abcam

ab177178

Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade

Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) is a rabbit monoclonal antibody detecting Histone H3 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF, ChIP, PepArr, CUT&Tag Seq**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 70 publications

Recombinant | RabMAb | Advanced Validation | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP16602
Purification technique	Affinity purification Protein A
Specificity	ab177178 binds K27ac alone and also when S28 is phosphorylated
Concentration	1.29 - 1.304 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/7000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ChIP

Tested

Species	Human
Dilution info	2 µg for 25 µg chromatin
Notes	Use GAPDH ChIP primer pair ab267832 as positive control.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/10000 - 1/100000
Notes	-

Species	Rat

Dilution info	1/10000 - 1/100000
Notes	-

Species	Human
Dilution info	1/10000 - 1/100000
Notes	-

PepArr

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ChIP-seq

Tested

Species	Human
Dilution info	4 µg/cells for 7 µg/cells
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/1500
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/1500 - 1/10000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/1500 - 1/10000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/1500 - 1/10000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	5 µg

Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

CUT&Tag-seq

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Expected

Species	Human, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information H3C1 acetyl K27

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.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in ChIC/CUT&RUN-seq, ChIP, ChIP-seq, Flow Cyt (Intra), ICC/IF, IHC-P, PepArr, WB in human, mouse, rat samples.

Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) has been cited over 78 times in peer reviewed journals and is trusted by the scientific community.

Abcams high quality manufacturing and validation processes ensure Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) has 8 independent reviews from customers.

Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) specifically detects Histone H3 Acetyl-K27 (UniProt ID: P68431; Molecular weight: 15kDa) and is sold in 100 uL and 1 mL selling sizes.

Conjugation-ready, carrier free format available for antibody clone EP16602 - ab32877.

Antibody clone EP16602 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, Alexa Fluor® 647, Alexa Fluor® 555, Alexa Fluor® 594, Alexa Fluor® 75, APC, PE (ab245911, ab245912, ab321196, ab321197, ab321198, ab321199, ab3212).

H3K27ac is a key epigenetic mark associated with gene activation and chromatin remodeling. The use of anti h3k27ac antibody and anti histone antibody can significantly enhance the detection and study of this modification. Research indicates that H3K27ac plays a crucial role in various cancers, making it a valuable target for understanding cancer progression and developing new therapeutic strategies. This antibody is also validated for ChIP-seq and CUT&RUN-seq, which are key applications to map protein-DNA interactions on a genome-wide scale using NGS.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
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 batch production

For more information, read more on recombinant antibodies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

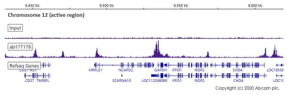
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

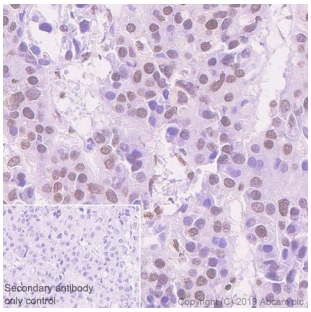
Full details and terms and conditions can be found here:
Terms & Conditions.

16 product images



ChIP-sequencing - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Chromatin was prepared from HeLa cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 10^7 HeLa cells and 4 µg of Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178). ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads.
Additional screenshots of mapped reads can be downloaded here.



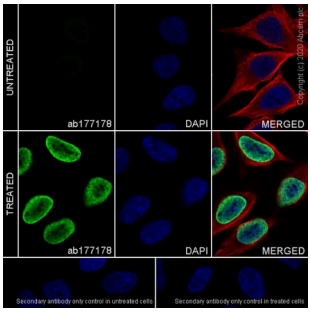
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Histone H3 (acetyl K27) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver cancer tissue using rabbit Anti-Histone H3 (acetyl K27) antibody

Immunohistochemical analysis of paraffin-embedded human liver cancer tissue labeling Histone H3 (acetyl K27) with ab177178 at 1/1500 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).
Nuclear staining on human liver cancer tissue is observed.

The section was incubated with ab177178 for 30 minutes at room temperature. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) was performed for 20 minutes.

