

**#4805** Store at  $-20^{\circ}\text{C}$

# Phospho-SMC1 (Ser957) (5D11G5) Mouse mAb

100  $\mu\text{l}$   
 (10 western blots)



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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.

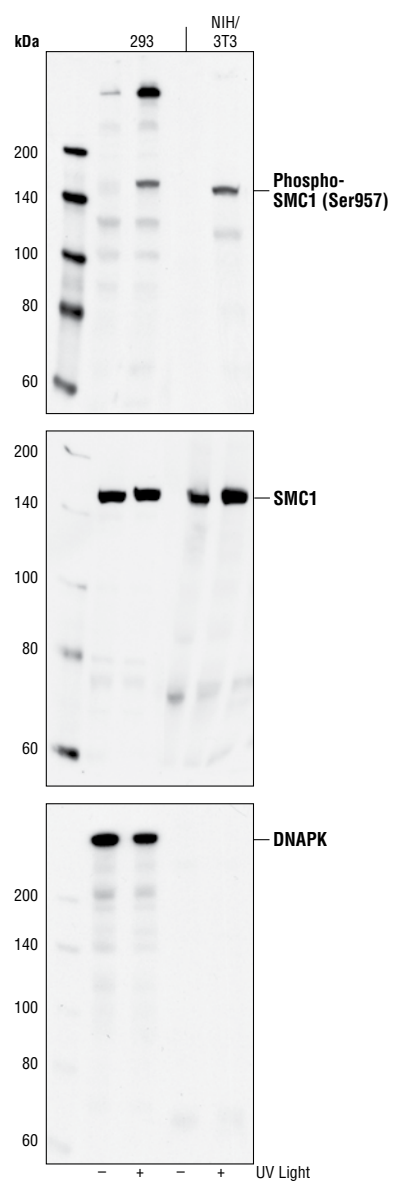
| Applications    | Species Cross-Reactivity* | Molecular Wt. | Isotype      |
|-----------------|---------------------------|---------------|--------------|
| W<br>Endogenous | H, M, (B)                 | 145 kDa       | Mouse IgG1** |

**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).

**Specificity/Sensitivity:** Phospho-SMC1 (Ser957) (5D11G5) Mouse Monoclonal Antibody detects endogenous levels of SMC1 only when phosphorylated at serine 957. This antibody may also recognize phosphorylated human DNA-PKcs (450kDa).

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser957 of human SMC1.

- Background References:**
- (1) Michaelis, C. et al. (1997) *Cell* 91, 35–45.
  - (2) Sjogren, C. and Nasmyth, K. (2001) *Curr. Biol.* 11, 991–995.
  - (3) Yazdi, P.T. et al. (2002) *Genes Dev.* 16, 571–582.
  - (4) Kim, S.T. et al. (2002) *Genes Dev.* 16, 560–570.



Western blot analysis of extracts from 293 and NIH/3T3 cells, untreated or UV-treated, using Phospho-SMC1 (Ser957) (5D11G5) Mouse Monoclonal Antibody (upper), SMC1 Antibody #4802 (middle), and DNA-PK Antibody #4602 (lower).

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

**Entrez-Gene ID #** 8243  
**Swiss-Prot Acc. #** Q14683

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu\text{g/ml}$  BSA, 50% glycerol and less than 0.02% sodium azide. Store at  $-20^{\circ}\text{C}$ . Do not aliquot the antibody.

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

**\*\*Anti-mouse 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](http://www.cellsignal.com).**

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**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.