

$G_{\alpha i-1}$ (I-20): sc-391

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_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 $G_{\alpha i-1}$, $G_{\alpha i-2}$, $G_{\alpha i-3}$, $G_{\alpha o}$, $G_{\alpha t1}$, $G_{\alpha t2}$, $G_{\alpha z}$ and $G_{\alpha gust}$. Of these, the three $G_{\alpha i}$ subtypes function to open atrial potassium channels.

REFERENCES

1. Jones, D.T., 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, G_{olf} . J. Biol. Chem. 265: 2671-2676.
2. 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.

SOURCE

$G_{\alpha i-1}$ (I-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping with in a highly divergent domain of $G_{\alpha i-1}$ 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.

APPLICATIONS

$G_{\alpha i-1}$ (I-20) is recommended for detection of $G_{\alpha i-1}$ and, to a lesser extent, $G_{\alpha i-2}$ and $G_{\alpha i-3}$ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

$G_{\alpha i-1}$ (I-20) is also recommended for detection of $G_{\alpha i-1}$ and, to a lesser extent, $G_{\alpha i-2}$ and $G_{\alpha i-3}$ in additional species, including equine, canine, bovine, porcine and avian.

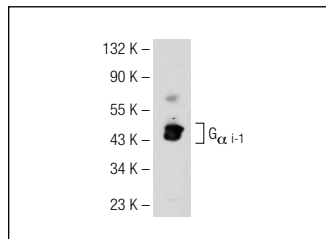
Molecular Weight of $G_{\alpha i-1}$: 41 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

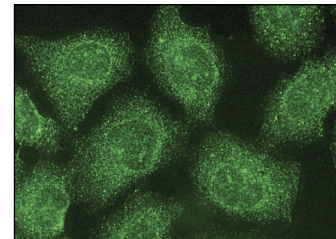
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



$G_{\alpha i-1}$ (I-20): sc-391. Western blot analysis of $G_{\alpha i-1}$ expression in SK-N-SH whole cell lysate.



$G_{\alpha i-1}$ (I-20): sc-391. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. 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.
2. Skoglund, G., et al. 1999. Cell-specific localization of G protein α -subunits in the islets of Langerhans. J. Endocrinol. 162: 31-37.
3. Boikess, S.R., et al. 2010. Neurotoxic methamphetamine regimens produce long-lasting changes in striatal G-proteins. Synapse. 64: 839-844.
4. Valdizán, E.M., et al. 2010. Agonist-dependent modulation of G-protein coupling and transduction of 5-HT1A receptors in rat dorsal raphe nucleus. Int. J. Neuropsychopharmacol. 13: 835-843.
5. García-Hoz, C., et al. 2010. $G_{\alpha q}$ acts as an adaptor protein in protein kinase C ζ (PKC ζ)-mediated ERK5 activation by G protein-coupled receptors (GPCR). J. Biol. Chem. 285: 13480-13489.
6. Tsang, S.H., et al. 2011. Function of the asparagine 74 residue of the inhibitory γ -subunit of retinal rod cGMP-phosphodiesterase (PDE) *in vivo*. Cell. Signal. 23: 1584-1589.
7. Dschietzig, T., et al. 2011. The positive inotropic effect of relaxin-2 in human atrial myocardium is preserved in end-stage heart failure: role of G_i -phosphoinositide-3 kinase signaling. J. Card. Fail. 17: 158-166.

RESEARCH USE

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



Try $G_{\alpha i-1}$ (R4): sc-13533, our highly recommended monoclonal alternative to $G_{\alpha i-1}$. Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see $G_{\alpha i-1}$ (R4): sc-13533.