SANTA CRUZ BIOTECHNOLOGY, INC.

A cyclase VII (H-120): sc-25501

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 VII (AC VII) is expressed in specific nephron segments and renal proximal tubules. All of the AC isoforms, except VIII, are expressed in glomeruli. $Ca2^+$/calmodulin-independent isoform VII is localized to sites in position to the basolateral extensions of marginal cells and exhibits moderate staining in type II and type IV fibrocytes in rat cochlea. Sustained activation of cAMP system increases expression of AC I, III, VI, VII and IV, whereas the level of AC II is decreased, and results in increase of cAMP accumulation. Acute activation of the D2 dopaminergic and m4 muscarinic receptors stimulates AC VII, whereas chronic receptor activation leads to a reduction in AC VII activity.

REFERENCES

1. Gilman, A.G. 1987. G proteins: transducers of receptor-generated signals. Ann. 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. Nevo, I., et al. 1998. Regulation of adenylyl cyclase isozymes on acute and chronic activation of inhibitory receptors. Mol. Pharmacol. 54: 419-426.
6. Drescher, M.J., et al. 2000. Immunohistochemical localization of adenylyl cyclase isoforms in the lateral wall of the rat cochlea. Brain Res. Mol. Brain Res. 76: 289-298.
7. Cho, D.H., et al. 2000. Multi-facet expressions of adenylate cyclase isoforms in B160F10 melanoma cells differentiated by forskolin treatment. Exp. Mol. Med. 32: 235-242.
8. Bek, M.J., et al. 2001. Differential expression of adenylyl cyclases in the rat nephron. Kidney 60: 890-899.

SOURCE

A cyclase VII (H-120) is a rabbit polyclonal antibody raised against amino acids 601-720 mapping to an internal region of A cyclase VII of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of 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 VII (H-120) is recommended for detection of A cyclase VII of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

SELECT PRODUCT CITATIONS

1. Ristori, C., et al. 2008. Adenylyl cyclase/cAMP system involvement in the antiangiogenic effect of somatostatin in the retina. Results from transgenic mice. Neurochem. Res. 33: 1247-1255.

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.