

PDE1A (B-10): sc-374602

BACKGROUND

Phosphodiesterases (PDE, also designated cyclic nucleotide phosphodiesterase) are important for the downregulation of the intracellular level of the second messenger cyclic adenosine monophosphate (cAMP) by hydrolyzing cAMP to 5'AMP. The PDE1 family are calmodulin-dependent (CaM-PDE) proteins that undergo stimulation through a calcium-calmodulin complex. The activation of PDE1A requires a sustained influx of Ca²⁺. Excluding its two short unique regions, human PDE1A has a predicted amino acid sequence exhibiting 94% homology to PDE of cow origin. PDE1A is most highly expressed in the brain, heart, kidney and skeletal muscle.

REFERENCES

- Clapham, J.C., et al. 2001. Cloning of dog heart PDE1A—a first detailed characterization at the molecular level in this species. *Gene* 268: 165-171.
- Fidock, M., et al. 2002. Isolation and differential tissue distribution of two human cDNAs encoding PDE1 splice variants. *Cell. Signal.* 14: 53-60.
- Lefievre, L., et al. 2002. Presence of cyclic nucleotide phosphodiesterases PDE1A, existing as a stable complex with calmodulin, and PDE3A in human spermatozoa. *Biol. Reprod.* 67: 423-430.
- Goaraya, T.A., et al. 2004. Sustained entry of Ca²⁺ is required to activate Ca²⁺-calmodulin-dependent phosphodiesterase 1A. *J. Biol. Chem.* 279: 40494-40504.

CHROMOSOMAL LOCATION

Genetic locus: PDE1A (human) mapping to 2q32.1; Pde1a (mouse) mapping to 2 C3.

SOURCE

PDE1A (B-10) is a mouse monoclonal antibody raised against amino acids 431-535 mapping at the C-terminus of PDE1A of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PDE1A (B-10) is available conjugated to agarose (sc-374602 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374602 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374602 PE), fluorescein (sc-374602 FITC), Alexa Fluor® 488 (sc-374602 AF488), Alexa Fluor® 546 (sc-374602 AF546), Alexa Fluor® 594 (sc-374602 AF594) or Alexa Fluor® 647 (sc-374602 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374602 AF680) or Alexa Fluor® 790 (sc-374602 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

PDE1A (B-10) is recommended for detection of PDE1A 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 PDE1A siRNA (h): sc-62763, PDE1A siRNA (m): sc-62764, PDE1A shRNA Plasmid (h): sc-62763-SH, PDE1A shRNA Plasmid (m): sc-62764-SH, PDE1A shRNA (h) Lentiviral Particles: sc-62763-V and PDE1A shRNA (m) Lentiviral Particles: sc-62764-V.

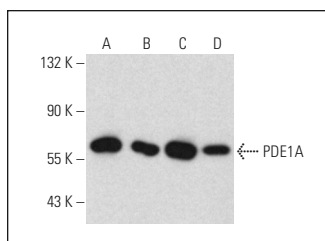
Molecular Weight of PDE1A isoforms: 57-63 kDa.

Positive Controls: NCI-H1299 whole cell lysate: sc-364234, IMR-32 cell lysate: sc-2409 or HeLa whole cell lysate: sc-2200.

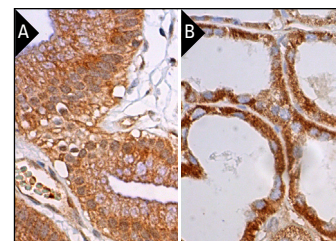
RECOMMENDED SUPPORT REAGENTS

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



PDE1A (B-10): sc-374602. Western blot analysis of PDE1A expression in HeLa (A), NCI-H1299 (B), IMR-32 (C) and NIH/3T3 (D) whole cell lysates.



PDE1A (B-10): sc-374602. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

- 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.

RESEARCH USE

For research use only, not for use in diagnostic procedures.