SANTA CRUZ BIOTECHNOLOGY, INC.

RGS4 (H-12): sc-398348

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Heterotrimeric G proteins function to relay information from cell surface receptors to intracellular effectors. In mammals, G protein α, β and γ polypeptides are encoded by at least 16, 4 and 7 genes, respectively. Most interest in G proteins has been focused on their α subunits, since these proteins bind and hydrolyze GTP and most obviously regulate the activity of the best studied effectors. Four G_α GTPase-activating proteins (GAPs) have been identified and are designated RGS1 (regulator of G protein signaling), RGS4, RGS10 and GAIP (G_α-interacting protein). Each of these proteins has been shown to deactivate specific G_α isoforms by increasing the rate at which they convert GTP to GDP. RGS1, RGS4 and GAIP bind tightly to and exhibit GAP activity towards $G_{\alpha\,i}$, $G_{\alpha\,o}$ and $G_{\alpha\,t}$, but not $G_{\alpha\,s}$. RGS10 increases the GTP hydrolytic activity of several members of the $G_{\alpha\,i}$ subfamily including $G_{\alpha\,i\text{-}3}$, $G_{\alpha\,z}$ and $G_{\alpha\,o}$.

CHROMOSOMAL LOCATION

Genetic locus: RGS4 (human) mapping to 1q23.3; Rgs4 (mouse) mapping to 1 H3.

SOURCE

RGS4 (H-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 182-205 at the C-terminus of RGS4 of human origin.

PRODUCT

Each vial contains 200 µg IgM 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-398348 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

RGS4 (H-12) is recommended for detection of RGS4 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 RGS4 siRNA (h): sc-40663, RGS4 siRNA (m): sc-40664, RGS4 shRNA Plasmid (h): sc-40663-SH, RGS4 shRNA Plasmid (m): sc-40664-SH, RGS4 shRNA (h) Lentiviral Particles: sc-40663-V and RGS4 shRNA (m) Lentiviral Particles: sc-40664-V.

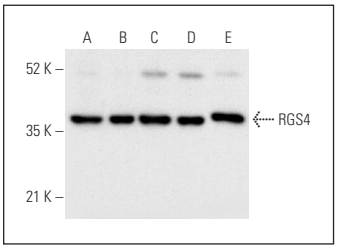
Molecular Weight of RGS4 isoforms 1-5: 23/23/34/11/21 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, SK-N-MC cell lysate: sc-2237 or Jurkat whole cell lysate: sc-2204.

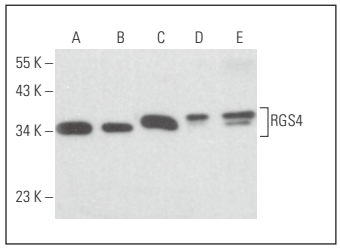
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



RGS4 (H-12): sc-398348. Western blot analysis of RGS4 expression in SK-N-SH (**A**), SK-N-MC (**B**), Raji (**C**), MDA-MB-231 (**D**) and Jurkat (**E**) whole cell lysates.



RGS4 (H-12): sc-398348. Western blot analysis of RGS4 expression in EOC 20 (**A**), SH-SY5Y (**B**) and Jurkat (**C**) whole cell lysates and rat brain (**D**) and mouse cerebellum (**E**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Wei, L., et al. 2017. Rosiglitazone inhibits Angiotensin II-induced proliferation of glomerular mesangial cells via the $G_{\alpha\,q}$/Plcβ4/TRPC signaling pathway. Cell. Physiol. Biochem. 44: 2228-2242.
2. Madrigal, A., et al. 2017. Expression regulation and functional analysis of RGS2 and RGS4 in adipogenic and osteogenic differentiation of human mesenchymal stem cells. Biol. Res. 50: 43.
3. Jiang, M., et al. 2020. BCL9 provides multi-cellular communication properties in colorectal cancer by interacting with paraspeckle proteins. Nat. Commun. 11: 19.
4. Hyun, S.A., et al. 2022. Bisphenol-A impairs synaptic formation and function by RGS4-mediated negative regulation of BDNF/NTRK2 signaling in the cerebral cortex. Dis. Model. Mech. 15: dmm049177.
5. Pu, Y., et al. 2024. MGST3 regulates BACE1 protein translation and amyloidogenesis by controlling the RGS4-mediated AKT signaling pathway. J. Biol. Chem. 300: 107530.

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.