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Rabbit Polyclonal Anti-Phospho-PDE5A antibody

Catalog Number: PPD5A-140AP

Lot Number:

General Information

Product	Phospho PDE5A Antibody
Description	Phosphorylated Phosphodiesterase 5A Antibody Affinity Purified
Accession #	Uniprot: O76074 NCBI: NP_001074.2
Verified Applications	ELISA, ICC, IHC, WB
Species Cross Reactivity	Bovine, Human, Mouse, Pig, Rat
Host	Rabbit
Immunogen	Phosphorylated synthetic peptide common to all PDE5A variants taken within amino acid region 120-170 on human PDE5A protein.
Specificity	This antibody will detect only PDE5A protein that has been phosphorylated at the PKG site. Will not detect unphosphorylated PDE5A, or other PDE family members.
Alternative Nomenclature	CGBPDE antibody, cGMP-specific 3'' antibody, CN5A antibody, CN5N antibody, PDE5 antibody,

Physical Properties

Quantity	100 µg
Volume	200 µl
Form	Affinity Purified Immunoglobulins
Immunoglobulin & Concentration	1.0-1.25 mg/ml IgG in antibody stabilization buffer
Storage	Store at -20ºC for long term storage.

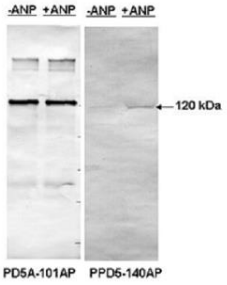
Recommended Dilutions

DOT Blot	1:10,000
ELISA	1:10,000
Immunocytochemistry	1:100
Immunofluorescence	1:100
Immunohistochemistry	1:100
Western Blot	1:500

Related Products

	Catalog #
FITC-Conjugated	PPD5A-FITC
Antigenic Blocking Peptide	P-PPD5A
Western Blot Positive Control	PC-PPD5A
HRP-Conjugated	PD5A-HRP
Anti-PDE5A	PD5A-101AP
Anti-Recombinant PDE5A	PD5A-112AP

Application Verification:



WB of recombinant GFP-PDE5A1 and Phospho-PDE5A antibody. Overexpressing cells were treated with or without ANP. Antibody dilution 1:500 in DiluObuffer. Blot was stripped with StripObuffer and reprobed with PPD5A-101AP.

Dilutions are for reference only. Applications not listed above are not necessarily precluded from working with this antibody. Investigators intending to use an application that has not been verified can request a complimentary sample.

Overview:

The cyclic monophosphate nucleotides, cyclic adenosine monophosphate (cAMP) and cyclic guanosine monophosphate (cGMP) are found ubiquitously in mammalian cells and act as second messenger transducers to effect the intracellular actions of a variety of G-protein coupled receptors (GPCRs) for hormones, cytokines, and neurotransmitters. Cyclic nucleotides are important intracellular second messengers which play important role in a variety of signal transduction process. The cyclic nucleotides are hydrolyzed and compartmentalized by a family of enzymes called phosphodieterases. One of the many phosphodiesterases that compartmentalized and hydrolyze cGMP in various tissues is phosphodiesterase type 5A (PDE5A). The cGMP is involved in nitric oxide signaling as well as cell signaling associated with natriuretic peptides and gulanylins. Some of the intracellular biding cites for the cGMP include cyclic nucleotide gated ion channels, cGMP-dependent protein kinases, and cyclic GMP biding phosphodiesterases (cGB-PDEs). The cGB-PDEs include PDE2, PDE3, PDE5 and PDE10; the members of these families contain various structural and functional motifs that are conserved. Most of these proteins contain dimmeric subunits that contain a highly conserved cGMP binding site and a phosphodiesterase catalytic site. The cGMP-specific phosphodiesterase type-5A (PDE5A) family is comprised of single gene with multiple splice variants (PDE5A1 and PDE5A2) generated by RNA splicing and use the of alternate initiation sites (1, 2). PDE5 is highly expressed in aorta, lungs, intestine, kidney adrenal gland, cerebellum, and cerebrum. In cerebellum, the PDE5 is highly expressed during neonatal development in Purkinje cells layer. PDE5 is also abundant in vascular smooth muscle regulating cGMP levels and vascular smooth muscle tonicity. In corpus cavernosum inhibition of PDE5 by sildenafil corrects erectile dysfunctions. The nitric oxide donor sodium notropurside (SNP) stimulate PDE5 activity by cGMP-dependent kinase phosphorylation (Rybalkin et. al., 2002; Murthy 2001). PDE5A1 has 875 amino acids (99.5 kDa). The amino terminal 142 amino acid of the PDE5 gene showed no sequence homology with other PDEs and also contained serine 92 that is phosphorylated by cGMP-kinases (McAllister et al., 93). A phospho-specific PDE5A antibody was generated against the conserved PKG phosphorylation site.

The affinity purified antibody labels PDE5A proteins when they are phosphorylated at Ser92 by PKG. The PDE5-selective antibody (PD5A-101AP) was generated using cyclic peptide methodology that results in higher titer and specificity (3). The PDE5-selective antibodies are generated against peptides from unique sequences on the PDE5A gene. The affinity purified antibody labels 99 and 89 kDa PDE5A1 and PDE5A2 proteins using PDE5A WB positive controls (PC-PD5A). The PDE5A-specific antiserum has no cross reactivity against PDE5B protein or any other member of the fast growing family of PDEs. FabGennix can conjugate antibodies with enzymes, fluorescent probes upon request at extra charge. We provide well characterized antibodies to other PDE family members including family selective, family subtype-selective, and family subtype variant selective antibodies. The PDE antibodies are available in family-selective, family subtype-selective and family-subtype-variant selective categories for detailed analyses of cyclic nucleotide signaling pathways. The Phospho-PDE5-selective antibodies (PD5A-100P and PD5A-101AP) are generated against peptide (C-GTP TRK IS^{P}A SEF DR) containing PKG phosphorylation site and is conserved in many species. For detection of PDE5A protein an affinity purified mono-specific polyclonal antibody (PD5A-101AP) and Western blot positive control for PDE5A is also available from FabGennix International Inc. The PDE5A-specific antiserum has no cross reactivity against PDE5B protein or any other member of the fast growing family of PDEs. The PDE5A antibody labels both PDE5A1 andPDE5A2 variants in various tissues including lungs and brain. FabGennix Inc. will also conjugate antibodies with enzymes, fluorescent probes upon request at extra charge.

References:

1. Rybalkin SD., Rabalkina IG., Feil R., Hoffmann F., Beavo J. A. J. Biol. Chem. 277; 3310-3317, 2002.
2. Murthy K. S. Biochem. J. 360, 199-208, 2001.
3. McAllister –Lusas, Sonneberg W. K., et. al., J. Biol. Chem. The structure of Bovine lung cGMP-binding, cGMP-specific phosphodiesterase deduced from a cDNA clone. J. Biol. Chem. 268; 22863-22871, 1993
4. Champion H., Bivalacqua T. J. et al., PNAS., 102; 1661-1666; 2005

For users who may require large amounts of the products listed above, please inquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.