SANTA CRUZ BIOTECHNOLOGY, INC.

G_{α} i-1/2/3 (N-20): sc-26761

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 $G_{\alpha\ i\text{-}1}$, $G_{\alpha\ i\text{-}2}$, $G_{\alpha\ i\text{-}3}$, $G_{\alpha\ o}$, $G_{\alpha\ t1}$, $G_{\alpha\ \tau 2}$, $G_{\alpha\ \zeta}$ 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, Golf. J. Biol. Chem. 265: 2671-2676.
2. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.

SOURCE

$G_{\alpha\ i\text{-}1/2/3}$ (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of $G_{\alpha\ i\text{-}1}$ of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-26761 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

$G_{\alpha\ i\text{-}1/2/3}$ (N-20) is recommended for detection of Guanine nucleotide binding proteins $G_{\alpha\ i\text{-}1}$, $G_{\alpha\ i\text{-}2}$ and $G_{\alpha\ i\text{-}3}$ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

$G_{\alpha\ i\text{-}1/2/3}$ (N-20) is also recommended for detection of Guanine nucleotide binding proteins $G_{\alpha\ i\text{-}1}$, $G_{\alpha\ i\text{-}2}$ and $G_{\alpha\ i\text{-}3}$ in additional species, including equine, canine, bovine, porcine and avian.

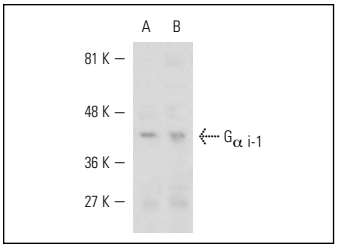
Molecular Weight of $G_{\alpha\ i\text{-}1/2/3}$: 41/41/45 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or KNRK whole cell lysate: sc-2214.

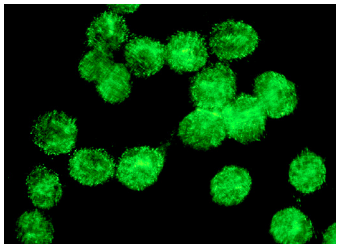
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



$G_{\alpha\ i\text{-}1/2/3}$ (N-20): sc-26761. Western blot analysis of $G_{\alpha\ i}$ expression in rat brain (**A**) and mouse brain (**B**) tissue extracts.



$G_{\alpha\ i\text{-}1/2/3}$ (N-20): sc-26761. Immunofluorescence staining of methanol-fixed KNRK cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. García-Bernal, D., et al. 2011. RGS10 restricts upregulation by chemokines of T cell adhesion mediated by $\alpha 4\beta 1$ and $\alpha L\beta 2$ integrins. J. Immunol. 187: 1264-1272.
2. Valdizán, E.M., et al. 2012. Chronic treatment with the opioid antagonist naltrexone favours the coupling of spinal cord μ-opioid receptors to $G_{\alpha\ \zeta}$ protein subunits. Neuropharmacology 62: 757-764.

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.

PROTOCOLS

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

MONOS Satisfaction Guaranteed

Try **$G_{\alpha\ i\text{-}1/2/3}$ (35): sc-136478**, our highly recommended monoclonal alternative to $G_{\alpha\ i\text{-}1/2/3}$ (N-20).