

Product datasheet

Anti-Histone H3 antibody [EPR17785] ab201456

Recombinant RabMAb

★★★★☆ 1 Abreviews 13 References 10 Images

Overview

Product name	Anti-Histone H3 antibody [EPR17785]
Description	Rabbit monoclonal [EPR17785] to Histone H3
Host species	Rabbit
Tested applications	Suitable for: WB, ICC/IF, Flow Cyt, IHC-P Unsuitable for: ChIP
Species reactivity	Reacts with: Mouse, Rat, Human
Immunogen	Synthetic peptide within Human Histone H3 aa 1-100. The exact sequence is proprietary. Database link: P68431
Positive control	WB: HeLa, HEK293, A375 and NIH/3T3 cell lysates; Human fetal brain, mouse kidney and rat brain lysates. IHC-P: Human cervix carcinoma, Human kidney, mouse colon and rat stomach tissues. ICC/IF: HeLa cells. Flow Cyt: HeLa cells.

General notes

This product is a recombinant monoclonal antibody, which offers several advantages including:

- 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](#).

Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise[™] guarantee.

In preparation for this, we have started to update the applications & species that this product is

Abpromise guaranteed for.

We are also updating the applications & species that this product has been “predicted to work with,” however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

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: 59% PBS, 40% Glycerol, 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR17785
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab201456** 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	★★★★☆	1/2000. Detects a band of approximately 15 kDa (predicted molecular weight: 15 kDa).
ICC/IF		1/800.
Flow Cyt		1/100. ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
IHC-P		1/200. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Application notes Is unsuitable for ChIP.

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.

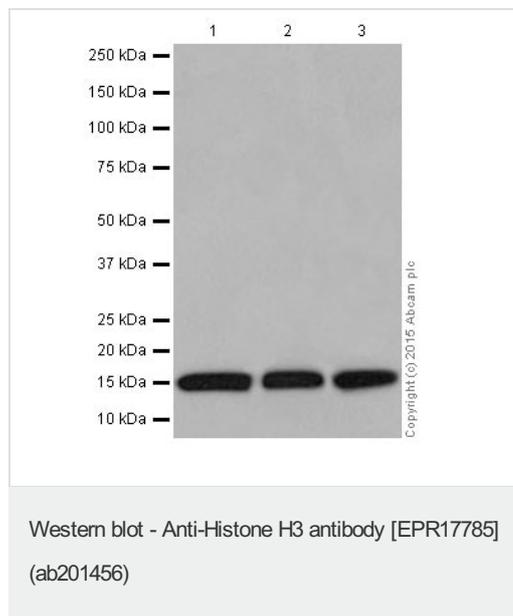
Phosphorylated at Thr-4 (H3T3ph) by GSG2/haspin during prophase and dephosphorylated during anaphase. Phosphorylation at Ser-11 (H3S10ph) by AURKB is crucial for chromosome condensation and cell-cycle progression during mitosis and meiosis. In addition phosphorylation at Ser-11 (H3S10ph) by RPS6KA4 and 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.

Images



All lanes : Anti-Histone H3 antibody [EPR17785] (ab201456) at 1/2000 dilution

Lane 1 : HeLa (Human epithelial cells from cervix adenocarcinoma) cell lysate

Lane 2 : HEK293 (Human embryonic kidney) cell lysate

Lane 3 : A375 (Human malignant melanoma) cell lysate

Lysates/proteins at 20 µg per lane.

Secondary

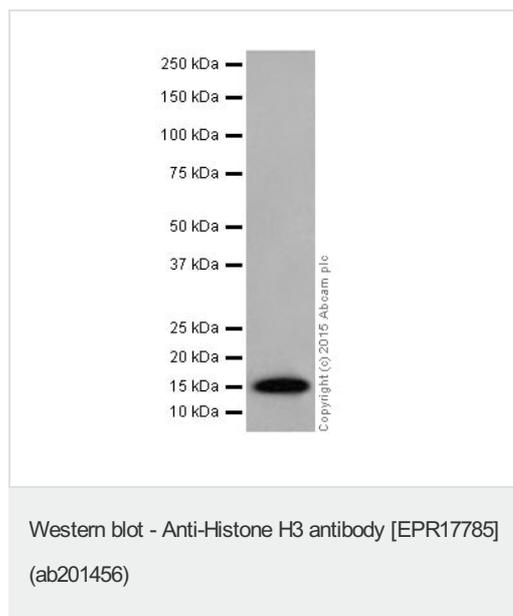
All lanes : Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 15 kDa

Observed band size: 15 kDa

Exposure time: 15 seconds

Blocking/Dilution buffer: 5% NFDm/TBST.



