

Product datasheet

Anti-Histone H3 (acetyl K14) antibody [EP964Y] - BSA and Azide free ab203952

Recombinant **RabMAb**

[11 References](#) [3 Images](#)

Overview

Product name	Anti-Histone H3 (acetyl K14) antibody [EP964Y] - BSA and Azide free
Description	Rabbit monoclonal [EP964Y] to Histone H3 (acetyl K14) - BSA and Azide free
Host species	Rabbit
Tested applications	Suitable for: IP, ICC/IF, ChIP, IHC-P, IHC, WB, IHC - Wholemout Unsuitable for: Flow Cyt
Species reactivity	Reacts with: Rat, Human, Saccharomyces cerevisiae, Caenorhabditis elegans, Drosophila melanogaster, Schizosaccharomyces pombe
Immunogen	Synthetic peptide within Histone H3 (acetyl K14). The exact sequence is proprietary.
Positive control	C6 cell lysates, human adenocarcinoma of uterus tissue and HeLa cells.
General notes	The formulation and the concentration of this product is compatible for metal-conjugation for mass cytometry (CyTOF®). Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents .

Properties

Form	Liquid
Storage instructions	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.
Storage buffer	pH: 7.20 Constituent: 49% PBS
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EP964Y

Isotype

IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab203952** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IP		Use at an assay dependent concentration.
ICC/IF		Use at an assay dependent concentration.
ChIP		Use at an assay dependent concentration. PubMed: 19188451
IHC-P		Use at an assay dependent concentration.
IHC		Use at an assay dependent concentration.
WB		Use at an assay dependent concentration. Detects a band of approximately 11 kDa (predicted molecular weight: 11 kDa).
IHC - Wholmount		Use at an assay dependent concentration.

Application notes

Is unsuitable for Flow Cyt.

Target

Function

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.

Sequence similarities

Belongs to the histone H3 family.

Developmental stage

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

Post-translational modifications

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).

Citrullination at Arg-9 (H3R8ci) and/or Arg-18 (H3R17ci) by PADI4 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 proteins (CBX1, CBX3 and CBX5) and prevents subsequent phosphorylation at Ser-11 (H3S10ph) and acetylation of H3 and H4. Methylation at Lys-5 (H3K4me) and Lys-80 (H3K79me) require preliminary monoubiquitination of H2B at 'Lys-120'. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are enriched in inactive X chromosome chromatin.

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 PRKCBB 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.

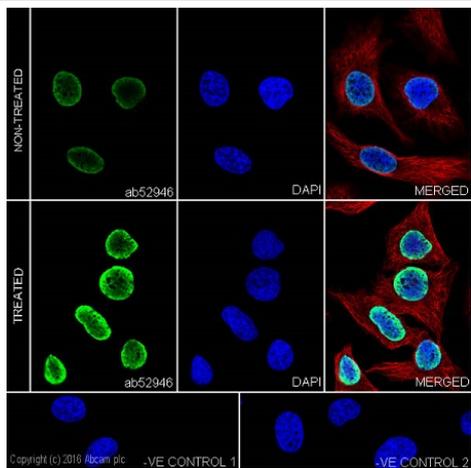
Phosphorylation at Tyr-42 (H3Y41ph) by JAK2 promotes exclusion of CBX5 (HP1 alpha) from chromatin.

Monoubiquitinated by RAG1 in lymphoid cells, monoubiquitination is required for V(D)J recombination (By similarity). Ubiquitinated by the CUL4-DDB-RBX1 complex in response to ultraviolet irradiation. This may weaken the interaction between histones and DNA and facilitate DNA accessibility to repair proteins.

Cellular localization

Nucleus. Chromosome.

Images



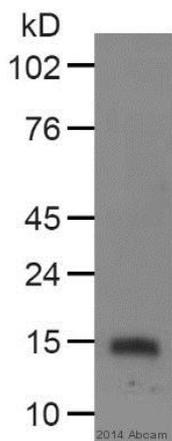
Immunocytochemistry/ Immunofluorescence - Anti-Histone H3 (acetyl K14) antibody [EP964Y] - BSA and Azide free (ab203952)

Immunocytochemistry/Immunofluorescence analysis of untreated HeLa (Human epithelial cell line from cervix adenocarcinoma) cells and TSA (Trichostatin A) (500ng/ml, 4h) and treated HeLa cells labeling Histone H3 (acetyl K14) with purified [ab52946](#) at 1/500. Cells were fixed with 4% PFA and permeabilized with 0.1% Triton X-100, counterstained with [ab150120](#) AlexaFluor[®]594 Goat anti-Mouse secondary 1:1000 (2ug/ml). An Alexa Fluor[®] 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody (Ab150077). Nuclei counterstained with DAPI (blue).

Negative Control 1: Rabbit primary antibody and anti-mouse secondary antibody([ab150120](#))

Negative Control 2: Mouse primary antibody([ab7291](#)) and anti-rabbit secondary antibody([ab150077](#))

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab52946](#)).



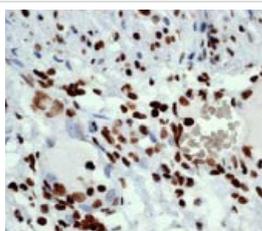
Immunoprecipitation - Anti-Histone H3 (acetyl K14) antibody [EP964Y] - BSA and Azide free (ab203952)

This image is courtesy of an anonymous Abreview.

[ab52946](#) immunoprecipitating Histone H3 (acetyl K14) in Drosophila melanogaster embryo whole tissue lysate. 500µg of tissue lysate was incubated with the undiluted primary antibody and matrix (Protein G) for 2 hours at 4°C.

For western blotting [ab52946](#) (1/20000) was used to confirm successful immunoprecipitation.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab52946](#)).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K14) antibody [EP964Y] - BSA and Azide free (ab203952)

[ab52946](#) at 1/100 dilution staining Histone H3 (acetyl K14) in human uterus adenocarcinoma tissue by Immunohistochemistry, Paraffin embedded tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab52946](#)).

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