Revision 1

#9114 Store at -20C

Phospho-cdc2 (Thr161) Antibody

Cell Signaling TECHNOLOGY®

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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	34	Rabbit	#P06493	983

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 and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-cdc2 (Thr161) Antibody detects endogenous levels of cdc2 only when phosphorylated at threonine 161. The antibody cross-reacts with endogenous CDK2 phosphorylated at threonine 160.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr161 of human cdc2. Antibodies are purified by protein A and peptide affinity chromatography.

Background

The entry of eukaryotic cells into mitosis is regulated by cdc2 kinase activation, a process controlled at several steps including cyclin binding and phosphorylation of cdc2 at Thr161 (1). However, the critical regulatory step in activating cdc2 during progression into mitosis appears to be dephosphorylation of cdc2 at Thr14 and Tyr15 (2). Phosphorylation at Thr14 and Tyr15, resulting in inhibition of cdc2, can be carried out by Wee1 and Myt1 protein kinases (3,4). The cdc25 phosphatase may be responsible for removal of phosphates at Thr14 and Tyr15 and subsequent activation of cdc2 (1,5).
cdc2 activation and association with cyclin A require phosphorylation at Thr161 by the CDK-activating kinase CAK, a complex of CDK7 and cyclin H (7,8).

Background References

1. Atherton-Fessler, S. et al. (1994) *Mol Biol Cell* 5, 989-1001.
2. Norbury, C. et al. (1991) *EMBO J* 10, 3321-9.
3. McGowan, C.H. and Russell, P. (1993) *EMBO J* 12, 75-85.
4. Wells, N.J. et al. (1999) *J Cell Sci* 112 (Pt 19), 3361-71.
5. Hunter, T. (1995) *Cell* 80, 225-36.
6. Fesquet, D. et al. (1993) *EMBO J.* 12, 3111-3121.
7. Ducommun, B. et al. (1991) *EMBO J.* 10, 3311-3319.

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

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Limited Uses

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