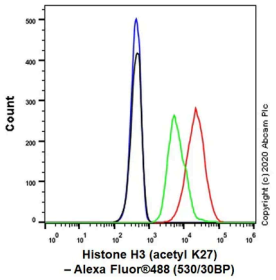


Immunocytochemistry/ Immunofluorescence - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Histone H3 (acetyl K27) Immunocytochemistry/ Immunofluorescence staining of HeLa cells treated with TSA (500 ng/ml, 4 hours) using rabbit Anti-Histone H3 (acetyl K27) antibody

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 K27) with ab177178 at 1/8000 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing increased nuclear staining in HeLa cells treated with TSA (500 ng/ml, 4 hours).

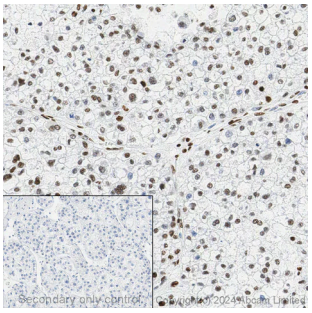
The nuclear counter stain is DAPI (blue).



Flow Cytometry (Intracellular) - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Histone H3 (acetyl K27) Flow Cytometry (Intracellular) staining using rabbit Anti-Histone H3 (acetyl K27) antibody

Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) treated with 500 ng/ml Trichostatin A for 4 hours (Red)/untreated (Green) at 1/1500 dilution. The secondary antibody was Goat anti rabbit IgG (Alexa Fluor®488) at 1/2000 dilution. Rabbit monoclonal IgG (ab172730) (Black) was used as the isotype control and cells without incubation with primary antibody and secondary antibody (Blue) were used as unlabeled control.

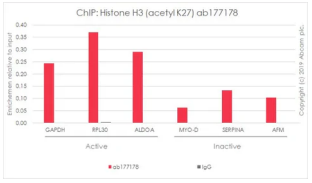


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Immunohistochemical analysis of formalin fixed paraffin embedded human liver carcinoma labelling Histone H3 (acetyl K27) with ab177178 at a concentration of 0.1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

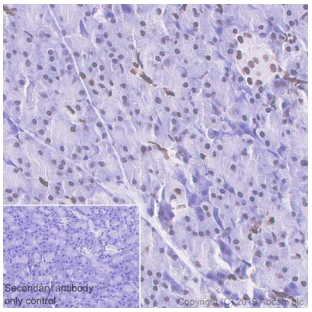
ab177178 Anti-Histone H3 (acetyl K27) antibody [EP16602] was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).



ChIP - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Chromatin was prepared from HeLa cells according to the Abcam Dual-X-ChIP protocol Cells were fixed with formaldehyde for 10 minutes. The ChIP was performed with 25µg of chromatin, 2µg of ab177178 (blue), and 20µl of Protein A/G Sepharose beads. 2µg of rabbit normal IgG was added to the beads as a control sample (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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

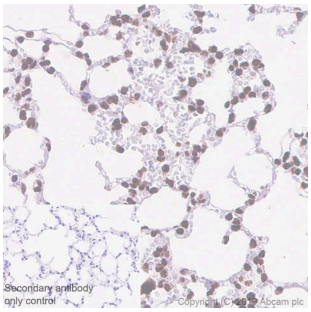
Histone H3 (acetyl K27) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat pancreas tissue using rabbit Anti-Histone H3 (acetyl K27) antibody

Immunohistochemical analysis of paraffin-embedded rat pancreas tissue labeling Histone H3 (acetyl K27) with ab177178 at 1/10000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Nuclear staining on rat pancreas is observed.

The section was incubated with ab177178 for 30 minutes at room temperature. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument. Counter stained with Hematoxylin.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) was performed for 20 minutes.



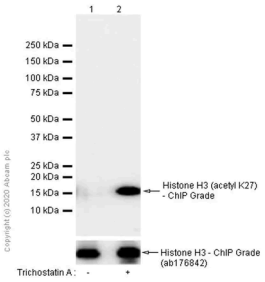
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Histone H3 (acetyl K27) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse lung tissue using rabbit Anti-Histone H3 (acetyl K27) antibody

Immunohistochemical analysis of paraffin-embedded mouse lung tissue labeling Histone H3 (acetyl K27) with ab177178 at 1/10000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).
Nuclear staining on mouse lung tissue is observed.

