

# Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade ab177177

 RabMAB

★★★★★ **1 Abreviews** **4 References** **10 图像**

### 概述

产品名称	Anti-Histone H3 (acetyl K9)抗体[EPR16988] - ChIP Grade
描述	兔单克隆抗体[EPR16988] to Histone H3 (acetyl K9) - ChIP Grade
宿主	Rabbit
经测试应用	<b>适用于:</b> ICC/IF, IHC-P, WB, PepArr, ChIP-sequencing, ChIP
种属反应性	<b>与反应:</b> Mouse, Rat, Human
免疫原	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
阳性对照	WB: Whole cell lysates from HeLa and NIH/3T3 cells treated with Trichostatin A. IHC-P: Human and mouse colon tissue. Rat spleen tissue. ICC/IF: HeLa cells. ChIP-seq: Chromatin from HeLa cells.
常规说明	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> <li>- High batch-to-batch consistency and reproducibility</li> <li>- Improved sensitivity and specificity</li> <li>- Long-term security of supply</li> <li>- Animal-free production</li> </ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAB® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAB® patents</a>.</p>

### 性能

形式	Liquid
存放说明	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
存储溶液	<p>Preservative: 0.01% Sodium azide</p> <p>Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA</p>
纯度	Protein A purified
克隆	单克隆
克隆编号	EPR16988

同种型

IgG

应用

The Abpromise guarantee

Abpromise™承诺保证使用ab177177于以下的经测试应用

“应用说明”部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说明
ICC/IF		1/3000.
IHC-P		1/200. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
WB	★★★★☆ (1)	1/5000. Detects a band of approximately 15 kDa (predicted molecular weight: 15 kDa).
PepArr		Use at an assay dependent concentration.
ChIP-sequencing		Use 4µg for 10 <sup>7</sup> cells.
ChIP		Use 2 µg for 25 µg of chromatin.

靶标

功能

Core component of nucleosome. Nucleosomes wrap and compact DNA into chromatin, limiting DNA accessibility to the cellular machineries which require DNA as a template. Histones thereby play a central role in transcription regulation, DNA repair, DNA replication and chromosomal stability. DNA accessibility is regulated via a complex set of post-translational modifications of histones, also called histone code, and nucleosome remodeling.

序列相似性

Belongs to the histone H3 family.

发展阶段

Expressed during S phase, then expression strongly decreases as cell division slows down during the process of differentiation.

翻译后修饰

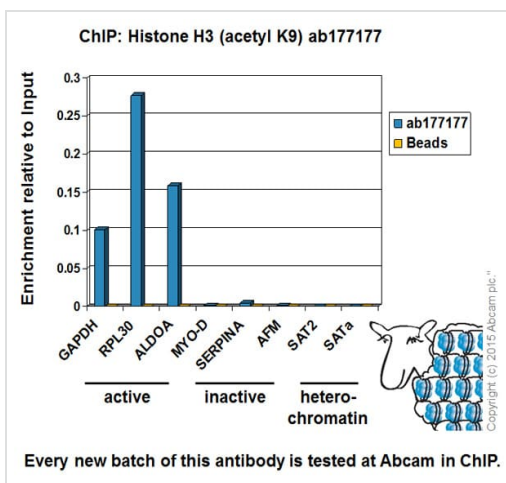
Acetylation is generally linked to gene activation. Acetylation on Lys-10 (H3K9ac) impairs methylation at Arg-9 (H3R8me2s). Acetylation on Lys-19 (H3K18ac) and Lys-24 (H3K24ac) favors methylation at Arg-18 (H3R17me).  
Citullination at Arg-9 (H3R8ci) and/or Arg-18 (H3R17ci) by PAD4 impairs methylation and represses transcription.  
Asymmetric dimethylation at Arg-18 (H3R17me2a) by CARM1 is linked to gene activation. Symmetric dimethylation at Arg-9 (H3R8me2s) by PRMT5 is linked to gene repression. Asymmetric dimethylation at Arg-3 (H3R2me2a) by PRMT6 is linked to gene repression and is mutually exclusive with H3 Lys-5 methylation (H3K4me2 and H3K4me3). H3R2me2a is present at the 3' of genes regardless of their transcription state and is enriched on inactive promoters, while it is absent on active promoters.  
Methylation at Lys-5 (H3K4me), Lys-37 (H3K36me) and Lys-80 (H3K79me) are linked to gene activation. Methylation at Lys-5 (H3K4me) facilitates subsequent acetylation of H3 and H4. Methylation at Lys-80 (H3K79me) is associated with DNA double-strand break (DSB) responses and is a specific target for TP53BP1. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are linked to gene repression. Methylation at Lys-10 (H3K9me) is a specific target for HP1

