

G α i-1 (I-20): sc-391



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. 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. 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.
3. 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.

CHROMOSOMAL LOCATION

Genetic locus: GNAI1 (human) mapping to 7q21; Gnai1 (mouse) mapping to 5 A3.

SOURCE

G α_{i-1} (I-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping with in a highly divergent domain of G α_{i-1} of rat origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-391 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-391 AC, 500 μ g/0.25 ml agarose in 1 ml.

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.

APPLICATIONS

G α_{i-1} (I-20) is recommended for detection of G α_{i-1} and, to a lesser extent, G α_{i-2} and G α_{i-3} of mouse, rat, human and bovine origin by Western blotting, 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).

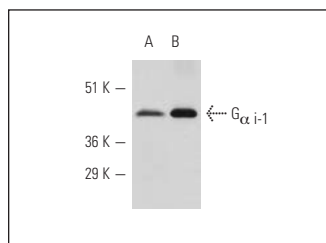
Molecular Weight of G α_{i-1} : 41 kDa.

Positive Controls: bovine brain extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



G α_{i-1} (I-20): sc-391. Western blot analysis of G α_{i-1} expression in bovine brain extract (A) and analysis of rat recombinant G α_{i-1} : sc-4232 WB (B).

SELECT PRODUCT CITATIONS

1. Sinnarajah, S., et al. 1998. Inhibition and enhancement of odorant-induced cAMP accumulation in rat olfactory cilia by antibodies directed against G $\alpha_{s/olf}$ and G α_{i-} protein subunits. *FEBS Lett.* 426: 377-380.
2. Murthy, K.S., et al. 1999. Identification of the G protein-activating domain of the natriuretic peptide clearance receptor (NPR-C). *J. Biol. Chem.* 274: 17587-17592.
3. Menco, B.P., et al. 2001. Ultrastructural localization of G proteins and the channel protein TRP2 to microvilli of rat vomeronasal receptor cells. *J. Comp. Neurol.* 438: 468-489.
4. Melnychuk, R. M., et al. 2004. Human cytomegalovirus-encoded G protein-coupled receptor US28 mediates smooth muscle cell migration through G α_{12} . *J. Virol.* 78: 8382-8391.