

Product Information

Anti-acetyl-Histone H3 (Ac-Lys²⁷)

produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200485**

Product Description

Anti-acetyl-Histone H3 (Ac-Lys²⁷) is produced in rabbit using as immunogen a synthetic peptide containing acetylated Lys²⁷ of human histone H3 (GeneID: 8290), conjugated to KLH. The corresponding sequence is identical in many species including rat and mouse histone H3. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-acetyl-Histone H3 (Ac-Lys²⁷) specifically recognizes human and mouse (Ac-Lys²⁷) Histone H3 (H3K27Ac). The antibody may be used in several immunochemical techniques including immunoblotting (~15 kDa), immunofluorescence and immunohistochemistry. Detection of the acetylated histone H3 (Ac-Lys²⁷) band by immunoblotting is specifically inhibited by the acetylated histone H3 (Ac-Lys²⁷) immunizing peptide, but not by the corresponding non-acetylated histone H3 peptide.

Histones are subjected to extensive covalent modifications, including phosphorylation, methylation, acetylation and ubiquitination, thought to play an important role in development and in cancer.¹⁻² Active chromatin is highly correlated with the hyperacetylation of histone H3 at the N-terminal tail. Histone H3 can be reversibly acetylated at Lys residues 9, 14, 18, 23, 27, 36 and 56, by a family of enzymes known as histone acetyl transferases (HATs). Histone H3 can be modified at Lys²⁷ either by methylation or acetylation. Tri-methylation of Lys²⁷ on histone H3 (H3K27Me3) is linked to gene silencing and is enriched in the genome of undifferentiated embryonic stem (ES) cells. This mark is lost during differentiation.³ Acetylation of K²⁷ on histone H3 (H3K27Ac) is a mark of active chromatin, and has been shown to mark regions in ES and embryonal carcinoma cells for activation during differentiation. Histone H3K27Ac has been shown to distinguish active from inactive enhancers and predicts development state.⁴ Histone H3 phosphorylation at S²⁸ and K²⁷ acetylation activates transcription and antagonize polycomb repressive complex 2 (PRC2) silencing.⁵

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: ~1.0 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 extracts of NIH3T3 cells.

Immunofluorescence: a working concentration of 2.5-5.0 µg/mL is recommended using HeLa cells.

Immunohistochemistry: a working concentration of 10-20 µg/mL is recommended using formalin-fixed paraffin-embedded human breast carcinoma.

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

References

1. Kouzarides, T., *Cell*, **128**, 693-705 (2007).
2. Strahl, B.D., and Allis, C.D., *Nature*, **403**, 41-45 (2000).
3. Lee, E.R., et al., *Stem Cells*, **25**, 2191-2199 (2007).

4. Creighton, M.P., et al., *Proc. Natl. Acad. Sci. USA*, **107**, 21931-21936 (2010).
5. Lau, P.N., and Cheung, P., *Proc. Natl. Acad. Sci. USA*, **108**, 2801-2806 (2011).

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