Anti-Histone H3 antibody [EPR17785] (ab201456) at 1/2000 dilution + Human fetal brain lysate at 10 µg

Secondary

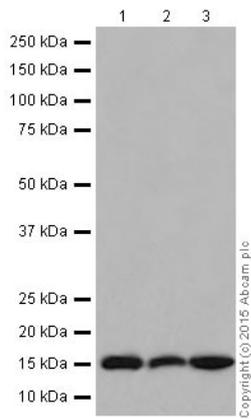
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 15 kDa

Observed band size: 15 kDa

Exposure time: 3 minutes

Blocking/Dilution buffer: 5% NFDm/TBST.



Western blot - Anti-Histone H3 antibody [EPR17785] (ab201456)

All lanes : Anti-Histone H3 antibody [EPR17785] (ab201456) at 1/2000 dilution

Lane 1 : Mouse kidney lysate

Lane 2 : Rat brain lysate

Lane 3 : NIH/3T3 (Mouse embryo fibroblast cells) cell lysate

Lysates/proteins at 10 µg per lane.

Secondary

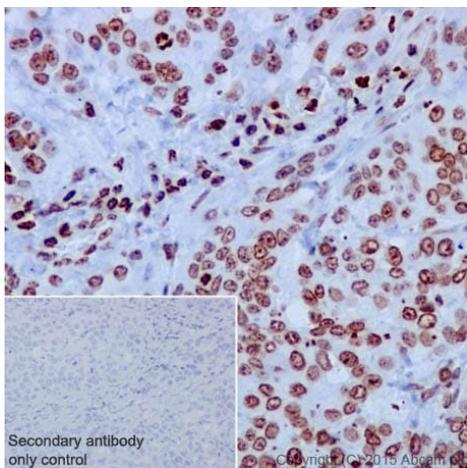
All lanes : Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 15 kDa

Observed band size: 15 kDa

Exposure time: 1 minute

Blocking/Dilution buffer: 5% NFD/MTBST.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 antibody [EPR17785] (ab201456)

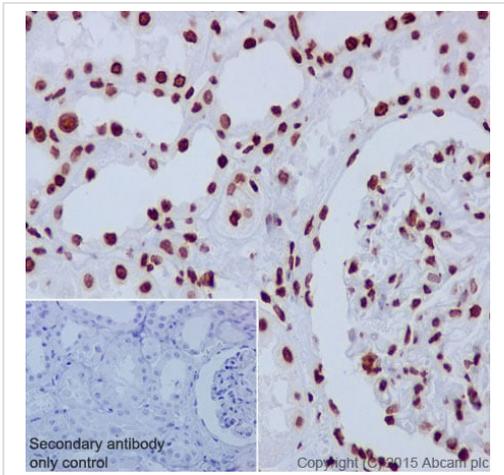
Immunohistochemical analysis of paraffin-embedded Human cervix carcinoma tissue labeling Histone H3 with ab201456 at 1/200 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution.

Nuclear staining on Human cervix carcinoma tissue is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used 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 antibody [EPR17785] (ab201456)

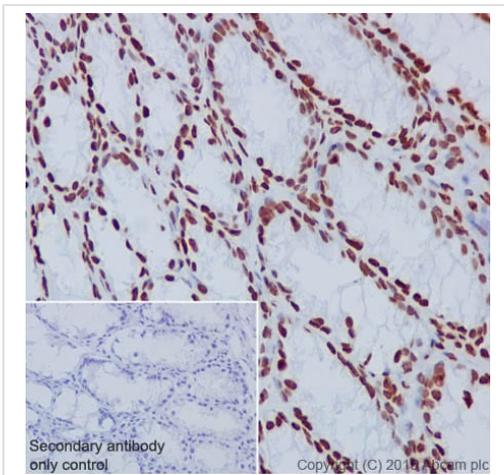
Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling Histone H3 with ab201456 at 1/200 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution.

