SANTA CRUZ BIOTECHNOLOGY, INC.

Rap1GAP (F-5): sc-166587

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Rap1 GTPase activating protein (Rap1GAP) specifically stimulates GTP hydrolytic activity of the monomeric G protein Rap1. Physical interaction between $G_{\alpha z}$, a member of the G_i family of trimeric G proteins, and Rap1GAP blocks the ability of regulators of G protein signaling to stimulate GTP hydrolysis of the α subunit, and also attenuates the ability of activated $G_{\alpha z}$ to inhibit adenylyl cyclase. Rap1GAP is expressed in the brain, kidney and pancreas and may act as a signal integrator to coordinate and/or integrate G_z signaling and Rap1 signaling in cells. A novel isoform of Rapl GTPase-activating protein, designated Rap1GAPII, binds specifically to $G_{\alpha z}$. Stimulation of the G_i-coupled M2 Muscarinic receptor translocates Rap1GAPII from the cytosol to the membrane and decreases the amount of GTP-bound Rap1, resulting in the activation of ERK/MAPK.

REFERENCES

1. Janoueix-Lerosey, I., et al. 1994. Phosphorylation of Rap1GAP during the cell cycle. Biochem. Biophys. Res. Commun. 202: 967-975.
2. Wada, Y., et al. 1997. Mitogen-inducible SIPA1 is mapped to the conserved syntenic groups of chromosome 19 in mouse and chromosome 11q13.3 centromeric to Bcl1 in human. Genomics 39: 66-73.
3. Kurachi, H., et al. 1997. Human SPA-1 gene product selectively expressed in lymphoid tissues is a specific GTPase-activating protein for Rap1 and Rap2. Segregate expression profiles from a Rap1GAP gene product. J. Biol. Chem. 272: 28081-28088.
4. Jordan, J.D., et al. 1999. Modulation of Rap activity by direct interaction of $G_{\alpha o}$ with Rap1 GTPase-activating protein. J. Biol. Chem. 274: 21507-21510.
5. Meng, J., Glick, J.L., Polakis, P., and Casey, P.J. 1999. Functional interaction between $G_{\alpha z}$ and Rap1GAP suggests a novel form of cellular cross-talk. J. Biol. Chem. 274: 36663-36669.

CHROMOSOMAL LOCATION

Genetic locus: RAP1GAP (human) mapping to 1p36.12; Rap1gap (mouse) mapping to 4 D3.

SOURCE

Rap1GAP (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 15-50 near the N-terminus of Rap1GAP 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.

Blocking peptide available for competition studies, sc-166587 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Rap1GAP (F-5) is recommended for detection of Rap1GAP 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).

Rap1GAP (F-5) is also recommended for detection of Rap1GAP in additional species, including canine and bovine.

Suitable for use as control antibody for Rap1GAP siRNA (h): sc-36388, Rap1GAP siRNA (m): sc-155959, Rap1GAP siRNA (r): sc-270196, Rap1GAP shRNA Plasmid (h): sc-36388-SH, Rap1GAP shRNA Plasmid (m): sc-155959-SH, Rap1GAP shRNA Plasmid (r): sc-270196-SH, Rap1GAP shRNA (h) Lentiviral Particles: sc-36388-V, Rap1GAP shRNA (m) Lentiviral Particles: sc-155959-V and Rap1GAP shRNA (r) Lentiviral Particles: sc-270196-V.

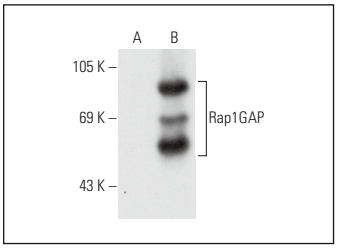
Molecular Weight of Rap1GAP: 89 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, SH-SY5Y cell lysate: sc-3812 or Rap1GAP (h): 293T Lysate: sc-116162.

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



Rap1GAP (F-5): sc-166587. Western blot analysis of Rap1GAP expression in non-transfected: sc-117752 (**A**) and human Rap1GAP transfected: sc-116162 (**B**) 293T whole cell lysates.

STORAGE

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