

RPA 14 kDa subunit (A-2): sc-393891

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 that is composed of three subunits, designated RPA 14 kDa (also known as RPA3), RPA 32 kDa and RPA 70 kDa. Together, these subunits play an important role in DNA replication, recombination and repair. RPA is one of the major damage-recognition structures involved in the early stage of nucleotide excision repair and may play a role in telomere maintenance. 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. The RPA 14 kDa subunit localizes to the nucleus and is the smallest component of the RPA complex, functioning with the other subunits to regulate various aspects of DNA metabolism.

REFERENCES

- Umbricht, C.B., et al. 1993. Cloning, overexpression, and genomic mapping of the 14-kDa subunit of human replication protein A. *J. Biol. Chem.* 268: 6131-6138.
- Umbricht, C.B., et al. 1994. High-resolution genomic mapping of the three human replication protein A genes (RPA1, RPA2, and RPA3). *Genomics* 20: 249-257.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 179837. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Rpa3 (mouse) mapping to 6 A1.

SOURCE

RPA 14 kDa subunit (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 96-121 at the C-terminus of RPA 14 kDa subunit of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-393891 X, 200 µg/0.1 ml.

RPA 14 kDa subunit (A-2) is available conjugated to agarose (sc-393891 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393891 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393891 PE), fluorescein (sc-393891 FITC), Alexa Fluor® 488 (sc-393891 AF488), Alexa Fluor® 546 (sc-393891 AF546), Alexa Fluor® 594 (sc-393891 AF594) or Alexa Fluor® 647 (sc-393891 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393891 AF680) or Alexa Fluor® 790 (sc-393891 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393891 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

RPA 14 kDa subunit (A-2) is recommended for detection of RPA 14 kDa subunit of mouse 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 14 kDa subunit siRNA (m): sc-45713, RPA 14 kDa subunit shRNA Plasmid (m): sc-45713-SH and RPA 14 kDa subunit shRNA (m) Lentiviral Particles: sc-45713-V.

RPA 14 kDa subunit (A-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

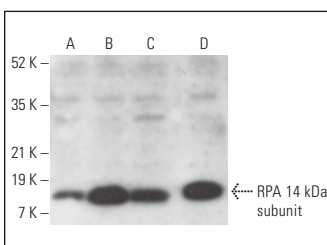
Molecular Weight of RPA 14 kDa subunit: 14 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, 3T3-L1 cell lysate: sc-2243 or Neuro-2A whole cell lysate: sc-364185.

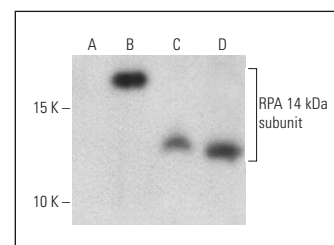
RECOMMENDED SUPPORT REAGENTS

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 14 kDa subunit (A-2): sc-393891. Western blot analysis of RPA 14 kDa subunit expression in NIH/3T3 (A), Neuro-2A (B), 3T3-L1 (C) and BW5147 (D) whole cell lysates.



RPA 14 kDa subunit (A-2) HRP: sc-393891 HRP. Direct western blot analysis of RPA 14 kDa subunit expression in non-transfected HEK293T (A), mouse RPA 14kDa subunit transfected HEK293T (B) and BW5147 (C) whole cell lysates and mouse thymus tissue extract (D).

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.

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