Revision 1

#4029 Store at -20C

Phospho-SMC1 (Ser360) Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IF-IC	H M R	Endogenous	145	Rabbit	#Q14683	8243

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:50

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.

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.

Species predicted to react based on 100% sequence homology:

Monkey, Chicken, Xenopus, Bovine, S. cerevisiae

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to Ser360 of the human SMC1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

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.

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.

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

WB: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses