Store at -20°C

#4029

Phospho-SMC1 (Ser360) Antibody

☐ Small 100 µl
(10 western blots)

☐ Petite 40 µl
(4 western blots)

Orders ■ 877-616-CELL (2355)
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Entrez-Gene ID #8243
Swiss-Prot Acc. #Q14683

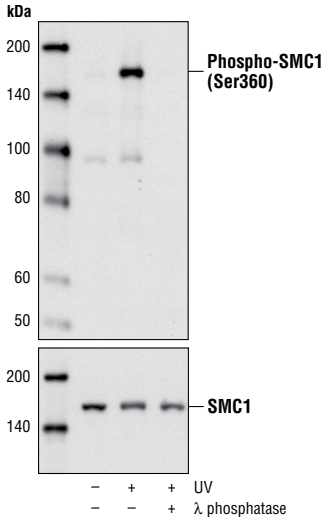
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IF-IC	H, M, R, (Mk, Sc, C, B, X)	145 kDa	Rabbit**
Endogenous			

Background: Structural maintenance of chromosomes 1 (SMC1) protein is a chromosomal protein member of the cohesin complex that enables sister chromatid cohesion and plays a role in DNA repair (1,2). ATM/NBS1-dependent phosphorylation of SMC1 occurs at Ser957 and Ser966 in response to ionizing radiation (IR) as part of the intra-S-phase DNA damage checkpoint (3). SMC1 phosphorylation is ATM-independent in cells subjected to other forms of DNA damage, including UV light and hydroxyurea treatment (4). While phosphorylation of SMC1 is required for activation of the IR-induced intra-S-phase checkpoint, the precise mechanism is not well understood and may involve a conformational change that affects SMC1-SMC3 interaction (3).

The serine residue at 360 of SMC1 is phosphorylated in an ATM/ATR-dependent manner in response to DNA damage (5,6). Phospho-SMC1 (Ser360) Antibody is directed at a site that was identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's LC-MS/MS platform for modification site discovery. Phosphorylation at Ser360 was discovered using an ATM/ATR substrate antibody and was shown to be induced by UV treatment. Please visit PhosphoSitePlus™, CST's modification site knowledgebase, at www.phosphosite.org for more information.

Specificity/Sensitivity: Phospho-SMC1 (Ser360) Antibody detects endogenous levels of SMC1 protein only when phosphorylated on Ser360. This antibody does not cross-react with other SMC proteins.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide (KLH-coupled) corresponding to Ser360 of the human SMC1 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from 293 cells, untreated or UV-treated (100 J/m² followed by 4 hour recovery) using Phospho-SMC1 (Ser360) Antibody (upper) or SMC1 Antibody #4802 (lower). Antibody phospho-specificity was determined by treating cell extracts with λ phosphatase.

Background References:

(1) Michaelis, C. et al. (1997) *Cell* 91, 35–45.

(2) Sjögren, C. and Nasmyth, K. (2001) *Curr Biol* 11, 991–5.

(3) Yazdi, P.T. et al. (2002) *Genes Dev* 16, 571–82.

(4) Kim, S.T. et al. (2002) *Genes Dev* 16, 560–70.

(5) Stokes, M.P. et al. (2007) *Proc Natl Acad Sci U S A* 104, 19855–60.

(6) Matsuoka, S. et al. (2007) *Science* 316, 1160–6.

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.**

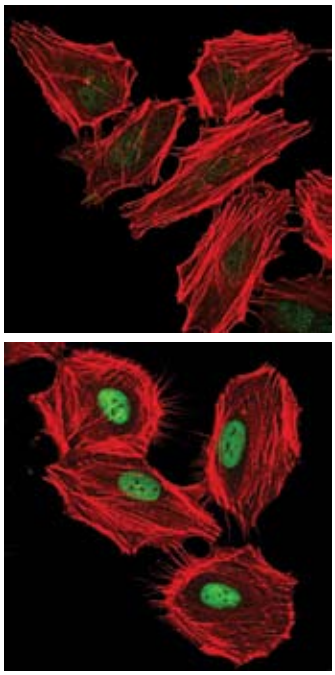
****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western Blotting	1:1000
Immunofluorescence (IF-IC)	1:50

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.



Confocal immunfluorescent analysis of HeLa cells, untreated (upper) and UV-treated (lower), using Phospho-SMC1 (Ser360) Antibody (green). Actin filaments have been labeled with DY-554 phalloidin (red).

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.