



RPA 32 kDa subunit (m): 293T Lysate: sc-125946

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 specifically interact 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.
3. Bochkarev, A., et al. 1997. Structure of the single-stranded-DNA-binding domain of replication protein A bound to DNA. *Nature* 385: 176-181.
4. Kim, J., et al. 2000. Replication protein a 32 kDa subunit (RPA p32) binds the SH2 domain of Stat3 and regulates its transcriptional activity. *Cell. Biol. Int.* 24: 467-473.
5. Mer, G., et al. 2000. Structural basis for the recognition of DNA repair proteins UNG2, XPA and Rad52 by replication factor RPA. *Cell* 103: 449-456.
6. Wang, M., et al. 2000. RPA stabilizes the XPA-damaged DNA complex through protein-protein interaction. *Biochemistry* 39: 64-69.
7. Iftode, C., et al. 2000. 5'→3' molecular polarity of human replication protein (hRPA) binding to pseudo-origin DNA substrates. *Biochemistry* 39: 11970-119981.
8. Smith, J., et al. 2000. Characterization of genetic interactions with RFA1: the role of RPA in DNA replication and telomere maintenance. *Biochimie* 82: 71-78.

CHROMOSOMAL LOCATION

Genetic locus: Rpa2 (mouse) mapping to 4 D2.3.

PRODUCT

RPA 32 kDa subunit (m): 293T Lysate represents a lysate of mouse RPA 32 kDa subunit transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

RPA 32 kDa subunit (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive RPA 32 kDa subunit antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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

PROTOCOLS

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