

# A cyclase III (C-20): sc-588

## 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 AC I, AC II, AC V and AC IX, but not AC VIII. The effects on AC I, AC II and AC VIII is dependent upon the ability of these AC isoforms to synergistically respond to selective activators in the presence of activated  $G_{\alpha s}$ . Belonging to the adenylyl cyclase class IV family, A cyclase III is activated by  $G_{olf}$ , which results in an elevation of cyclic AMP and subsequent activation of a cyclic nucleotide-gated channel.

## CHROMOSOMAL LOCATION

Genetic locus: ADCY3 (human) mapping to 2p23.3; Adcy3 (mouse) mapping to 12 A1.1.

## SOURCE

A cyclase III (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of A cyclase III of mouse origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-588 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

A cyclase III (C-20) is recommended for detection of adenylyl cyclase III of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 III (C-20) is also recommended for detection of adenylyl cyclase III in additional species, including equine, canine and porcine.

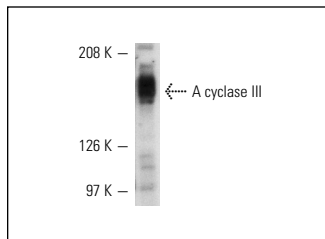
Suitable for use as control antibody for A cyclase III siRNA (h): sc-29600, A cyclase III siRNA (m): sc-29601, A cyclase III shRNA Plasmid (h): sc-29600-SH, A cyclase III shRNA Plasmid (m): sc-29601-SH, A cyclase III shRNA (h) Lentiviral Particles: sc-29600-V and A cyclase III shRNA (m) Lentiviral Particles: sc-29601-V.

Molecular Weight of glycosylated A cyclase III forms: 170/180 kDa.

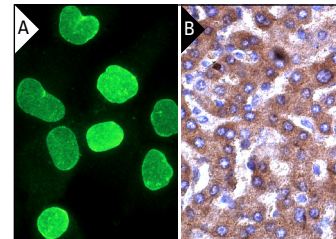
## STORAGE

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

## DATA



A cyclase III (C-20): sc-588. Western blot analysis of A cyclase III expression in A-10 whole cell lysate.



A cyclase III (C-20): sc-588. Immunofluorescence staining of methanol-fixed A-10 cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes cells (B).

## SELECT PRODUCT CITATIONS

- Belluscio, L., et al. 1998. Mice deficient in  $G_{olf}$  are anosmic. *Neuron* 20: 69-81.
- Wei, J., et al. 1998. Phosphorylation and inhibition of olfactory adenylyl cyclase by CaM Kinase II in neurons: a mechanism for attenuation of olfactory signals. *Neuron* 21: 495-504.
- Sammeta, N., et al. 2010. Uncx regulates proliferation of neural progenitor cells and neuronal survival in the olfactory epithelium. *Mol. Cell. Neurosci.* 45: 398-407.
- Gueguen, M., et al. 2010. Implication of Adenylyl cyclase 8 in pathological smooth muscle cell migration occurring in rat and human vascular remodelling. *J. Pathol.* 221: 331-342.
- Hengl, T., et al. 2010. Molecular components of signal amplification in olfactory sensory cilia. *Proc. Natl. Acad. Sci. USA* 107: 6052-6057.
- Lee, A.C., et al. 2011. Olfactory marker protein is critical for functional maturation of olfactory sensory neurons and development of mother preference. *J. Neurosci.* 31: 2974-2982.
- Stratigopoulos, G., et al. 2011. Cut-like homeobox 1 (CUX1) regulates expression of the fat mass and obesity-associated and retinitis pigmentosa GTPase regulator-interacting protein-1-like (RPGRIP1L) genes and coordinates leptin receptor signaling. *J. Biol. Chem.* 286: 2155-2170.
- Dauner, K., et al. 2012. Expression patterns of anoctamin 1 and anoctamin 2 chloride channels in the mammalian nose. *Cell Tissue Res.* 347: 327-341.
- Li, F., et al. 2013. Heterotrimeric G protein subunit  $G\gamma 13$  is critical to olfaction. *J. Neurosci.* 33: 7975-7984.

## RESEARCH USE

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