

PDE1B (G-5): sc-393112

BACKGROUND

cAMP-hydrolyzing cyclic nucleotide phosphodiesterase (PDE) catalyzes hydrolysis of the cyclic nucleotides cAMP and cGMP to the corresponding nucleoside 5'-monophosphates. PDEs are key enzymes in signaling pathways that influence smooth muscle tone regulation. The PDE1 family are calmodulin-dependent (CaM-PDEs) that undergo stimulation through a calcium-calmodulin complex. Human PDE1B (PDE1B1) protein is present in neuronal cells of the cerebellum, hippocampus, and caudate, and lymphoblastoid lines, such as RPMI-8392 cells. PDE1B may participate in learning, memory, and regulation of phosphorylation of DARPP-32 in dopaminergic neurons. A splice variant known as PDE1B2 encodes a 516-amino acid protein and diverges from PDE1B1 by the replacement of the first 38 residues with an alternative 18 residues. The human PDE1B gene maps to chromosome 12q13.2, contains 13 exons, and encodes a 536 amino acid protein.

CHROMOSOMAL LOCATION

Genetic locus: PDE1B (human) mapping to 12q13.2; Pde1b (mouse) mapping to 15 F3.

SOURCE

PDE1B (G-5) is a mouse monoclonal antibody raised against amino acids 435-536 mapping at the C-terminus of PDE1B of human origin.

PRODUCT

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

PDE1B (G-5) is available conjugated to agarose (sc-393112 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393112 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393112 PE), fluorescein (sc-393112 FITC), Alexa Fluor® 488 (sc-393112 AF488), Alexa Fluor® 546 (sc-393112 AF546), Alexa Fluor® 594 (sc-393112 AF594) or Alexa Fluor® 647 (sc-393112 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393112 AF680) or Alexa Fluor® 790 (sc-393112 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PDE1B (G-5) is recommended for detection of PDE1B 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), 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).

Suitable for use as control antibody for PDE1B siRNA (h): sc-60088, PDE1B siRNA (m): sc-60089, PDE1B shRNA Plasmid (h): sc-60088-SH, PDE1B shRNA Plasmid (m): sc-60089-SH, PDE1B shRNA (h) Lentiviral Particles: sc-60088-V and PDE1B shRNA (m) Lentiviral Particles: sc-60089-V.

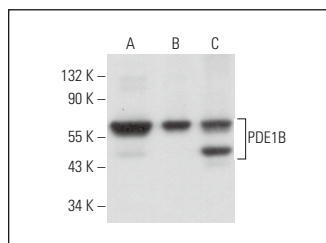
Molecular Weight of PDE1B: 63 kDa.

Positive Controls: rat brain extract: sc-2392, rat hippocampus tissue extract or mouse brain extract: sc-2253.

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PDE1B (G-5): sc-393112. Western blot analysis of PDE1B expression in mouse brain (A), rat brain (B) and rat hippocampus (C) tissue extracts.



PDE1B (G-5): sc-393112. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic and nuclear staining of neuronal cells.

SELECT PRODUCT CITATIONS

1. Pekcec, A., et al. 2018. Targeting the dopamine D1 receptor or its downstream signalling by inhibiting phosphodiesterase-1 improves cognitive performance. *Br. J. Pharmacol.* 175: 3021-3033.
2. Choi, W.S., et al. 2021. Vinpocetine alleviates lung inflammation via macrophage inflammatory protein-1β inhibition in an ovalbumin-induced allergic asthma model. *PLoS ONE* 16: e0251012.
3. Hollis, W.C., et al. 2024. Submicron immunoglobulin particles exhibit FcγRII-dependent toxicity linked to autophagy in TNFα-stimulated endothelial cells. *Cell. Mol. Life Sci.* 81: 376.

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 for detailed protocols and support products.

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