

Rap 1 (E-6): sc-398755

BACKGROUND

Ras oncogenes encode GTP-binding proteins that are capable of transforming immortalized cells in culture. Two Ras-related human genes, designated Rap1A and Rap1B, encode 95% homologous proteins that share with Ras proteins a similar C-terminal Cys-Ali-Ali-Xaa sequence and are ubiquitously expressed in mammalian tissues. The putative "effector" domain of Ras proteins whose integrity is required for cell transformation as well as interaction with the putative effector protein GAP is conserved in both Rap 1 proteins. It has been postulated that p21Rap 1 acts to interfere with Ras effector function by binding to Ras GAP. In fact, it is known that p21Rap 1 binds to Ras GAP *in vitro* in a GTP-dependent manner without affecting p21Rap 1 GTPase activity. A GAP protein specific for p21Rap 1 has been identified and the corresponding cDNA has been isolated.

REFERENCES

1. Pizon, V., et al. 1988. Human cDNAs Rap1 and Rap2 homologous to the *Drosophila* gene Dras3 encode proteins closely related to Ras in the "effector" region. *Oncogene* 3: 201-204.
2. Pizon, V., et al. 1988. Nucleotide sequence of a human cDNA encoding a Ras-related protein (Rap1B). *Nucleic Acids Res.* 16: 7719.
3. Culine, S., et al. 1989. Expression of the Ras-related Rap genes in human tumors. *Int. J. Cancer* 44: 990-994.

CHROMOSOMAL LOCATION

Genetic locus: RAP1A (human) mapping to 1p13.2, RAP1B (human) mapping to 12q15; Rap1a (mouse) mapping to 3 F2.2, Rap1b (mouse) mapping to 10 D2.

SOURCE

Rap 1 (E-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 140-174 near the C-terminus of Rap 1A of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Rap 1 (E-6) is available conjugated to agarose (sc-398755 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398755 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398755 PE), fluorescein (sc-398755 FITC), Alexa Fluor® 488 (sc-398755 AF488), Alexa Fluor® 546 (sc-398755 AF546), Alexa Fluor® 594 (sc-398755 AF594) or Alexa Fluor® 647 (sc-398755 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398755 AF680) or Alexa Fluor® 790 (sc-398755 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398755 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

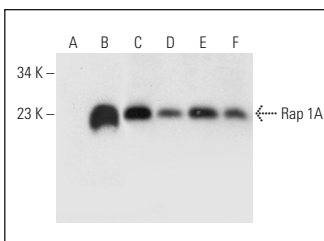
Rap 1 (E-6) is recommended for detection of Rap 1A and Rap 1B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Rap 1 siRNA (h): sc-36384, Rap 1 siRNA (m): sc-36385, Rap 1 siRNA (r): sc-270358, Rap 1 shRNA Plasmid (h): sc-36384-SH, Rap 1 shRNA Plasmid (m): sc-36385-SH, Rap 1 shRNA Plasmid (r): sc-270358-SH, Rap 1 shRNA (h) Lentiviral Particles: sc-36384-V, Rap 1 shRNA (m) Lentiviral Particles: sc-36385-V and Rap 1 shRNA (r) Lentiviral Particles: sc-270358-V.

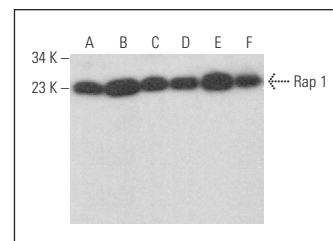
Molecular Weight of Rap 1: 21/24 kDa.

Positive Controls: Rap 1A (m): 293T Lysate: sc-122963, KNRK whole cell lysate: sc-2214 or HeLa whole cell lysate: sc-2200.

DATA



Rap 1 (E-6): sc-398755. Western blot analysis of Rap 1A expression in non-transfected 293T: sc-117752 (A), mouse Rap 1A transfected 293T: sc-122963 (B), KNRK (C), SW480 (D), NIH/3T3 (E) and HeLa (F) whole cell lysates.



Rap 1 (E-6): sc-398755. Western blot analysis of Rap 1 expression in A-431 (A), C6 (B), MOLT-4 (C), HUV-EC-C (D) and RAW 264.7 (E) whole cell lysates and mouse brain tissue extract (F).

SELECT PRODUCT CITATIONS

1. Litwiniuk, A., et al. 2016. FOXO1 and GSK-3β are main targets of Insulin-mediated myogenesis in C2C12 muscle cells. *PLoS ONE* 11: e0146726.
2. Xiao, A., et al. 2019. Statins affect human glioblastoma and other cancers through TGF-β inhibition. *Oncotarget* 10: 1716-1728.
3. Elsbabrouy, R., et al. 2021. Type 1 polyisoprenoid diphosphate phosphatase modulates geranylgeranyl-mediated control of HMG CoA reductase and UBIAD1. *Elife* 10: e64688.
4. Lagarrigue, F., et al. 2022. Direct binding of Rap1 to Talin1 and to MRL proteins promotes integrin activation in CD4⁺ T cells. *J. Immunol.* 208: 1378-1388.
5. Cheng, Q., et al. 2023. Disruption of protein geranylgeranylation in the cerebellum causes cerebellar hypoplasia and ataxia via blocking granule cell progenitor proliferation. *Mol. Brain* 16: 24.

STORAGE

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