

PDE1C (E-16): sc-54933

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.
- 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 (mouse) mapping to 6 B3.

SOURCE

PDE1C (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PDE1C of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54933 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PDE1C (E-16) is recommended for detection of PDE1C of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PDE1C (E-16) is also recommended for detection of PDE1C in additional species, including equine, canine and avian.

Suitable for use as control antibody for PDE1C siRNA (m): sc-62766, PDE1C shRNA Plasmid (m): sc-62766-SH and PDE1C shRNA (m) Lentiviral Particles: sc-62766-V.

Molecular Weight of PDE1C: 81 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.