SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ q/11/14}$ (G-7): sc-365906

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. Four distinct classes of G_α subunits have been identified; these include G_s, G_i, G_q and $G_{\alpha\ 12/13}$. The G_q class includes $G_{\alpha\ 15}$, $G_{\alpha\ 14}$, $G_{\alpha\ 11}$ and $G_{\alpha\ q}$, two of which, $G_{\alpha\ 11}$ and $G_{\alpha\ q}$, are abundant in brain and lung and present at lower levels in a variety of tissues.

REFERENCES

1. Strathmann, M. and Simon, M.I. 1990. G protein diversity: a distinct class of α subunits is present in vertebrates and invertebrates. Proc. Natl. Acad. Sci. USA 87: 9113-9117.
2. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.

SOURCE

$G_{\alpha\ q/11/14}$ (G-7) is a mouse monoclonal antibody raised against amino acids 60-359 mapping at the C-terminus of $G_{\alpha\ 11}$ 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.

$G_{\alpha\ q/11/14}$ (G-7) is available conjugated to agarose (sc-365906 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365906 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365906 PE), fluorescein (sc-365906 FITC), Alexa Fluor® 488 (sc-365906 AF488), Alexa Fluor® 546 (sc-365906 AF546), Alexa Fluor® 594 (sc-365906 AF594) or Alexa Fluor® 647 (sc-365906 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365906 AF680) or Alexa Fluor® 790 (sc-365906 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

$G_{\alpha\ q/11/14}$ (G-7) is recommended for detection of $G_{\alpha\ q}$, $G_{\alpha\ 11}$ and $G_{\alpha\ 14}$ 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).

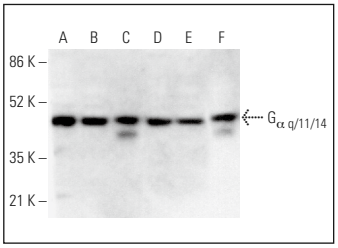
Molecular Weight of $G_{\alpha\ q/11/14}$: 40-41 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, CCRF-CEM cell lysate: sc-2225 or MOLT-4 cell lysate: sc-2233.

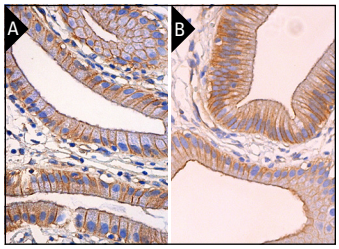
STORAGE

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

DATA



$G_{\alpha\ q/11/14}$ (G-7): sc-365906. Western blot analysis of $G_{\alpha\ q/11/14}$ expression in HeLa (**A**), CCRF-CEM (**B**), MOLT-4 (**C**), TK-1 (**D**), ALL-SIL (**E**) and TF-1 (**F**) whole cell lysates.



$G_{\alpha\ q/11/14}$ (G-7): sc-365906. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing membrane staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing membrane staining of glandular cells. Blocking reagent used: UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Luessen, D.J., et al. 2017. Chronic intermittent ethanol exposure selectively alters the expression of G_α subunit isoforms and RGS subtypes in rat prefrontal cortex. Brain Res. 1672: 106-112.
2. Fenstermaker, R.A., et al. 2018. Survivin monoclonal antibodies detect survivin cell surface expression and inhibit tumor growth *in vivo*. Clin. Cancer Res. 24: 2642-2652.
3. Tenkorang, M.A.A., et al. 2019. NADPH oxidase mediates membrane androgen receptor-induced neurodegeneration. Endocrinology 160: 947-963.
4. Park, E.J., et al. 2020. Exosomes co-expressing AQP5-targeting miRNAs and IL-4 receptor-binding peptide inhibit the migration of human breast cancer cells. FASEB J. 34: 3379-3398.
5. Zaccone, G., et al. 2020. Expression of acetylcholine- and G protein-coupled muscarinic receptor in the neuroepithelial cells (NECs) of the obligated air-breathing fish, *Arapaima gigas (Arapaimatidae: Teleostei).* Zoology 139: 125755.
6. White, A.D., et al. 2020. $G_{q/11}$-dependent regulation of endosomal cAMP generation by parathyroid hormone class B GPCR. Proc. Natl. Acad. Sci. USA 117: 7455-7460.
7. Boesgaard, M.W., et al. 2020. Delineation of molecular determinants for FR900359 inhibition of $G_{q/11}$ unlocks inhibition of $G_{\alpha\ s}$. J. Biol. Chem. 295: 13850-13861.
8. Jiang, Y., et al. 2021. PAR2 induces ovarian cancer cell motility by merging three signalling pathways to transactivate EGFR. Br. J. Pharmacol. 178: 913-932.

RESEARCH USE

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