SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ o}$ (SPM396): sc-56537

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), 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 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.

REFERENCES

1. Jones D.T., Masters, S.B., Bourne, H.R. and Reed, R.R. 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., Strathmann, M.P. and Gautam, N. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
3. Cali, J.J., Balcueva, E.A., Rybalkin, I. and Robishaw, J.D. 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.
4. McLaughlin, S.K., McKinnon, P.J. and Margolskee, R.F. 1992. Gustducin is a taste-cell-specific G protein closely related to the transducins. Nature 357: 563-569.
5. von Weizsacker, E., Strathman, M.P. and Simon, M.I. 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.
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.

CHROMOSOMAL LOCATION

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

SOURCE

$G_{\alpha\ o}$ (SPM396) is a mouse monoclonal antibody raised against partially purified brain $G_{\alpha\ o}$ 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.

APPLICATIONS

$G_{\alpha\ o}$ (SPM396) 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) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

$G_{\alpha\ o}$ (SPM396) 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.

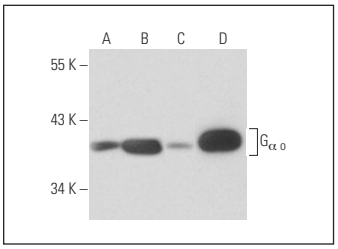
Molecular Weight of $G_{\alpha\ o}$: 40 kDa.

Positive Controls: rat brain extract: sc-2392, SK-N-SH cell lysate: sc-2410 or IMR-32 cell lysate: sc-2409.

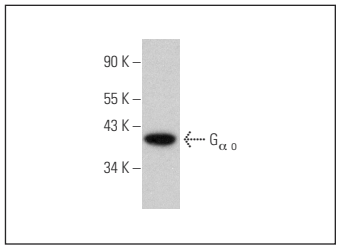
RECOMMENDED SUPPORT REAGENTS

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, 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).

DATA



$G_{\alpha\ o}$ (SPM396): sc-56537. Western blot analysis of $G_{\alpha\ o}$ expression in SK-N-SH (**A**), IMR-32 (**B**) and Y79 (**C**) whole cell lysates and rat brain (**D**) tissue extract.



$G_{\alpha\ o}$ (SPM396): sc-56537. Western blot analysis of $G_{\alpha\ o}$ expression in BE (2)-M17 whole cell lysate.

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.

CONJUGATES

See **$G_{\alpha\ o}$ (A2): sc-13532** for $G_{\alpha\ o}$ antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.