Phosphorylated at Thr-4 (H3T3ph) by GSG2/haspin during prophase and dephosphorylated during anaphase. Phosphorylation at Ser-11 (H3S10ph) by AURKB is crucial for chromosome condensation and cell-cycle progression during mitosis and meiosis. In addition phosphorylation at Ser-11 (H3S10ph) by RPS6KA4 and RPS6KA5 is important during interphase because it enables the transcription of genes following external stimulation, like mitogens, stress, growth factors or UV irradiation and result in the activation of genes, such as c-fos and c-jun. Phosphorylation at Ser-11 (H3S10ph), which is linked to gene activation, prevents methylation at Lys-10 (H3K9me) but facilitates acetylation of H3 and H4. Phosphorylation at Ser-11 (H3S10ph) by AURKB mediates the dissociation of HP1 proteins (CBX1, CBX3 and CBX5) from heterochromatin. Phosphorylation at Ser-11 (H3S10ph) is also an essential regulatory mechanism for neoplastic cell transformation. Phosphorylated at Ser-29 (H3S28ph) by MLTK isoform 1, RPS6KA5 or AURKB during mitosis or upon ultraviolet B irradiation. Phosphorylation at Thr-7 (H3T6ph) by PRKCB is a specific tag for epigenetic transcriptional activation that prevents demethylation of Lys-5 (H3K4me) by LSD1/KDM1A. At centromeres, specifically phosphorylated at Thr-12 (H3T11ph) from prophase to early anaphase, by DAPK3 and PKN1. Phosphorylation at Thr-12 (H3T11ph) by PKN1 is a specific tag for epigenetic transcriptional activation that promotes demethylation of Lys-10 (H3K9me) by KDM4C/JMJD2C. Phosphorylation at Tyr-42 (H3Y41ph) by JAK2 promotes exclusion of CBX5 (HP1 alpha) from chromatin.

Nucleus. Chromosome.

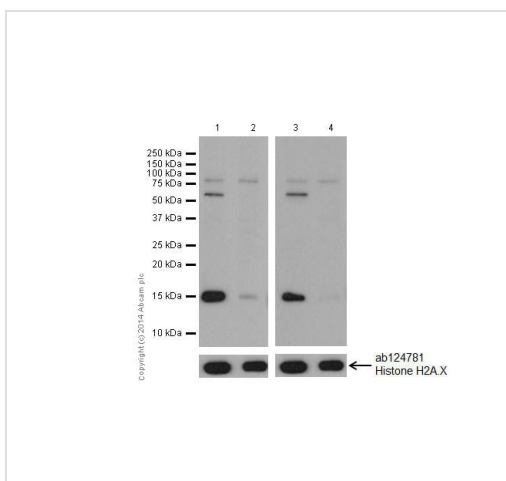
图片





ChIP - Anti-Histone H3 (acetyl K9) antibody  
[EPR16988] - ChIP Grade (ab177177)

Chromatin was prepared from HeLa (Human epithelial cell line from cervix adenocarcinoma) cells according to the Abcam X-ChIP protocol. Cells were fixed with formaldehyde for 10 minutes. The ChIP was performed with 25µg of chromatin, 2µg of ab177177 (blue), and 20µl of Protein A/G sepharose beads. No antibody was added to the beads control (yellow). The immunoprecipitated DNA was quantified by real time PCR (Taqman approach for active and inactive loci, Sybr green approach for heterochromatic loci). Primers and probes are located in the first kb of the transcribed region.



Western blot - Anti-Histone H3 (acetyl K9) antibody  
[EPR16988] - ChIP Grade (ab177177)

**All lanes :** Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade (ab177177) at 1/1000 dilution

**Lane 1 :** HeLa (Human epithelial cell line from cervix adenocarcinoma) treated with Trichostatin A 500 ng/ml for 4hr whole cell lysates

