

#4620 Store at -20°C

Histone H3 (D2B12) XP[®] Rabbit mAb (ChIP Formulated)



Orders: 877-616-CELL (2355)
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cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications: ChIP	Reactivity: H M	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #P68431	Entrez-Gene Id: 8350
Product Usage Information		For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10 ⁶ cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.			
		Application Chromatin IP	Dilution 1:50		
Storage		Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.			
Specificity/Sensitivity		Histone H3 (D2B12) XP® Rabbit mAb (ChIP Formulated) detects endogenous levels of total histone H3 protein. This antibody does not cross-react with other histones.			
Species predicted to react based on 100% sequence homology		Rat, Hamster, Monkey, Chicken, D. melanogaster, Xenopus, Zebrafish, Bovine			
Source / Purification		Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of the human histone H3 protein.			
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		1. Workman, J.L. and Kingston, R.E. (1998) <i>Annu Rev Biochem</i> 67, 545-79. 2. Hansen, J.C. et al. (1998) <i>Biochemistry</i> 37, 17637-41. 3. Strahl, B.D. and Allis, C.D. (2000) <i>Nature</i> 403, 41-5. 4. Cheung, P. et al. (2000) <i>Cell</i> 103, 263-71. 5. Bernstein, B.E. and Schreiber, S.L. (2002) <i>Chem Biol</i> 9, 1167-73. 6. Jaskelioff, M. and Peterson, C.L. (2003) <i>Nat Cell Biol</i> 5, 395-9. 7. Thorne, A.W. et al. (1990) <i>Eur J Biochem</i> 193, 701-13. 8. Hendzel, M.J. et al. (1997) <i>Chromosoma</i> 106, 348-60. 9. Goto, H. et al. (1999) <i>J Biol Chem</i> 274, 25543-9. 10. Preuss, U. et al. (2003) <i>Nucleic Acids Res</i> 31, 878-85. 11. Dai, J. et al. (2005) <i>Genes Dev</i> 19, 472-88.			
Species Reactivity		Species reactivity is determined by testing in at least one approved application (e.g., western blot).			
Applications Key		ChIP: Chromatin IP			
Cross-Reactivity Key		H: Human M: Mouse			
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