SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\beta\ 5}$ (F-5): sc-365758

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 (i.e., a photon, pheromone, odorant, hormone or neurotransmitter), while the effectors (e.g., adenyl cyclase), which act to generate one or more intracellular messengers, are less numerous. Each subunit of the G protein complex is encoded by a member of one of three corresponding gene families (α, β, γ). In mammals, there are five different members of the β-subunit family. The β subunits of the G proteins are important regulators of G protein a subunits as well as of certain signal transduction receptors and effectors. In contrast to $G_{\beta\ 1\text{-}4}$, which are at least 83% homologous, $G_{\beta\ 5}$ is only 50% homologous to the other β subunits. Human $G_{\beta\ 5}$ is expressed at high levels in brain, pancreas, kidney, and heart.

REFERENCES

1. Blatt, C., et al. 1988. Chromosomal localization of genes encoding guanine nucleotide-binding protein subunits in mouse and human. Proc. Natl. Acad. Sci. USA 85: 7642-7646.
2. Gautam, N., et al. 1990. G protein diversity is increased by associations with a variety of γ subunits. Proc. Natl. Acad. Sci. USA 87: 7973-7977.
3. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
4. 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.
5. Kleuss, C., et al. 1992. Different β subunits determine G protein interaction with transmembrane receptors. Nature 358: 424-426.
6. Blank, J.L., et al. 1992. Activation of cytosolic phosphoinositide phospholipase C by G protein $\beta\gamma$ subunits. J. Biol. Chem. 267: 23069-23075.
7. Hurowitz, E.H., et al. 2000. Genomic characterization of the human heterotrimeric G protein α, β and γ subunit genes. DNA Res. 7: 111-120.

CHROMOSOMAL LOCATION

Genetic locus: GNB5 (human) mapping to 15q21.2; Gnb5 (mouse) mapping to 9 D.

SOURCE

$G_{\beta\ 5}$ (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 21-47 near the N-terminus of $G_{\beta\ 5}$ of human 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

$G_{\beta\ 5}$ (F-5) is recommended for detection of $G_{\beta\ 5}$ long and short forms 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).

$G_{\beta\ 5}$ (F-5) is also recommended for detection of $G_{\beta\ 5}$ long and short forms in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for $G_{\beta\ 5}$ siRNA (h): sc-41770, $G_{\beta\ 5}$ siRNA (m): sc-41771, $G_{\beta\ 5}$ shRNA Plasmid (h): sc-41770-SH, $G_{\beta\ 5}$ shRNA Plasmid (m): sc-41771-SH, $G_{\beta\ 5}$ shRNA (h) Lentiviral Particles: sc-41770-V and $G_{\beta\ 5}$ shRNA (m) Lentiviral Particles: sc-41771-V.

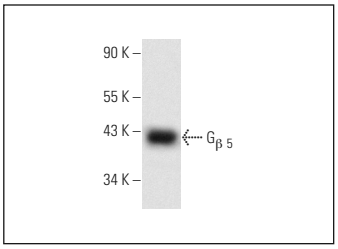
Molecular Weight of $G_{\beta\ 5}$: 39 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or human brain extract: sc-364375.

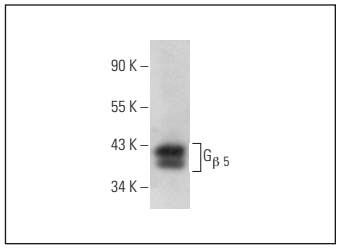
RECOMMENDED SUPPORT REAGENTS

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



$G_{\beta\ 5}$ (F-5): sc-365758. Western blot analysis of $G_{\beta\ 5}$ expression in mouse brain tissue extract.



$G_{\beta\ 5}$ (F-5): sc-365758. Western blot analysis of $G_{\beta\ 5}$ expression in human brain tissue extract.

SELECT PRODUCT CITATIONS

1. Hillenbrand, M., et al. 2015. Comprehensive analysis of heterotrimeric G-protein complex diversity and their interactions with GPCRs in solution. Proc. Natl. Acad. Sci. USA 112: E1181-E1190.

RESEARCH USE

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