

PDE5A (D-3): sc-398747



The Power to Question

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 PDE family contains proteins that serve tissue-specific roles in the regulation of lipolysis, glycogenolysis, myocardial contractility and smooth muscle relaxation. PDE5A, also designated cGMP-binding cGMP-specific phosphodiesterase or CGB-PDE, regulates the intracellular concentration of cyclic nucleotides and thereby is important in signal transduction. PDE5A catalyzes the hydrolysis of cGMP to 5'GMP and the protein is expressed in heart, placenta, aortic smooth muscle cells, skeletal muscle and pancreas.

REFERENCES

- Cheung, P.P., et al. 1998. Partial characterization of the active site human platelet cAMP phosphodiesterase, PDE3A, by site-directed mutagenesis. *Arch. Biochem. Biophys.* 360: 99-104.
- Fisher, D.A., et al. 1998. Isolation and characterization of PDE8A, a novel human cAMP-specific phosphodiesterase. *Biochem. Biophys. Res. Commun.* 246: 570-577.
- Gantner, F., et al. 1998. Phosphodiesterase profile of human B lymphocytes from normal and atopic donors and the effects of PDE inhibition on B cell proliferation. *Br. J. Pharmacol.* 123: 1031-1038.
- Hetman, J.M., et al. 2000. Cloning and characterization of PDE7B, a cAMP-specific phosphodiesterase. *Proc. Natl. Acad. Sci. USA* 97: 472-476.
- SWISS-PROT/TrEMBL (O60930). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: PDE5A (human) mapping to 4q26; Pde5a (mouse) mapping to 3 G1.

SOURCE

PDE5A (D-3) is a mouse monoclonal antibody raised against amino acids 31-150 mapping near the N-terminus of PDE5A 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.

PDE5A (D-3) is available conjugated to agarose (sc-398747 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398747 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398747 PE), fluorescein (sc-398747 FITC), Alexa Fluor® 488 (sc-398747 AF488), Alexa Fluor® 546 (sc-398747 AF546), Alexa Fluor® 594 (sc-398747 AF594) or Alexa Fluor® 647 (sc-398747 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398747 AF680) or Alexa Fluor® 790 (sc-398747 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

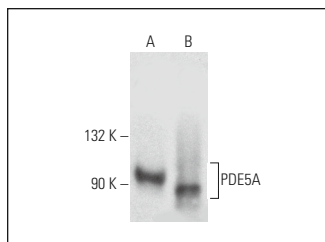
PDE5A (D-3) is recommended for detection of PDE5A isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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 PDE5A siRNA (h): sc-44918, PDE5A siRNA (m): sc-44919, PDE5A shRNA Plasmid (h): sc-44918-SH, PDE5A shRNA Plasmid (m): sc-44919-SH, PDE5A shRNA (h) Lentiviral Particles: sc-44918-V and PDE5A shRNA (m) Lentiviral Particles: sc-44919-V.

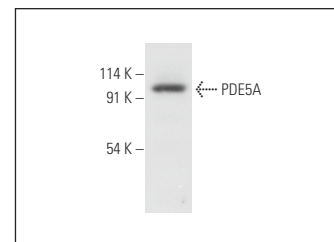
Molecular Weight of PDE5A: 95 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, rat lung extract: sc-2396 or A-10 cell lysate: sc-3806.

DATA



PDE5A (D-3): sc-398747. Western blot analysis of PDE5A expression in A-10 whole cell lysate (A) and rat lung tissue extract (B).



PDE5A (D-3): sc-398747. Western blot analysis of PDE5A expression in HEK293 whole cell lysate.

SELECT PRODUCT CITATIONS

- West, T.M., et al. 2019. Phosphodiesterase 5 associates with β_2 adrenergic receptor to modulate cardiac function in type 2 diabetic hearts. *J. Am. Heart Assoc.* 8: e012273.
- Sánchez-Gloria, J.L., et al. 2023. Allicin, an emerging treatment for pulmonary arterial hypertension: an experimental study. *Int. J. Mol. Sci.* 24: 12959.
- Murao, N., et al. 2024. Sildenafil amplifies calcium influx and insulin secretion in pancreatic β cells. *Physiol. Rep.* 12: e16091.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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