

Product Information

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Anti-Acetyl-Histone H4 [Ac-Lys¹⁶]

produced in rabbit, affinity isolated antibody

Catalog Number **H9164**

Product Description

Anti-Acetyl-Histone H4 [Ac-Lys¹⁶] is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 9-18 [Ac-Lys¹⁶] of human histone H4 (GeneID: 121504), conjugated to KLH. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Acetyl-Histone H4 [Ac-Lys¹⁶] specifically recognizes acetylated-histone H4 [Ac-Lys¹⁶] (~12 kDa) by immunoblotting. Staining of the acetylated-histone H4 [Ac-Lys¹⁶] band in immunoblotting is specifically inhibited by the histone H4 [Ac-Lys¹⁶] immunizing peptide and not by the corresponding unmodified histone H4 peptide (human, amino acids 9-18).

In eukaryotic cells, DNA is packaged into chromatin. The building block of chromatin is the nucleosome which is comprised of an octamer of core histones (H2A, H2B, H3, and H4) around which 147 bp of DNA are wrapped. Linker histone H1 binds to DNA between nucleosomal core particles and is involved in establishing and maintaining higher order chromatin structures. Histones are subjected to several covalent modifications, such as phosphorylation, methylation, acetylation, and ubiquitination, that affect chromatin structure and regulate chromatin activity.^{1,2} Histone modifications are thought to play an important role in cancer and disease.³ 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 subjected to covalent modifications.^{4,5} Histone H4 can be reversibly acetylated at Lys residues 5, 8, 12, and 16. Acetylation of histone H4 on Lys¹⁶ (H4-K16Ac) is a prevalent modification that plays a role in transcriptional activation by regulating higher-order chromatin structure and protein interactions.^{6,7} This modification inhibits the intramolecular folding of nucleosomal arrays into compact 30-nm thick fibers and impedes the ability of chromatin to form cross-fiber interactions. H4-K16Ac has also been shown to inhibit the ability of the remodeling enzyme ACF to mobilize a mononucleosome.⁷

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet 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. Repeated freezing and thawing, or storage in "frost-free" freezers, is 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

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using HL60 cell lysates.

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

References

1. Fischle, W., et al., *Curr. Opin. Cell Biol.*, **15**, 172-183 (2003).
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3. Schneider, R., et al., *Trends Biochem.*, **27**, 396-402 (2002).
4. Rice, J.C., and Allis, C.D., *Curr. Opin. Cell Biol.*, **13**, 263-273 (2001).
5. Garcia, B.A., et al., *J. Biol. Chem.*, **282**, 7632-7640 (2007).
6. Suka, N., et al., *Nat. Genet.* **32**, 378-383 (2002).
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DXP,ER,PHC 12/07-1

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