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RAP1 (h): 293T Lysate: sc-117426

BACKGROUND

Telomeres are DNA-protein structures that protect the ends of linear chromosomes and help maintain genomic stability and cell phenotype. Mammalian telomeric proteins consist of TRF1 (telomeric repeat binding factor), TRF2, tankyrase and TIN2, which have no recognized orthologs in the budding yeast, *Saccharomyces cerevisiae*, and RAP1, which is an ortholog to the yeast telomeric protein scRap1. Like scRap1, mammalian RAP1 regulates telomere elongation. RAP1 interacts with two proteins, Rif1 and Rif2, which contribute to telomere length homeostasis. Unlike scRap1, which binds telomeric DNA directly, RAP1 is recruited to telomeres by TRF2. The functional and structural similarities of scRap1 to mammalian RAP1 suggest that the budding yeast preserved RAP1 at telomeres, but lost the TRF component. The telomeric protein TRF1 requires TIN2 to control telomere length in human cells.

REFERENCES

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- Kim, S.H., Kaminke, P. and Campisi, J. 1999. TIN2, a new regulator of telomere length in human cells. *Nat. Genet.* 23: 405-412.
- Scherthan, H., Jerratsch, M., Li, B., Smith, S., Hultén, M., Lock, T. and de Lange, T. 2000. Mammalian meiotic telomeres: protein composition and redistribution in relation to nuclear pores. *Mol. Cell. Biol.* 11: 4189-4203.
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- Arthur, W.T., Quilliam, L.A. and Cooper, J.A. 2004. RAP1 promotes cell spreading by localizing Rac guanine nucleotide exchange factors. *J. Cell Biol.* 167: 111-122.

CHROMOSOMAL LOCATION

Genetic locus: TERF2IP (human) mapping to 16q23.1.

PRODUCT

RAP1 (h): 293T Lysate represents a lysate of human RAP1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

RAP1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive RAP1 antibodies. Recommended use: 10-20 µl per lane.

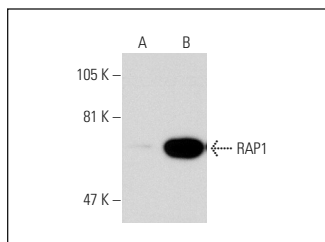
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RAP1 (5G7): sc-47695 is recommended as a positive control antibody for Western Blot analysis of enhanced human RAP1 expression in RAP1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



RAP1 (5G7): sc-47695. Western blot analysis of RAP1 expression in non-transfected: sc-117752 (A) and human RAP1 transfected: sc-117426 (B) 293T whole cell lysates.

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.

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.