SANTA CRUZ BIOTECHNOLOGY, INC.

G_β (C-8): sc-166064

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 α 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. 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.
2. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
3. von Weizsacker, 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.
4. Kleuss, C., et al. 1992. Different β subunits determine G protein interaction with transmembrane receptors. Nature 358: 424-426.
5. Blank, J.L., et al. 1992. Activation of cytosolic phosphoinositide phospholipase C by G protein $\beta\gamma$ subunits. J. Biol. Chem. 267: 23069-23075.
6. Iñiguez-Lluhi, J.A., et al. 1992. G protein $\beta\gamma$ subunits sythesized in Sf9 cells. J. Biol. Chem. 267: 23409-23417.
7. 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.
8. Conklin, B.R., et al. 1993. Structural elements of G_α subunits that interact with $G_{\beta\,\gamma}$, receptors, and effectors. Cell 73: 631-641.
9. Kleuss, C., et al. 1993. Selectivity in signal transduction determined by γ subunits of heterotrimeric G proteins. Science 259: 832-834.

SOURCE

G_β (C-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 302-340 at the C-terminus of G_β of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166064 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

G_β (C-8) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

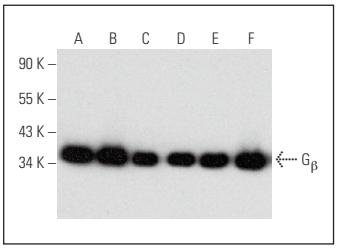
Molecular Weight of G_β: 36 kDa.

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

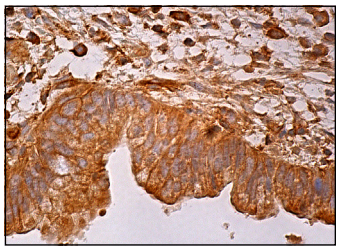
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



G_β (C-8): sc-166064. 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 (C-8): sc-166064. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells.

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 for detailed protocols and support products.