

A cyclase VI (N-20): sc-68138

BACKGROUND

Adenylyl cyclases (A 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. A cyclases respond to receptor-initiated signals and are mediated by heterotrimeric G proteins which catalyze the exchange of GDP for GTP and activate A cyclase function. A cyclase VI, also known as ADCY6 (adenylate cyclase type 6), is a 1,168 amino acid A cyclase that localizes to the membrane and contains two guanylate cyclase domains. Using magnesium as a cofactor, A cyclase VI functions as a calcium-inhibitable A cyclase that catalyzes the conversion of ATP to 3',5'-cyclic AMP and diphosphate and plays a role in a variety of events throughout the body. Multiple isoforms of A cyclase VI exist due to alternative splicing events.

REFERENCES

1. Haber, N., et al. 1994. Chromosomal mapping of human adenylyl cyclase genes type III, type V and type VI. *Hum. Genet.* 94: 69-73.
2. Gaudin, C., et al. 1994. Mammalian adenylyl cyclase family members are randomly located on different chromosomes. *Hum. Genet.* 94: 527-529.
3. Harry, A., et al. 1997. Differential regulation of adenylyl cyclases by $G_{\alpha s}$. *J. Biol. Chem.* 272: 19017-19021.
4. Raimundo, S., et al. 1999. Cloning and sequence of partial cDNAs encoding the human type V and VI adenylyl cyclases and subsequent RNA-quantification in various tissues. *Clin. Chim. Acta* 285: 155-161.
5. Wicker, R., et al. 2000. Cloning and expression of human adenylyl cyclase type VI in normal thyroid tissues. *Biochim. Biophys. Acta* 1493: 279-283.
6. Cote, M., et al. 2001. Expression and regulation of adenylyl cyclase isoforms in the human adrenal gland. *J. Clin. Endocrinol. Metab.* 86: 4495-4503.
7. Ludwig, M.G., et al. 2002. Characterization of the human adenylyl cyclase gene family: cDNA, gene structure, and tissue distribution of the nine isoforms. *J. Recept. Signal Transduct. Res.* 22: 79-110.

CHROMOSOMAL LOCATION

Genetic locus: ADCY6 (human) mapping to 12q13.12; Adcy6 (mouse) mapping to 15 F1.

SOURCE

A cyclase VI (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal cytoplasmic domain of A cyclase VI 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.

Blocking peptide available for competition studies, sc-68138 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

A cyclase VI (N-20) is recommended for detection of a cyclase VI 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

A cyclase VI (N-20) is also recommended for detection of a cyclase VI in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for A cyclase VI siRNA (h): sc-40321, A cyclase VI siRNA (m): sc-40322, A cyclase VI shRNA Plasmid (h): sc-40321-SH, A cyclase VI shRNA Plasmid (m): sc-40322-SH, A cyclase VI shRNA (h) Lentiviral Particles: sc-40321-V and A cyclase VI shRNA (m) Lentiviral Particles: sc-40322-V.

Molecular Weight of A cyclase VI: 132 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Liu, X., et al. 2010. Fibroblast-specific expression of AC6 enhances β -adrenergic and prostacyclin signaling and blunts bleomycin-induced pulmonary fibrosis. *Am. J. Physiol. Lung Cell Mol. Physiol.* 298: L819-L829.
2. Bogard, A.S., et al. 2011. Human bronchial smooth muscle cells express adenylyl cyclase isoforms 2, 4, and 6 in distinct membrane microdomains. *J. Pharmacol. Exp. Ther.* 337: 209-217.

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.



Try **A cyclase V/VI (B-6): sc-514785**, our highly recommended monoclonal alternative to A cyclase VI (N-20).