

Product datasheet

Anti-Histone H3 (citrulline R26) antibody [EPR20606] ab212082

Recombinant RabMAb

★★★★★ [2 Abreviews](#) [5 Images](#)

Overview

Product name	Anti-Histone H3 (citrulline R26) antibody [EPR20606]
Description	Rabbit monoclonal [EPR20606] to Histone H3 (citrulline R26)
Host species	Rabbit
Tested applications	Suitable for: WB, Dot blot, ELISA
Species reactivity	Reacts with: Mouse, Human
Immunogen	This product was produced with the following immunogens: Synthetic peptide. This information is proprietary to Abcam and/or its suppliers. Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HEK-293T transfected with GFP-tagged PAD14 (WT) whole cell lysate treated with CaCl ₂ and Ionomycin; NIH/3T3 transfected with GFP-tagged PAD14 (WT) whole cell lysate treated with CaCl ₂ .
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: <ul style="list-style-type: none">- High batch-to-batch consistency and reproducibility- Improved sensitivity and specificity- Long-term security of supply- Animal-free production For more information see here . 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: 7.2 Preservative: 0.01% Sodium azide Constituents: 0.05% BSA, 40% Glycerol (glycerin, glycerine), PBS

Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR20606
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab212082 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
WB		1/1000. Detects a band of approximately 15 kDa (predicted molecular weight: 15 kDa).
Dot blot		1/1000.
ELISA		Use a concentration of 0 - 1 µg/ml.

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 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 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.

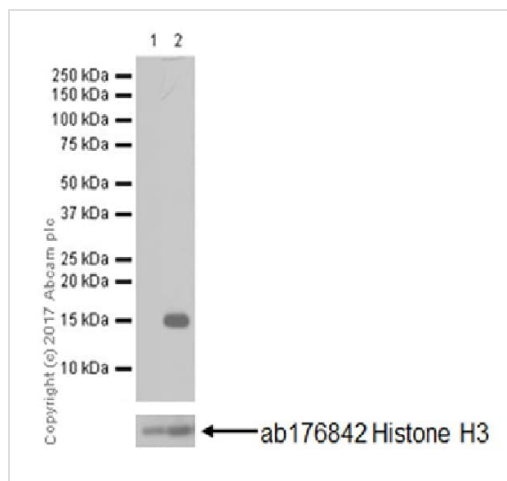
Phosphorylation at Tyr-42 (H3Y41ph) by JAK2 promotes exclusion of CBX5 (HP1 alpha) from chromatin.

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



Western blot - Anti-Histone H3 (citulline R26) antibody [EPR20606] (ab212082)

All lanes : Anti-Histone H3 (citulline R26) antibody [EPR20606] (ab212082) at 1/1000 dilution

Lane 1 : HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) transfected with an empty vector (control) then treated with 10 mM CaCl₂ and 10 μM Ionomycin for 2 hours, whole cell lysate

Lane 2 : HEK-293T transfected with a GFP-tagged PAD14 expression vector then treated with 10 mM CaCl₂ and 10 μM Ionomycin for 2 hours, whole cell lysate

Lysates/proteins at 10 μg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

Developed using the ECL technique.

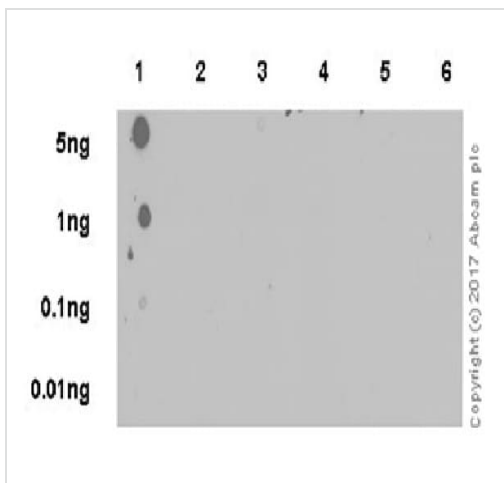
Predicted band size: 15 kDa

Observed band size: 15 kDa

Exposure time: 5 seconds

Histone H3R26 is citrullinated by PADI4, CaCl_2 is used as a co-factor according to the literature (PMID: 16567635). Ionomycin is used to improve the modification by PADI4 according to the literature (PMID: 26360112).

