AbX™

Dimethyl Lys^{4} Histone H3 Rabbit pAb

Catalog Number A006-100UL

Features

- Reacts specifically with modified dimethylated Lysine4 in Histone H3
- Supplied as a PBS solution
- Applications include Western blotting and ChIP

INTRODUCTION

The nucleosome, made up of four core histone proteins (H2A, H2B, H3 and H4), is the primary building block of chromatin. Histones have been shown to be dynamic proteins, undergoing multiple types of post-translational modifications, including acetylation, phosphorylation, methylation and ubiquitination. Histone methylation is a major determinant for the formation of active and inactive regions of the genome and is crucial for the proper programming of the genome during development. A diverse set of histone lysine methyltransferases has been identified, all but one of which contain a SET domain originally identified in the Drosophila, Enhancer of zeste and Trithorax proteins. Lysine methylation occurs primarily on histones H3 (Lys4, 9, 27, 36, 79) and H4 (Lys20) and has been implicated in both transcriptional activation and silencing. Methylation of these lysine residues induces the recruitment of chromatin modifying enzymes containing methyl-lysine binding modules. The discovery in 2004 of the histone demethylase LSD1, followed by the *Jumonji* demethylases JMJD1, JMJD2 and JHDM1 has shown that methylation is a reversible epigenetic process controlling cellular events.

Form

Purified AbX™ Lys4 Dimethyl Lys4 Histone H3 Rabbit Antibody.

Immunogen

Lysine4 dimethylated peptide of Histone H3

Cross reactivity

Peptide immunogen sequence is highly conserved. Expected to react with Histone H3 from yeast to mammals.

Buffercomposition

Phosphate Buffered Saline at pH 7.2 containing 0.09% Sodium Azide

Storage

Short Term: 4°C. Extended: Aliquot and freeze at -20°C

Uses

Western blotting and ChIP. Other applications not yet tested.

SuggestedDilution

Western blotting: Suggested dilution, 1:500-1:2,000

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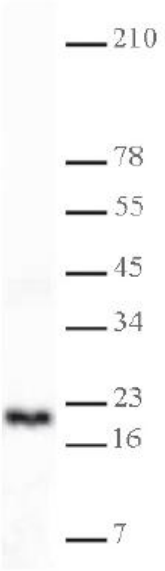
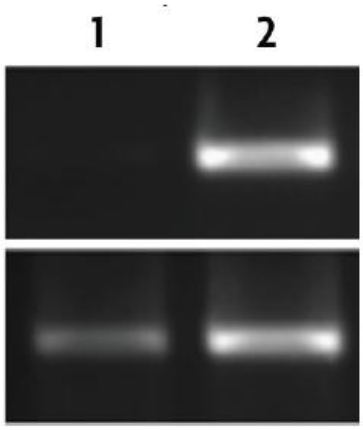
WesternBlotting
Acid treated HeLa (10 µg) extract was treated with a 1:500 dilution of antibody A006-100UL prior to visualization.



Chromatin Immunoprecipitation
Antibody A006-100UL was used in ChIP with murine embryonic stem cells (lane 1) or erythroleukemia cells (lane 2).
Top Panel: PCR primers specific for ß-globulin were used to amplify a 210 base pair promoter following DNA isolation.
Lower Panel: Input DNA control.



Specificity Data
To confirm the specificity of the antisera a dot blot system was used with amounts of peptides from 10-250 pmoles. Unmodified, monomethylated, dimethylated and trimethylated peptides surrounding the Lysine 4 site on Histone H3 were spotted in lanes 1-4 respectively. Lanes 5-8 contained peptides starting at residue 6, with the sequence, TARKSTGGKAPRKQLAT, encompassing the residue lysine 9 on Histone H3 that is unmodified, monomethylated, dimethylated and trimethylated respectively. Lanes 9-12 contained peptides encompassing the residue lysine 27 on Histone H3 that is unmodified, monomethylated, dimethylated and trimethylated respectively.

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