The section was incubated with ab177178 for 30 minutes at room temperature. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) was performed for 20 minutes.



Western blot - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Histone H3 (acetyl K27) Western blot staining using rabbit Anti-Histone H3 (acetyl K27) antibody

All lanes:
Western blot - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) at 1/10000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 15 µg

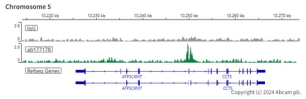
Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) treated with 500 ng/ml Trichostatin A for 4 hours whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 15 kDa

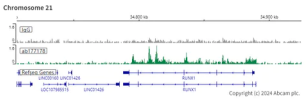
Observed band size: 15 kDa



ChIC/CUT&RUN sequencing - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 HeLa (Human epithelial cell line from cervix adenocarcinoma) cells and 5 µg of ab177178 [EP16602]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown.

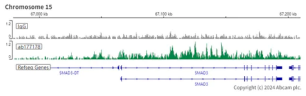
The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



ChIC/CUT&RUN sequencing - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 HeLa (Human epithelial cell line from cervix adenocarcinoma) cells and 5 µg of ab177178 [EP16602]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown.

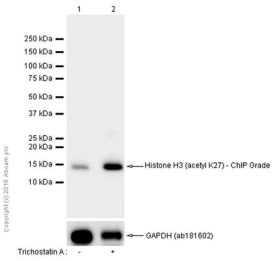
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ChIC/CUT&RUN sequencing - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

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



Western blot - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Histone H3 (acetyl K27) Western blot staining using rabbit Anti-Histone H3 (acetyl K27) antibody

All lanes:
Western blot - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) at 1/10000 dilution

Lane 1:
C6 (Rat glial tumor glial cell) whole cell lysate at 15 µg

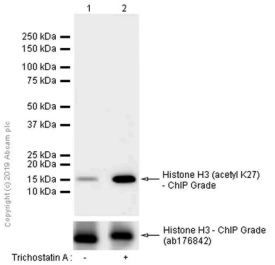
Lane 2:
C6 (Rat glial tumor glial cell) treated with 500 ng/ml Trichostatin A for 4 hours whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 15 kDa

Observed band size: 15 kDa



Western blot - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Histone H3 (acetyl K27) Western blot staining using rabbit Anti-Histone H3 (acetyl K27) antibody

All lanes:
Western blot - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178) at 1/10000 dilution

Lane 1:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 15 µg

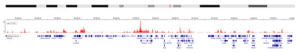
Lane 2:
NIH/3T3 (Mouse embryonic fibroblast cell line) treated with 500 ng/ml Trichostatin A for 4 hours whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

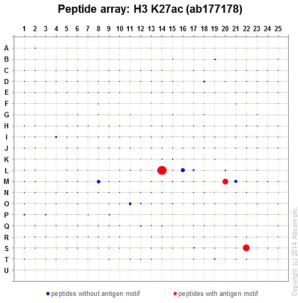
Predicted band size: 15 kDa

Observed band size: 15 kDa



CUT&Tag sequencing - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

Nuclei isolated from adult mouse cortex were resuspended in antibody buffer (20 mM HEPES pH 7.5, 150 mM NaCl, 0.5 mM spermidine, 2 mM EDTA, 0.05% digitonin, 0.01% NP-40, 2% BSA, protease inhibitors). 200,000 nuclei were incubated overnight at 4 °C with 1 µl primary antibody in 100 µl antibody buffer (1:100). After two washes in high-salt Dig-300 buffer (as above, 300 mM NaCl, no EDTA), nuclei were incubated with anti-rabbit nanobody-Tn5 for 1 h at room temperature in high-salt Dig-300, washed, and tagmented in the same buffer supplemented with 10 mM $MgCl_2$ for 1 h at 37 °C. Purified DNA was amplified with indexed i5/i7 primers and sequenced paired-end on the Illumina NovaSeq X to a depth of -10 million reads. Data were kindly provided by an anonymous collaborator.



Peptide Array - Anti-Histone H3 (acetyl K27) antibody [EP16602] - ChIP Grade (ab177178)

ab177178 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, is available under the Product Protocol section.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.