SANTA CRUZ BIOTECHNOLOGY, INC.

RGS4 (D-8): sc-398658

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 $G_{\alpha\,o}$.

REFERENCES

1. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
2. McLaughlin, S.K., et al. 1992. Gustducin is a taste-cell-specific G protein closely related to the transducins. Nature 357: 563-569.

CHROMOSOMAL LOCATION

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

SOURCE

RGS4 (D-8) is a mouse monoclonal antibody raised against amino acids 41-80 mapping near the N-terminus of RGS4 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.

APPLICATIONS

RGS4 (D-8) 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).

RGS4 (D-8) is also recommended for detection of RGS4 in additional species, including porcine.

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.

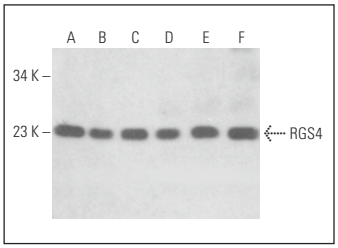
Molecular Weight of RGS4 isoforms 1-5: 23/23/34/11/21 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, Jurkat whole cell lysate: sc-2204 or Neuro-2A whole cell lysate: sc-364185.

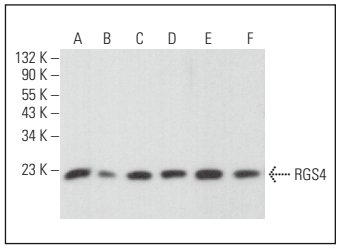
RECOMMENDED SUPPORT REAGENTS

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



RGS4 (D-8): sc-398658. Western blot analysis of RGS4 expression in Jurkat (**A**), EOC 20 (**B**), PC-12 (**C**) and Hep G2 (**D**) whole cell lysates and rat brain (**E**) and mouse cerebellum (**F**) tissue extracts.



RGS4 (D-8): sc-398658. Western blot analysis of RGS4 expression in Jurkat (**A**), Ramos (**B**), IMR-32 (**C**), C6 (**D**), Neuro-2A (**E**) and WEHI-231 (**F**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. 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.
2. Fok, C., et al. 2020. Regulator of G protein signalling 4 (RGS4) as a novel target for the treatment of sensorineural hearing loss. Int. J. Mol. Sci. 22: 3.
3. Joshi, I.V., et al. 2024. RGS4 controls airway hyperresponsiveness through GAP-independent mechanisms. J. Biol. Chem. 300: 107127.

STORAGE

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

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.