SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\gamma\ 2/3/4/7}$ (C-5): sc-166419

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. 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.

REFERENCES

1. Blatt, C., et al. 1988. Chromosomal localization of genes encoding guanine nucleotide-binding protein subunits in mouse and human. Proc. Natl. Acad. Sci. USA 85: 7642-7646.
2. Gautam, N., et al. 1990. G protein diversity is increased by associations with a variety of γ subunits. Proc. Natl. Acad. Sci. USA 87: 7973-7977.
3. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
4. von Weizsäcker, E., et al. 1992. Diversity among the β subunits of heterotrimeric GTP-binding proteins: characterization of a novel β subunit cDNA. Biochem. Biophys. Res. Commun. 183: 350-356.
5. Kleuss, C., et al. 1992. Different β subunits determine G protein interaction with transmembrane receptors. Nature 358: 424-426.

SOURCE

$G_{\gamma\ 2/3/4/7}$ (C-5) is a mouse monoclonal antibody raised against amino acids 1-71 representing full length $G_{\gamma\ 2}$ of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$G_{\gamma\ 2/3/4/7}$ (C-5) is available conjugated to agarose (sc-166419 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166419 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166419 PE), fluorescein (sc-166419 FITC), Alexa Fluor® 488 (sc-166419 AF488), Alexa Fluor® 546 (sc-166419 AF546), Alexa Fluor® 594 (sc-166419 AF594) or Alexa Fluor® 647 (sc-166419 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166419 AF680) or Alexa Fluor® 790 (sc-166419 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

$G_{\gamma\ 2/3/4/7}$ (C-5) is recommended for detection of $G_{\gamma\ 2}$, $G_{\gamma\ 3}$, $G_{\gamma\ 4}$ and $G_{\gamma\ 7}$ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

$G_{\gamma\ 2/3/4/7}$ (C-5) is also recommended for detection of $G_{\gamma\ 2}$, $G_{\gamma\ 3}$, $G_{\gamma\ 4}$ and $G_{\gamma\ 7}$ in additional species, including equine, canine, bovine and porcine.

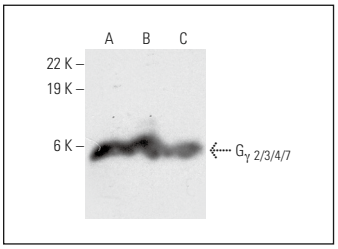
Molecular Weight of $G_{\gamma\ 2/3/4/7}$: 3-8 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or rat cerebellum extract: sc-2398.

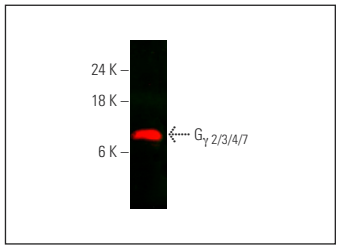
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



$G_{\gamma\ 2/3/4/7}$ (C-5): sc-166419. Western blot analysis of $G_{\gamma\ 2/3/4/7}$ expression in mouse brain (**A**), rat brain (**B**) and rat cerebellum (**C**) tissue extracts.



$G_{\gamma\ 2/3/4/7}$ (C-5): sc-166419. Near-infrared western blot analysis of $G_{\gamma\ 2/3/4/7}$ expression in rat cerebellum tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

1. Sabbir, M.G., et al. 2018. Muscarinic acetylcholine type 1 receptor activity constrains neurite outgrowth by inhibiting microtubule polymerization and mitochondrial trafficking in adult sensory neurons. Front. Neurosci. 12: 402.
2. Kawakami, K., et al. 2022. Heterotrimeric G_q proteins act as a switch for GRK5/6 selectivity underlying β-arrestin transducer bias. Nat. Commun. 13: 487.

STORAGE

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