

New Item

INTERNATIONAL

cAMP-dependent phosphodiesterase antibodies (PD4-100P and PD4-101AP)

Cyclic nucleotides are hydrolyzed and compartmentalized by a family of enzymes called phosphodiesterases. cAMP-specific phosphodiesterase type-4 (PDE4) family is comprised of 4 genes (PDE4 A, B, C and D) with multiple splice variants generated by RNA splicing and use of alternate initiation sites (1). The cAMP-dependent protein kinase A modulates the enzyme activity of some PDE4 family members by phosphorylation/dephosphorylation mechanisms (2, 3). Such short-term regulatory mechanisms are necessary for rapid changes in the cAMP levels in cells. PDE4-family selective inhibitor, rolipram inhibits all members of the PDE4 family in mM range. At present PDE4 subtype selective and variant selective inhibitors are not available. In rodents inhibition of PDE4 enzymes by rolipram attenuated short- and long-term memory impairment produced by the administration of scopolamine and MK801 (3, 4). Interaction of these enzymes with cellular scaffolding proteins plays important role in PDE4 compartmentalization and cAMP-dependent signaling. Members of the PDE4A and D subtype variants specifically interact with cytoskeletal proteins with SH3 domains or RACK and AKAP for cellular compartmentalization. In brain PDE4A, B and D are associated with GPCRs signaling (5, 6).

The PDE4 family-selective antibody was generated against a common sequence near the C-terminal end that is unique to PDE4 family members. The polyclonal antibody labels PDE4A and PDE4D variants in rat brain and has low affinity for PDE4B variants (7). *FabGennix Inc.* provides PDE family selective, family subtype-selective and family-subtype-variant selective antibodies for detailed analyses of cAMP signaling pathways. The PDE4 selective-antibody (PD4-100P/101AP) was generated using cyclic peptide methodology that results in higher titer and specificity (6). Antibody PD4-100P and PD4-101AP label all known PDE4 A and D variants including PDE4A1, A5, Ax, A8 and PDE4D1-D5. PDE4-selective antibody is also available in affinity purified form for confocal, Western blotting and immunohistochemical (IHC) analyses. *FabGennix Inc.* will also conjugate antibodies with fluorescent probes upon request at extra charge.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	price
PD4-100P	Rabbit	Polyclonal antisera	R, M, H, *C, *monk	100 µl	205
PD4-101AP	Rabbit	Affinity purified IgG	R, M, H, *C, *monk	50 µg	225
PD4-102Ig	Rabbit	IgG Purified	R, M, H, C, *monk	50 µg	205
P-PD4	Peptide	Blocking peptide	all PDE4 proteins	250 ug	65
PC-PD4	WB control	Ready-to-use control	Rat PDE4 proteins	5 appl	165

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

Immunogen: Synthetic peptide common to most of the PDE4 subtypes.

Concentration: PD4-100P Neat serum with out preservatives

PD4-101AP IgG concentration 1 mg/ml in antibody stabilization buffer.

Applications: Antibody PD4-100P and PD4-101AP is ideal for IMM/ PDE4 activity measurement and screening of various PDE4 enzyme variants. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay in his/her laboratory. WB: > 1:1000 ; IMM & i.p pull-down assays: > 1:250

Reactivity: This antibody detects 3 isoforms of PDE4A subclasses (PDE4A1, PDE4A5 and PDE4Ax), three isoforms of PDE4D (PDE4D1, PDE4D2, PDE4D3). It has low affinity for PDE4B isoforms.

Protocols: Standard protocol for various applications (WB; IMM and IHC) for this antibody is provided with the product specification sheet, however, *FabGennix Inc.* strongly recommends investigators to optimize conditions for use of this antibody in their laboratories.

Form/Storage: The antiserum is supplied in antibody stabilization buffer with 0.02% thimerosal or merthiolate. The affinity-purified antibodies are purified on antigen-speharose affinity column. For long-term storage of antibodies, store at -20°C. Now these antibodies can be stored at -20°C and used immediately with out thawing. *FabGennix Inc.* does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45µ filter after every use for long-term storage.

References:

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2. Hoffman R., Wilkinson, I. R., McCallum F., Engels P., Houslay M. D. *Biochem. J.* 333; 139-149, 1998.
3. Zhang H.T and O'Donnell J. M. *Neuropsychopharmacology* 150; 311-316, 2000.
4. Zhang H. T., Crissman A. M., Dorairaj N. R., Chandler L. J., O'Donnell J. M. *Neuropsychopharmacology* 23, 198-204, 2000.
5. Farooqui S. M., Zhang K., Makhay M., Jackson K., Farooqui S. Q., Cherry J. M and O'Donnell J. M. *Brain Res. Brain Res.* 867; 52-61 2000
6. Ye Y., Houslay M. D., Farooqui M. S., Jackson K. T., Chen M., O'Donnell J. M. *J. Neurochem.* 69; 2397-2404, 1998.
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For users who may require large amounts of PDE4-100P or PD4-101AP, please enquire about bulk material discounts.

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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