

A cyclase II (K-17): sc-32110

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 AC I, AC II, AC V and AC IX, but not AC VIII. The effects on AC I, AC II and AC VIII is dependent upon the ability of these AC 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 adenylyl 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; Adcy2 (mouse) mapping to 13 B3.

SOURCE

A cyclase II (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of A cyclase II of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-32110 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

A cyclase II (K-17) is recommended for detection of A cyclase II of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

A cyclase II (K-17) is also recommended for detection of A cyclase II in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for A cyclase II siRNA (h): sc-40317, A cyclase II siRNA (m): sc-40318, A cyclase II shRNA Plasmid (h): sc-40317-SH, A cyclase II shRNA Plasmid (m): sc-40318-SH, A cyclase II shRNA (h) Lentiviral Particles: sc-40317-V and A cyclase II shRNA (m) Lentiviral Particles: sc-40318-V.

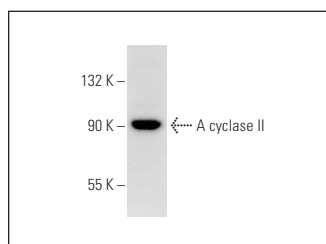
Molecular Weight of A cyclase II: 124 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, IMR-32 cell lysate: sc-2409 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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



A cyclase II (K-17): sc-32110. Western blot analysis of A cyclase II expression in IMR-32 whole cell lysate.

STORAGE

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

RESEARCH USE

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