SANTA CRUZ BIOTECHNOLOGY, INC.

RGS12 (G-4): sc-398545

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Regulators of G-protein signaling (RGS proteins) are a family of highly diverse, multifunctional signaling proteins that share a conserved 120 amino acid domain (RGS domain). RGS domains bind directly to activated G_α subunits and act as GTPase-activating proteins (GAPs) to attenuate and/or modulate hormone and neurotransmitter receptor-initiated signaling by both G_α-GTP and $G_{\beta\gamma}$. RGS proteins shorten the lifetime of the activated G protein. RGS12 is a GTPase-activating protein for G_t class α subunits. Rat cardiac myocytes express mRNA for at least ten RGS proteins, including RGS12. RGS12 contains a Ras-binding domain (RBD), PDZ and PTB domains and single "LGN motifs" that are guanine nucleotide exchange factors specific for the α-subunit of G proteins. There are 12 distinct transcripts of human RGS12 that arise by unusually complex splicing of the RGS12 gene and are expressed at high levels in brain and lung and lower levels in testis, heart, and spleen. The RGS gene generates proteins that are expressed in a tissue-specific manner and range in size from 356 to 1,447 amino acids. The human RGS12 gene maps to chromosome 4p16.3.

REFERENCES

1. Snow, B.E., et al. 1997. Molecular cloning and expression analysis of rat RGS12 and RGS14. Biochem. Biophys. Res. Commun. 233: 770-777.
2. Kardestuncer, T., et al. 1998. Cardiac myocytes express mRNA for ten RGS proteins: changes in RGS mRNA expression in ventricular myocytes and cultured atria. FEBS Lett. 438: 285-288.
3. Snow, B.E., et al. 1998. GTPase activating specificity of RGS12 and binding specificity of an alternatively spliced PDZ (PSD-95/Dlg/ZO-1) domain. J. Biol. Chem. 273: 17749-17755.
4. Ponting, C.P. 1999. Raf-like Ras/Rap-binding domains in RGS12- and still-life-like signalling proteins. J. Mol. Med. 77: 695-698.
5. Hepler, J.R. 1999. Emerging roles for RGS proteins in cell signalling. Trends Pharmacol. Sci. 20: 376-382.

CHROMOSOMAL LOCATION

Genetic locus: RGS12 (human) mapping to 4p16.3.

SOURCE

RGS12 (G-4) is a mouse monoclonal antibody raised against amino acids 3-302 mapping at the N-terminus of RGS12 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.

RGS12 (G-4) is available conjugated to agarose (sc-398545 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398545 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398545 PE), fluorescein (sc-398545 FITC), Alexa Fluor® 488 (sc-398545 AF488), Alexa Fluor® 546 (sc-398545 AF546), Alexa Fluor® 594 (sc-398545 AF594) or Alexa Fluor® 647 (sc-398545 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398545 AF680) or Alexa Fluor® 790 (sc-398545 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

RGS12 (G-4) is recommended for detection of RGS12 isoforms 1 and 4 of 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).

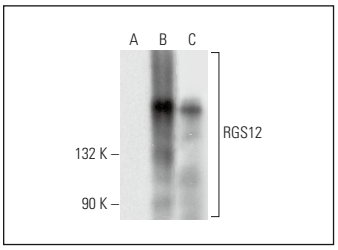
Suitable for use as control antibody for RGS12 siRNA (h): sc-40671, RGS12 shRNA Plasmid (h): sc-40671-SH and RGS12 shRNA (h) Lentiviral Particles: sc-40671-V.

Positive Controls: RGS12 (h): 293T Lysate: sc-369438, human breast extract: sc-363753 or MCF7 whole cell lysate: sc-2206.

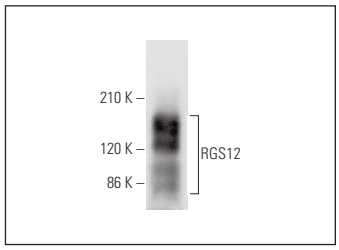
RECOMMENDED SUPPORT REAGENTS

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



RGS12 (G-4): sc-398545. Western blot analysis of RGS12 expression in non-transfected 293T: sc-117752 (**A**), human RGS12 transfected 293T: sc-369438 (**B**) and MCF7 (**C**) whole cell lysates.



RGS12 (G-4): sc-398545. Western blot analysis of RGS12 expression in human breast tissue extract.

SELECT PRODUCT CITATIONS

1. Lan, T., et al. 2021. MicroRNA-204-5p reduction in rat hippocampus contributes to stress-induced pathology via targeting RGS12 signaling pathway. J. Neuroinflammation 18: 243.

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.