SANTA CRUZ BIOTECHNOLOGY, INC.

A cyclase I (H-70): sc-25743

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. 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.

REFERENCES

1. Gilman, A.G. 1987. G proteins: transducers of receptor-generated signals. Ann. Rev. Biochem. 56: 615-649.
2. Tang, W.J., et al. 1992. Adenylyl cyclases. Cell 70: 869-872.

CHROMOSOMAL LOCATION

Genetic locus: ADCY1 (human) mapping to 7p12.3; Adcy1 (mouse) mapping to 11 A1.

SOURCE

A cyclase I (H-70) is a rabbit polyclonal antibody raised against amino acids 770-839 of A cyclase I 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.

APPLICATIONS

A cyclase I (H-70) is recommended for detection of A cyclase I 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), 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 I (H-70) is also recommended for detection of A cyclase I in additional species, including porcine.

Suitable for use as control antibody for A cyclase I siRNA (h): sc-40316, A cyclase I siRNA (m): sc-140592, A cyclase I shRNA Plasmid (h): sc-40316-SH, A cyclase I shRNA Plasmid (m): sc-140592-SH, A cyclase I shRNA (h) Lentiviral Particles: sc-40316-V and A cyclase I shRNA (m) Lenti-viral Particles: sc-140592-V.

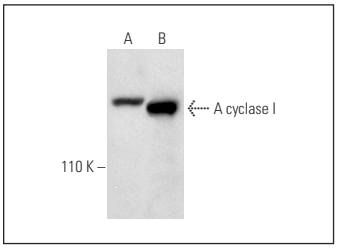
Molecular Weight of A cyclase I: 123 kDa.

Positive Controls: Y79 cell lysate: sc-2240, IMR-32 cell lysate: sc-2409 or rat brain extract: sc-2392.

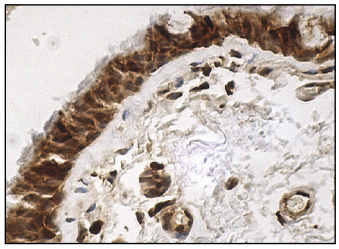
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



A cyclase I (H-70): sc-25743. Western blot analysis of A cyclase I expression in IMR-32 whole cell lysate (**A**) and rat brain tissue extract (**B**).



A cyclase I (H-70): sc-25743. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing nuclear and cytoplasmic staining of respiratory epithelial cells.

SELECT PRODUCT CITATIONS

1. Burgos-Ramos, E., et al. 2007. Chronic but not acute intracerebroventricular administration of amyloid β-peptide (25-35) decreases somatostatin content, adenylate cyclase activity, somatostatin-induced inhibition of adenylate cyclase activity, and adenylate cyclase I levels in the rat hippocampus. J. Neurosci. Res. 85: 433-442.

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.

PROTOCOLS

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