

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

## 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., adenylyl cyclase), which act to generate one or more intracellular messengers, are less numerous. In mammals, G protein  $\alpha$ ,  $\beta$  and  $\gamma$  polypeptides are encoded by at least 16, 4 and 7 genes, respectively. Most interest in G proteins has been focused on their  $\alpha$  subunits, since these proteins bind and hydrolyze GTP and most obviously regulate the activity of the best studied effectors. Four distinct classes of  $G_{\alpha}$  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  $G_{\alpha}$  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  $G_{\alpha}$  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  $\mu$ g IgG<sub>1</sub> 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  $\mu$ g per 100-500  $\mu$ g 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.

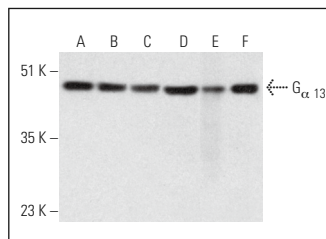
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-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™ 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).

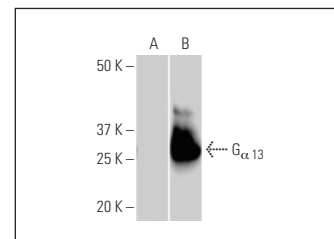
## STORAGE

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

- Grundmann, M., et al. 2018. Lack of  $\beta$ -Arrestin signaling in the absence of active G proteins. *Nat. Commun.* 9: 341.
- 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.
- 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.
- Zhang, F., et al. 2021. Reregulation of hepatic stellate cell contraction and cirrhotic portal hypertension by Wnt/ $\beta$ -catenin signaling via interaction with Gli1. *Br. J. Pharmacol.* 178: 2246-2265.
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- Chatterjee, T., et al. 2021. Anti-GPR56 monoclonal antibody potentiates GPR56-mediated Src-Fak signaling to modulate cell adhesion. *J. Biol. Chem.* 296: 100261.
- 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.
- 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.