SANTA CRUZ BIOTECHNOLOGY, INC.

G_{α} i/o/t/z/gust (H-300): sc-28586

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_s, G_i, G_q and $G_{\alpha\ 12/13}$. The G_i class comprises all the known α 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. Gustducin has been identified as a taste-cell-specific G protein within the G_i subclass of G_{α} subunit proteins that is most closely related to the transducins and is exclusively expressed in taste buds.

REFERENCES

1. Jones, D.T., et al. 1990. Biochemical characterization of three stimulatory GTP-binding proteins. The large and small forms of G_s and the olfactory-specific G protein, G_{olf}. J. Biol. Chem. 265: 2671-2676.
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.

SOURCE

$G_{\alpha\ i/o/t/z/gust}$ (H-300) is a rabbit polyclonal antibody raised against amino acids 55-354 mapping at the C-terminus of $G_{\alpha\ i\text{-}3}$ 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.

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.

APPLICATIONS

$G_{\alpha\ i/o/t/z/gust}$ (H-300) is recommended for detection of $G_{\alpha\ i\text{-}1,2,3}$, $G_{\alpha\ o}$, $G_{\alpha\ t1,2}$, $G_{\alpha\ z}$ and $G_{\alpha\ gust}$ of mouse, rat and human 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

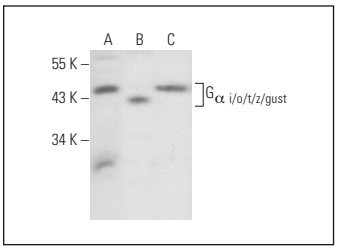
$G_{\alpha\ i/o/t/z/gust}$ (H-300) is also recommended for detection of $G_{\alpha\ i\text{-}1,2,3}$, $G_{\alpha\ o}$, $G_{\alpha\ t1,2}$, $G_{\alpha\ z}$ and $G_{\alpha\ gust}$ in additional species, including equine, canine, bovine, porcine and avian.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or A549 cell lysate: sc-2413.

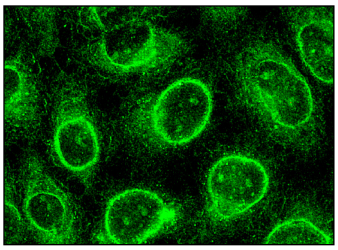
RECOMMENDED SECONDARY REAGENTS

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.

DATA



$G_{\alpha\ i/o/t/z/gust}$ (H-300): sc-28586. Western blot analysis of $G_{\alpha\ i/o/t/z/gust}$ expression in HeLa (**A**), NIH/3T3 (**B**) and A549 (**C**) whole cell lysates.



$G_{\alpha\ i/o/t/z/gust}$ (H-300): sc-28586. Immunofluorescence staining of methanol-fixed HeLa cells showing perinuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Coopman, K., et al. 2010. Comparative effects of the endogenous agonist glucagon-like peptide-1 (GLP-1)-(7-36) amide and the small-molecule ago-allosteric agent "compound 2" at the GLP-1 receptor. J. Pharmacol. Exp. Ther. 334: 795-808.
2. Voulalas, P.J., et al. 2011. Differential subcellular distribution of rat brain dopamine receptors and subtype-specific redistribution induced by cocaine. Mol. Cell. Neurosci. 46: 645-654.
3. Macías-Sánchez, K., et al. 2011. Rho1 and other GTP-binding proteins are associated with vesicles carrying glucose oxidase activity from *Fusarium oxysporum* f. sp. *lycopersici*. Antonie Van Leeuwenhoek 99: 671-680.