

#4131 Store at -20°C

Phospho-Cyclin B1 (Ser147) Antibody



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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R	Endogenous	55	Rabbit	#P14635	891

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-Cyclin B1 (Ser147) Antibody detects endogenous levels of cyclin B1 only when phosphorylated at serine 147.	
Species predicted to react based on 100% sequence homology:	Pig	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser147 of human cyclin B1. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	Cyclins are a family of proteins that activate specific cyclin-dependent kinases required for progression through the cell cycle. The entry of all eukaryotic cells into mitosis is regulated by activation of cdc2/cdk1 at the G2/M transition. This activation is a multi-step process that begins with the binding of the regulatory subunit, cyclin B1, to cdc2/cdk1 to form the mitosis-promoting factor (MPF). MPF remains in the inactive state until phosphorylation of cdc2/cdk1 at Thr161 by cdk activating kinase (CAK) (1,2) and dephosphorylation of cdc2/cdk1 at Thr14/Tyr15 by cdc25C (3-5). Five cyclin B1 phosphorylation sites (Ser116, 126, 128, 133, and 147) are located in the cytoplasmic retention signal (CRS) domain and are thought to regulate the translocation of cyclin B1 to the nucleus at the G2/M checkpoint, promoting nuclear accumulation and initiation of mitosis (6-9). While MPF itself can phosphorylate Ser126 and Ser128, polo-like kinase 1 (PLK1) phosphorylates cyclin B1 preferentially at Ser133 and possibly at Ser147 (6,10). At the end of mitosis, cyclin B1 is targeted for degradation by the anaphase-promoting complex (APC), allowing for cell cycle progression (11). Research studies have shown that cyclin B1 is overexpressed in breast, prostate, and non-small cell lung cancers (12-14).	
Background References	<ol style="list-style-type: none"> 1. Lorca, T. et al. (1992) <i>EMBO J</i> 11, 2381-90. 2. Harper, J.W. and Elledge, S.J. (1998) <i>Genes Dev</i> 12, 285-9. 3. Norbury, C. et al. (1991) <i>EMBO J</i> 10, 3321-9. 4. McGowan, C.H. and Russell, P. (1993) <i>EMBO J</i> 12, 75-85. 5. Atherton-Fessler, S. et al. (1994) <i>Mol Biol Cell</i> 5, 989-1001. 6. Toyoshima-Morimoto, F. et al. (2001) <i>Nature</i> 410, 215-20. 7. Li, J. et al. (1997) <i>Proc Natl Acad Sci U S A</i> 94, 502-7. 8. Takizawa, C.G. and Morgan, D.O. (2000) <i>Curr Opin Cell Biol</i> 12, 658-65. 9. Santos, S.D. et al. (2012) <i>Cell</i> 149, 1500-13. 10. Jackman, M. et al. (2003) <i>Nat Cell Biol</i> 5, 143-8. 11. Gong, D. and Ferrell, J.E. (2010) <i>Mol Biol Cell</i> 21, 3149-61. 12. Mashal, R.D. et al. (1996) <i>Cancer Res</i> 56, 4159-63. 13. Kawamoto, H. et al. (1997) <i>Am J Pathol</i> 150, 15-23. 14. Soria, J.C. et al. (2000) <i>Cancer Res</i> 60, 4000-4. 	

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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