SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ 12}$ (B-5): sc-515610

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 (i.e., 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. Four distinct classes of G_{α} subunits have been identified; these include $G_{\alpha\ s}$, $G_{\alpha\ i}$, $G_{\alpha\ q}$ and $G_{\alpha\ 12/13}$. The two members of the fourth class of G_{α} subunit proteins, $G_{\alpha\ 12}$ and $G_{\alpha\ 13}$, are insensitive to ADP-ribosylation by pertussis toxin, share 67% identity with each other and less than 45% identity with other G_{α} subunits and are widely expressed in a broad range of tissues.

REFERENCES

1. Strathmann, M., et al. 1989. Diversity of the G-protein family: sequences from five additional a subunits in the mouse. Proc. Natl. Acad. Sci. USA 86: 7407-7409.
2. Strathmann, M.P. and Simon, M.I. 1991. $G_{\alpha\ 12}$ and $G_{\alpha\ 13}$ subunits define a fourth class of G protein a subunits. Proc. Natl. Acad. Sci. USA 88: 5582-5586.
3. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
4. Cali, J.J., et al. 1992. Selective tissue distribution of G protein γ subunits, including a new form of the γ subunits identified by cDNA cloning. J. Biol. Chem. 267: 24023-24027.
5. McLaughlin, S.K., et al. 1992. Gustducin is a taste-cell-specific G protein closely related to the transducins. Nature 357: 563-569.
6. 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.

CHROMOSOMAL LOCATION

Genetic locus: GNA12 (human) mapping to 7p22.3; Gna12 (mouse) mapping to 5 G2.

SOURCE

$G_{\alpha\ 12}$ (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of $G_{\alpha\ 12}$ of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515610 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

$G_{\alpha\ 12}$ (B-5) is recommended for detection of $G_{\alpha\ 12}$ 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).

Suitable for use as control antibody for $G_{\alpha\ 12}$ siRNA (h): sc-41742, $G_{\alpha\ 12}$ siRNA (m): sc-41743, $G_{\alpha\ 12}$ shRNA Plasmid (h): sc-41742-SH, $G_{\alpha\ 12}$ shRNA Plasmid (m): sc-41743-SH, $G_{\alpha\ 12}$ shRNA (h) Lentiviral Particles: sc-41742-V and $G_{\alpha\ 12}$ shRNA (m) Lentiviral Particles: sc-41743-V.

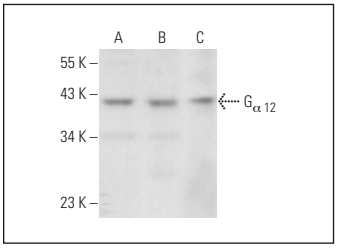
Molecular Weight of $G_{\alpha\ 12}$: 45 kDa.

Positive Controls: rat brain extract: sc-2392, C6 whole cell lysate: sc-364373 or Neuro-2A whole cell lysate: sc-364185.

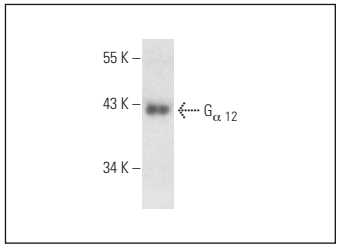
RECOMMENDED SUPPORT REAGENTS

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



$G_{\alpha\ 12}$ (B-5): sc-515610. Western blot analysis of $G_{\alpha\ 12}$ expression in C6 (**A**) and Neuro-2A (**B**) whole cell lysates and rat brain tissue extract (**C**).



$G_{\alpha\ 12}$ (B-5): sc-515610. Western blot analysis of $G_{\alpha\ 12}$ expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Festa, B.P., et al. 2018. Impaired autophagy bridges lysosomal storage disease and epithelial dysfunction in the kidney. Nat. Commun. 9: 161.

STORAGE

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

RESEARCH USE

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