

#4781 Store at -20°C

Phospho-PKA C (Thr197) Antibody


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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: WB	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 42	Source: Rabbit	UniProt ID: #P17612	Entrez-Gene Id: 5566
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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 and 50% glycerol. Store at –20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	Phospho-PKA C (Thr197) Antibody detects endogenous levels of PKA C (-alpha, -beta and -gamma) only when phosphorylated at Thr197. This antibody does not cross-react with PKA C phosphorylated at other sites.	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr197 of PKA C. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	<p>The second messenger cyclic AMP (cAMP) activates cAMP-dependent protein kinase (PKA or cAPK) in mammalian cells and controls many cellular mechanisms such as gene transcription, ion transport, and protein phosphorylation (1). Inactive PKA is a heterotetramer composed of a regulatory subunit (R) dimer and a catalytic subunit (C) dimer. In this inactive state, the pseudosubstrate sequences on the R subunits block the active sites on the C subunits. Three C subunit isoforms (C-α, C-β, and C-γ) and two families of regulatory subunits (RI and RII) with distinct cAMP binding properties have been identified. The two R families exist in two isoforms, α and β (RI-α, RI-β, RII-α, and RII-β). Upon binding of cAMP to the R subunits, the autoinhibitory contact is eased and active monomeric C subunits are released. PKA shares substrate specificity with Akt (PKB) and PKC, which are characterized by an arginine at position -3 relative to the phosphorylated serine or threonine residue (2). Substrates that present this consensus sequence and have been shown to be phosphorylated by PKA are Bad (Ser155), CREB (Ser133), and GSK-3 (GSK-3α Ser21 and GSK-3β Ser9) (3-5). In addition, combined knock-down of PKA C-α and -β blocks cAMP-mediated phosphorylation of Raf (Ser43 and Ser259) (6). Autophosphorylation and phosphorylation by PDK-1 are two known mechanisms responsible for phosphorylation of the C subunit at Thr197 (7).</p>	
Background References	<ol style="list-style-type: none"> 1. Montminy, M. (1997) <i>Annu. Rev. Biochem.</i> 66, 807-822. 2. Dell'Acqua, M.L. and Scott, J.D. (1997) <i>J. Biol. Chem.</i> 272, 12881-12884. 3. Tan, Y. et al. (2000) <i>J. Biol. Chem.</i> 275, 25865-25869. 4. Gonzalez, G.A. and Montminy, M.R. (1989) <i>Cell</i> 59, 675-680. 5. Fang, X. et al. (2000) <i>Proc. Natl. Acad. Sci. USA</i> 97, 11960-11965. 6. Dumaz, N. and Marais, R. (2003) <i>J. Biol. Chem.</i> 278, 29819-29823. 7. Moore, M.J. et al. (2002) <i>J. Biol. Chem.</i> 277, 47878-47884. 	
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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