Revision 1

Store at -20C

#12028

Phospho-cdc25C (Thr48) (D2H3) Rabbit mAb

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, IP, IF-IC	H	Endogenous	75	Rabbit IgG	#P30307	995

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunofluorescence (Immunocytochemistry)	1:300

Storage

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.

Specificity/Sensitivity

Phospho-cdc25C (Thr48) (D2H3) Rabbit mAb recognizes endogenous levels of cdc25C protein only when phosphorylated at Thr48.

Species predicted to react based on 100% sequence homology

Monkey

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr48 of human cdc25C protein.

Background

Cdc25 is a protein phosphatase responsible for dephosphorylating and activating cdc2, a crucial step in regulating the entry of all eukaryotic cells into mitosis (1). cdc25C is constitutively phosphorylated at Ser216 throughout interphase by c-TAK1, while phosphorylation at this site is DNA damage-dependent at the G2/M checkpoint (2). When phosphorylated at Ser216, cdc25C binds to members of the 14-3-3 family of proteins, sequestering cdc25C in the cytoplasm and thereby preventing premature mitosis (3). The checkpoint kinases Chk1 and Chk2 phosphorylate cdc25C at Ser216 in response to DNA damage (4,5).
Full activation of cdc25C involves phosphorylation at more than 12 different sites by cdc2/cyclin B and Polo-like kinase, and the activity of Pin1, a peptidyl-prolyl isomerase (PPI) (6,7). Pin1 contains a WW domain that binds phospho-Ser/Thr-Pro sites and a catalytic PPI region that induces a cis/trans isomerization at phospho-Ser/Thr-Pro bonds (8). Thr48 and Thr67 of cdc25C interact directly with the WW domain of Pin1 when these sites are phosphorylated (9). Thr48 phosphorylation also mediates binding to CKS/p13SUC1 (10).

Background References

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3. Kumagai, A. and Dunphy, W.G. (1999) *Genes Dev.* 13, 1067-1072.
4. Blasina, A. et al. (1999) *Curr. Biol.* 9, 1-10.
5. Furnari, B. et al. (1999) *Mol. Biol. Cell* 10, 833-845.
6. Izumi, T. and Maller, J.L. (1993) *Mol Biol Cell* 4, 1337-50.
7. Stukenberg, P.T. and Kirschner, M.W. (2001) *Mol Cell* 7, 1071-83.
8. Yaffe, M.B. et al. (1997) *Science* 278, 1957-60.
9. Lu, P.J. et al. (1999) *Science* 283, 1325-8.
10. Landrieu, I. et al. (2001) *J Biol Chem* 276, 1434-8.

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 **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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