

G α i-1 (R4): sc-13533

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. adenylyl 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 α_s , G α_i , G α_q and G $\alpha_{12/13}$. The G α_i class comprises all the known α subunits that are susceptible to pertussis toxin modifications, including G α_{i-1} , G α_{i-2} , G α_{i-3} , G α_o , G α_{t1} , G α_{t2} , G α_z and G α_{gust} . Of these, the three G α_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 α_s and the olfactory-specific G protein, G α_{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 Weizsäcker, 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: GNAI1 (human) mapping to 7q21; Gnai1 (mouse) mapping to 5 A3.

SOURCE

G α_{i-1} (R4) is a mouse monoclonal antibody raised against G α_{i-1} of rat origin.

PRODUCT

Each vial contains 200 μ g IgG $_{2b}$ 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

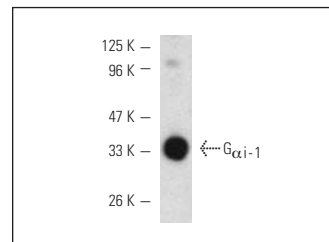
G α_{i-1} (R4) is recommended for detection of G α_{i-1} of mouse, rat, human and bovine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for G α_{i-1} siRNA (h): sc-41750 and G α_{i-1} siRNA (m): sc-41751.

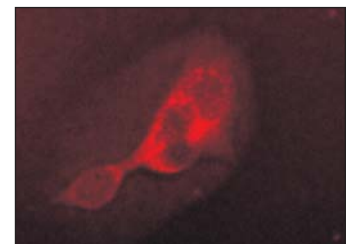
Molecular Weight of G α_{i-1} : 41 kDa.

Positive Controls: bovine brain extract or SK-N-SH cell lysate: sc-2410.

DATA



G α_{i-1} (R4): sc-13533. Western blot analysis of G α_{i-1} expression in rat recombinant G α_{i-1} .



G α_{i-1} (R4): sc-13533. Immunofluorescence staining of methanol-fixed SK-N-SH cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Garic-Stankovic, A., Hernandez, M.R., Chiang, P.J., Debelak-Kragtorp, K.A., Flentke, G.R., Armant, D.R. and Smith, S.M. 2005. Ethanol triggers neural crest apoptosis through the selective activation of a pertussis toxin-sensitive G protein and a phospholipase C β -dependent Ca $^{2+}$ transient. *Alcohol. Clin. Exp. Res.* 29: 1237-1246.
2. Aguado-Llera, D., Puebla-Jiménez, L., Yébenes-Gregorio, L. and Arilla-Ferreiro, E. 2007. Alteration of the somatostatinergic system in the striatum of rats with acute experimental autoimmune encephalomyelitis. *Neuroscience* 148: 238-249.
3. Aguado-Llera, D., Arilla-Ferreiro, E., Chowen, J.A., Argente, J., Puebla-Jiménez, L., Frago, L.M. and Barrios, V. 2007. 17 β -Estradiol protects depletion of rat temporal cortex somatostatinergic system by β -Amyloid. *Neurobiol. Aging* 28: 1396-1409.

RESEARCH USE

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

PROTOCOLS

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