

# RGS6/7 (M-19): sc-8141

## BACKGROUND

Heterotrimeric G proteins function to relay information from cell surface receptors to various intracellular effectors. G proteins comprise  $\alpha$ ,  $\beta$  and  $\gamma$  subunits, and following activation the  $\alpha$  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  $G_{\alpha}$  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  $\gamma$  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/ $\beta 5$  complexes preferentially target  $G_{\alpha o}$  subunit for hydrolysis and inhibit  $G_{\beta 1\gamma 2}$ -mediated activation of phospholipase C.

## REFERENCES

- Conklin, B.R. and Bourne, H.R. 1993. Structural elements of  $G_{\alpha}$  subunits that interact with  $G_{\beta\gamma}$  receptors, and effectors. *Cell* 73: 631-641.
- Snow, B.E., et al. 1998. A G protein gamma 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.
- 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.
- Guan, K.L. and Han, M. 1999. A G protein signaling network mediated by an RGS protein. *Genes Dev.* 13: 1763-1767.
- Hepler, J.R. 1999. Emerging roles for RGS proteins in cell signaling. *Trends Pharmacol. Sci.* 20: 376-382.
- 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 signaling pathways. *J. Biol. Chem.* 274: 31087-31093.

## CHROMOSOMAL LOCATION

Genetic locus: RGS6 (human) mapping to 14q24.3, RGS7 (human) mapping to 1q23.1; Rgs6 (mouse) mapping to 12 D1, Rgs7 (mouse) mapping to 1 H3.

## SOURCE

RGS6/7 (M-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of RGS7 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8141 P, (100  $\mu$ g 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

RGS6/7 (M-19) is recommended for detection of RGS6 and RGS7 of mouse, rat, human and bovine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

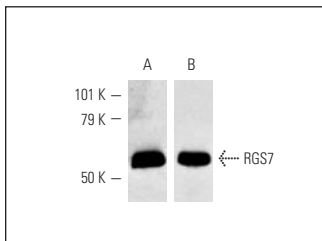
Molecular Weight of RGS6/7: 55 kDa.

Positive Controls: TT whole cell lysate, mouse cerebellum extract: sc-2403 or mouse brain extract: sc-2253.

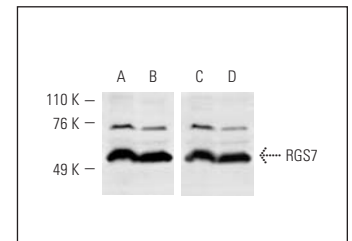
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Western blot analysis of bovine recombinant RGS7 (A,B). Antibodies tested include RGS6/7 (M-19): sc-8141 (A) and RGS7 (C-19): sc-8139 (B).



Western blot analysis of RGS7 expression in mouse brain (A,C) and mouse cerebellum (B,D) extracts. Antibodies tested include RGS7 (C-19): sc-8139 (A,B) and RGS6/7 (M-19): sc-8141 (C,D).

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.