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Phospho-Chk1 (Ser345) (133D3) Rabbit mAb (PE Conjugate)



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

Applications: FC-FP	Reactivity: H M R Mk	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #O14757	Entrez-Gene Id: 1111
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Product Usage Information	Application Flow Cytometry (Fixed/Permeabilized)	Dilution 1:50
Storage	Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibodies. Protect from light. Do not freeze.	
Specificity / Sensitivity	Phospho-Chk1 (Ser345) (133D3) Rabbit mAb (PE Conjugate) detects endogenous levels of Chk1 protein only when phosphorylated at Ser345.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser345 of human Chk1 protein.	
Product Description	This Cell Signaling Technology antibody is conjugated to phycoerythrin (PE) and tested in-house for direct flow cytometry analysis in human cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-Chk1 (Ser345) (133D3) Rabbit mAb #2348.	
Background	Chk1 kinase acts downstream of ATM/ATR kinase and plays an important role in DNA damage checkpoint control, embryonic development, and tumor suppression (1). Activation of Chk1 involves phosphorylation at Ser317 and Ser345 by ATM/ATR, followed by autophosphorylation of Ser296. Activation occurs in response to blocked DNA replication and certain forms of genotoxic stress (2). While phosphorylation at Ser345 serves to localize Chk1 to the nucleus following checkpoint activation (3), phosphorylation at Ser317 along with site-specific phosphorylation of PTEN allows for re-entry into the cell cycle following stalled DNA replication (4). Chk1 exerts its checkpoint mechanism on the cell cycle, in part, by regulating the cdc25 family of phosphatases. Chk1 phosphorylation of cdc25A targets it for proteolysis and inhibits its activity through 14-3-3 binding (5). Activated Chk1 can inactivate cdc25C via phosphorylation at Ser216, blocking the activation of cdc2 and transition into mitosis (6). Centrosomal Chk1 has been shown to phosphorylate cdc25B and inhibit its activation of CDK1-cyclin B1, thereby abrogating mitotic spindle formation and chromatin condensation (7). Furthermore, Chk1 plays a role in spindle checkpoint function through regulation of aurora B and BubR1 (8). Research studies have implicated Chk1 as a drug target for cancer therapy as its inhibition leads to cell death in many cancer cell lines (9).	
Background References	<ol style="list-style-type: none"> 1. Liu, Q. et al. (2000) <i>Genes Dev</i> 14, 1448-59. 2. Zhao, H. and Piwnica-Worms, H. (2001) <i>Mol Cell Biol</i> 21, 4129-39. 3. Jiang, K. et al. (2003) <i>J Biol Chem</i> 278, 25207-17. 4. Martin, S.A. and Ouchi, T. (2008) <i>Mol Cancer Ther</i> 7, 2509-16. 5. Chen, M.S. et al. (2003) <i>Mol Cell Biol</i> 23, 7488-97. 6. Zeng, Y. et al. (1998) <i>Nature</i> 395, 507-10. 7. Löffler, H. et al. (2006) <i>Cell Cycle</i> 5, 2543-7. 8. Zachos, G. et al. (2007) <i>Dev Cell</i> 12, 247-60. 9. Garber, K. (2005) <i>J Natl Cancer Inst</i> 97, 1026-8. 	

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Applications Key	FC-FP: Flow Cytometry (Fixed/Permeabilized)
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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