SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\gamma\ 5}$ (S-14): sc-376

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: GNG5 (human) mapping to 1p22.3; Gng5 (mouse) mapping to 3 H2.

SOURCE

$G_{\gamma\ 5}$ (S-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of $G_{\gamma\ 5}$ 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-376 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

$G_{\gamma\ 5}$ (S-14) is recommended for detection of $G_{\gamma\ 5}$ of broad 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for $G_{\gamma\ 5}$ siRNA (h): sc-41778, $G_{\gamma\ 5}$ siRNA (m): sc-41779, $G_{\gamma\ 5}$ shRNA Plasmid (h): sc-41778-SH, $G_{\gamma\ 5}$ shRNA Plasmid (m): sc-41779-SH, $G_{\gamma\ 5}$ shRNA (h) Lentiviral Particles: sc-41778-V and $G_{\gamma\ 5}$ shRNA (m) Lentiviral Particles: sc-41779-V.

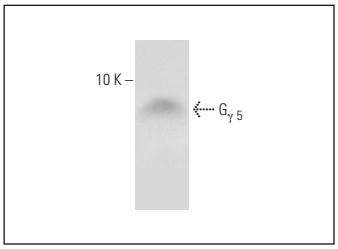
Molecular Weight of $G_{\gamma\ 5}$: 8 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

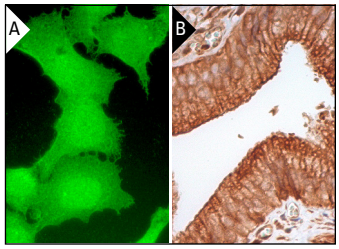
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



$G_{\gamma\ 5}$ (S-14): sc-376. Western blot analysis of $G_{\gamma\ 5}$ expression in NIH/3T3 whole cell lysate.



$G_{\gamma\ 5}$ (S-14): sc-376. Immunofluorescence staining of formalin-fixed HepG2 cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Macrez, N., et al. 1999. Specific $G_{\alpha\ 11/\beta\ 3/\gamma\ 5}$ protein involvement in endothelin receptor-induced phosphatidylinositol hydrolysis and Ca^{2+} release in rat portal vein myocytes. Mol. Pharmacol. 55: 684-692.
2. Schuller, U., et al. 2001. Developmental expression of heterotrimeric G proteins in the murine cerebellar cortex. Histochem. Cell Biol. 116: 149-159.
3. Lents, N.H., et al. 2009. The rapid activation of N-Ras by α-thrombin in fibroblasts is mediated by the specific G protein $G_{\alpha i\ 2}$-$G_{\beta\ 1}$-$G_{\gamma\ 5}$ and occurs in lipid rafts. Cell. Signal. 21: 1007-1014.
4. Lei, B., et al. 2009. Lipid rafts constrain basal α(1A)-adrenergic receptor signaling by maintaining receptor in an inactive conformation. Cell. Signal. 21: 1532-1539.

RESEARCH USE

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