

# RAP1 (4C8/1): sc-53434

## 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 RAP1 does not bind DNA directly, it 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.

## CHROMOSOMAL LOCATION

Genetic locus: TERF2IP (human) mapping to 16q23.1; Terf2ip (mouse) mapping to 8 E1.

## SOURCE

RAP1 (4C8/1) is a mouse monoclonal antibody raised against RAP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RAP1 (4C8/1) is available conjugated to agarose (sc-53434 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53434 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53434 PE), fluorescein (sc-53434 FITC), Alexa Fluor® 488 (sc-53434 AF488), Alexa Fluor® 546 (sc-53434 AF546), Alexa Fluor® 594 (sc-53434 AF594) or Alexa Fluor® 647 (sc-53434 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53434 AF680) or Alexa Fluor® 790 (sc-53434 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

RAP1 (4C8/1) is recommended for detection of RAP1 of mouse, rat and 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 siRNA (m): sc-38555, RAP1 siRNA (r): sc-270420, RAP1 shRNA Plasmid (h): sc-38554-SH, RAP1 shRNA Plasmid (m): sc-38555-SH, RAP1 shRNA Plasmid (r): sc-270420-SH, RAP1 shRNA (h) Lentiviral Particles: sc-38554-V, RAP1 shRNA (m) Lentiviral Particles: sc-38555-V and RAP1 shRNA (r) Lentiviral Particles: sc-270420-V.

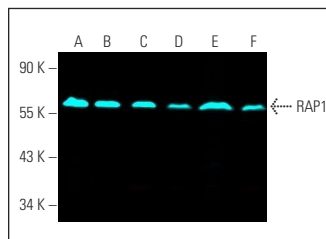
Molecular Weight of RAP1: 44 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or HL-60 whole cell lysate: sc-2209.

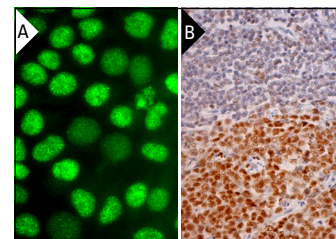
## STORAGE

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

## DATA



RAP1 (4C8/1) Alexa Fluor® 647: sc-53434 AF647. Direct fluorescent western blot analysis of RAP1 expression in Jurkat (A), HL-60 (B), C32 (C), MCF7 (D), K-562 (E) and HeLa (F) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



RAP1 (4C8/1): sc-53434. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in germinal center and cells in non-germinal center (B).

## SELECT PRODUCT CITATIONS

- Teo, H., et al. 2010. Telomere-independent RAP1 is an IKK adaptor and regulates NFκB-dependent gene expression. *Nat. Cell Biol.* 12: 758-767.
- Wang, X., et al. 2012. Heat-labile enterotoxin-induced activation of NFκB and MAPK pathways in intestinal epithelial cells impacts enterotoxigenic *Escherichia coli* (ETEC) adherence. *Cell. Microbiol.* 14: 1231-1241.
- Wamsley, J.J., et al. 2017. LZAP is a novel Wip1 binding partner and positive regulator of its phosphatase activity *in vitro*. *Cell Cycle* 16: 213-223.
- Khattar, E., et al. 2019. RAP1 regulates hematopoietic stem cell survival and affects oncogenesis and response to chemotherapy. *Nat. Commun.* 10: 5349.
- Sharma, S., et al. 2021. Human telomerase is directly regulated by non-telomeric TRF2-G-quadruplex interaction. *Cell Rep.* 35: 109154.
- Stock, A.J., et al. 2022. Aberrant expression and localization of the RAP1 shelterin protein contribute to age-related phenotypes. *PLoS Genet.* 18: e1010506.
- Tao, S., et al. 2022. Exosomes derived from tumor cells initiate breast cancer cell metastasis and chemoresistance through a MALAT1-dependent mechanism. *J. Oncol.* 2022: 5483523.
- Wang, C., et al. 2022. The expression and significance of Epac1 and Epac2 in the inner ear of guinea pigs. *Eur. Arch. Otorhinolaryngol.* 279: 5207-5214.
- Storchova, R., et al. 2023. Phosphorylation of TRF2 promotes its interaction with TIN2 and regulates DNA damage response at telomeres. *Nucleic Acids Res.* 51: 1154-1172.

## RESEARCH USE

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