Histone H3K27me1 antibody (mAb)

Catalog Nos: 61015, 61016
RRID: AB_2715573
Clone: MABI 0321
Application(s): ChIP, ChIP-Seq, CUT&Tag, DB, ICC, IF, WB
Reactivity: Human, Wide Range Predicted

Quantities: 100 µg, 50 µg
Purification: Protein G Chromatography
Host: Mouse
Isotype: IgG2a
Concentration: 1.0 µg/µl
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. Histone H1 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; these modifications play a major role in regulating gene expression.

The methylation of histones can occur on two different residues: arginine or lysine. Histone methylation can be associated with transcriptional activation or repression, depending on the methylated residue. Lysine 27 of histone H3 can be mono-, di- or trimethylated (Histone H3 monomethyl Lys27, Histone H3 dimethyl Lys27 or Histone H3 trimethyl Lys27) by different histone methyltransferases such as EZH2 or NSD3. Methylation of this residue is mainly associated with transcriptional repression.

Immunogen: This Histone H3 monomethyl Lys27 antibody was raised against a peptide containing monomethyl Lys27 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.

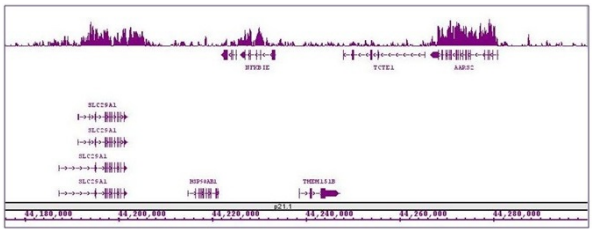
Application Notes:
Applications Validated by Active Motif:
ChIP: 2 - 5 µg per ChIP
ChIP-Seq: 2 - 5 µg each
WB: 0.5 - 2 µg/ml dilution
CUT&Tag: 1-2 µg per 50 µl reaction

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.

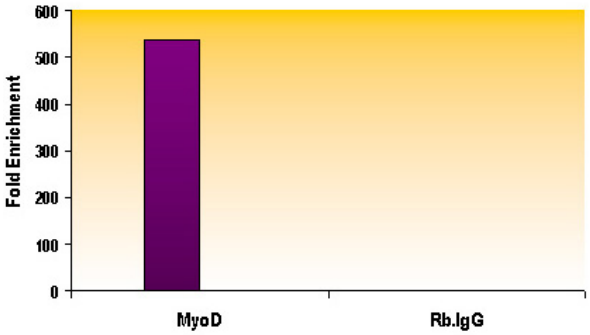
Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product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

This product is for research use only and is not for use in diagnostic procedures.

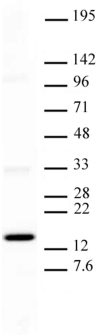
This antibody is manufactured by MAB Institute, Inc.



Histone H3K27me1 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 B cell lymphoma cell line and 2 µg of antibody. ChIP DNA was sequenced on the Illumina HiSeq and 15 million sequence tags were mapped to identify Histone H3K27me1 binding sites. The image shows binding across a region of chromosome 6. You can view the complete data set in the UCSC Genome Browser, starting at this specific location, here.

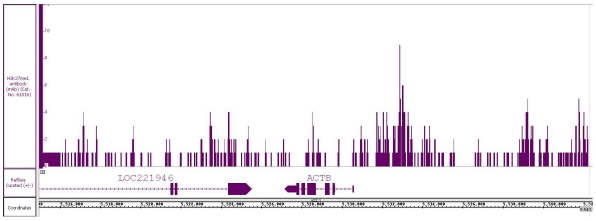


Histone H3K27me1 antibody (mAb) tested by ChIP.
Chromatin IP performed using the ChIP-IT® Express Kit (Catalog No. 53008) and HeLa Chromatin (1.5 x 10^6 cell equivalents per ChIP) using 10 µg of Histone H3 monomethyl Lys27 pAb or the equivalent amount of rabbit IgG. RT-qPCR was performed on DNA purified from each of the ChIP DNA using a primer pair for the MyoD gene. Data are presented as Fold Enrichment of the antibody signal versus the negative control IgG using the ddCT method.



Histone H3K27me1 antibody (mAb) tested by Western blot.
HeLa nuclear extract (20 µg per lane) probed with Histone H3 monomethyl Lys27 antibody (2 µg/ml dilution).

Histone H3K27me1 antibody (mAb) tested by dot blot analysis.
Dot blot analysis was used to confirm the specificity of Histone H3 monomethyl Lys27 antibody for monomethyl Lys27 of histone H3. Recombinant methylated histone proteins corresponding to the immunogen and related sequences were spotted onto PVDF and probed with Histone H3 monomethyl Lys27 at 2 µg/ml. The amount of protein (picomoles) spotted is indicated next to each row. Lane 1: unmodified H3 protein. Lane 2: monomethyl Lys4 protein. Lane 3: dimethyl Lys4 protein. Lane 4: trimethyl Lys4 protein. Lane 5: monomethyl Lys9 protein. Lane 6: dimethyl Lys9 protein. Lane 7: trimethyl Lys9 protein. Lane 8: monomethyl Lys27 protein. Lane 9: dimethyl Lys27 protein. Lane 10: trimethyl Lys27 protein.



Histone H3K27me1 antibody (mAb) tested by CUT&Tag
CUT&Tag was performed using 100,000 K562 cells and sequenced using 38 base-pair, paired-end reads on the Illumina NovaSeq. Data was collected from 5 million reads, and H3K27me1 data is shown for Chromosome 7.