SANTA CRUZ BIOTECHNOLOGY, INC.

G_β (B-11): sc-166249

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. Modi, W.S., et al. 1989. Chromosomal localization of the gene encoding a third form of the β subunit of GTP-binding regulatory proteins. Cytogenet. Cell Genet. 51: 1046.
3. Levine, M.A., et al. 1990. Chromosomal localization of the genes encoding two forms of the G-protein β polypeptide, β-1 and β-3, in man. Genomics 8: 380-386.
4. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
5. 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.
6. Kleuss, C., et al. 1992. Different β subunits determine G protein interaction with transmembrane receptors. Nature 358: 424-426.
7. Blank, J.L., et al. 1992. Activation of cytosolic phosphoinositide phospholipase C by G protein $\beta\gamma$ subunits. J. Biol. Chem. 267: 23069-23075.
8. Jones, P.G., et al. 1998. Cloning and tissue distribution of the human G protein β-5 cDNA. Biochim. Biophys. Acta 1402: 288-291.
9. 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.

SOURCE

G_β (B-11) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of $G_{\beta\ 2}$ of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

G_β (B-11) is recommended for detection of $G_{\beta\ 1}$, $G_{\beta\ 2}$, $G_{\beta\ 3}$ and $G_{\beta\ 4}$ 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).

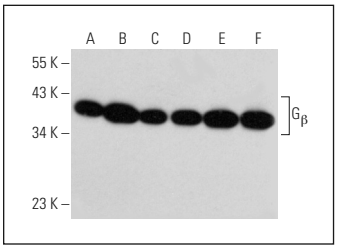
Molecular Weight of G_β: 36 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, AMJ2-C8 whole cell lysate: sc-364366 or Jurkat whole cell lysate: sc-2204.

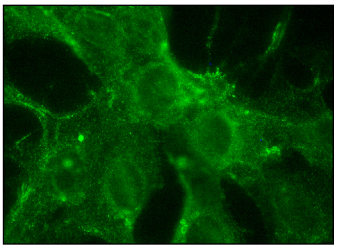
RECOMMENDED SUPPORT REAGENTS

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_β (B-11): sc-166249. Western blot analysis of G_β expression in Jurkat (**A**), U-251-MG (**B**), NIH/3T3 (**C**), AMJ2-C8 (**D**), C6 (**E**) and NRK (**F**) whole cell lysates.



G_β (B-11): sc-166249. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Li, D., et al. 2021. Involvement of protein kinase A in oxytocin neuronal activity in rat dams with pup deprivation. Neurochem. Res. 46: 980-991.

STORAGE

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

PROTOCOLS

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