

A cyclase I (V-20): sc-586

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. A cyclase I, also known as AC1 or ADCY1, is a 1,119 amino acid multi-pass membrane protein expressed in the brain, retina and adrenal medulla. A cyclase I binds two magnesium ions per subunit and may be involved in regulatory processes in the central nervous system.

CHROMOSOMAL LOCATION

Genetic locus: ADCY1 (human) mapping to 7p12.3.

SOURCE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-586 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

A cyclase I (V-20) is recommended for detection of A cyclase I of 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).

Suitable for use as control antibody for A cyclase I siRNA (h): sc-40316, A cyclase I shRNA Plasmid (h): sc-40316-SH and A cyclase I shRNA (h) Lentiviral Particles: sc-40316-V.

Molecular Weight of A cyclase I: 123 kDa.

Positive Controls: Y79 cell lysate: sc-2240, ARPE-19 whole cell lysate: sc-364357 or IMR-32 cell lysate: sc-2409.

STORAGE

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

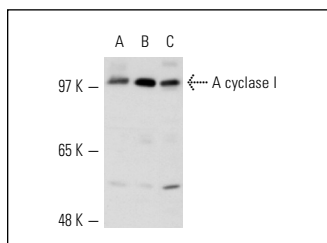
PROTOCOLS

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

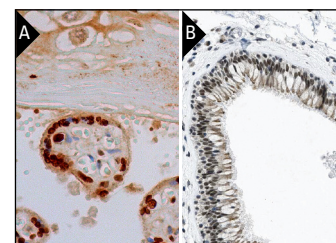
RESEARCH USE

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

DATA



A cyclase I (V-20): sc-586. Western blot analysis of A cyclase I expression in Y79 (A), ARPE-19 (B) and IMR-32 (C) whole cell lysates.



A cyclase I (V-20): sc-586. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of trophoblastic cells and decidual cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing nuclear and cytoplasmic staining of respiratory epithelial cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Yamamoto, M., et al. 1996. Reduced immunoreactivity of adenylyl cyclase in dementia of the Alzheimer type. *Neuroreport* 7: 2965-2970.
2. Nlend, M.C., et al. 2007. Calcium-mediated, purinergic stimulation and polarized localization of calcium-sensitive adenylyl cyclase isoforms in human airway epithelia. *FEBS Lett.* 581: 3241-3246.
3. Göttle, M., et al. 2009. Characterization of mouse heart adenylyl cyclase. *J. Pharmacol. Exp. Ther.* 329: 1156-1165.
4. Namkung, W., et al. 2010. CFTR-adenylyl cyclase I association responsible for UTP activation of CFTR in well-differentiated primary human bronchial cell cultures. *Mol. Biol. Cell* 21: 2639-2648.
5. Ujickova, H., et al. 2011. Up-regulation of adenylylcyclases I and II induced by long-term adaptation of rats to morphine fades away 20 days after morphine withdrawal. *Biochim. Biophys. Acta* 1810: 1220-1229.
6. Li, Z., et al. 2011. cAMP and fibroblast growth factor 2 regulate bone sialoprotein gene expression in human prostate cancer cells. *Gene* 471: 1-12.
7. Zalduegui, A., et al. 2011. Levels of $G_{s\alpha}$ (short and long), $G_{\alpha\text{olf}}$ and G_{β} subunits, and calcium-sensitive adenylyl cyclase isoforms (1, 5/6, 8) in post-mortem human brain caudate and cortical membranes: comparison with rat brain membranes and potential stoichiometric relationships. *Neurochem. Int.* 58: 180-189.



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Try **A cyclase I (F-10): sc-365350**, our highly recommended monoclonal alternative to A cyclase I (V-20).