SANTA CRUZ BIOTECHNOLOGY, INC.

RPA 14 kDa subunit (C-16): sc-30411

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 an 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

1. 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.
2. 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.
3. 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/
4. Zou, L., et al. 2003. Sensing DNA damage through ATRIP recognition of RPA-ssDNA complexes. Science 300: 1542-1548.
5. Dodson, G.E., et al. 2004. DNA replication defects, spontaneous DNA damage, and ATM-dependent checkpoint activation in replication protein A-deficient cells. J. Biol. Chem. 279: 34010-34014.

CHROMOSOMAL LOCATION

Genetic locus: RPA3 (human) mapping to 7p21.3; Rpa3 (mouse) mapping to 6 A1.

SOURCE

RPA 14 kDa subunit (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of RPA 14 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-30411 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-30411 X, 200 µg/0.1 ml.

APPLICATIONS

RPA 14 kDa subunit (C-16) is recommended for detection of RPA 14 kDa subunit of human and, to a lesser extent, mouse and rat 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 14 kDa subunit (C-16) is also recommended for detection of RPA 14 kDa subunit in additional species, including equine, canine, bovine and porcine.

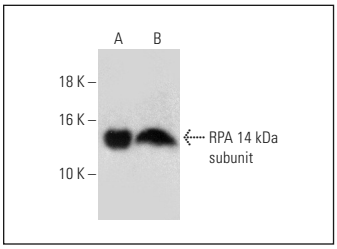
Suitable for use as control antibody for RPA 14 kDa subunit siRNA (h): sc-45476, RPA 14 kDa subunit siRNA (m): sc-45713, RPA 14 kDa subunit shRNA Plasmid (h): sc-45476-SH, RPA 14 kDa subunit shRNA Plasmid (m): sc-45713-SH, RPA 14 kDa subunit shRNA (h) Lentiviral Particles: sc-45476-V and RPA 14 kDa subunit shRNA (m) Lentiviral Particles: sc-45713-V.

RPA 14 kDa subunit (C-16) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of RPA 14 kDa subunit: 14 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, K-562 whole cell lysate: sc-2203 or HL-60 whole cell lysate: sc-2209.

DATA



RPA 14 kDa subunit (C-16): sc-30411. Western blot analysis of RPA 14 kDa subunit expression in HL-60 (**A**) and K-562 (**B**) whole cell lysates.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.