SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\gamma\ 2}$ (A-16): sc-374

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 (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. It is becoming increasingly clear that different G protein complexes expressed in different tissues carry structurally distinct members of the γ as well as the α and β subunits and that preferential associations between members of subunit families increase G protein functional diversity.

CHROMOSOMAL LOCATION

Genetic locus: GNG2 (human) mapping to 14q22.1; Gng2 (mouse) mapping to 14 A3.

SOURCE

$G_{\gamma\ 2}$ (A-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of $G_{\gamma\ 2}$ of bovine 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-374 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

$G_{\gamma\ 2}$ (A-16) is recommended for detection of $G_{\gamma\ 2}$ of broad species 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

$G_{\gamma\ 2}$ (A-16) is also recommended for detection of $G_{\gamma\ 2}$ in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for $G_{\gamma\ 2}$ siRNA (h): sc-41774, $G_{\gamma\ 2}$ siRNA (m): sc-41775, $G_{\gamma\ 2}$ shRNA Plasmid (h): sc-41774-SH, $G_{\gamma\ 2}$ shRNA Plasmid (m): sc-41775-SH, $G_{\gamma\ 2}$ shRNA (h) Lentiviral Particles: sc-41774-V and $G_{\gamma\ 2}$ shRNA (m) Lentiviral Particles: sc-41775-V.

Molecular Weight of $G_{\gamma\ 2}$: 3-7 kDa.

Positive Controls: rat brain extract: sc-2392.

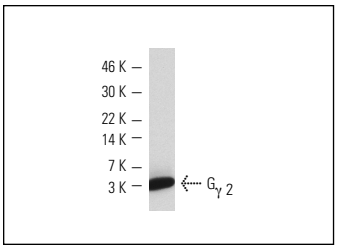
RESEARCH USE

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

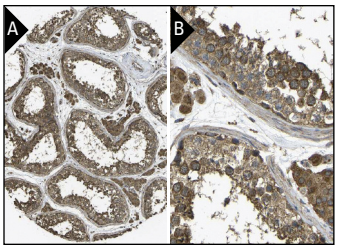
STORAGE

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

DATA



$G_{\gamma\ 2}$ (A-16): sc-374. Western blot analysis of $G_{\gamma\ 2}$ expression in rat brain extract.



$G_{\gamma\ 2}$ (A-16): sc-374. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and membrane staining of Leydig cells and seminiferus ducts at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Kowluru, A., et al. 1997. Glucose activates the carboxyl methylation of γ subunits of trimeric GTP-binding proteins in pancreatic β cells. Modulation *in vivo* by calcium, GTP, and Pertussis toxin. J. Clin. Invest. 100: 1596-1610.
2. 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.
3. Rojkova, A.M., et al. 2003. G_{γ} subunit-selective G protein β5 mutant defines regulators of G protein signaling protein binding requirement for nuclear localization. J. Biol. Chem. 278: 12507-12512.
4. Di Cesare Mannelli, L., et al. 2006. $G_{i/o}$ proteins: expression for direct activation enquiry. Protein Expr. Purif. 47: 303-310.
5. Mahon, M.J., et al. 2006. A docking site for G protein $\beta\gamma$ subunits on the parathyroid hormone 1 receptor supports signaling through multiple pathways. Mol. Endocrinol. 20: 136-145.
6. Lobanova, E.S., et al. 2008. Transducin γ-subunit sets expression levels of α- and β-subunits and is crucial for rod viability. J. Neurosci. 28: 3510-3520.
7. 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.
8. Kolesnikov, A.V., et al. 2011. G protein $\beta\gamma$-complex is crucial for efficient signal amplification in vision. J. Neurosci. 31: 8067-8077.