SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ s}$: sc-4225 WB

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. The G_s subfamily of G_α subunits includes two closely related proteins, $G_{\alpha\ s}$ and $G_{\alpha\ olf}$, which respectively stimulate adenylate cyclase and mediate response to olfactory stimuli.

REFERENCES

1. Jones, D.T., et al. 1990. Biochemical characterization of three stimulatory GTP-binding proteins. The large and small forms of G_s and the olfactory-specific G protein, G_{olf}. J. Biol. Chem. 265: 2671-2676.
2. Simon, M.I., et al. 1991. Diversity of G proteins in signal transduction. Science 252: 802-808.
3. Iñiguez-Lluhi, J.A., et al. 1992. G protein $\beta\gamma$ subunits synthesized in Sf9 cells. J. Biol. Chem. 267: 23409-23417.
4. Cali, J.J., et al. 1992. Selective tissue distribution of G protein γ subunits, including a new form of the γ subunits identified by cDNA cloning. J. Biol. Chem. 267: 24023-24027.
5. McLaughlin, S.K., et al. 1992. Gustducin is a taste-cell-specific G protein closely related to the transducins. Nature 357: 563-569.
6. von Weizsäcker, E., et al. 1992. Diversity among the β subunits of heterotrimeric GTP-binding proteins: characterization of a novel β-subunit cDNA. Biochem. Biophys. Res. Commun. 183: 350-356.
7. Kleuss, C., et al. 1992. Different β subunits determine G protein interaction with transmembrane receptors. Nature 358: 424-426.

CHROMOSOMAL LOCATION

Genetic locus: GNAS (human) mapping to 20q13.3; Gnas (mouse) mapping to 2 E1-H3.

SOURCE

$G_{\alpha\ s}$ is expressed in *E. coli* as a 47 kDa protein mapping at amino acids 1-419 of $G_{\alpha\ s}$ of rat origin.

PRODUCT

$G_{\alpha\ s}$ is purified from bacterial lysates (>98%) by column chromatography; supplied as 1.0 µg in 0.1 ml SDS-PAGE loading buffer.

STORAGE

Store at -20° C. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

$G_{\alpha\ s}$ is suitable as a Western blotting control for sc-823, sc-26766, sc-46975, sc-46976 and sc-135914.

SELECT PRODUCT CITATIONS

1. Beitzel, F., et al. 2007. β-Adrenoceptor signaling in regenerating skeletal muscle after β-agonist administration. Am. J. Physiol. Endocrinol. Metab. 293: E932-E940.
2. Zalduegui, A., et al. 2011. Levels of $G_{s\alpha}$(short and long), $G_{\alpha olf}$ and G_β(common) subunits, and calcium-sensitive adenylyl cyclase isoforms (1, 5/6, 8) in post-mortem human brain caudate and cortical membranes: comparison with rat brain membranes and potential stoichiometric relationships. Neurochem. Int. 58: 180-189.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.