Nuclear staining on Human kidney tissue is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used 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 antibody [EPR17785] (ab201456)

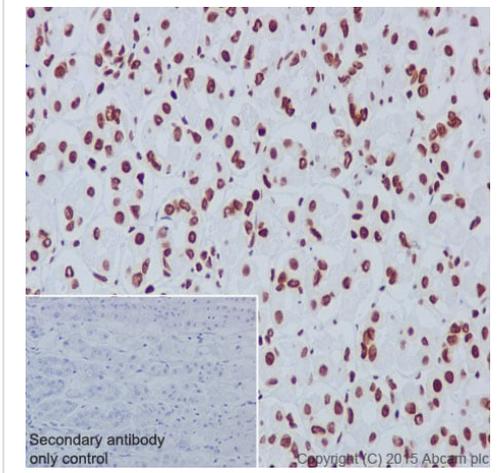
Immunohistochemical analysis of paraffin-embedded Mouse colon tissue labeling Histone H3 with ab201456 at 1/200 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution.

Nuclear staining on mouse colon tissue is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used 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 antibody [EPR17785] (ab201456)

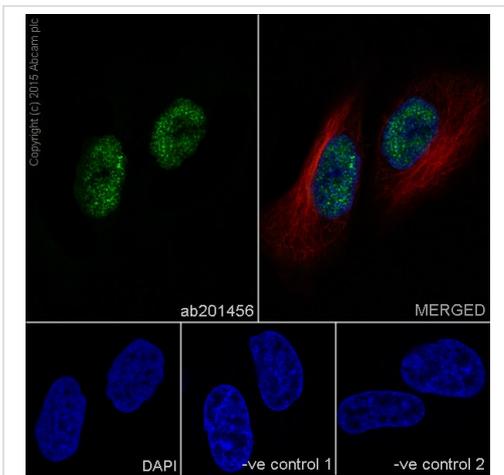
Immunohistochemical analysis of paraffin-embedded Rat stomach tissue labeling Histone H3 with ab201456 at 1/200 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution.

Nuclear staining on rat stomach tissue is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used 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 antibody [EPR17785] (ab201456)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton-X100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling Histone H3 with ab201456 at 1/800 dilution, followed by AlexaFluor®488 Goat anti-Rabbit secondary antibody (ab150077) at 1/500 dilution (green).

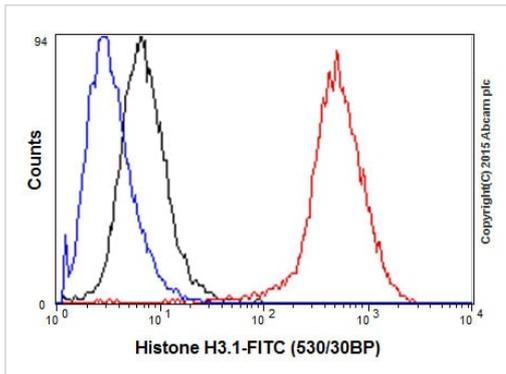
Confocal image showing nuclear staining on HeLa cell line.

The nuclear counter stain is DAPI (blue).

Tubulin is stained with ab7291 anti-Tubulin (mouse mAb) at 1/1000 dilution, followed by AlexaFluor®594 Goat anti-Mouse secondary antibody (ab150120) at 1/500 dilution (red).

-ve control 1: ab201456 at 1/800 dilution followed by AlexaFluor®594 Goat anti-Mouse secondary antibody (ab150120) at 1/500 dilution.

-ve control 2: ab7291 anti-Tubulin (mouse mAb) at 1/1000 dilution, followed by AlexaFluor®488 Goat anti-Rabbit secondary antibody (ab150077) at 1/500 dilution.



Flow Cytometry - Anti-Histone H3 antibody
[EPR17785] (ab201456)

Flow cytometric analysis of 2% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling Histone H3 with ab201456 at 1/100 dilution (red) compared with a rabbit monoclonal IgG isotype control (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.

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 antibody [EPR17785] (ab201456)

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

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