SANTA CRUZ BIOTECHNOLOGY, INC.

A cyclase VII (V-18): sc-32120

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 (A cyclase VII) is expressed in specific nephron segments and renal proximal tubules. All of the A cyclase isoforms, except VIII, are expressed in glomeruli. Ca^{2+}/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 A cyclase I, III, VI, VII and IV, whereas the level of A cyclase II is decreased, and results in increase of cAMP accumulation. Acute activation of the D2 dopaminergic and m4 muscarinic receptors stimulates A cyclase VII, whereas chronic receptor activation leads to a reduction in A cyclase VII activity.

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. 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.

CHROMOSOMAL LOCATION

Genetic locus: ADCY7 (human) mapping to 16q12.1.

SOURCE

A cyclase VII (V-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of A cyclase VII 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.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-32120 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

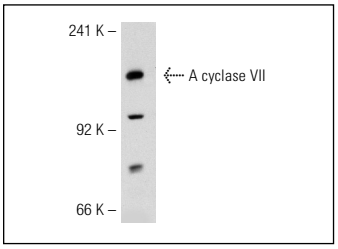
A cyclase VII (V-18) is recommended for detection of Adenylyl cyclase VII of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for A cyclase VII siRNA (h): sc-40323, A cyclase VII shRNA Plasmid (h): sc-40323-SH and A cyclase VII shRNA (h) Lentiviral Particles: sc-40323-V.

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 VII (V-18): sc-32120. Western blot analysis of A cyclase VII expression in 293T whole cell lysate.

SELECT PRODUCT CITATIONS

1. Schönrath, K., et al. 2011. Involvement of VILIP-1 (visinin-like protein) and opposite roles of cyclic AMP and GMP signaling in *in vitro* cell migration of murine skin squamous cell carcinoma. Mol. Carcinog. 50: 319-333.

PROTOCOLS

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