SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ i\text{-}1}$ (B-11): sc-515658

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 (α photon, pheromone, odorant, hormone or neurotransmitter), whereas 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 subunits are encoded by at least 16, 4 and 7 different genes, respectively. The α subunits bind to and hydrolyze GTP. G protein complexes expressed in different tissues contain distinct α, β and γ subunits. Preferential associations between members of subunit families increase G protein functional diversity. 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 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.

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. 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.

SOURCE

$G_{\alpha\ i\text{-}1}$ (B-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 91-116 with in a highly divergent domain of $G_{\alpha\ i\text{-}1}$ 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.

$G_{\alpha\ i\text{-}1}$ (B-11) is available conjugated to agarose (sc-515658 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515658 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515658 PE), fluorescein (sc-515658 FITC), Alexa Fluor® 488 (sc-515658 AF488), Alexa Fluor® 546 (sc-515658 AF546), Alexa Fluor® 594 (sc-515658 AF594) or Alexa Fluor® 647 (sc-515658 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515658 AF680) or Alexa Fluor® 790 (sc-515658 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515658 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

$G_{\alpha\ i\text{-}1}$ (B-11) is recommended for detection of $G_{\alpha\ i\text{-}1}$ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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); may cross-react with $G_{\alpha\ i\text{-}2}$ and $G_{\alpha\ i\text{-}3}$.

Suitable for use as control antibody for $G_{\alpha\ i\text{-}1}$ siRNA (h): sc-105382, $G_{\alpha\ i\text{-}1}$ siRNA (m): sc-41751, $G_{\alpha\ i\text{-}1}$ shRNA Plasmid (h): sc-105382-SH, $G_{\alpha\ i\text{-}1}$ shRNA Plasmid (m): sc-41751-SH, $G_{\alpha\ i\text{-}1}$ shRNA (h) Lentiviral Particles: sc-105382-V and $G_{\alpha\ i\text{-}1}$ shRNA (m) Lentiviral Particles: sc-41751-V.

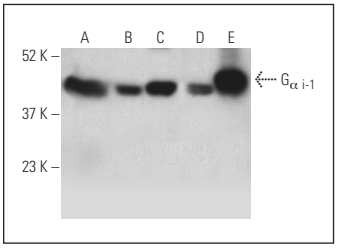
Molecular Weight of $G_{\alpha\ i\text{-}1}$: 41 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, 3611-RF whole cell lysate: sc-2215 or RPE-J cell lysate: sc-24771.

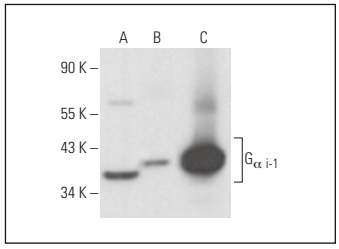
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



$G_{\alpha\ i\text{-}1}$ (B-11) HRP: sc-515658 HRP. Direct western blot analysis of $G_{\alpha\ i\text{-}1}$ expression in C6 (**A**), 3611-RF (**B**), RPE-J (**C**) and H4 (**D**) whole cell lysates and mouse eye tissue extract (**E**).



$G_{\alpha\ i\text{-}1}$ (B-11): sc-515658. Western blot analysis of $G_{\alpha\ i\text{-}1}$ expression in H4 (**A**) and Neuro-2A (**B**) whole cell lysates and mouse eye tissue extract (**C**).

SELECT PRODUCT CITATIONS

1. Li, Y., et al. 2023. $G_{\alpha\ i1/3}$ mediate Netrin-1-CD146-activated signaling and angiogenesis. Theranostics 13: 2319-2336.

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.