

#5243 Store at -20°C

## Phospho-PLK Binding Motif (ST\*P) (D73F6) Rabbit mAb



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<b>Applications:</b> WB, IP, E-P	<b>Reactivity:</b> All	<b>Sensitivity:</b> Endogenous	<b>Source/Isotype:</b> Rabbit IgG
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<b>Product Usage Information</b>	<b>Application</b> Western Blotting Immunoprecipitation Peptide ELISA (DELFI)	<b>Dilution</b> 1:1000 1:100 1:1000
<b>Storage</b>	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.	
<b>Specificity / Sensitivity</b>	Phospho-PLK Binding Motif (ST*P) (D73F6) Rabbit mAb detects endogenous levels of cellular proteins containing the Ser-phospho-Thr-Pro motif. This antibody has minor cross-reactivity with phospho-Thr-Pro motifs.	
<b>Source / Purification</b>	Monoclonal antibody is produced by immunizing animals with an SpTP peptide library.	
<b>Background</b>	Polo-like kinases (PLKs) are Ser/Thr protein kinases that play an essential role during the cell cycle. At least four PLKs exist in mammalian cells: PLK1, PLK2, PLK3, and PLK4 (1). PLKs have a highly conserved amino-terminal kinase domain and a relatively divergent carboxy-terminal domain called the Polo-box domain (PBD). Of the four PLKs, PLK1 is the best characterized (2). PLK1 functions as a key regulator of mitotic events by phosphorylating substrate proteins on centrosomes, kinetochores, the mitotic spindle, and the midbody, and is crucial for proper progression through multiple stages of mitosis (2-4). The PBDs of PLK1 function as a phospho-Ser/Thr-binding module, recognizing the optimal recognition sequence motif Ser-(pSer/pThr)-(Pro/X) (5). Binding of phosphopeptides containing the Ser-(pSer/pThr)-(Pro/X) motif by the PBD in PLK1 relieves its inhibitory function on kinase activity (6). Ser-(pSer/pThr)-Pro peptides are phosphorylated by proline-directed kinases such as cyclin dependent kinases (CDKs). These findings imply that priming phosphorylations on substrates or docking proteins by other mitotic kinases such as CDKs may target PLK1 to its substrates and simultaneously activate its kinase activity. Phospho-PLK Binding Motif (ST*P) (D73F6) Rabbit mAb is a useful tool to study PLK1 binding proteins and PLK1 substrates.	
<b>Background References</b>	1. Nigg, E.A. (1998) <i>Curr Opin Cell Biol</i> 10, 776-83. 2. Donaldson, M.M. et al. (2001) <i>J Cell Sci</i> 114, 2357-8. 3. Barr, F.A. et al. (2004) <i>Nat Rev Mol Cell Biol</i> 5, 429-40. 4. Kishi, K. et al. (2009) <i>Mol Cell Biol</i> 29, 3134-50. 5. Elia, A.E. et al. (2003) <i>Science</i> 299, 1228-31. 6. Elia, A.E. et al. (2003) <i>Cell</i> 115, 83-95.	

<b>Species Reactivity</b>	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
<b>Western Blot Buffer</b>	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.
<b>Applications Key</b>	<b>WB:</b> Western Blotting <b>IP:</b> Immunoprecipitation <b>E-P:</b> Peptide ELISA (DELFI)
<b>Cross-Reactivity Key</b>	<b>H:</b> human <b>M:</b> mouse <b>R:</b> rat <b>Hm:</b> hamster <b>Mk:</b> monkey <b>Vir:</b> virus <b>Mi:</b> mink <b>C:</b> chicken <b>Dm:</b> D. melanogaster <b>X:</b> Xenopus <b>Z:</b> zebrafish <b>B:</b> bovine <b>Dg:</b> dog <b>Pg:</b> pig <b>Sc:</b> S. cerevisiae <b>Ce:</b> C. elegans <b>Hr:</b> horse <b>GP:</b> Guinea Pig <b>Rab:</b> rabbit <b>All:</b> all species expected
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