

#5527 Store at -20C

PIP4K2A (D83C1) Rabbit mAb**Cell Signaling**
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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk B Pg	Endogenous	50	Rabbit IgG	#P48426	5305

Product Usage Information	Application Western Blotting	Dilution 1:1000
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	PIP4K2A (D83C1) Rabbit mAb recognizes endogenous levels of total PI 5-P 4-kinase type-2 alpha (PIP4K2A) protein. This antibody does not cross-react with PIP4K2B or PIP4K2C and is not predicted to cross-react with type I PIP5Ks or PIKfyve.	
Species predicted to react based on 100% sequence homology:	Dog, Horse	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human PIP4K2A protein.	
Background	Phosphatidylinositol 5-phosphate 4-kinase type-2 alpha (PtdIns 4-Kinase type II alpha, PIP4K2A), is one of three known members of the type II PIP kinase family, consisting of PIP4K2A, PIP4K2B, and PIP4K2C. Each catalyzes the phosphorylation of phosphatidylinositol 5-monophosphate (PI 5-P) to form phosphatidylinositol 4,5-bisphosphate (PI 4,5-P₂). Originally thought to be a PI 4-P 5-Kinase (1,2), PIP4K2A was subsequently shown to phosphorylate the 4-position of PI 5-P, thus defining a new family of lipid kinases (3). Ubiquitously expressed with highest levels in the brain, mutations in PIP4K2A have been described in patients with Schizophrenia and other neuronal disorders (4-8). The levels of PI 5-P change significantly in response to physiological and pathological stimuli (5-12), as well as cell transformation with nucleophosmin anaplastic lymphoma tyrosine kinase (13). In contrast, hypoosmotic shock and histamine decrease cellular levels of PI 5-P (14,15). PIP4K2A has been hypothesized to play a role in suppressing mitogen-dependent increases in PI 5-P in response to DNA damage and cellular stress (16-18). PIP4K2A regulates the levels of PI 5-P in the nucleus by converting the PI 5-P to PI 4,5-P₂, thus preventing PI 5-P from interacting with and regulating the ability of ING2 to activate p53 and p53-dependent apoptotic pathways (19). PIP4K2A has been shown to form a heterodimer with PIP4K2B resulting in its recruitment to the nucleus. Interestingly, PIP4K2A is 2000-fold more active than PIP4K2B in this context, suggesting that the two lipid kinases act in tandem, with PIP4K2B acting as the targeting subunit and PIP4K2A the catalytic component (18). PIP4Ks may also play a role in lipid vesicle formation and/or Golgi homeostasis (20).	
Background References	1. Divecha, N. et al. (1995) <i>Biochem J</i> 309 (Pt 3), 715-9. 2. Boronenkov, I.V. and Anderson, R.A. (1995) <i>J Biol Chem</i> 270, 2881-4. 3. Rameh, L.E. et al. (1997) <i>Nature</i> 390, 192-6. 4. Stopkova, P. et al. (2003) <i>Am J Med Genet B Neuropsychiatr Genet</i> 123B, 50-8. 5. Schwab, S.G. et al. (2006) <i>Mol Psychiatry</i> 11, 837-46. 6. Bakker, S.C. et al. (2007) <i>Genes Brain Behav</i> 6, 113-9. 7. Fedorenko, O. et al. (2008) <i>Psychopharmacology (Berl)</i> 199, 47-54. 8. Salazar, G. et al. (2009) <i>J Biol Chem</i> 284, 1790-802. 9. Morris, J.B. et al. (2000) <i>FEBS Lett</i> 475, 57-60. 10. Sbrissa, D. et al. (2004) <i>Endocrinology</i> 145, 4853-65. 11. Guittard, G. et al. (2009) <i>J Immunol</i> 182, 3974-8. 12. Sarkes, D. and Rameh, L.E. (2010) <i>Biochem J</i> 428, 375-84. 13. Coronas, S. et al. (2008) <i>Biochem Biophys Res Commun</i> 372, 351-5. 14. Sbrissa, D. et al. (2002) <i>J Biol Chem</i> 277, 47276-84.	

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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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