SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ o}$ (A2): sc-13532

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: GNAO1 (human) mapping to 16q12.2; Gnao1 (mouse) mapping to 8 C5.

SOURCE

$G_{\alpha\ o}$ (A2) is a mouse monoclonal antibody raised against $G_{\alpha\ o}$ of bovine origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$G_{\alpha\ o}$ (A2) is available conjugated to agarose (sc-13532 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13532 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13532 PE), fluorescein (sc-13532 FITC), Alexa Fluor® 488 (sc-13532 AF488), Alexa Fluor® 546 (sc-13532 AF546), Alexa Fluor® 594 (sc-13532 AF594) or Alexa Fluor® 647 (sc-13532 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13532 AF680) or Alexa Fluor® 790 (sc-13532 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

$G_{\alpha\ o}$ (A2) is recommended for detection of $G_{\alpha\ o}$ 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

$G_{\alpha\ o}$ (A2) is also recommended for detection of $G_{\alpha\ o}$ in additional species, including bovine.

Suitable for use as control antibody for $G_{\alpha\ o}$ siRNA (h): sc-29326, $G_{\alpha\ o}$ siRNA (m): sc-37256, $G_{\alpha\ o}$ shRNA Plasmid (h): sc-29326-SH, $G_{\alpha\ o}$ shRNA Plasmid (m): sc-37256-SH, $G_{\alpha\ o}$ shRNA (h) Lentiviral Particles: sc-29326-V and $G_{\alpha\ o}$ shRNA (m) Lentiviral Particles: sc-37256-V.

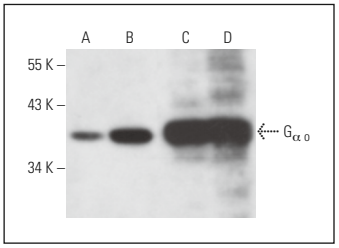
Molecular Weight of $G_{\alpha\ o}$: 40 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or SK-N-SH cell lysate: sc-2410.

STORAGE

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

DATA



$G_{\alpha\ o}$ (A2): sc-13532. Western blot analysis of $G_{\alpha\ o}$ expression in SK-N-SH (**A**) and IMR-32 (**B**) whole cell lysates and rat brain (**C**) and mouse brain (**D**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Lau, Y.E., et al. 2000. Distribution of PDE4A and $G_{\alpha\ o}$ immunoreactivity in the accessory olfactory system of the mouse. Neuroreport 11: 27-32.
2. Suárez, R., et al. 2009. Transposition and intermingling of $G_{\alpha\ i2}$ and $G_{\alpha\ o}$ afferences into single vomeronasal glomeruli in the madagascan lesser tenrec echinops telfairi. PLoS ONE 4: e8005.
3. Lee, J.S., et al. 2010. Involvement of cholesterol in synaptic vesicle swelling. Exp. Biol. Med .235: 470-477.
4. Suárez, R., et al. 2011. Deterioration of the $G_{\alpha\ o}$ vomeronasal pathway in sexually dimorphic mammals. PLoS ONE 6: e26436.
5. Lee, J.S., et al. 2012. Water channels in platelet volume regulation. J. Cell. Mol. Med. 16: 945-949.
6. Kuge, H., et al. 2014. Functional compartmentalization of the plasma membrane of neurons by a unique acyl chain composition of phospholipids. J. Biol. Chem. 289: 26783-26793.
7. Liu, C., et al. 2015. Amyloid precursor protein enhances Nav1.6 sodium channel cell surface expression. J. Biol. Chem. 290: 12048-12057.
8. Ramírez, V.T., et al. 2016. Wnt-5a/Frizzled9 receptor signaling through the $G_{\alpha\ o}$-$G_{\beta\ \gamma}$ complex regulates dendritic spine formation. J. Biol. Chem. 291: 19092-2107.
9. Solis, G.P., et al. 2017. Golgi-resident $G_{\alpha\ o}$ promotes protrusive membrane dynamics. Cell 170: 939-955.
10. Maccarrone, M., et al. 2018. Early alteration of distribution and activity of hippocampal type-1 cannabinoid receptor in Alzheimer's disease-like mice overexpressing the human mutant amyloid precursor protein. Pharmacol. Res. 130: 366-373.

RESEARCH USE

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