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

For Research Use Only. Not For Use In Diagnostic Procedures.

Description: This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 647 fluorescent dye and tested in-house for direct flow cytometry and immunofluorescent analysis in human and mouse cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-Histone H3 (Ser10) Antibody #9701.

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.

Recommended Antibody Dilutions:

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

For application specific protocols please see the web page for this product at www.cellsignal.com.

Background References:


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