Anti-monomethyl Histone H3 (Lys4), mouse monoclonal antibody

Catalog No.    MAB10002-20, MAB10002-100
Lot No.        09001

Product Description

Clone No.   MABI0302 (CMA302)
Host        Mouse
Source      Culture supernatant of serum free medium
Isotype     IgG2b
Size        100 µl
Concentration 1 mg/ml
Antigen     13 amino acid residues from the N-terminus of human Histone H3.1
Buffer      PBS+0.05% sodium azaid
Storage     Store below -20℃
Expiration Date Mar 2011

Application notes

Immunoprecipitation  1-5 µg/5 µl Sepharose
Immunostaining      0.5-1 µg/ml
Immunoblot          0.5-1 µg/ml

Attention

Mouse IgG has weak combination with protein A and protein G. Please use the beads which connect anti-mouse IgG antibodies such as anti-mouse IgG sepharose for immunoprecipitation.

Reference

MABI 0302

Dilution (×1000)

K4 unmodified
K4 monomethyl
K4 dimethyl
K4 trimethyl
K9 monomethyl

Dilution (×1000)
Nucleosomes are composed of four different histone proteins designated H2A, H2B, H3, and H4. In humans, five variants of histone H3 are reported: H3.1, H3.2, H3.3, H3t, and CENP-A. The two major Histone H3 variants, H3.1 and H3.3, are the main variants displaying distinct genomic localization patterns in eukaryotes. Deposition of Histone H3.1 is associated with DNA synthesis during DNA replication and possibly DNA repair, while Histone H3.3 is incorporated independently of DNA synthesis and is the predominant form of H3 found in non-dividing cells. Hence, these new Histone H3 variant monoclonal antibodies offer great utility for dissecting the functional significance of these H3 variants and the molecular mechanisms associated with their deposition.

Recently, it was shown that a genomic gene cluster regulating skeletal myogenesis is marked by H3.3 protein prior to cellular muscle formation and that H3.3 marking of this region enables myogenic gene activation (Ref. 2). These results suggest that monitoring H3.3 marking at specific loci may be useful in the prediction of cell fate. These H3.3 monoclonal antibodies are expected to be useful probes in the field of regenerative medicine.

**Fluorescence immunostaining**

- **Histone H3.1/H3.2 MAb** (1D4F2)
  - NIH3T3
  - HeLa

- **Histone H3.3 MAb** (1E4A3)

**Experimental example**

These H3 variant antibodies were essential tools in a first of kind study showing that differentiation specific genes are marked for lineage specific expression by the deposition of Histone H3.3 at the onset of differentiation signaling (Ref. 2).

**Reference**

Monoclonal Antibodies to Histone Modifications

Histones are the main protein components of chromatin. To facilitate nuclear packaging and control of gene expression, DNA in chromatin is wound around nucleosome particles composed primarily of the Histones H2A, H2B, H3, and H4. Histone N-terminal regions (histone tails) protrude from the nucleosome core and are subject to a variety of reversible, regulated modifications (including acetylation, phosphorylation, and methylation) influencing transcription and chromatin structure. How such modifications are regulated and how these modifications effect gene expression continues to be an area of intense interest and research. In such studies, chromatin immunoprecipitation (ChIP) is perhaps the most widely used experimental procedure. Due to the inherent variability and limited supply of polyclonal antibodies, well characterized monoclonal antibodies are preferred reagents for ChIP. The versatile set of anti-histone monoclonal antibodies offered here are therefore highly valuable reagents to your lab’s epigenetic toolbox.

**Histone H3 N-terminal modifications**

**Histone H3 phospho Ser10 immunostaining**

<table>
<thead>
<tr>
<th>Description</th>
<th>Host</th>
<th>Residue</th>
<th>Modification</th>
<th>Clone</th>
<th>Application</th>
<th>Cat. No.</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti Histone H3</td>
<td>Mouse</td>
<td></td>
<td>unmodified</td>
<td>MABI0001</td>
<td>ChIP/ WB/ IC</td>
<td>MCA-MAB0001-100-EX</td>
<td>100 µL</td>
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<tr>
<td>Anti Monomethyl Histone H3 (Lys4)</td>
<td>Mouse</td>
<td>K4 (Lysine 4)</td>
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<td>Mouse</td>
<td></td>
<td>trimethyl</td>
<td>MABI0004</td>
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<td>Rat</td>
<td>acetyl</td>
<td>2G1F9</td>
<td>ChIP/ WB/ IC/ IHC</td>
<td>CAC-CE-037A</td>
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<td>Anti Acetyl Histone H3 (Lys9)</td>
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<td>K9 (Lysine 9)</td>
<td>dimethyl</td>
<td>MABI0005</td>
<td>ChIP/ WB/ IC</td>
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<tr>
<td>Anti Monomethyl Histone H3 (Lys9)</td>
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<td></td>
<td>trimethyl</td>
<td>MABI0006</td>
<td>ChIP/ WB/ IC</td>
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<td></td>
<td>dimethyl</td>
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<td>ChIP/ WB/ IC</td>
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<td>trimethyl</td>
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<td>K9/27 (Lysine 9/27)</td>
<td>acetyl</td>
<td>MABI0010</td>
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<td>trimethyl</td>
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<td>trimethyl</td>
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<td>phospho</td>
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<td>phospho</td>
<td>MABI0014</td>
<td>WB/ IC</td>
<td>MCA-MAB0014-100-EX</td>
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</tr>
</tbody>
</table>

Reference


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