# SANTA CRUZ BIOTECHNOLOGY, INC.

# G<sub>β 1</sub> (3): sc-136307



# 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 ( $\alpha$ ,  $\beta$ ,  $\gamma$ ). In mammals, there are five different members of the  $\beta$ -subunit family. The  $\beta$  subunits of the G protein a subunits as well as of certain signal transduction receptors and effectors. In contrast to  $G_{\beta 1-4}$ , which are at least 83% homologous,  $G_{\beta 5}$  is only 50% homologous to the other  $\beta$  subunits. Human  $G_{\beta 5}$  is expressed at high levels in brain, pancreas, kidney, and heart.

## REFERENCES

- 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  $\gamma$  subunits. Proc. Natl. Acad. Sci. USA 87: 7973-7977.

### **CHROMOSOMAL LOCATION**

Genetic locus: GNB1 (human) mapping to 1p36.33; Gnb1 (mouse) mapping to 4 E2.

### SOURCE

 $G_{\beta\ 1}$  (3) is a mouse monoclonal antibody raised against amino acids 130-145 of  $G_{\beta\ 1}$  of bovine origin.

# PRODUCT

Each vial contains 200  $\mu g$  IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

# **APPLICATIONS**

 $G_{\beta,1}$  (3) is recommended for detection of  $G_{\beta,1}$  of mouse, rat, human and canine 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); may cross-react with  $G_{\beta,2}$  and  $G_{\beta,4}$ .

Suitable for use as control antibody for G<sub>β1</sub> siRNA (h): sc-41762, G<sub>β1</sub> siRNA (m): sc-41763, G<sub>β1</sub> shRNA Plasmid (h): sc-41762-SH, G<sub>β1</sub> shRNA Plasmid (m): sc-41763-SH, G<sub>β1</sub> shRNA (h) Lentiviral Particles: sc-41762-V and G<sub>β1</sub> shRNA (m) Lentiviral Particles: sc-41763-V.

Molecular Weight of  $G_{\beta 1}$ : 36 kDa.

Positive Controls: EOC 20 whole cell lysate: sc-364187, HeLa whole cell lysate: sc-2200 or Neuro-2A whole cell lysate: sc-364185.

#### **RECOMMENDED SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA





 ${\rm G}_{\beta,1}$  (3): sc-136307. Western blot analysis of  ${\rm G}_{\beta,1}$  expression in HeLa (A), T98G (B), Neuro-2A (C) and EOC 20 (D) whole cell lysates.

 ${\sf G}_{\beta}$  (3): sc-136307. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (A). Immunoperoxidase staining of formalin fixed, paraffinembedded human cerebral cortex tissue showing neuropil staining (B).

## **SELECT PRODUCT CITATIONS**

1. Dela Paz, N.G. and Frangos, J.A. 2019. Rapid flow-induced activation of  $G_{\alpha\ q/11}$  is independent of Piezo1 activation. Am. J. Physiol., Cell Physiol. 316: C741-C752.

#### **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.