

PDE1C (D-10): sc-166044

BACKGROUND

Phosphodiesterases (PDEs, also designated cyclic nucleotide phosphodiesterase) are important for the downregulation of intracellular levels of the second messengers cyclic adenosine monophosphate (cAMP) and cyclic guanosine monophosphate (cGMP). The PDE1 family are calmodulin-dependent (CaM-PDE) proteins that undergo stimulation through a calcium-calmodulin complex and function to hydrolyze cAMP to 5'AMP and cGMP to 5'GMP. PDE1C (phosphodiesterase 1C), also known as HCAM3, is a widely expressed protein that has a high affinity for both cAMP and cGMP. Two isoforms, designated PDE1C1 and PDE1C2, exist due to alternative splicing at the C-terminus. While both isoforms are expressed in low levels throughout the body, PDE1C2 is expressed predominately in the brain and heart, while PDE1C1 is expressed predominately in the brain, heart and lung.

REFERENCES

- Cherry, J.A. and Pho, V. 2002. Characterization of cAMP degradation by phosphodiesterases in the accessory olfactory system. *Chem. Senses* 27: 643-652.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602987. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Rybalkin, S.D., et al. 2003. Cyclic GMP phosphodiesterases and regulation of smooth muscle function. *Circ. Res.* 93: 280-291.
- Ahlström, M., et al. 2005. Cyclic nucleotide phosphodiesterases (PDEs) in human osteoblastic cells; the effect of PDE inhibition on cAMP accumulation. *Cell. Mol. Biol. Lett.* 10: 305-319.
- Evgenov, O.V., et al. 2006. Inhibition of phosphodiesterase 1 augments the pulmonary vasodilator response to inhaled nitric oxide in awake lambs with acute pulmonary hypertension. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 290: L723-L729.
- Dolci, S., et al. 2006. Subcellular localization and regulation of type-1C and type-5 phosphodiesterases. *Biochem. Biophys. Res. Commun.* 341: 837-846.
- Torsney, C., et al. 2006. Characterization of sensory neuron subpopulations selectively expressing green fluorescent protein in phosphodiesterase 1C BAC transgenic mice. *Mol. Pain.* 2: 17-17.
- Murray, F., et al. 2007. Expression and activity of cAMP phosphodiesterase isoforms in pulmonary artery smooth muscle cells from patients with pulmonary hypertension: role for PDE1. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 292: L294-L303
- Vandeput, F., et al. 2007. Cyclic nucleotide phosphodiesterase PDE1C1 in human cardiac myocytes. *J. Biol. Chem.* 282: 32749-32757.

CHROMOSOMAL LOCATION

Genetic locus: PDE1C (human) mapping to 7p14.3.

RESEARCH USE

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

SOURCE

PDE1C (D-10) is a mouse monoclonal antibody raised against amino acids 448-709 mapping at the C-terminus of PDE1C 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.

APPLICATIONS

PDE1C (D-10) is recommended for detection of PDE1C of 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 PDE1C siRNA (h): sc-62765, PDE1C shRNA Plasmid (h): sc-62765-SH and PDE1C shRNA (h) Lentiviral Particles: sc-62765-V.

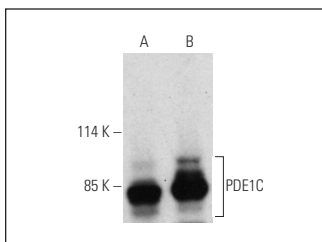
Molecular Weight of PDE1C: 81 kDa.

Positive Controls: human brain extract: sc-364375, human stomach extract: sc-363780 or human bronchus extract: sc-363754.

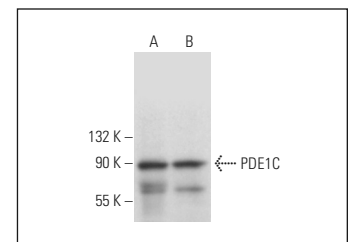
RECOMMENDED SUPPORT REAGENTS

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



PDE1C (D-10): sc-166044. Western blot analysis of PDE1C expression in human esophagus (A) and human brain (B) tissue extracts.



PDE1C (D-10): sc-166044. Western blot analysis of PDE1C expression in human bronchus (A) and human stomach (B) tissue extracts.

STORAGE

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