

Phospho-Chk1 (Ser345) Antibody

- Small 100 µl (10 western blots)
- Large 300 µl (30 western blots)

rev. 03/26/10

Orders ■ 877-616-CELL (2355)
orders@cellsignal.com
Support ■ 877-678-TECH (8324)
info@cellsignal.com
Web ■ www.cellsignal.com

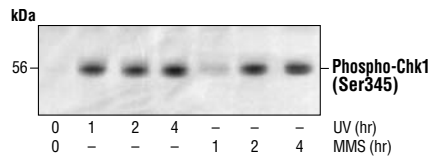
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk	56 kDa	Rabbit**

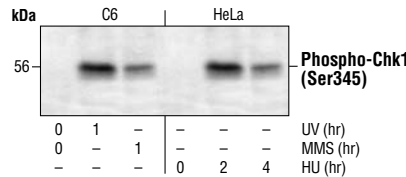
Background: Chk1 kinase acts downstream of ATM/ATR kinase to play an important role in DNA damage checkpoint control, embryonic development and tumor suppression (1). Activation of Chk1 involves phosphorylation of Ser317 and Ser345 and occurs in response to blocked DNA replication and certain forms of genotoxic stress (2). Phosphorylation at Ser 345 serves to localize Chk1 to the nucleus (3) following checkpoint activation while recent phosphorylation at Ser 317 along with site-specific phosphorylation of PTEN was shown to allow for reentry into the cell cycle following stalled DNA replication. (4). Chk1 exerts its checkpoint mechanism on the cell cycle in part by regulating the cdc25 family of phosphatases. Chk1 phosphorylation of cdc25A targets it for proteolysis and inhibits its activity through 14-3-3 binding. (5). Activated Chk1 can inactivate cdc25C via phosphorylation at Ser216, blocking the activation of cdc2 and transition into mitosis (6). Also, centrosomal Chk1 has been shown to phosphorylate cdc25B inhibiting its activation of CDK1-cyclin B1 and thus mitotic spindle formation and chromatin condensation (7). Furthermore, Chk1 plays a role in spindle checkpoint function through regulation of Aurora B and BubR1 (8). Chk1 has emerged as a drug target for cancer therapy as its inhibition leads to cell death in many cancer cell lines (9).

Specificity/Sensitivity: Phospho-Chk1 (Ser345) Antibody detects endogenous levels of Chk1 only when phosphorylated at serine 345. This antibody does not cross-react with Chk1 when phosphorylated at other sites.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser345 of human Chk1. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from COS cells treated with UV or MMS for the indicated times using Phospho-Chk1 (Ser345) Antibody.



Western blot analysis of extracts from COS cells treated with UV or MMS for the indicated times using Phospho-Chk1 (Ser345) Antibody.

Entrez-Gene ID #1111
Swiss-Prot Acc. #O14757

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:

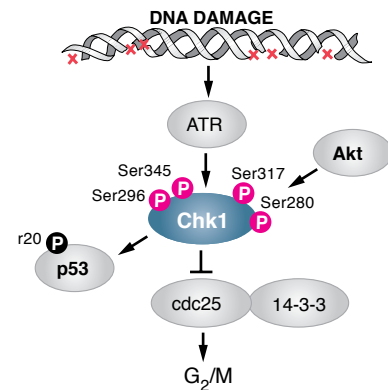
Western blotting 1:1000

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) Liu, Q. et al. (2000) *Genes Dev* 14, 1448-59.
- (2) Zhao, H. and Piwnicka-Worms, H. (2001) *Mol Cell Biol* 21, 4129-39.
- (3) Jiang, K. et al. (2003) *J Biol Chem* 278, 25207-17.
- (4) Martin, S.A. and Ouchi, T. (2008) *Mol Cancer Ther* 7, 2509-16.
- (5) Chen, M.S. et al. (2003) *Mol Cell Biol* 23, 7488-97.
- (6) Zeng, Y. et al. (1998) *Nature* 395, 507-10.
- (7) Löffler, H. et al. (2006) *Cell Cycle* 5, 2543-7.
- (8) Zachos, G. et al. (2007) *Dev Cell* 12, 247-60.
- (9) Garber, K. (2005) *J Natl Cancer Inst* 97, 1026-8.



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.

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.