SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\beta 1}$ (C-16): sc-379

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Heterotrimeric G proteins function to relay information from cell surface receptors to intracellular effectors. Each of a very broad range of receptors specifically detects an extracellular stimulus (i.e. a photon, pheromone, odorant, hormone or neurotransmitter), while the effectors (e.g. adenyl cyclase), which act to generate one or more intracellular messengers, are less numerous. 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. Evidence, however, has established an important regulatory role for the $\beta\gamma$ subunits. The G protein β subunits are important regulators of G protein α subunits as well as of certain signal transduction receptors and effectors. In mammals, there are five different members of the β subunit family.

CHROMOSOMAL LOCATION

Genetic locus: GNB1 (human) mapping to 1p36.33; Gnb1 (mouse) mapping to 4 E2.

SOURCE

$G_{\beta 1}$ (C-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within a divergent domain in the N-terminus of $G_{\beta 1}$ of mouse origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-379 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

$G_{\beta 1}$ (C-16) is recommended for detection of $G_{\beta 1}$ 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).

$G_{\beta 1}$ (C-16) is also recommended for detection of $G_{\beta 1}$ in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for $G_{\beta 1}$ siRNA (h): sc-41762, $G_{\beta 1}$ siRNA (m): sc-41763, $G_{\beta 1}$ shRNA Plasmid (h): sc-41762-SH, $G_{\beta 1}$ shRNA Plasmid (m): sc-41763-SH, $G_{\beta 1}$ shRNA (h) Lentiviral Particles: sc-41762-V and $G_{\beta 1}$ shRNA (m) Lentiviral Particles: sc-41763-V.

Molecular Weight of $G_{\beta 1}$: 36 kDa.

Positive Controls: rat brain extract: sc-2392, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

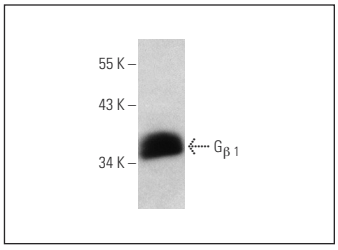
RESEARCH USE

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

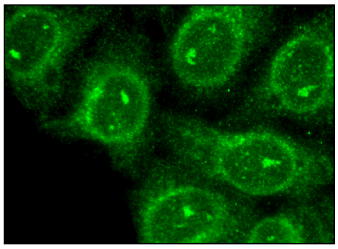
STORAGE

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

DATA



$G_{\beta 1}$ (C-16): sc-379. Western blot analysis of $G_{\beta 1}$ expression in rat brain tissue extract.



$G_{\beta 1}$ (C-16): sc-379. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Macrez-Lepretrek, N., et al. 1997. G protein heterotrimer $G_{\alpha 3\beta 1\gamma 3}$ couples the angiotensin AT1A receptor to increases in cytoplasmic Ca^{2+} in rat portal vein myocytes. J. Biol. Chem. 272: 10095-10102.
2. Macrez, N., et al. 1997. A $\beta\gamma$ dimer derived from G_{13} transduces the angiotensin AT1 receptor signal to stimulation of Ca^{2+} channels in rat portal vein myocytes. J. Biol. Chem. 272: 23180-23185.
3. Hippe, H.J., et al. 2009. The interaction of nucleoside diphosphate kinase B with $G_{\beta\gamma}$ dimers controls heterotrimeric G protein function. Proc. Natl. Acad. Sci. USA 106: 16269-16274.
4. Wen, X.H., et al. 2009. Overexpression of rhodopsin alters the structure and photoresponse of rod photoreceptors. Biophys. J. 96: 939-950.
5. Zhang, L., et al. 2010. Proteomic analysis of PBMCs: characterization of potential HIV-associated proteins. Proteome Sci. 8: 12.
6. Sanchez, A.M., et al. 2011. Estrogen receptor-α promotes endothelial cell motility through focal adhesion kinase. Mol. Hum. Reprod. 17: 219-226.
7. Hippe, H.J., et al. 2011. Nucleoside diphosphate kinase B is required for the formation of heterotrimeric G protein containing caveolae. Naunyn Schmiedebergs Arch. Pharmacol. 384: 461-472.
8. Dowal, L., et al. 2011. Proteomic analysis of palmitoylated platelet proteins. Blood 118: e62-e73.
9. Li, F., et al. 2013. Heterotrimeric G protein subunit $G_{\beta 13}$ is critical to olfaction. J. Neurosci. 33: 7975-7984.