Revision 8

Store at +4C

#3475

Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb (Alexa Fluor® 555 Conjugate)

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
IF-IC	H M R Mk Z	Endogenous	Rabbit IgG	#P68431	8350

Product Usage Information

Application	Dilution
Immunofluorescence (Immunocytochemistry)	1:50

Storage

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

Specificity/Sensitivity

Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb (Alexa Fluor® 555 Conjugate) detects endogenous levels of histone H3 only when phosphorylated at Ser10. The antibody does not cross-react with other phosphorylated histones or with acetylated histones.

Lack of staining in G2 cells has been reported in some cell lines by immunofluorescence.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser10 of human histone H3. This antibody was conjugated to Alexa Fluor® 555 under optimal conditions with an F/P ratio of 2-6.

Description

This Cell Signaling Technology (CST) Antibody was conjugated to Alexa Fluor® 555 fluorescent dye and tested in-house for immunofluorescence in human and mouse cells. The unconjugated Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb #3377 reacts with phospho-histone H3 (Ser10) from human, mouse, rat, and monkey. CST expects that Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb (Alexa Fluor® 555 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 DNA wound around eight core histone proteins (two each of H2A, H2B, H3, and H4), is the primary building block of chromatin (1). The amino-terminal tails of core histones undergo various posttranslational 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, 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, 23, 27, and 56. 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 at 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 at Thr3 of H3 in prophase and its dephosphorylation during anaphase (11).

Background References

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3. Strahl, B.D. and Allis, C.D. (2000) *Nature* 403, 41-5.
4. Cheung, P. et al. (2000) *Cell* 103, 263-71.
5. Bernstein, B.E. and Schreiber, S.L. (2002) *Chem Biol* 9, 1167-73.
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7. Thorne, A.W. et al. (1990) *Eur J Biochem* 193, 701-13.
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9. Goto, H. et al. (1999) *J Biol Chem* 274, 25543-9.
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11. Dai, J. et al. (2005) *Genes Dev* 19, 472-88.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

IF-IC: Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey **Z:** Zebrafish

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