Revision 1

Store at -20C

#5661

Phospho-PKA C (Thr197) (D45D3) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	42	Rabbit IgG	#P17612	5566

Product Usage Information

Application	Dilution
Western Blotting	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

Phospho-PKA C (Thr197) (D45D3) Rabbit mAb detects endogenous levels of PKA C (-α, -β, and -γ) only when phosphorylated at Thr197.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Thr197 of human PKA C protein.

Background

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).

Background References

1. Montminy, M. (1997) *Annu. Rev. Biochem.* 66, 807-822.
2. Dell'Acqua, M.L. and Scott, J.D. (1997) *J. Biol. Chem.* 272, 12881-12884.
3. Tan, Y. et al. (2000) *J. Biol. Chem.* 275, 25865-25869.
4. Gonzalez, G.A. and Montminy, M.R. (1989) *Cell* 59, 675-680.
5. Fang, X. et al. (2000) *Proc. Natl. Acad. Sci. USA* 97, 11960-11965.
6. Dumaz, N. and Marais, R. (2003) *J. Biol. Chem.* 278, 29819 -29823.
7. Moore, M.J. et al. (2002) *J. Biol. Chem.* 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

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

Trademarks and Patents

Limited Uses

terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.