SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ i\text{-}2}$ (L5): sc-13534

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.

CHROMOSOMAL LOCATION

Genetic locus: GNAI2 (human) mapping to 3p21.31; Gnai2 (mouse) mapping to 9 F1.

SOURCE

$G_{\alpha\ i\text{-}2}$ (L5) is a mouse monoclonal antibody raised against $G_{\alpha\ i\text{-}2}$ of rat origin.

PRODUCT

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

$G_{\alpha\ i\text{-}2}$ (L5) is available conjugated to agarose (sc-13534 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-13534 PE), fluorescein (sc-13534 FITC), Alexa Fluor® 488 (sc-13534 AF488), Alexa Fluor® 546 (sc-13534 AF546), Alexa Fluor® 594 (sc-13534 AF594) or Alexa Fluor® 647 (sc-13534 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13534 AF680) or Alexa Fluor® 790 (sc-13534 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

$G_{\alpha\ i\text{-}2}$ (L5) is recommended for detection of $G_{\alpha\ i\text{-}2}$ 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

$G_{\alpha\ i\text{-}2}$ (L5) is also recommended for detection of $G_{\alpha\ i\text{-}2}$ in additional species, including bovine.

Suitable for use as control antibody for $G_{\alpha\ i\text{-}2}$ siRNA (h): sc-41752, $G_{\alpha\ i\text{-}2}$ siRNA (m): sc-41753, $G_{\alpha\ i\text{-}2}$ shRNA Plasmid (h): sc-41752-SH, $G_{\alpha\ i\text{-}2}$ shRNA Plasmid (m): sc-41753-SH, $G_{\alpha\ i\text{-}2}$ shRNA (h) Lentiviral Particles: sc-41752-V and $G_{\alpha\ i\text{-}2}$ shRNA (m) Lentiviral Particles: sc-41753-V.

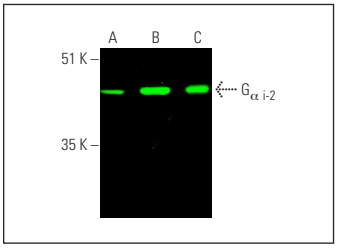
Molecular Weight of $G_{\alpha\ i\text{-}2}$: 41 kDa.

Positive Controls: U-937 cell lysate: sc-2239, human spleen extract: sc-363779 or human adrenal gland extract: sc-363761.

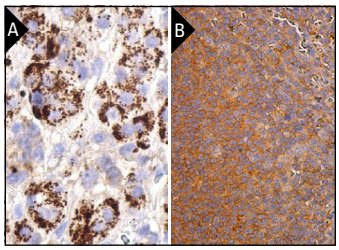
STORAGE

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

DATA



$G_{\alpha\ i\text{-}2}$ (L5): sc-13534. Near-infrared western blot analysis of $G_{\alpha\ i\text{-}2}$ expression in U-937 (**A**), human spleen (**B**) and human adrenal gland (**C**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



$G_{\alpha\ i\text{-}2}$ (L5): sc-13534. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of cells in white pulp and cells in red pulp (**B**).

SELECT PRODUCT CITATIONS

1. Caicedo, A., et al. 2003. Role of the G protein subunit α-gustducin in taste cell responses to bitter stimuli. J. Neurosci. 23: 9947-9952.
2. Zumaquero, E., et al. 2010. Exosomes from human lymphoblastoid B cells express enzymatically active CD38 that is associated with signaling complexes containing CD81, Hsc-70 and Lyn. Exp. Cell Res. 316: 2692-2706.
3. Suárez, R., et al. 2011. Deterioration of the $G_{\alpha\ o}$ vomeronasal pathway in sexually dimorphic mammals. PLoS ONE 6: e26436.
4. Kapusta, D.R., et al. 2012. Brain heterotrimeric $G_{\alpha\ i\text{-}2}$-subunit protein-gated pathways mediate central sympathoinhibition to maintain fluid and electrolyte homeostasis during stress. FASEB J. 26: 2776-87.
5. Malik, R.U., et al. 2013. Detection of G protein-selective G protein-coupled receptor (GPCR) conformations in live cells. J. Biol. Chem. 288: 17167-78.
6. Zhang, Y., et al. 2014. Peripheral pain is enhanced by insulin-like growth factor 1 through a G protein-mediated stimulation of T-type calcium channels. Sci. Signal. 7: ra94.
7. Yoda, A., et al. 2015. Mutations in G protein β subunits promote transformation and kinase inhibitor resistance. Nat. Med. 21: 71-75.
8. Luessen, D.J., et al. 2017. Chronic intermittent ethanol exposure selectively alters the expression of G_{α} subunit isoforms and RGS subtypes in rat prefrontal cortex. Brain Res. 1672: 106-112.
9. Madiraju, P., et al. 2018. Natriuretic peptide receptor-C activation attenuates angiotensin II-induced enhanced oxidative stress and hyperproliferation of aortic vascular smooth muscle cells. Mol. Cell. Biochem. 448: 77-89.

RESEARCH USE

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