

A cyclase II (F-7): sc-514938

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

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- Tang, W.J., et al. 1992. Adenylyl cyclases. *Cell* 70: 869-872.
- Taussig, R., et al. 1994. Distinct patterns of bidirectional regulation of mammalian adenylyl cyclases. *J. Biol. Chem.* 269: 6093-6100.
- Jacobowitz, O., et al. 1994. Phorbol ester-induced stimulation and phosphorylation of adenylyl cyclase 2. *Proc. Natl. Acad. Sci. USA* 91: 10630-10634.
- Bol, G.F., et al. 1997. Adenylyl cyclase type II is stimulated by PKC via C-terminal phosphorylation. *Biochim. Biophys. Acta* 1358: 307-313.
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CHROMOSOMAL LOCATION

Genetic locus: ADCY2 (human) mapping to 5p15.31; Adcy2 (mouse) mapping to 13 B3.

SOURCE

A cyclase II (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 777-802 within an internal region of A cyclase II of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-514938 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

A cyclase II (F-7) is recommended for detection of A cyclase II of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

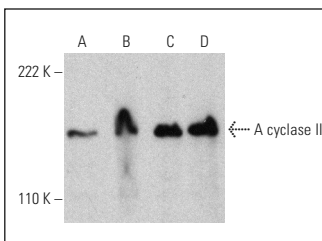
Molecular Weight of A cyclase II: 124 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, mouse brain extract: sc-2253 or Jurkat whole cell lysate: sc-2204.

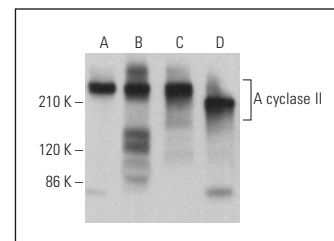
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



A cyclase II (F-7): sc-514938. Western blot analysis of A cyclase II expression in IMR-32 (A), SH-SY5Y (B), Jurkat (C) and HEK293T (D) whole cell lysates.



A cyclase II (F-7): sc-514938. Western blot analysis of A cyclase II expression in SH-SY5Y (A), Jurkat (B) and RAW 264.7 (C) whole cell lysates and mouse brain tissue extract (D).

RESEARCH USE

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