SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ s}$ (12): sc-135914

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 (e.g., 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. Evidence, however, has established an important regulatory role for the $\beta\gamma$ subunits. The G_s subfamily of G_α subunits includes two closely related proteins, $G_{\alpha\ s}$ and $G_{\alpha\ olf}$, which respectively stimulate adenylyl cyclase and mediate response to olfactory stimuli.

CHROMOSOMAL LOCATION

Genetic locus: GNAS (human) mapping to 20q13.32; Gnas (mouse) mapping to 2 H4.

SOURCE

$G_{\alpha\ s}$ (12) is a mouse monoclonal antibody raised against amino acids 11-21 of $G_{\alpha\ s}$ of human 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.

$G_{\alpha\ s}$ (12) is available conjugated to agarose (sc-135914 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-135914 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

$G_{\alpha\ s}$ (12) is recommended for detection of $G_{\alpha\ s}$ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for $G_{\alpha\ s}$ siRNA (h): sc-29328, $G_{\alpha\ s}$ siRNA (m): sc-41757, $G_{\alpha\ s}$ shRNA Plasmid (h): sc-29328-SH, $G_{\alpha\ s}$ shRNA Plasmid (m): sc-41757-SH, $G_{\alpha\ s}$ shRNA (h) Lentiviral Particles: sc-29328-V and $G_{\alpha\ s}$ shRNA (m) Lentiviral Particles: sc-41757-V.

Molecular Weight of $G_{\alpha\ s}$: 49 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, TT whole cell lysate: sc-364195 or 3T3-L1 cell lysate: sc-2243.

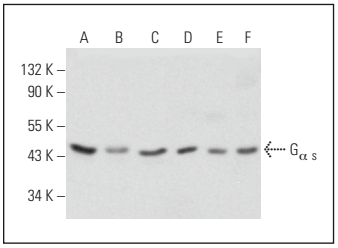
RECOMMENDED SUPPORT REAGENTS

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).

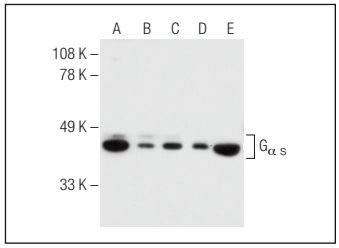
STORAGE

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

DATA



$G_{\alpha\ s}$ (12): sc-135914. Western blot analysis of $G_{\alpha\ s}$ expression in 3T3-L1 (**A**), C3H/10T1/2 (**B**) and C6 (**C**) whole cell lysates and rat brain (**D**), rat cerebellum (**E**) and mouse brain (**F**) tissue extracts.



$G_{\alpha\ s}$ (12): sc-135914. Western blot analysis of $G_{\alpha\ s}$ expression in Jurkat (**A**), HEK293 (**B**), TT (**C**), K-562 (**D**) and MCF7 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lee, I.T., et al. 2012. Role of TLR4/NADPH oxidase/ROS-activated p38 MAPK in VCAM-1 expression induced by lipopolysaccharide in human renal mesangial cells. Cell Commun. Signal. 10: 33.
2. Tobar-Rubin, R., et al. 2013. Intragenic suppression of a constitutively active allele of $G_{\alpha\ s}$ associated with McCune-Albright syndrome. J. Mol. Endocrinol. 50: 193-201.
3. Liu, Y., et al. 2017. Dibutyryl-cAMP attenuates pulmonary fibrosis by blocking myofibroblast differentiation via PKA/CREB/CBP signaling in rats with silicosis. Respir. Res. 18: 38.
4. Pusapati, G.V., et al. 2018. G protein-coupled receptors control the sensitivity of cells to the morphogen Sonic hedgehog. Sci. Signal. 11: eaao5749.
5. Fish, E.W., et al. 2019. Cannabinoids exacerbate alcohol teratogenesis by a CB1-hedgehog interaction. Sci. Rep. 9: 16057.
6. Nunez, F.J., et al. 2020. Glucocorticoids rapidly activate cAMP production via $G_{\alpha\ s}$ to initiate non-genomic signaling that contributes to one-third of their canonical genomic effects. FASEB J. 34: 2882-2895.
7. Cheng, C.Y., et al. 2020. Nrf2/HO-1 partially regulates cytoprotective effects of carbon monoxide against urban particulate matter-induced inflammatory responses in oral keratinocytes. Cytokine 133: 155185.
8. Maziarz, M., et al. 2020. Revealing the activity of trimeric G-proteins in live cells with a versatile biosensor design. Cell 182: 770-785.e16.
9. Wang, T., et al. 2023. Regulation of the Hippo/YAP axis by CXCR7 in the tumorigenesis of gastric cancer. J. Exp. Clin. Cancer Res. 42: 297.
10. Elli, F.M., et al. 2024. Targeted silencing of GNAS in a human model of osteoprogenitor cells results in the deregulation of the osteogenic differentiation program. Front. Endocrinol. 15: 1296886.

RESEARCH USE

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