SANTA CRUZ BIOTECHNOLOGY, INC.

A cyclase II (A-21): sc-130676

BACKGROUND

Adenylyl cyclases function to convert ATP to cyclic AMP in response to activation by a variety of hormones, neurotransmitters and other regulatory molecules. Cyclic AMP, in turn, activates several other target molecules to control a broad range of diverse phenomena such as metabolism, gene transcription and memory. Adenylyl cyclases respond to receptor-initiated signals, mediated by the G_s and G_i heterotrimeric G proteins. The binding of an agonist to a G_s coupled receptor catalyzes the exchange of GDP (bound to $G_{\alpha s}$) for GTP, the dissociation of GTP-$G_{\alpha s}$ from $G_{\beta\gamma}$ and $G_{\alpha s}$-mediated activation of adenylyl cyclase. Adenylyl cyclases of the type II family differ from other subforms in that they are conditionally stimulated by $G_{\alpha s/\beta\gamma}$ subunits and regulated by PKC-mediated C-terminal phosphorylation. Both short- and long-term activation of D(2L) dopamine receptors result in a marked degree of sensitization of A cyclase I, II, V and IX, but not A cyclase VIII. The effects on A cyclase I, II and VIII is dependent upon the ability of these A cyclase isoforms to synergistically respond to selective activators in the presence of activated $G_{\alpha s}$.

REFERENCES

1. Gilman, A.G. 1987. G proteins: transducers of receptor-generated signals. Annu. Rev. Biochem. 56: 615-649.
2. Bourne, H.R., et al. 1990. The GTPase superfamily: a conserved switch for diverse cell functions. Nature 348: 125-132.
3. Tang, W.-J., et al. 1992. Adenylyl cyclases. Cell 70: 869-872.
4. Taussig, R., et al. 1994. Distinct patterns of bidirectional regulation of mammalian adenylyl cyclases. J. Biol. Chem. 269: 6093-6100.
5. Jacobowitz, O., et al. 1994. Phorbol ester-induced stimulation and phosphorylation of adenylyl cyclase 2. Proc. Natl. Acad. Sci. USA 91: 10630-10634.
6. Bol, G.F., et al. 1997. Adenylyl cyclase type II is stimulated by PKC via C-terminal phosphorylation. Biochim. Biophys. Acta 1358: 307-313.
7. Cumbay, M.G., et al. 2001. Heterologous sensitization of recombinant adenylate cyclases by activation of D_2 dopamine receptors. J. Pharmacol. Exp. Ther. 297: 1201-1209.

CHROMOSOMAL LOCATION

Genetic locus: ADCY2 (human) mapping to 5p15.31.

SOURCE

A cyclase II (A-21) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of A cyclase II of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

A cyclase II (A-21) is recommended for detection of A cyclase II of 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)], 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).

Suitable for use as control antibody for A cyclase II siRNA (h): sc-40317, A cyclase II shRNA Plasmid (h): sc-40317-SH and A cyclase II shRNA (h) Lentiviral Particles: sc-40317-V.

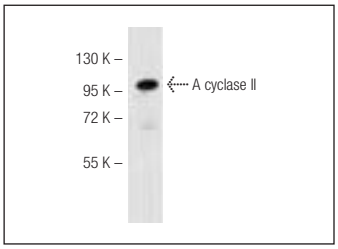
Molecular Weight of A cyclase II: 124 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812 or Jurkat whole cell lysate: sc-2204.

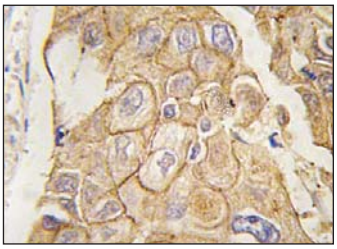
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



A cyclase II (A-21): sc-130676. Western blot analysis of A cyclase II expression in Jurkat whole cell lysate.



A cyclase II (A-21): sc-130676. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung carcinoma tissue showing cytoplasmic and membrane localization.

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.