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ProductInformation

Anti-Histone H3
Developed in Rabbit
IgG Fraction of Antiserum

Product Number **H 0164**

Product Description

Anti-Histone H3 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 125-136 located at the C-terminus of human histone H3, conjugated to KLH. This sequence is identical in many species including rat, mouse, chicken, *Xenopus*, *Drosophila*, and plant histone H3. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Histone H3 specifically recognizes histone H3. Applications include the detection of histone H3 by immunoblotting (17 kDa) and immunofluorescence. Staining of the histone H3 band in immunoblotting is specifically inhibited with the histone H3 immunizing peptide (human, amino acids 125-136).

Histone proteins H1, H2A, H2B, H3, and H4 function as building blocks for packaging eukaryotic DNA into repeating nucleosome units that are folded in higher-order chromatin fibers. The relatively unstructured and highly charged N-terminal tail domains of histones are central to the processes that modulate chromatin structure. A diverse and elaborate array of post-translational modifications, including acetylation, phosphorylation and methylation, ubiquitination and ADP-ribosylation occur in histones, particularly on the N-terminal tail domains of histones, particularly of H3 and H4.[1, 2] These modifications may alter chromatin structure and recruit downstream chromatin-associated proteins involved in transcription regulation. These in turn, may dictate dynamic transitions between transcriptionally active or silent chromatin states.

Phosphorylation of H3, mainly on Ser^{10} and Ser^{28}, is localized to a small fraction of highly acetylated H3 and occurs primarily in response to mitogenic and stress stimuli.[2, 3-5] Phosphorylation of Ser^{10} is considered a crucial event for the onset of mitosis. It is tightly correlated with chromosome condensation during both mitosis and meiosis. Histones H3 and H4 are also the predominant histones that undergo methylation and are highly methylated in mammalian cells.[6-7] Histone methylation, like acetylation, is a complex, dynamic process involved in a number of processes, including transcriptional regulation, chromatin condensation, mitosis ad heterochromatin assembly. Conserved lysine residues in the N-terminal tail domains of histone H3, Lys^4, Lys^9, and Lys^{27} are the preferred sites of methylation.[1, 7-9] Histone lysine residues can be mono-, di-, and tri-methylated at different heterochromatic subdomains, adding further complexity to the regulation of chromatin structure.

Reagent

Anti-Histone H3 is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability
For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile
By immunoblotting, a working antibody dilution of 1:5,000-1:10,000 is recommended using a whole cell extract of the A431 human epidermoid carcinoma cell line, and a whole cell extract of the mouse fibroblast NIH3T3 cell line.

By immunoblotting, a working antibody dilution of 1:2,500-1:5,000 is recommended using a whole cell extract of the rat pheochromocytoma PC12 cell line.

By indirect immunofluorescence, a working antibody dilution of 1:250-1:500 is recommended using mouse fibroblast NIH3T3 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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