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ProductInformation

Anti-Methyl-Histone H3 [Me-Lys^{9}]
Developed in Rabbit
Affinity Isolated Antibody

Product Number **H 7162**

Product Description

Anti-Methyl-Histone H3 [Me-Lys^{9}] is developed in rabbit using a synthetic methylated peptide corresponding to amino acids 7-20 [Me-Lys^{9}] of histone H3 conjugated to keyhole limpet hemocyanin (KLH) as immunogen. This histone H3 sequence is identical in many species including mouse, rat, bovine, chicken, frog, drosophila, and *C. elegans*, and is highly conserved (single amino acid substitution) in tetrahymena histone H3. The antibody is affinity-purified using the immunizing peptide immobilized on agarose and subsequently absorbed on the non-methylated histone H3 peptide (human, amino acids 7-20) immobilized on agarose.

Anti-Methyl-Histone H3 [Me-Lys^{9}] recognizes histone H3 methylated on Lys^{9}. Applications include the detection of [Me-Lys^{9}] histone H3 by immunoblotting (17 kDa). Staining of [Me-Lys^{9}] histone H3 in immunoblotting is specifically inhibited with the immunizing peptide [Me-Lys^{9}] histone H3 (human, amino acids 7-20). There is no inhibition with the non-methylated histone H3 peptide (human, amino acids 7-20).

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 occurs 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.

Histones H3 and H4 are the predominant histones modified by methylation and are highly methylated in mammalian cells.[3, 4] Histone methylation, like acetylation, is a complex, dynamic process involving a number of processes, including transcriptional regulation, chromatin condensation, mitosis, and heterochromatin assembly. Moreover, lysine residues can be mono-, di-, and tri-methylated, adding further complexity to the regulation of chromatin structure.

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, 4-6] Methylation of H3 at Lys^{9} is a modification intrinsically linked to epigenetic silencing and heterochromatin assembly. Histone H3 is methylated at Lys^{9} by site-specific H3 methyltransferases (HMTases) encoded by the *SUV39H1* gene family.[7] Methylation of H3 at Lys^{9} by SUV39H1 generates a binding site for HP1 proteins, a family of heterochromatic adaptor proteins implicated in both gene silencing and in the organization of higher order chromatin.[8-11] Methylation of Lys^{9} interferes with the phosphorylation of Ser^{10} but is also influenced by pre-existing modifications in the N-terminus of H3, such as H3 Ser^{10} phosphorylation itself.[7] Conversely, *in vivo* deregulated SUV39H1 or disrupted SUV39H1activity modulates H3 Ser^{10} phosphorylation in native chromatin leading to aberrant mitotic divisions.

Reagent

Anti-Methyl-Histone H3 [Me-Lys^{9}] is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin (BSA) and 15 mM sodium azide.

Antibody concentration: minimum 0.1 mg/ml

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 hazards 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 at –20 °C. 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 minimum working dilution of 1:1,000 is recommended using a whole cell extract of the human epitheloid carcinoma HeLa cell line.

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

References

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