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# cdc25A Antibody

Store at -20C  
#3652

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

<b>Applications:</b> W	<b>Reactivity:</b> H M	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 70	<b>Source/Isotype:</b> Rabbit	<b>UniProt ID:</b> #P30304	<b>Entrez-Gene Id:</b> 993
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## 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

cdc25A Antibody recognizes endogenous levels of total cdc25A protein. The antibody will cross-react with calf intestinal phosphatase (CIP) when present in abundance.

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser177 of human cdc25A.

## Background

The cdc25 protein phosphatase family plays a critical role in activating cyclin-dependent kinases (CDKs) via dephosphorylation of conserved Thr14/Tyr15 inhibitory phosphorylation sites. While cdc25C is primarily responsible for activating CDK1 to overcome the G2/M checkpoint and allow mitotic entry, the primary substrate of cdc25A is CDK2, which, when active, allows progression through the G1/S and intra-S checkpoints (1). Abundance, subcellular localization and activity of cdc25A is tightly controlled by a variety of mechanisms, including phosphorylation, ubiquitination, and inhibitory binding to 14-3-3 proteins. During normal cell cycle progression, elevated c-Myc and E2F transcription factor levels lead to increased cdc25A expression (2). When conditions are favorable for DNA synthesis, cdc25A and CDK2 form an activation loop, wherein each activates the other enzyme (1). DNA damage, on the other hand, leads to multisite phosphorylation at inhibitory sites (Ser123, Ser177, Ser278, Ser292, and Thr506) by Chk1 and Chk2, which result in 14-3-3 binding and ubiquitin-mediated degradation (3,4).

## Background References

- Hoffmann, I. et al. (1994) *EMBO J* 13, 4302-10.
- Vigo, E. et al. (1999) *Mol Cell Biol* 19, 6379-95.
- Chen, M. et al. (2003) *Mol. Cell. Biol.* 23, 7488-7497.
- Chen, M. et al. (2003) *Mol. Cell. Biol.* 23, 7488-7497.
- Sørensen, C.S. et al. (2003) *Cancer Cell* 3, 247-58.

## 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

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