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PRODUCT INFORMATION



PDE2A (human, recombinant; aa 215-900)

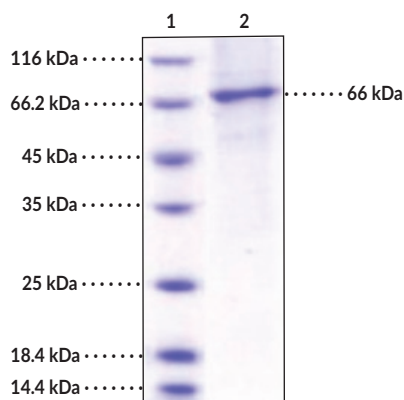
Item No. 32037

Overview and Properties

Synonyms: CGS-PDE, CGMP-Dependent 3',5'-Cyclic Phosphodiesterase, Cyclic GMP-Stimulated Phosphodiesterase, Phosphodiesterase 2A, CGMP-Stimulated
Source: Recombinant human C-terminal His-tagged PDE2A expressed in insect cells
Amino Acids: 215-900
Molecular Weight: 80 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥90% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile 20mM Tris, pH 7.4, with 500 mM sodium chloride and 10% glycol
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: PDE2A (human, recombinant; aa 215-900)

Figure 1: SDS-PAGE Analysis of PDE2A (human, recombinant; aa 215-900)

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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PRODUCT INFORMATION



Description

Phosphodiesterase 2A (PDE2A) is a cGMP-stimulated cyclic nucleotide phosphodiesterase that hydrolyzes cGMP and cAMP.¹ It is a 941-amino acid protein comprised of an N-terminal domain (1-214), GAF-A domain (215-372), GAF-B domain (393-541), and a catalytic domain (579-941) and functions as a homodimer.² PDE2A is expressed in the brain and to a lesser extent in heart, placenta, lung, skeletal muscle, kidney, spleen, and pituitary.³ Upon cGMP binding to the GAF-B domain, PDE2A is activated and hydrolyzes cAMP and cGMP to regulate cell signaling.¹ PDE2A mRNA levels are reduced in postmortem amygdala from patients with schizophrenia, bipolar disorder, and major depressive disorder compared with healthy controls.⁴ PDE2A brain activity is increased in the *Fmr1*^{-/-} mouse model of fragile X syndrome and administration of the selective PDE2A inhibitor BAY 60-7550 (Item No. 10011135) restores axonal length and spine maturation and attenuates social discriminatory and vocalization deficits in *Fmr1*^{-/-} young mice.⁵ Adenovirus shRNA knockdown of *Pde2a* attenuates bronchoalveolar lavage fluid (BALF) neutrophilia, reduces lung levels of inducible nitric oxide synthase (iNOS), and increases lung cAMP levels in a mouse model of acute lung injury.⁶ Cayman's PDE2A (human, recombinant; aa 215-900) protein consists of 706 amino acids and has a calculated molecular weight of 80 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 66 kDa.

References

1. Zhang, C., Lueptow, L.M., Zhang, H.-T., et al. The role of phosphodiesterase-2 in psychiatric and neurodegenerative disorders. *Phosphodiesterases: CNS Functions and Diseases*. Zhang, H.T., Xu, Y., and O'Donnell, J.M., editors, Springer International Publishing AG (2017).
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3. Stephenson, D.T., Coskran, T.M., Wilhelms, M.B., et al. Immunohistochemical localization of phosphodiesterase 2A in multiple mammalian species. *J. Histochem. Cytochem.* **57**(10), 933-949 (2009).
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