

A cyclase (R-32): sc-1701

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. At least nine distinct isoforms of adenylyl cyclases have been cloned and expressed. In addition, numerous partial cDNA clones have been described, indicating that the total number of adenylyl cyclases may be even larger.

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.

SOURCE

A cyclase (R-32) is a rabbit polyclonal antibody raised against amino acids 1183-1215 of adenylyl cyclase of rat origin.

PRODUCT

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

APPLICATIONS

A cyclase (R-32) is recommended for detection of adenylyl cyclase family members 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), 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).

A cyclase (R-32) is also recommended for detection of adenylyl cyclase family members in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of A cyclase: 130 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812.

RESEARCH USE

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

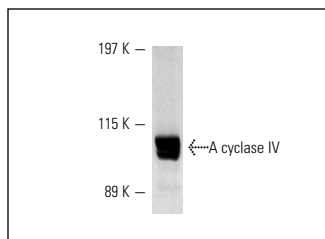
PROTOCOLS

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

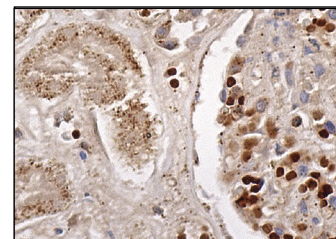
STORAGE

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

DATA



A cyclase (R-32): sc-1701. Western blot analysis of insect cells transfected with an A cyclase IV Baculovirus expression vector.



A cyclase (R-32): sc-1701. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and nuclear staining of cells in glomeruli and tubules.

SELECT PRODUCT CITATIONS

1. Budnik, L.T., et al. 1997. Functional lysophosphatidic acid receptor in bovine luteal cells. *FEBS Lett.* 419: 4-8.
2. Jimenez, V., et al. 2004. Isolation and purification of human placental plasma membranes from normal and pre-eclamptic pregnancies. a comparative study. *Placenta* 25: 422-437.
3. Yamada, R., et al. 2005. cAMP differentially regulates axonal and dendritic development of dentate granule cells. *J. Biol. Chem.* 280: 38020-38028.
4. Beltrán, C., et al. 2007. Particulate and soluble adenylyl cyclases participate in the sperm acrosome reaction. *Biochem. Biophys. Res. Commun.* 358: 1128-1135.
5. Nikolov, E.N. and Ivanova-Nikolova, T.T. 2007. Dynamic integration of α -adrenergic and cholinergic signals in the atria: role of G protein-regulated inwardly rectifying K^+ channels. *J. Biol. Chem.* 282: 28669-28682.
6. Stumpf, T., et al. 2008. The human TRPV6 channel protein is associated with cyclophilin B in human placenta. *J. Biol. Chem.* 283: 18086-18098.
7. Tovey, S.C., et al. 2008. Selective coupling of type 6 adenylyl cyclase with type 2 IP_3 receptors mediates direct sensitization of IP_3 receptors by cAMP. *J. Cell Biol.* 183: 297-311.
8. Oner, S.S., et al. 2010. β_2 -adrenoceptor, G_s and adenylyl cyclase coupling in purified detergent-resistant, low density membrane fractions. *Eur. J. Pharmacol.* 630: 42-52.

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Try **A cyclase (C-5): sc-377243**, our highly recommended monoclonal alternative to A cyclase (R-32).