SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ t1}$ (F-7): sc-518145

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 $G_{\alpha\ gust}$. In the well characterized visual system, photorhodopsin catalyzes the exchange of guanine nucleotides bound to the visual transducin G_α subunits ($G_{\alpha\ ti}$ in rod cells and $G_{\alpha\ t2}$ in cone cells).

REFERENCES

1. Jones, D.T. and Reed, R.R. 1987. Molecular cloning of five GTP-binding protein cDNA species from rat olfactory neuroepithelium. J. Biol. Chem. 262: 14241-14249.
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.
4. McLaughlin, S.K., et al. 1992. Gustducin is a taste-cell-specific G protein closely related to the transducins. Nature 357: 563-569.
5. 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.
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: GNAT1 (human) mapping to 3p21.31; Gnat1 (mouse) mapping to 9 F1.

SOURCE

$G_{\alpha\ t1}$ (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 112-131 of $G_{\alpha\ t1}$ of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain 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.

APPLICATIONS

$G_{\alpha\ t1}$ (F-7) is recommended for detection of $G_{\alpha\ t1}$ 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).

Suitable for use as control antibody for $G_{\alpha\ t1}$ siRNA (h): sc-43783, $G_{\alpha\ t1}$ siRNA (m): sc-45759, $G_{\alpha\ t1}$ shRNA Plasmid (h): sc-43783-SH, $G_{\alpha\ t1}$ shRNA Plasmid (m): sc-45759-SH, $G_{\alpha\ t1}$ shRNA (h) Lentiviral Particles: sc-43783-V and $G_{\alpha\ t1}$ shRNA (m) Lentiviral Particles: sc-45759-V.

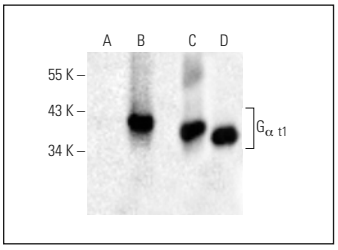
Molecular Weight of $G_{\alpha\ t1}$: 46 kDa.

Positive Controls: $G_{\alpha\ t1}$ (m2): 293T Lysate: sc-120374, human eye extract: sc-364223 or mouse eye extract: sc-364241.

RECOMMENDED SECONDARY 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



$G_{\alpha\ t1}$ (F-7): sc-518145. Western blot analysis of $G_{\alpha\ t1}$ expression in non-transfected 293T: sc-117752 (**A**) and mouse $G_{\alpha\ t1}$ transfected 293T: sc-120374 (**B**) whole cell lysates and mouse eye (**C**) and human eye (**D**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.