Blocking/Dilution buffer: 5% BSA/TBST.



Dot Blot - Anti-Histone H3 (citrulline R26) antibody [EPR20606] (ab212082)

Dot blot analysis of Histone H3 (citrulline R26) labeled with ab212082 at 1/1000 dilution.

Lane 1: Histone H3 (citrulline R26) peptide (aa25-36)

Lane 2: Histone H3 (Citrulline R17) peptide (aa1-21)

Lane 3: Histone H3 (Citrulline R8) peptide (aa1-21)

Lane 4: Histone H3 (Citrulline R2) peptide (aa1-21)

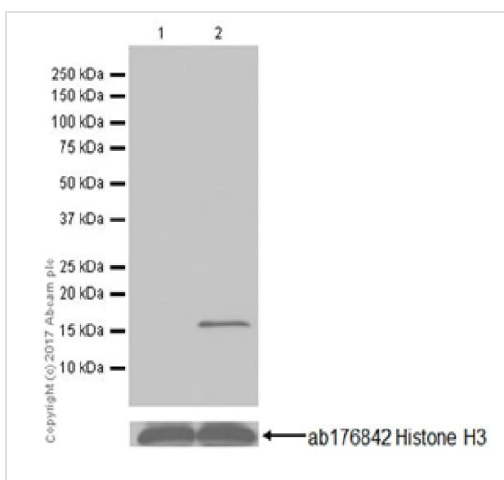
Lane 5: Histone H3 peptide (aa1-21)

Lane 6: Histone H3 peptide (aa19-36)

Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/100000 dilution was used as secondary antibody.

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure time: 30 seconds.



Western blot - Anti-Histone H3 (citrulline R26) antibody [EPR20606] (ab212082)

All lanes : Anti-Histone H3 (citrulline R26) antibody [EPR20606] (ab212082) at 1/1000 dilution

Lane 1 : NIH/3T3 (mouse embryonic fibroblast cell line) transfected with a GFP-tagged empty vector (control) then treated with 10 mM CaCl_2 for 2 hours, whole cell lysate

Lane 2 : NIH/3T3 transfected with a GFP-tagged PADI4 expression vector treated with 10 mM CaCl_2 for 2 hours, whole cell lysate

Lysates/proteins at 10 μg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at

1/100000 dilution

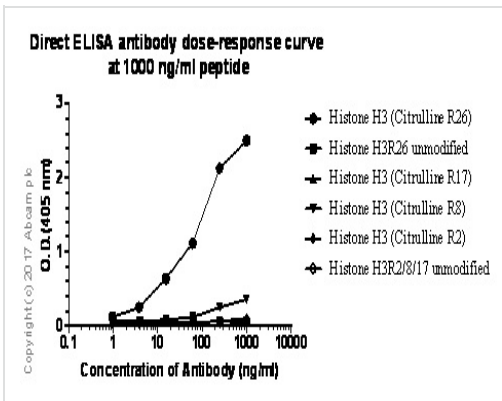
Predicted band size: 15 kDa

Observed band size: 15 kDa

Exposure time: 3 minutes

Histone H3R26 is citrullinated by PADI4, CaCl₂ is used as a co-factor according to the literature (PMID: 16567635). Ionomycin is used to improve the modification by PADI4 according to the literature (PMID: 26360112).

Blocking/Dilution buffer: 5% BSA/TBST.



ELISA - Anti-Histone H3 (citrulline R26) antibody
[EPR20606] (ab212082)

ELISA using ab212082 labeling Histone H3 (Citrulline R26), Histone H3R26 unmodified, Histone H3 (Citrulline R17), Histone H3 (Citrulline R8), Histone H3 (Citrulline R2) and Histone H3R2/8/17 unmodified at 1 µg/ml. ab212082 was used at a range between 0 - 1 µg/ml.

Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG(H+L) was used as secondary antibody at 1/2500 dilution.

ab212082 cross binds H3R8Cit at 14%.

Why choose a recombinant antibody?

<p>Research with confidence Consistent and reproducible results</p>	<p>Long-term and scalable supply Recombinant technology</p>
<p>Success from the first experiment Confirmed specificity</p>	<p>Ethical standards compliant Animal-free production</p>

Anti-Histone H3 (citrulline R26) antibody
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