$G_{\alpha\,13}$ (6F6-B5): sc-293424

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 (a photon, pheromone, odorant, hormone or neurotransmitter) while the effectors (i.e., adenyl 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 $G_{\alpha\,s}$, $G_{\alpha\,i}$, $G_{\alpha\,q}$ and $G_{\alpha\,12/13}$. The two members of the fourth class of G_{α} subunit proteins, $G_{\alpha\,12}$ and $G_{\alpha\,13}$, are insensitive to ADP-ribosylation by pertussis toxin, share 67% identity with each other and less than 45% identity with other G_{α} subunits and are widely expressed in a broad range of tissues.

CHROMOSOMAL LOCATION

Genetic locus: GNA13 (human) mapping to 17q24.1; Gna13 (mouse) mapping to 11 E1.

SOURCE

$G_{\alpha\,13}$ (6F6-B5) is a mouse monoclonal antibody raised against amino acids 1-377 representing full length $G_{\alpha\,13}$ of human origin.

PRODUCT

Each vial contains 100 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

$G_{\alpha\,13}$ (6F6-B5) is recommended for detection of $G_{\alpha\,13}$ of mouse, rat and human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for $G_{\alpha\,13}$ siRNA (h): sc-35427, $G_{\alpha\,13}$ siRNA (m): sc-35428, $G_{\alpha\,13}$ shRNA Plasmid (h): sc-35427-SH, $G_{\alpha\,13}$ shRNA Plasmid (m): sc-35428-SH, $G_{\alpha\,13}$ shRNA (h) Lentiviral Particles: sc-35427-V and $G_{\alpha\,13}$ shRNA (m) Lentiviral Particles: sc-35428-V.

Molecular Weight of $G_{\alpha\,13}$: 44 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Y79 cell lysate: sc-2240 or U-937 cell lysate: sc-2239.

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).
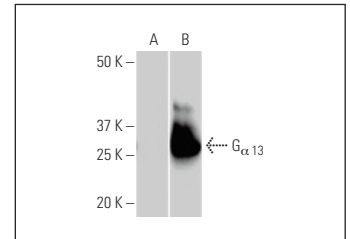
STORAGE

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

DATA
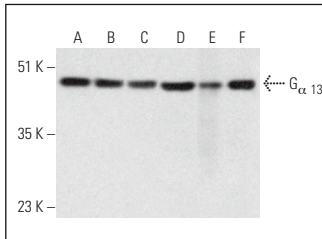
$G_{\alpha\,13}$ (6F6-B5): sc-293424. Western blot analysis of $G_{\alpha\,13}$ expression in Hep G2 (**A**), Y79 (**B**), U-937 (**C**) and KNRK (**D**) whole cell lysates and mouse liver (**E**) and rat liver (**F**) tissue extracts.

$G_{\alpha\,13}$ (6F6-B5): sc-293424. Western blot analysis of $G_{\alpha\,13}$ expression in non-transfected (**A**) and $G_{\alpha\,13}$ transfected (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Grundmann, M., et al. 2018. Lack of β-Arrestin signaling in the absence of active G proteins. Nat. Commun. 9: 341.

2. Son, H.J., et al. 2019. Effect of estradiol in an azoxymethane/dextran sulfate sodium-treated mouse model of colorectal cancer: implication for sex difference in colorectal cancer development. Cancer Res. Treat. 51: 632-648.

3. Spoerri, P.M., et al. 2020. Protease-activated receptor signalling initiates $\alpha_5\beta_1$-Integrin-mediated adhesion in non-haematopoietic cells. Nat. Mater. 19: 218-226.

4. Zhang, F., et al. 2021. Reregulation of hepatic stellate cell contraction and cirrhotic portal hypertension by Wnt/β-catenin signaling via interaction with Gli1. Br. J. Pharmacol. 178: 2246-2265.

5. Hu, H.B., et al. 2021. LPA signaling acts as a cell-extrinsic mechanism to initiate cilia disassembly and promote neurogenesis. Nat. Commun. 12: 662.

6. Virlogeux, A., et al. 2021. Increasing brain palmitoylation rescues behavior and neuropathology in Huntington disease mice. Sci. Adv. 7: eabb0799.

7. Chatterjee, T., et al. 2021. Anti-GPR56 monoclonal antibody potentiates GPR56-mediated Src-Fak signaling to modulate cell adhesion. J. Biol. Chem. 296: 100261.

8. Shields, M.A., et al. 2022. $G_{\alpha\,13}$ loss in Kras/Tp53 mouse model of pancreatic tumorigenesis promotes tumors susceptible to rapamycin. Cell Rep. 38: 110441.

9. Eckenstaler, R., et al. 2022. Thromboxane A2 receptor activation via $G_{\alpha\,13}$-RhoA/C-ROCK-LIMK2-dependent signal transduction inhibits angiogenic sprouting of human endothelial cells. Biochem. Pharmacol. 201: 115069.

RESEARCH USE

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