor® 546 (sc-56770 AF546), Alexa Fluor® 594 (sc-56770 AF594) or Alexa Fluor® 647 (sc-56770 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56770 AF680) or Alexa Fluor® 790 (sc-56770 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

RPA 32 kDa subunit (9H8) is recommended for detection of RPA 32 kDa subunit 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).

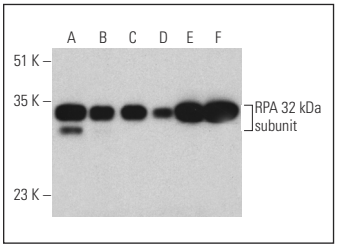
Suitable for use as control antibody for RPA 32 kDa subunit siRNA (h): sc-38229, RPA 32 kDa subunit siRNA (m): sc-38230, RPA 32 kDa subunit shRNA Plasmid (h): sc-38229-SH, RPA 32 kDa subunit shRNA Plasmid (m): sc-38230-SH, RPA 32 kDa subunit shRNA (h) Lentiviral Particles: sc-38229-V and RPA 32 kDa subunit shRNA (m) Lentiviral Particles: sc-38230-V.

Molecular Weight of RPA 32 kDa subunit: 32 kDa.

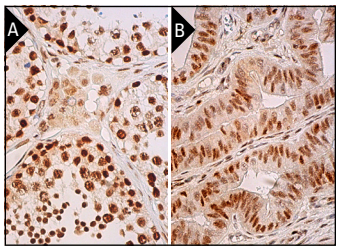
STORAGE

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

DATA



RPA 32 kDa subunit (9H8) HRP: sc-56770 HRP. Direct western blot analysis of RPA 32 kDa subunit expression in Saos-2 (**A**), MCF7 (**B**), HeLa (**C**), T-47D (**D**), Raji (**E**) and SUP-T1 (**F**) whole cell lysates.



RPA 32 kDa subunit (9H8): sc-56770. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and Leydig cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Rossi, R., et al. 2006. The dispersal of replication proteins after etoposide treatment requires the cooperation of Nbs1 with the ataxia telangiectasia Rad3-related/Chk1 pathway. Cancer Res. 66: 1675-1683.
2. Findlay, S., et al. 2018. SHLD2/FAM35A co-operates with REV7 to coordinate DNA double-strand break repair pathway choice. EMBO J. 37: e100158.
3. Kim, W., et al. 2019. ZFP161 regulates replication fork stability and maintenance of genomic stability by recruiting the ATR/ATRIP complex. Nat. Commun. 10: 5304.
4. Hubackova, S., et al. 2020. Replication and ribosomal stress induced by targeting pyrimidine synthesis and cellular checkpoints suppress p53-deficient tumors. Cell Death Dis. 11: 110.
5. Averbek, S., et al. 2021. O-GlcNAcylation affects the pathway choice of DNA double-strand break repair. Int. J. Mol. Sci. 22: 5715.
6. Zhu, C., et al. 2022. Profilin-1 regulates DNA replication forks in a context-dependent fashion by interacting with SNF2H and BOD1L. Nat. Commun. 13: 6531.
7. Zhu, S., et al. 2023. SUMOylation of HNRNPA2B1 modulates RPA dynamics during unperturbed replication and genotoxic stress responses. Mol. Cell 83: 539-555.e7.
8. Li, Y., et al. 2024. USP25 Elevates SHLD2-mediated DNA double-strand break repair and regulates chemoresponse in cancer. Adv. Sci. 11: e2403485.

RESEARCH USE

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