SANTA CRUZ BIOTECHNOLOGY, INC.

A cyclase VIII (R-20): sc-1967

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 VIII (A cyclase VIII) is one of the three mammalian calcium-stimulated isoforms, each of which is expressed in a region-specific manner in the central nervous system. In addition to the high expression in the brain, A cyclase VIII is also expressed in the lung. Ca^{2+}/calmodulin-dependent A cyclase VIII immunoreactivity is increased in alcoholic corpus amyadaloideum and hippocampus, suggesting that adenyl cyclase may play a role in the pathophysiology of alcoholism. A significant decrease in the level of A cyclase I and a tendency to decrease in the level of A cyclase VIII in Alzheimer's disease hippocampus suggests that A cyclase I and VIII may play an essential role in learning and memory. A cyclase VIII knock-out mice do not have normal increases in behavioral markers of anxiety; thus, A cyclase VIII may also function in the modulation of anxiety.

CHROMOSOMAL LOCATION

Genetic locus: ADCY8 (human) mapping to 8q24.22, ADCY5 (human) mapping to 3q21.1; Adcy8 (mouse) mapping to 15 D1, Adcy5 (mouse) mapping to 16 B3.

SOURCE

A cyclase VIII (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of A cyclase VIII of rat origin.

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-1967 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

A cyclase VIII (R-20) is recommended for detection of Adenylyl cyclase VIII and, to a lesser extent, Adenylyl cyclase V, of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 VIII (R-20) is also recommended for detection of adenylyl cyclase VIII and, to a lesser extent, adenylyl cyclase V in additional species, including equine, canine and porcine.

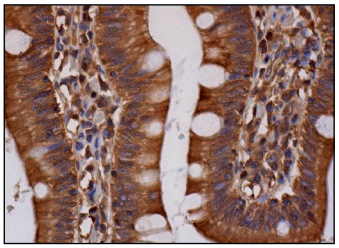
Molecular Weight of A cyclase VIII: 165 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, T98G cell lysate: sc-2294 or IMR-32 cell lysate: sc-2409.

RESEARCH USE

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

DATA



A cyclase VIII (R-20): sc-1967. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Guenifi, A., et al. 2000. Adenylyl cyclase isoform expression in non-diabetic and diabetic Goto-Kakizaki (GK) rat pancreas. Evidence for distinct overexpression of type-8 adenylyl cyclase in diabetic GK rat islets. Histochem. Cell Biol. 113: 81-89.
2. Yamamoto, M., et al. 2000. Hippocampal level of neural specific adenylyl cyclase type I is decreased in Alzheimer's disease. Biochim. Biophys. Acta 1535: 60-68.
3. Abdel-Majid, R.M., et al. 2002. Localization of adenylyl cyclase proteins in the rodent retina. Brain Res. Mol. Brain Res. 101: 62-70.
4. Ostrom, R.S., et al. 2003. Angiotensin II enhances adenylyl cyclase signaling via Ca^{2+}/calmodulin. G_q-G_s cross-talk regulates collagen production in cardiac fibroblasts. J. Biol. Chem. 278: 24461-24468.
5. Baxendale, R.W., et al. 2003. Evidence for multiple distinctly localized adenylyl cyclase isoforms in mammalian spermatozoa. Mol. Reprod. Dev. 66: 181-190.
6. 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.