SANTA CRUZ BIOTECHNOLOGY, INC.

A cyclase V/VI (B-6): sc-514785

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. Adenylyl cyclases V (AC V) and VI (AC VI) have multiple messages. AC V and AC VI are highly expressed in heart. Unlike AC VI, AC V is expressed to a lesser extent in brain and is absent in a variety of other tissues. Both AC V and AC VI can be stimulated by NaF, guanosine 5'-[γ-thio]triphosphoate and Forskolin but not by Ca^{2+}/calmodulin. Activation of the D2 dopaminergic and m4 muscarine receptors inhibit the activity of adenylyl cyclase isozymes I, V, VI and VIII, whereas type II, IV and VII are stimulated and type III is not affected.

REFERENCES

1. Gilman, A.G. 1987. G proteins: transducers of receptor-generated signals. Annu. Rev. Biochem. 56: 615-649.
2. Bourne, H.R., et al. 1990. The GTPase superfamily: a conserved switch for diverse cell functions. Nature 348: 125-132.

CHROMOSOMAL LOCATION

Genetic locus: ADCY5 (human) mapping to 3q21.1, ADCY6 (human) mapping to 12q13.12; Adcy5 (mouse) mapping to 16 B3, Adcy6 (mouse) mapping to 15 F1.

SOURCE

A cyclase V/VI (B-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1149-1165 at the C-terminus of A cyclase VI of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

A cyclase V/VI (B-6) is available conjugated to agarose (sc-514785 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514785 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514785 PE), fluorescein (sc-514785 FITC), Alexa Fluor® 488 (sc-514785 AF488), Alexa Fluor® 546 (sc-514785 AF546), Alexa Fluor® 594 (sc-514785 AF594) or Alexa Fluor® 647 (sc-514785 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514785 AF680) or Alexa Fluor® 790 (sc-514785 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514785 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

A cyclase V/VI (B-6) is recommended for detection of A cyclase V and A cyclase VI of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for A cyclase V/VI siRNA (h): sc-43587, A cyclase V/VI siRNA (m): sc-43588, A cyclase V/VI shRNA Plasmid (h): sc-43587-SH, A cyclase V/VI shRNA Plasmid (m): sc-43588-SH, A cyclase V/VI shRNA (h) Lentiviral Particles: sc-43587-V and A cyclase V/VI shRNA (m) Lentiviral Particles: sc-43588-V.

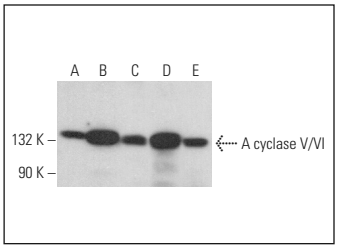
Molecular Weight of A cyclase V/VI: 132 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

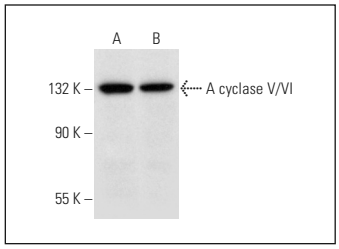
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



A cyclase V/VI (B-6): sc-514785. Western blot analysis of A cyclase V/VI expression in SK-N-SH (**A**), IMR-32 (**B**) and C6 (**C**) whole cell lysates and mouse postnatal brain (**D**) and rat brain (**E**) tissue extracts.



A cyclase V/VI (B-6): sc-514785. Western blot analysis of A cyclase V/VI expression in HeLa (**A**) and Hep G2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Guo, M., et al. 2021. Deletion of FGF9 in GABAergic neurons causes epilepsy. Cell Death Dis. 12: 196.

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.