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 $G_s$) for GTP, the dissociation of GTP-$G_s$, from $G_s$ and $G_i$, mediated activation of adenyl cyclase. Adenylyl cyclase III (AC III) exhibits distinct staining within the cell nucleus in rat primary sensory neurons and is expressed in myenteric ganglia as two bands near 220 kDa by SDS-PAGE. In addition, a processed form of AC III is expressed in primary neurons and PC12 cells as a 70 kDa protein. Both short- and long-term activation of D(2L) dopamine receptors result in a marked degree of sensitization of AC I, AC II, AC V and AC IX, but not AC VIII. The effects on AC I, AC II and AC VII is dependent upon the ability of these AC isoforms to synergistically respond to selective activators in the presence of activated $G_s$. 

**REFERENCES**


**CHROMOSOMAL LOCATION**

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

**SOURCE**

A cyclase III (H-270) is a rabbit polyclonal antibody raised against amino acids 1-270 mapping at the N-terminus of A cyclase III 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.

**STORAGE**

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