

#9716 Store at 4°C

# Phospho-Histone H3 (Ser10) Antibody (Alexa Fluor® 647 Conjugate)

100 µl  
 (50 tests)

New more concentrated formulation

rev. 07/28/11



**Orders** ■ 877-616-CELL (2355)  
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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.	Source
F, IF-IC Endogenous	H, M, R, Mk	17 kDa	Rabbit

**Description:** This Cell Signaling Technology Antibody was conjugated to Alexa Fluor® 647 fluorescent dye and tested in-house for direct Flow Cytometry in human and mouse cells. The unconjugated antibody, #9701 reacts with phospho-histone H3 (Ser10) from human, mouse, rat, and monkey. CST expects that Phospho-Histone H3 (Ser10) Antibody (Alexa Fluor® 647 Conjugate) will also recognize phospho-histone H3 (Ser10) in these species.

**Background:** Modulation of chromatin structure plays an important role in the regulation of transcription in eukaryotes. The nucleosome, made up of four core histone proteins (H2A, H2B, H3 and H4), is the primary building block of chromatin (1). The amino-terminal tails of core histones undergo various post-translational modifications, including acetylation, phosphorylation, methylation and ubiquitination (2-5). These modifications occur in response to various stimuli and have a direct effect on the accessibility of chromatin to transcription factors and, therefore, on gene expression (6). In most species, histone H2B is primarily acetylated at Lys5, 12, 15 and 20 (4,7). Histone H3 is primarily acetylated at Lys9, 14, 18 and 23 (2,3). Acetylation of H3 at Lys9 appears to have a dominant role in histone deposition and chromatin assembly in some organisms (2,3).

Phosphorylation at Ser10, Ser28 and Thr11 of histone H3 is tightly correlated with chromosome condensation during both mitosis and meiosis (8-10). Phosphorylation of Thr3 of histone H3 is highly conserved among many species and is catalyzed by the kinase haspin. Immunostaining with phospho-specific antibodies in mammalian cells reveals mitotic phosphorylation of H3 Thr3 in prophase and its dephosphorylation during anaphase (11).

**Specificity/Sensitivity:** Phospho-Histone H3 (Ser10) Antibody (Alexa Fluor® 647 Conjugate) detects endogenous levels of histone H3 only when phosphorylated at serine 10. The antibody does not cross-react with other phosphorylated histones or with acetylated histones.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phospho-peptide corresponding to residues surrounding Ser10 of human histone H3. Antibodies are purified by protein A and peptide affinity chromatography. The antibody was conjugated to Alexa Fluor® 647 under optimal conditions with an F/P ratio of 2-6.

**Entrez-Gene ID** #8352  
**Swiss-Prot Acc.** #P68431

**Storage:** Supplied in PBS (pH 7.2), less than 0.1% sodium azide, 2 mg/ml BSA. Store at 4°C. *Protect from light. Do not freeze.*

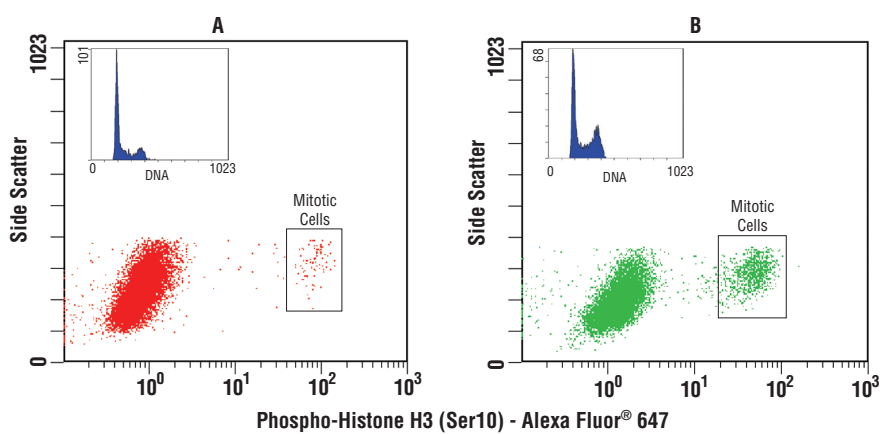
**Recommended Antibody Dilutions:**

Flow Cytometry	1:50
Immunofluorescence (IF-IC)	1:100

**For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).**

**Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.**

- Background References:**
- (1) Workman, J.L. and Kingston, R.E. (1998) *Annu. Rev. Biochem.* 67, 545-579.
  - (2) Hansen, J.C. et al. (1998) *Biochemistry* 37, 17637-17641.
  - (3) Strahl, B.D. and Allis, C.D. (2000) *Nature* 403, 41-45.
  - (4) Cheung, P. et al. (2000) *Cell* 103, 263-271.
  - (5) Bernstein, B.E. and Schreiber, S.L. (2002) *Chem. Biol.* 9, 1167-1173.
  - (6) Jaskelioff, M. and Peterson, C.L. (2003) *Nat. Cell Biol.* 5, 395-399.
  - (7) Thorne, A.W. et al. (1990) *Eur. J. Biochem.* 193, 701-713.
  - (8) Hendzel, M.J. et al. (1997) *Chromosoma* 106, 348-360.
  - (9) Goto, H. et al. (1999) *J. Biol. Chem.* 274, 25543-25549.
  - (10) Preuss, U. et al. (2003) *Nucleic Acids Res.* 31, 878-885.
  - (11) Dai, J. et al. (2005) *Genes Dev.* 19, 472-488.



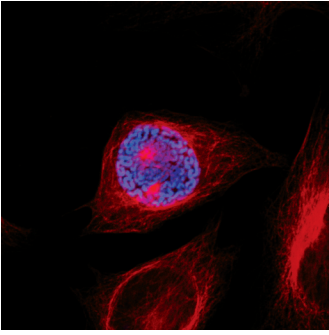
Flow cytometric analysis of THP-1 cells, untreated (A) or paclitaxel-treated (B), stained with Phospho-Histone H3 (Ser10) Antibody (Alexa Fluor® 647 Conjugate). The blue inserts represent PI (DNA) staining alone, showing an increase in the number of mitotic cells in the paclitaxel-treated sample.

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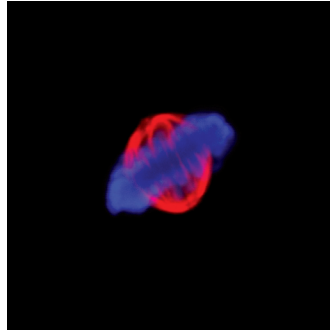
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**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey 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**

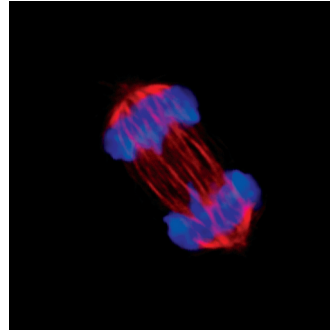
**Prophase**



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*Confocal immunofluorescent analysis of mitotic HeLa cells using Phospho-Histone H3 (Ser10) Antibody (Alexa Fluor® 647 Conjugate) (blue pseudocolor) and  $\beta$ -Tubulin (9F3) Rabbit mAb (Alexa Fluor® 555 Conjugate) (red).*