Histone H3

Catalog number

H5110-25

Supplier

United States Biological

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. 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).

Applications

Suitable for use in ChIP. Other applications have not been tested.

Recommended Dilutions

ChIP: 1:50
Optimal dilutions to be determined by the researcher.

Storage and Stability

May be stored at 4°C for short-term only. For long-term storage, aliquot and store at -20°C. Aliquots are stable for 12 months at -20°C. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. Further dilutions can be made in assay buffer.

Immunogen

Synthetic peptide corresponding to the C-terminal sequence of human histone H3. Species sequence homology: rat, monkey, chicken, D. melanogaster, xenopus, zebrafish, bovine, and equine

Formulation

Supplied as a liquid in 10mM sodium HEPES, pH 7.5, 150mM sodium chloride, 0.1mg/ml BSA, 50% glycerol.

Purity

Purified by Protein A and peptide affinity chromatography.

Specificity

Recognizes endogenous levels of total human histone H3. Does not cross-react with other histones. Species crossreactivity: mouse.

Product Type

Pab

Source

human

Isotype

IgG

Grade

Affinity Purified

Applications

ChIP

Crossreactivity

Hu Mo

Storage

-20°C

Reference

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