SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ q/11}$ (C-16): sc-46972

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. Four distinct classes of G_{α} subunits have been identified; these include G_s, G_i, G_q and $G_{\alpha\ 12/13}$. The G_q class includes $G_{\alpha\ 15}$,$G_{\alpha\ 14}$, $G_{\alpha\ 11}$ and $G_{\alpha\ q}$, two of which, $G_{\alpha\ 11}$ and $G_{\alpha\ q}$ are abundant in brain and lung and present at lower levels in a variety of tissues.

REFERENCES

1. Strathmann, M. and Simon, M.I. 1990. G protein diversity: a distinct class of α subunits is present in vertebrates and invertebrates. Proc. Natl. Acad. Sci. USA 87: 9113-9117.
2. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
3. 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.
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. Conklin, B.R. and Bourne, H.R. 1993. Structural elements of G_{α} subunits that interact with $G_{\beta\gamma}$, receptors and effectors. Cell 73: 631-641.

CHROMOSOMAL LOCATION

Genetic locus: GNAQ (human) mapping to 9q21.2, GNA11 (human) mapping to 19p13.3; Gnaq (mouse) mapping to 19 A, Gna11 (mouse) mapping to 10 C1.

SOURCE

$G_{\alpha\ q/11}$ (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of $G_{\alpha\ 11}$ of human 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-46972 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

$G_{\alpha\ q/11}$(C-16) is recommended for detection of $G_{\alpha\ q}$ and $G_{\alpha\ 11}$ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

$G_{\alpha\ q/11}$(C-16) is also recommended for detection of $G_{\alpha\ q}$ and $G_{\alpha\ 11}$ in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of $G_{\alpha\ q/11}$: 40-41 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Lanzafame, A.A., et al. 2006. Inositol phospholipids localized to caveolae in rat heart are regulated by α_1-adrenergic receptors and by ischemia-reperfusion. Am. J. Physiol. Heart Circ. Physiol. 290: H2059-H2065.
2. Adjobo-Hermans, M.J., et al. 2011. Real-time visualization of heterotrimeric G protein G_q activation in living cells. BMC Biol. 9: 32.
3. Gliem, S., et al. 2013. Bimodal processing of olfactory information in an amphibian nose: odor responses segregate into a medial and a lateral stream. Cell. Mol. Life Sci. 70: 1965-1984.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.