Histone H3K27ac antibody (mAb)

Catalog Nos: 39685, 39085
RRID: AB_2793305
Clone: MABI 0309
Application(s): ChIP, ChIP-Seq, DB, ICC, IF, WB
Reactivity: Human, Wide Range Predicted

Quantities: 100 µg, 50 µg
Purification: Protein G Chromatography
Host: Mouse
Isotype: IgG1
Molecular Weight: 17 kDa

Background: Histone H3 is one of the core components of the nucleosome. The nucleosome is the smallest subunit of chromatin and consists of 147 base pairs of DNA wrapped around an octamer of core histone proteins (two each of Histone H2A, Histone H2B, Histone H3 and Histone H4). Histone H1 is a linker histone, present at the interface between the nucleosome core and DNA entry/exit points; it is responsible for establishing higher-order chromatin structure. Chromatin is subject to a variety of chemical modifications, including post-translational modifications of the histone proteins and the methylation of cytosine residues in the DNA. Reported histone modifications include acetylation, methylation, phosphorylation, ubiquitylation, glycosylation, ADP-ribosylation, carbonylation and SUMOylation; they play a major role in regulating gene expression.Lysine N-ε-acetylation is a dynamic, reversible and tightly regulated protein and histone modification that plays a major role in chromatin remodeling and in the regulation of gene expression in various cellular functions. Acetylation of histone H3 occurs at several different lysine positions in the histone tail, and is performed by Histone Acetyltransferases (HATs) such as CBP/p300. Acetylation of histone H3 at Lys27 is associated with transcriptional activation.Histone H3K27 can also be mono-, di- or trimethylated by different histone methyltransferases, such as EZH2 or NSD3. While histone methylation can be associated with transcriptional activation or repression, methylation of Lysine 27 of histone H3 is mainly associated with transcriptional repression.

Immunogen: This Histone H3 acetyl Lys27 antibody was raised against a synthetic peptide including acetyl-lysine 27 of human histone H3.

Buffer: PBS pH 7.5 containing 30% glycerol. 0.3M NaCl, and 0.035% sodium azide. Sodium azide is highly toxic.

Application Notes:
Applications Validated by Active Motif:
ChIP: 5 - 10 µg per ChIP
ChIP-Seq: 5 - 10 µg each
ICC/IF: 1 - 2 µg/ml dilution
WB: 0.5 - 2 µl/ml dilution
CUT&Tag: 1 µg per 50 µl reaction

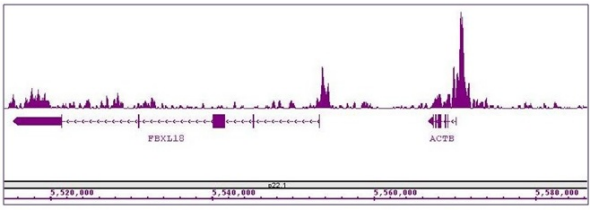
ChIP-Seq validation was performed by Active Motif's Epigenetics Services; the complete data set is available in the UCSC Genome Browser by clicking here.

NGS-QC® certification: this antibody has been processed by the NGS-QC® generator. For additional details, click here.

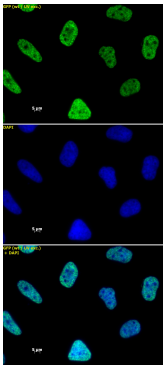
For Histone H3K27ac, we also offer AbFlex® Histone H3K27ac Recombinant Antibody (rAb). For details, see Catalog No. 91193.

Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product is guaranteed for 12 months from date of receipt. This product is for research use only and is not for use in diagnostic procedures.

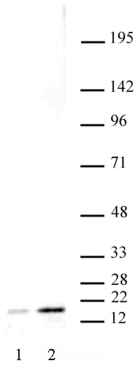
This antibody is manufactured by MAB Institute, Inc.



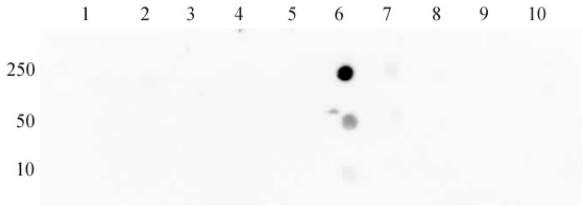
Histone H3K27ac antibody (mAb) tested by ChIP-Seq.
ChIP was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with 15 ug of chromatin from a human medulloblastoma cell line and 4 µg of antibody. ChIP DNA was sequenced on the Illumina HiSeq and 17 million sequence tags were mapped to identify Histone H3K27ac binding sites. The image shows binding across a region of chromosome 7. You can view the complete data set in the UCSC Genome Browser, starting at this specific location, here.



Histone H3 acetyl Lys27 mAb tested by immunofluorescence.
Staining of HeLa cells with Histone H3 acetyl Lys27 mAb (1 µg/ml, top panel) and DAPI (middle panel), and a merge of both images (bottom panel).



Histone H3 acetyl Lys27 mAb tested by Western blot.
HeLa nuclear extract (20 µg per lane) probed with Histone H3 acetyl Lys27 mAb (2 µg/ml dilution).
Lane 1: No treatment.
Lane 2: cells treated with sodium butyrate.



Histone H3 acetyl Lys27 mAb tested by dot blot analysis.
Dot blot analysis was used to confirm the specificity of Histone H3 acetyl Lys27 mAb for acetyl-Lys27 histone H3. Acetylated peptides corresponding to the immunogen and related peptides were spotted onto PVDF and probed with the antibody at 0.2 µg/ml. The amount of peptide (picomoles) spotted is indicated next to each row.
Lane 1: acetyl-Lys4 peptide. Lane 2: acetyl-Lys9 peptide. Lane 3: acetyl-Lys14 peptide. Lane 4: acetyl-Lys18 peptide. Lane 5: acetyl-Lys23 peptide. Lane 6: acetyl-Lys27 peptide. Lane 7: acetyl-Lys36 peptide. Lane 8: acetyl-Lys37 peptide. Lane 9: acetyl-Lys64 peptide. Lane 10: acetyl-Lys79 peptide.