Store at –20°C

#9527

Phospho-cdc25C (Thr48) Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

Entrez-Gene ID #995
Swiss-Prot Acc. #P30307

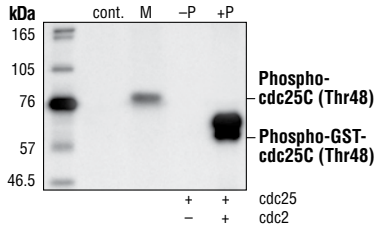
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H	60-80 kDa	Rabbit**

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 preventing premature mitosis (3). The checkpoint kinases Chk1 and Chk2 phosphorylate cdc25C at Ser216 in response to DNA damage (4,5).

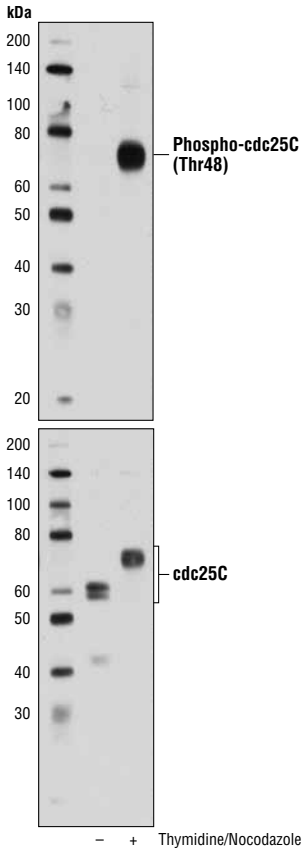
Full activation of cdc25C involves phosphorylation at more than 12 different sites by cdc2/cyclin B and Polo-like kinase, and the activity of Pin1, a peptidyl-prolyl isomerase (PPI) (6,7). Pin1 contains a WW domain that binds phospho-Ser/Thr-Pro sites and a catalytic PPI region that induces a cis/trans isomerization on 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/p13^{SUC1} (10).

Specificity/Sensitivity: Phospho-cdc25C (Thr48) Antibody detects endogenous levels of cdc25C only when phosphorylated at Thr48.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr48 of human cdc25C. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from HT29 cells, untreated (cont.) and nocodazole-treated (M), and of GST-cdc25C fusion protein, nonphosphorylated (-P) or phosphorylated (+P) by cdc2/cyclin B (New England Biolabs #P6020), using Phospho-cdc25C (Thr48) Antibody.



Western blot analysis of extracts from HT29 cells, asynchronous or synchronized in mitosis, using Phospho-cdc25C (Thr48) Antibody (upper) or total Cdc25C (5H9) Rabbit mAb #4688 (lower). Mitotic synchronization was performed by thymidine block followed by release into nocodazole and mitotic shake-off.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

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.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Jessus, C. and Ozon, R. (1995) Prog. Cell Cycle Res. 1, 215–228.

(2) Peng, C.Y. et al. (1997) *Science* 277, 1501–1505.

(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, 1337–1350.

(7) Stukenberg, P. T. et al. (2001) *Mol. Cell* 7, 1071–1083.

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(9) Lu, P. J. et al. (1999) *Science* 283, 1325–1328.

(10) Landrieu, I. et al. (2001) *J. Biol. Chem* 276, 1434–1438.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **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 **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.