SANTA CRUZ BIOTECHNOLOGY, INC.

RPA 14 kDa subunit (E-2): sc-271564

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

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/

CHROMOSOMAL LOCATION

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

SOURCE

RPA 14 kDa subunit (E-2) is a mouse monoclonal antibody raised against amino acids 24-81 mapping within an internal region of RPA 14 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271564 X, 200 µg/0.1 ml.

RPA 14 kDa subunit (E-2) is available conjugated to agarose (sc-271564 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271564 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271564 PE), fluorescein (sc-271564 FITC), Alexa Fluor® 488 (sc-271564 AF488), Alexa Fluor® 546 (sc-271564 AF546), Alexa Fluor® 594 (sc-271564 AF594) or Alexa Fluor® 647 (sc-271564 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271564 AF680) or Alexa Fluor® 790 (sc-271564 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

RPA 14 kDa subunit (E-2) is recommended for detection of RPA 14 kDa subunit of mouse, rat and human 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 (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 (E-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

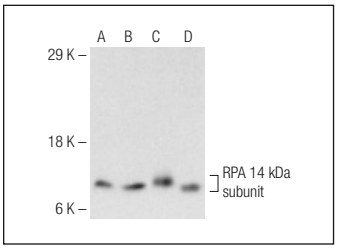
Molecular Weight of RPA 14 kDa subunit: 14 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HL-60 whole cell lysate: sc-2209 or HL-60 nuclear extract: sc-2147.

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 (E-2): sc-271564. Western blot analysis of RPA 14 kDa subunit expression in HL-60 (**A**) and K-562 (**B**) whole cell lysates and HL-60 (**C**) and MOLT-4 (**D**) nuclear extracts.

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.