**Lane 2 :** Untreated HeLa whole cell lysates

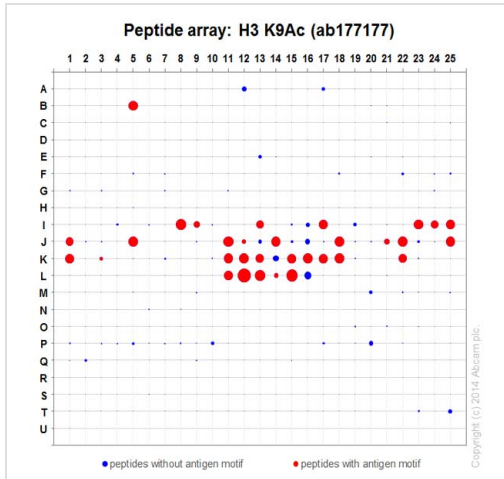
**Lane 3 :** NIH/3T3 (Mouse embryo fibroblast cell line) treated with Trichostatin A 500 ng/ml for 4hr whole cell lysates

**Lane 4 :** Untreated NIH/3T3 whole cell lysates

Lysates/proteins at 10 µg per lane.

**Predicted band size:** 15 kDa

**Observed band size:** 15 kDa

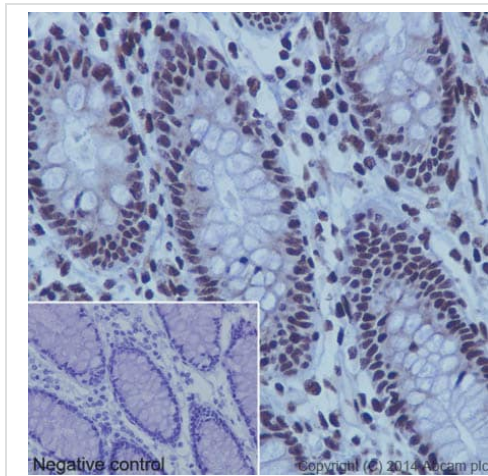


Peptide Array - Anti-Histone H3 (acetyl K9) antibody  
[EPR16988] - ChIP Grade (ab177177)

ab177177 was tested in Peptide Array against 501 different modified and unmodified histone peptides; each peptide is printed on the array at six concentrations (each in triplicate).

Circle area represents affinity between the antibody and a peptide: all antigen-containing peptides are displayed as red circles, all other peptides as blue circles. The affinity is calculated as area under curve when antibody binding values are plotted against the corresponding peptide concentration. Each circle area is normalized to the peptide with the strongest affinity.

The complete dataset, including full list of all peptides and information on the position of each peptide in the diagram, can be downloaded [here](#).

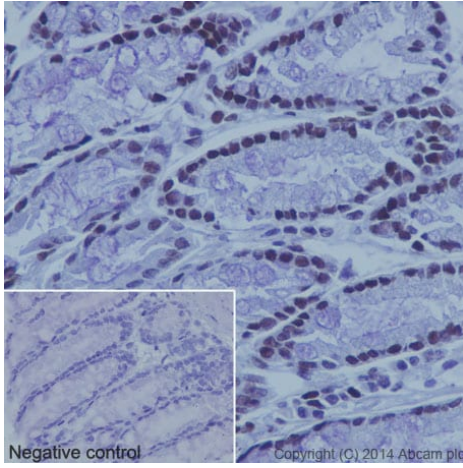


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade (ab177177)

Immunohistochemical analysis of paraffin-embedded human colon tissue labeling Histone H3 (acetyl K9) with ab177177 at 1/500 dilution, followed by Goat Anti-Rabbit HRP (IgG H&L) ([ab97051](#)) at 1/500 dilution. Nuclear staining on glandular epithelium of Human colon tissue is observed. Counterstained with hematoxylin.

**Negative control:** PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

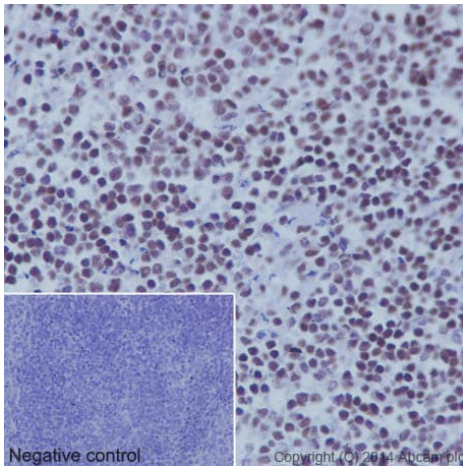


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade (ab177177)

Immunohistochemical analysis of paraffin-embedded mouse colon tissue labeling Histone H3 (acetyl K9) with ab177177 at 1/500 dilution, followed by Goat Anti-Rabbit HRP (IgG H&L) ([ab97051](#)) at 1/500 dilution. Nuclear staining on glandular epithelium of mouse colon tissue is observed. Counterstained with hematoxylin.

