sigma-aldrich.com

3050 Spruce Street, St. Louis, MO 63103 USA Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757 email: techservice@sial.com sigma-aldrich.com

Product Information

PDE1A, active, His-tagged, human recombinant, expressed in *Sf*9 cells

Catalog Number **SRP5339** Storage Temperature –70 °C

Synonyms: HCAM1; HSPDE1A; MGC26303

Product Description

PDE1A is a member of the cyclic nucleotide phosphodiesterase family that is stimulated by Ca^{2+} -calmodulin. PDE1A is a cGMP-specific phosphodiesterase and hydrolyzes cGMP to 5'-GMP. Calmodulin is tightly bound to PDE1A in human spermatozoa and this results in permanent activation of PDE1A.¹ Inhibition of PDE1A function significantly attenuates vascular smooth muscle cell growth by decreasing proliferation via G₁ arrest and induces apoptosis.² In vascular smooth muscle cell, PDE1A is important in regulating growth and survival of these cells, and thus can contribute to the neointima formation in atherosclerosis and restenosis.

Recombinant full-length human PDE1A was expressed by baculovirus in *Sf*9 insect cells using an N-terminal His-tag. The gene accession number is NM_005019. It is supplied in 50 mM MOPS, pH 7.0, 300 mM NaCl, 150 mM imidazole, 0.1 mM PMSF, 0.25 mM DTT, and 25% glycerol.

Molecular mass: ~64 kDa

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and storage at -70 °C is recommended. After opening, aliquot into smaller quantities and store at -70 °C. Avoid repeated handling and multiple freeze/thaw cycles.

Figure 1.

SDS-PAGE Gel of Typical Lot: ≥70% (SDS-PAGE, densitometry)

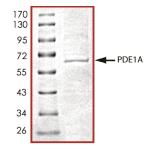
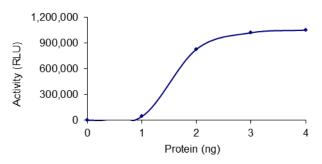


Figure 2.

Specific Activity of Typical Lot: 10,413–14,134 nmole/min/mg



Phosphodiesterase activity was determined with a luminescent assay procedure.

References

- Lefièvre, L. et al., Presence of cyclic nucleotide phosphodiesterases PDE1A, existing as a stable complex with calmodulin, and PDE3A in human spermatozoa. Biol. Reprod., 67(2), 423-30 (2002).
- Nagel, D.J. et al., Role of nuclear Ca²⁺/calmodulinstimulated phosphodiesterase 1A in vascular smooth muscle cell growth and survival. Circ. Res., 98(6), 777-84 (2006).

IC,RC,MAM 01/13-1

©2013 Sigma-Aldrich Co. LLC. All rights reserved. SIGMA-ALDRICH is a trademark of Sigma-Aldrich Co. LLC, registered in the US and other countries. Sigma brand products are sold through Sigma-Aldrich, Inc. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see product information on the Sigma-Aldrich website at www.sigmaaldrich.com and/or on the reverse side of the invoice or packing slip.