abcam

Product datasheet

Anti-Histone H3 (acetyl K36) antibody ab232929

4 Images

Overview

Product name	Anti-Histone H3 (acetyl K36) antibody
Description	Rabbit polyclonal to Histone H3 (acetyl K36)
Host species	Rabbit
Tested applications	**Suitable for:** ChIP-sequencing, WB, ChIP, Dot blot
Species reactivity	**Reacts with:** Human, Recombinant fragment
Immunogen	Synthetic peptide corresponding to Human Histone H3 (acetyl K36) conjugated to keyhole limpet haemocyanin. Database link: **P68431**
Positive control	ChIP: Chromatin from HeLa cells. ChIPseq: Chromatin from HeLa S3 cells. WB: HeLa whole cell and histone extracts.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. 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, along with publications, 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	Preservatives: 0.05% Sodium azide, 0.05% Proclin 300 Constituent: PBS
Purity	Affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab232929 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
ChIP-sequencing		Use at an assay dependent concentration. Use 2.00000 µg for 1.5 x 10^6 cells
WB		1/1000. Predicted molecular weight: 15 kDa.
ChIP		Use at an assay dependent concentration. Use 2.00000 µg for 1.5 x 10^6 cells
Dot blot		1/10000.

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.

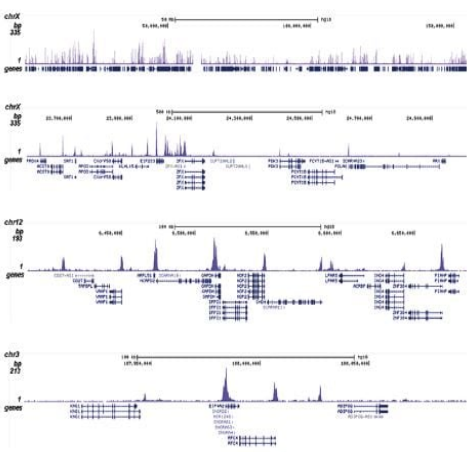
Developmental stage Expressed during S phase, then expression strongly decreases as cell division slows down during the process of differentiation.

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.

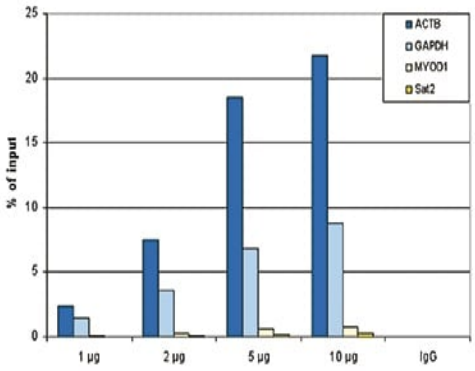
Cellular localization Nucleus. Chromosome.

Images



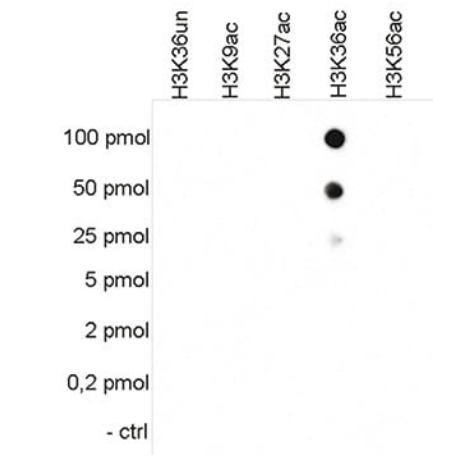
ChIP-sequencing - Anti-Histone H3 (acetyl K36) antibody (ab232929)

ChIP was performed on sheared chromatin from 1.5 million HeLa S3 cells using 2 µg ab232929 against Histone H3 (acetyl K36). The IP'd DNA was subsequently analysed on an Illumina HiSeq. Library preparation, cluster generation and sequencing were performed according to the manufacturer's instructions. The 51 bp tags were aligned to the human genome using the BWA algorithm. The figure shows the enrichment along the complete sequence and a 1 Mb region of the X-chromosome (A and B) and in genomic regions of chromosome 12 and 3, surrounding the GAPDH and EIF4A2 genes.



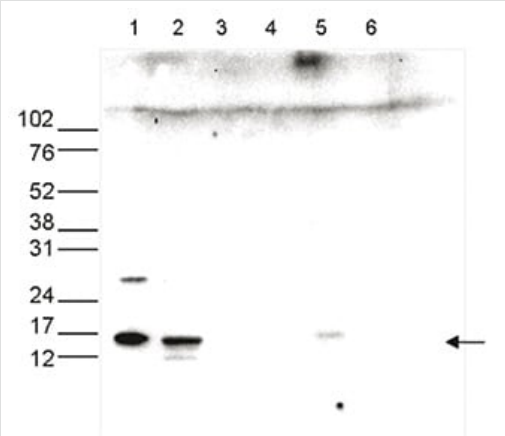
ChIP - Anti-Histone H3 (acetyl K36) antibody (ab232929)

ChIP assays were performed using HeLa (human epithelial cell line from cervix adenocarcinoma) cells, ab232929 against Histone H3 (acetyl K36) and optimized PCR primer sets for qPCR. ChIP was performed using sheared chromatin from 1.5 million cells. A titration of ab232929 consisting of 1, 2, 5 and 10 µg per ChIP experiment was analysed. IgG (2 µg/IP) was used as negative IP control. QPCR was performed with primers for a region approximately 1 kb upstream of the ACTB promoter and for the GAPDH promoter, used as positive controls, and for the coding region of the inactive MYOD1 gene and the Sat2 satellite repeat, used as negative controls. The figure shows the recovery, expressed as a % of input (the relative amount of immunoprecipitated DNA compared to input DNA after qPCR analysis).



Dot Blot - Anti-Histone H3 (acetyl K36) antibody (ab232929)

To test the cross reactivity of ab232929 against Histone H3 (acetyl K36), a Dot Blot analysis was performed with peptides containing other histone modifications and the unmodified H3K36. One hundred to 0.2 pmol of the respective peptides were spotted on a membrane. ab232929 was used was used at 1/10000 dilution. ab232929 shows a high specificity for the modification of interest.



Western blot - Anti-Histone H3 (acetyl K36) antibody (ab232929)

All lanes : Anti-Histone H3 (acetyl K36) antibody (ab232929) at 1/1000 dilution

Lane 1 : HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell extract at 25 µg
Lane 2 : HeLa histone extract at 15 µg
Lane 3 : Recombinant histone H2A at 1 µg
Lane 4 : Recombinant histone H2B at 1 µg
Lane 5 : Recombinant histone H3 at 1 µg
Lane 6 : Recombinant histone H4 at 1 µg

Predicted band size: 15 kDa

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