SANTA CRUZ BIOTECHNOLOGY, INC.

RGS12 (A-2): sc-514173

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_ι 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; Rgs12 (mouse) mapping to 5 B2.

SOURCE

RGS12 (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 787-809 within an internal region of RGS12 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-514173 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

RGS12 (A-2) is recommended for detection of RGS12 isoforms 1-4 of human origin and both RGS12 isoforms of mouse and rat 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).

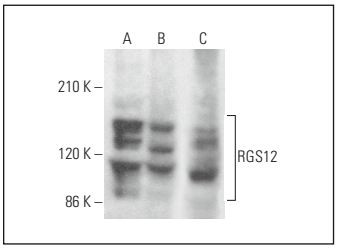
Suitable for use as control antibody for RGS12 siRNA (h): sc-40671, RGS12 siRNA (m): sc-40672, RGS12 shRNA Plasmid (h): sc-40671-SH, RGS12 shRNA Plasmid (m): sc-40672-SH, RGS12 shRNA (h) Lentiviral Particles: sc-40671-V and RGS12 shRNA (m) Lentiviral Particles: sc-40672-V.

Positive Controls: RGS12 (h): 293T Lysate: sc-369438, MCF7 whole cell lysate: sc-2206 or MDA-MB-231 cell lysate: sc-2232.

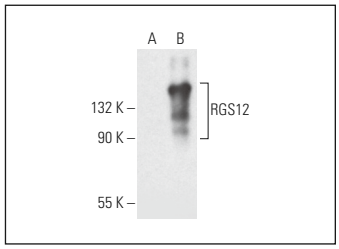
RECOMMENDED SUPPORT REAGENTS

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 (A-2): sc-514173. Western blot analysis of RGS12 expression in MCF7 (**A**), MDA-MB-231 (**B**) and 3T3-L1 (**C**) whole cell lysates.



RGS12 (A-2): sc-514173. Western blot analysis of RGS12 expression in non-transfected: sc-117752 (**A**) and human RGS12 transfected: sc-369438 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2017. RGS12 is a novel tumor-suppressor gene in African American prostate cancer that represses AKT and MNX1 expression. Cancer Res. 77: 4247-4257.
2. Yuan, G., et al. 2023. RGS12 represses oral squamous cell carcinoma by driving M1 polarization of tumor-associated macrophages via controlling ciliary MYCBP2/KIF2A signaling. Int. J. Oral. Sci. 15: 11.

STORAGE

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