SANTA CRUZ BIOTECHNOLOGY, INC.

Rap1 (E-11): sc-373790

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

1. Li, B., et al. 2000. Identification of human Rap1: implications for telomere evolution. Cell 101: 471-483.
2. 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/
3. 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.
4. 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.
5. 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.
6. Liu, D., et al. 2004. Telosome, a mammalian telomere-associated complex formed by multiple telomeric proteins. J. Biol. Chem. 279: 51338-51342.
7. Sarthy, J., et al. 2009. Human Rap1 inhibits non-homologous end joining at telomeres. EMBO J. 28: 3390-3399.
8. Martinez, P., et al. 2010. Mammalian Rap1 controls telomere function and gene expression through binding to telomeric and extratelomeric sites. Nat. Cell Biol. 12: 768-780.
9. Chen, Y., et al. 2011. A conserved motif within Rap1 has diversified roles in telomere protection and regulation in different organisms. Nat. Struct. Mol. Biol. 18: 213-221.

SOURCE

Rap1 (E-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 811-835 near the C-terminus of Rap1 of *Saccharomyces cerevisiae* 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.

Blocking peptide available for competition studies, sc-373790 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Rap1 (E-11) is recommended for detection of Rap1 of *Saccharomyces cerevisiae* 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).

Molecular Weight (predicted) of Rap1: 92 kDa.

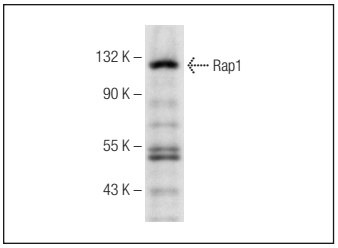
Molecular Weight (observed) of Rap1: 118 kDa.

Positive Controls: *S. cerevisiae* whole cell lysate.

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



Rap1 (E-11): sc-373790. Western blot analysis of Rap1 expression in *S. cerevisiae* whole cell lysate.

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 for detailed protocols and support products.