

A cyclase VIII (B-4): sc-377442

BACKGROUND

Adenylyl cyclases function to convert ATP to cyclic AMP in response to activation by a variety of hormones, neurotransmitters and other regulatory molecules. 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, dissociation of $GTP-G_{\alpha s}$ from $G_{\beta\gamma}$ and $G_{\alpha s}$ -mediated activation of adenylyl cyclase. Adenylyl cyclase type VIII (A cyclase VIII) is one of the three mammalian calcium-stimulated isoforms, each of which is expressed in a region-specific manner in the central nervous system. In addition to the high expression in the brain, A cyclase VIII is also expressed in the lung. Ca^{2+} /calmodulin-dependent A cyclase VIII immunoreactivity is increased in alcoholic corpus amygdaloideum and hippocampus, suggesting that adenylyl cyclase may play a role in the pathophysiology of alcoholism. A significant decrease in the level of A cyclase I and a tendency to decrease in the level of A cyclase VIII in Alzheimer's disease hippocampus suggests that A cyclase I and VIII may play an essential role in learning and memory. A cyclase VIII knock-out mice do not have normal increases in behavioral markers of anxiety; thus, A cyclase VIII may also function in the modulation of anxiety.

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. and Gilman, A.G. 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. Muglia, L.M., et al. 1999. The 5'-flanking region of the mouse adenylyl cyclase type VIII gene imparts tissue-specific expression in transgenic mice. *J. Neurosci.* 19: 2051-2058.
6. Yamamoto, M., et al. 2000. Hippocampal level of neural specific adenylyl cyclase type I is decreased in Alzheimer's disease. *Biochim. Biophys. Acta* 1535: 60-68.
7. Schaefer, M.L., et al. 2000. Altered stress-induced anxiety in adenylyl cyclase type VIII-deficient mice. *J. Neurosci.* 20: 4809-4820.

CHROMOSOMAL LOCATION

Genetic locus: ADCY8 (human) mapping to 8q24.22; Adcy8 (mouse) mapping to 15 D1.

SOURCE

A cyclase VIII (B-4) is a mouse monoclonal antibody raised against amino acids 561-830 mapping within an internal region of A cyclase VIII of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

A cyclase VIII (B-4) is recommended for detection of A cyclase VIII 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).

A cyclase VIII (B-4) is also recommended for detection of A cyclase VIII in additional species, including equine.

Suitable for use as control antibody for A cyclase VIII siRNA (h): sc-40325, A cyclase VIII siRNA (m): sc-40326, A cyclase VIII shRNA Plasmid (h): sc-40325-SH, A cyclase VIII shRNA Plasmid (m): sc-40326-SH, A cyclase VIII shRNA (h) Lentiviral Particles: sc-40325-V and A cyclase VIII shRNA (m) Lentiviral Particles: sc-40326-V.

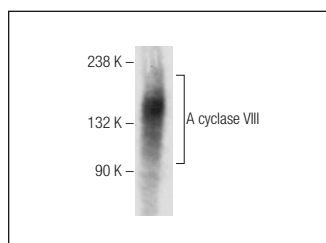
Molecular Weight of A cyclase VIII: 165 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, T98G cell lysate: sc-2294 or IMR-32 cell lysate: sc-2409.

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 A/G PLUS-Agarose: sc-2003 (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 VIII (B-4): sc-377442. Western blot analysis of A cyclase VIII expression in U-87 MG 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.