SANTA CRUZ BIOTECHNOLOGY, INC.

RGS7 (R-20): sc-9715

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Heterotrimeric G proteins function to relay information from cell surface receptors to various intracellular effectors. G proteins comprise α, β and γ subunits, and following activation the α subunit binds GTP and dissociates from the $\beta\gamma$ complex. A large group of proteins have been identified as GTPase-activating proteins (GAPs), including the RGS (regulator of G protein signaling) family, which serve to deactivate specific G_α isoforms by increasing the rate at which they convert GTP to GDP. A subfamily of RGS proteins expressed in the central nervous system contain, in addition to the highly conserved RGS domain, a characteristic GGL domain, or G protein γ subunit-like domain, which mediates binding to $G_{\beta\ 5}$ subunits. This subfamily, which includes RGS6, RGS7, RGS9 and RGS11, associates with $G_{\beta\ 5}$ to form active GAP complexes that are predominantly localized to the cytosol. RGS/β5 complexes preferentially target $G_{\alpha\ 0}$ subunit for hydrolysis and inhibit $G_{\beta 1\gamma 2}$-mediated activation of phospholipase C.

REFERENCES

1. Conklin, B.R. and Bourne, H.R. 1993. Structural elements of G_α subunits that interact with $G_{\beta\ \gamma}$, receptors, and effectors. Cell 73: 631-641.
2. Snow, B.E., et al. 1998. A G protein γ subunit-like domain shared between RGS11 and other RGS proteins specifies binding to $G_{\beta\ 5}$ subunits. Proc. Natl. Acad. Sci. USA 95: 13307-13312.
3. Thomas, E.A., et al. 1998. RGS9: a regulator of G-protein signalling with specific expression in rat and mouse striatum. J. Neurosci. Res. 52: 118-124.
4. Guan, K.L. and Han, M. 1999. A G-protein signaling network mediated by an RGS protein. Genes Dev. 13: 1763-1767.
5. Hepler, J.R. 1999. Emerging roles for RGS proteins in cell signalling. Trends Pharmacol. Sci. 20: 376-382.
6. Posner, B.A., et al. 1999. Regulators of G protein signaling 6 and 7. Purification of complexes with $G_{\beta\ 5}$ and assessment of their effects on G protein-mediated signalin pathways. J. Biol. Chem. 274: 31087-31093.

CHROMOSOMAL LOCATION

Genetic locus: RGS7 (human) mapping to 1q43; Rgs7 (mouse) mapping to 1 H3.

SOURCE

RGS7 (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of RGS7 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-9715 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

RGS7 (R-20) is recommended for detection of RGS7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

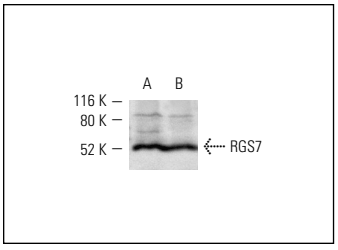
RGS7 (R-20) is also recommended for detection of RGS7 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for RGS7 siRNA (h): sc-40667, RGS7 siRNA (m): sc-40668, RGS7 shRNA Plasmid (h): sc-40667-SH, RGS7 shRNA Plasmid (m): sc-40668-SH, RGS7 shRNA (h) Lentiviral Particles: sc-40667-V and RGS7 shRNA (m) Lentiviral Particles: sc-40668-V.

Molecular Weight of RGS7: 56 kDa.

Positive Controls: mouse cerebellum extract: sc-2403 or mouse brain extract: sc-2253.

DATA



RGS7 (R-20): sc-9715. Western blot analysis of RGS7 expression in mouse cerebellum (**A**) and mouse brain (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Zhang, J.H., et al. 2001. Nuclear localization of G protein β 5 and regulator of G protein signaling 7 in neurons and brain. J. Biol. Chem. 276: 10284-10289.
2. Li, Y., et al. 2008. Differential control of the CCAAT/enhancer-binding protein β (C/EBPβ) products liver-enriched transcriptional activating protein (LAP) and liver-enriched transcriptional inhibitory protein (LIP) and the regulation of gene expression during the response to endoplasmic reticulum stress. J. Biol. Chem. 283: 22443-22456.

STORAGE

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