SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ 15}$ (C-18): sc-7415

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., adenylyl 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 $G_{12/13}$. The G_i class comprises all the known a subunits that are susceptible to pertussis toxin modifications, including $G_{\alpha\ i\text{-}1}$, $G_{\alpha\ i\text{-}2}$, $G_{\alpha\ i\text{-}3}$, $G_{\alpha\ o}$, $G_{\alpha\ t1}$, $G_{\alpha\ t2}$, $G_{\alpha\ z}$ and $G_{\alpha\ gust}$. Of these, the three $G_{\alpha\ i}$ subtypes function to open atrial potassium channels. $G_{\alpha\ 15}$ is a member of the G_q subfamily and is expressed specifically in hematopoietic cells.

REFERENCES

1. Jones, D.T., et al. 1990. Biochemical characterization of three stimulatory GTP-binding proteins. J. Biol. Chem. 265: 2671-2676.
2. Amatruda, T.T., III, et al. 1991. $G_{\alpha\ 16}$, a G protein α subunit specifically expressed in hematopoietic cells. Proc. Natl. Acad. Sci. USA 88: 5587-5591.
3. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
4. McLaughlin, S.K., et al. 1992. Gustducin is a taste-cell-specific G protein closely related to the transducins. Nature 357: 563-569.
5. 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.
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.
7. Conklin, B.R., et al. 1993. Structural elements of G_α subunits that interact with $G_{\beta\ \gamma}$, receptors, and effectors. Cell 73: 631-641.

CHROMOSOMAL LOCATION

Genetic locus: GNA15 (human) mapping to 19p13.3; Gna15 (mouse) mapping to 10 C1.

SOURCE

$G_{\alpha\ 15}$ (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of $G_{\alpha\ 15}$ 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-7415 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

$G_{\alpha\ 15}$ (C-18) is recommended for detection of $G_{\alpha\ 15}$ 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), 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).

$G_{\alpha\ 15}$ (C-18) is also recommended for detection of $G_{\alpha\ 15}$ in additional species, including equine, canine, bovine and porcine.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

SELECT PRODUCT CITATIONS

1. O'Flaherty, J.T., et al. 2000. The coupling of 5-oxo-eicosanoid receptors to heterotrimeric G proteins. J. Immunol. 164: 3345-3352.
2. Masuda, K., et al. 2003. A combinatorial G protein-coupled receptor reconstitution system on budded baculovirus. Evidence for G_a and $G_{\alpha\ o}$ coupling to a human leukotriene B4 receptor. J. Biol. Chem. 278: 24552-24562.

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.

PROTOCOLS

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