

A cyclase VI (G-19): sc-68137

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

- Haber, N., et al. 1994. Chromosomal mapping of human adenylyl cyclase genes type III, type V and type VI. *Hum. Genet.* 94: 69-73.
- Gaudin, C., et al. 1994. Mammalian adenylyl cyclase family members are randomly located on different chromosomes. *Hum. Genet.* 94: 527-529.
- Harry, A., et al. 1997. Differential regulation of adenylyl cyclases by $G_{\alpha s}$. *J. Biol. Chem.* 272: 19017-19021.
- 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.
- Wicker, R., et al. 2000. Cloning and expression of human adenylyl cyclase type VI in normal thyroid tissues. *Biochim. Biophys. Acta* 1493: 279-283.
- Cote, M., et al. 2001. Expression and regulation of adenylyl cyclase isoforms in the human adrenal gland. *J. Clin. Endocrinol. Metab.* 86: 4495-4503.
- 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.
- Celano, M., et al. 2003. Expression of adenylyl cyclase types III and VI in human hyperfunctioning thyroid nodules. *Mol. Cell. Endocrinol.* 203: 129-135.
- Tovey, S.C., et al. 2008. Selective coupling of type 6 adenylyl cyclase with type 2 IP3 receptors mediates direct sensitization of IP3 receptors by cAMP. *J. Cell Biol.* 183: 297-311.

CHROMOSOMAL LOCATION

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

SOURCE

A cyclase VI (G-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of A cyclase VI 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-68137 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

A cyclase VI (G-19) 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 (G-19) 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.

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.



Try **A cyclase V/VI (B-6): sc-514785**, our highly recommended monoclonal alternative to A cyclase VI (G-19).