SANTA CRUZ BIOTECHNOLOGY, INC.

RAP1 (5G7): sc-47695

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

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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.

CHROMOSOMAL LOCATION

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

SOURCE

RAP1 (5G7) is a mouse monoclonal antibody raised against RAP1 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.

STORAGE

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

APPLICATIONS

RAP1 (5G7) is recommended for detection of RAP1 of human 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for RAP1 siRNA (h): sc-38554, RAP1 shRNA Plasmid (h): sc-38554-SH and RAP1 shRNA (h) Lentiviral Particles: sc-38554-V.

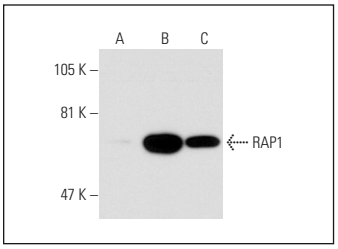
Molecular Weight of RAP1: 44 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HL-60 nuclear extract: sc-2147 or RAP1 (h): 293T Lysate: sc-117426.

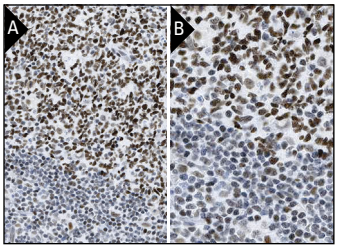
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

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 and HeLa nuclear extract (**C**).



RAP1 (5G7): sc-47695. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of lymphoid cells at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Kudo, T., et al. 2009. Cathepsin G, a neutrophil protease, induces compact cell-cell adhesion in MCF-7 human breast cancer cells. Mediators Inflamm. 2009: 850940.
2. Buranda, T., et al. 2013. Rapid parallel flow cytometry assays of active GTPases using effector beads. Anal. Biochem. 442: 149-157.

RESEARCH USE

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