

Rap1 (y-300): sc-20167

BACKGROUND

Rap1, also known as TERF2IP (telomeric repeat-binding factor 2-interacting protein 1) or DRIP5, is a 399 amino acid nuclear and cytoplasmic protein that contains one BRCT domain and one Myb-like domain. Belonging to the Rap1 family, Rap1 acts as both a regulator of telomere function and a regulator of transcription. While it does not bind DNA directly, Rap1 is recruited to telomeric double-stranded 5'-TTAGGG-3' repeats via its interaction with TRF2. Rap1 is required to negatively regulate telomere recombination and is essential for repressing homology-directed repair (HDR), which can affect telomere length. The gene that encodes Rap1 maps to human chromosome 16q23.1 and mouse chromosome 8 E1.

REFERENCES

- Li, B., et al. 2000. Identification of human Rap1: implications for telomere evolution. *Cell* 101: 471-483.
- Online Mendelian Inheritance in Man, OMIM[™]. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 605061. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Hanaoka, S., et al. 2001. NMR structure of the hRap1 Myb motif reveals a canonical three-helix bundle lacking the positive surface charge typical of Myb DNA-binding domains. *J. Mol. Biol.* 312: 167-175.
- Tan, M., et al. 2003. The telomeric protein Rap1 is conserved in vertebrates and is expressed from a bidirectional promoter positioned between the Rap1 and KARS genes. *Gene* 323: 1-10.
- Ye, J.Z., et al. 2004. TIN2 binds TRF1 and TRF2 simultaneously and stabilizes the TRF2 complex on telomeres. *J. Biol. Chem.* 279: 47264-47271.
- Liu, D., et al. 2004. Telosome, a mammalian telomere-associated complex formed by multiple telomeric proteins. *J. Biol. Chem.* 279: 51338-51342.
- Sarthy, J., et al. 2009. Human RAP1 inhibits non-homologous end joining at telomeres. *EMBO J.* 28: 3390-3399.

SOURCE

Rap1 (y-300) is a rabbit polyclonal antibody raised against amino acids 528-827 of Rap1 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

Rap1 (y-300) is recommended for detection of Rap1 of *Saccharomyces cerevisiae* 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight (predicted) of Rap1: 92 kDa.

Molecular Weight (observed) of Rap1: 118 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/ 2.0 ml).

SELECT PRODUCT CITATIONS

- Pardo, B. and Marcand, S. 2005. Rap1 prevents telomere fusions by non-homologous end joining. *EMBO J.* 24: 3117-3127.
- Fry, C.J., et al. 2006. The LRS and SIN domains: two structurally equivalent but functionally distinct nucleosomal surfaces required for transcriptional silencing. *Mol. Cell. Biol.* 26: 9045-9059.
- Buck, M.J. and Lieb, J.D. 2006. A chromatin-mediated mechanism for specification of conditional transcription factor targets. *Nat. Genet.* 38: 1446-1451.
- Tomar, R.S., et al. 2008. Yeast Rap1 contributes to genomic integrity by activating DNA damage repair genes. *EMBO J.* 27: 1575-1584.
- Ahn, S.H., et al. 2009. Ctk1 promotes dissociation of basal transcription factors from elongating RNA polymerase II. *EMBO J.* 28: 205-212.

RESEARCH USE

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



Try **Rap1 (G-7): sc-374297** or **Rap1 (E-11): sc-373790**, our highly recommended monoclonal alternatives to Rap1 (y-300).