**Negative control:** PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



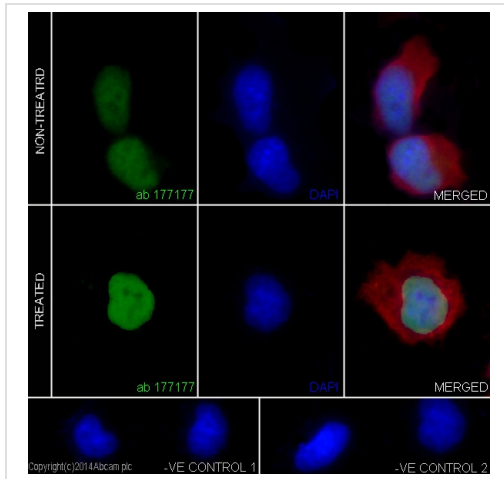
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade (ab177177)

Immunohistochemical analysis of paraffin-embedded rat spleen tissue labeling Histone H3 (acetyl K9) with ab177177 at 1/500 dilution, followed by Goat Anti-Rabbit HRP (IgG H&L) ([ab97051](#)) at 1/500 dilution. Nuclear staining on rat spleen tissue is observed. Counterstained with hematoxylin.

**Negative control:** PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.





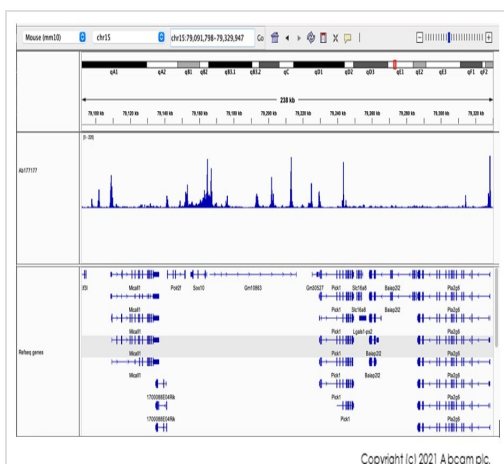
Immunocytochemistry/ Immunofluorescence - Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade (ab177177)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling Histone H3 (acetyl K9) with ab177177 at 1/3000 dilution, followed by Goat anti-rabbit Alexa Fluor® 488 (IgG) (**ab150077**) secondary antibody at 1/400 dilution (green). Confocal image shows nuclear staining on HeLa cell line. The expression increased after treatment with Trichostatin A (500 ng/ml) for 4 hours. The nuclear counter stain is DAPI (blue). Tubulin is detected with **ab7291** (anti-Tubulin mouse mAb) at 1/500 dilution and **ab150120** (goat anti-mouse AlexaFluor®594 secondary antibody) at 1/500 dilution (red).

The negative controls are as follows:

-ve control 1: ab177177 at 1/3000 dilution followed by **ab150120** (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.

-ve control 2: **ab7291** (anti-Tubulin mouse mAb) at 1/500 dilution followed by **ab150077** (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/400 dilution.



CUT&Tag sequencing - Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade (ab177177)

This experiment and image is courtesy of Dr Marek Bartosovic, Gonçalo Castelo-Branco Group, Karolinska Institutet.

CUT&Tag-seq was performed using 200,000 Oli-neu (Oligodendrocyte progenitor) cells. Cells were permeabilized with 0.05% Digitonin and 0.01% NP-40 for 3 minutes. A 1:100 dilution of Recombinant Anti-Histone H3 (acetyl K9) antibody [EPR16988] - ChIP Grade (ab177177) was used, along with a Guinea pig anti-rabbit Secondary. DNA was seq using Illumina NovaSeq S Prime to a depth of 22 million reads.

*This image is courtesy of Dr Marek Bartosovic, Gonçalo Castelo-Branco Group, Karolinska Institutet.*

The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.

### Why choose a recombinant antibody?



**Research with confidence**  
Consistent and reproducible results



**Long-term and scalable supply**  
Recombinant technology



**Success from the first experiment**  
Confirmed specificity



**Ethical standards compliant**  
Animal-free production

Anti-Histone H3 (acetyl K9) antibody [EPR16988] -  
ChIP Grade (ab177177)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

### Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.cn/abpromise> or contact our technical team.

### Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors