3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Anti-Phosphodiesterase 6α'
Developed in Rabbit
Affinity Isolated Antibody

Product Number **P 3120**

Product Description

Anti-Phosphodiesterase 6α' is developed in rabbit using a synthetic peptide corresponding to amino acid residues 16-29 of human phosphodiesterase 6α' (PDE6α') as immunogen. This sequence is completely conserved between human, chicken, and frog. The antibody is purified by immuneoaffinity chromatography.

Anti-Phosphodiesterase 6α' detects phosphodiesterase 6α' by immunoblotting (~90 kDa).

The second messengers, cAMP and cGMP, are key regulatory molecules that are involved in a wide variety of signal transduction pathways, such as insulin secretion, platelet aggregation, smooth muscle relaxation, olfaction, and vision. Levels of cAMP and cGMP are regulated by their rate of synthesis by nucleotide cyclases and by their rate of hydrolysis by cyclic nucleotide phosphodiesterases (PDEs). PDEs form a superfamily of enzymes that catalyze the conversion of 3-prime, 5-prime-cyclic nucleotides to the corresponding nucleoside 5-prime-monophosphates. Mammalian PDEs are divided into major families based on their substrate specificities, kinetic properties, allosteric regulators, inhibitor sensitivities, and amino acid sequences. The family members display distinct tissue, cell, and subcellular expression, suggesting that they are involved in signal transduction pathways.

Phosphodiesterase 6α (PDE6) is an effector enzyme in the G protein-mediated signal transduction cascade in the visual system. There are five different subunits consisting of rod and cone specific catalytic subunits: α' (cone), α (rod), and β (rod), γ (inhibitory subunit), and δ. The function of the δ subunit is not known and probably interacts with many other proteins besides the PDE6 family. The catalytic core of the PDE6 system is comprised of α'/α' homodimers in the cone and α/β heterodimers in the rod. The C-terminus of both the catalytic and inhibitory subunits is modified by methylation, myristyolation, and prenylation, which have been shown to be critical for proper complex assembly and membrane association.

Reagent

Anti-Phosphodiesterase 6α' is supplied in phosphate buffered saline (PBS), pH 7.4, containing 1 mg/ml bovine serum albumin (BSA), and 0.05% sodium azide.

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) has been sent to the attention of the safety officer at your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. For extended storage, freeze at –20 °C in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

For immunoblotting, the minimum recommended working antibody dilution is 1:500 using sheep retinal extract.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. He, F., et al., Multiple zinc binding sites in retinal rod cGMP phosphodiesterase, PDE6α/β. J. Biol. Chem., **275**, 20572-20577 (2000).
2. Granovsky, A.E., and Artemyev, N.O., Identification of the γ subunit-interacting residues on photoreceptor cGMP phosphodiesterase, PDE6α′. J. Biol. Chem., **275**, 41258-41262 (2000).

kaa 01/04