Histone H3K4me3 antibody (pAb)

Catalog Nos: 39159, 39060, 39160
RRID: AB_2615077
Application(s): ChIP, ChIP-Seq, CUT&RUN, CUT&Tag, DB, ICC, IF, IHC, WB
Reactivity: Budding Yeast, Human, Mouse, Wide Range Predicted

Volumes: 100 µl, 50 µl, 10 µl
Purification: None
Host: Rabbit
Isotype: Serum
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. Histone methylation can be associated with transcriptional activation or repression, depending on the methylated residue. Lysine 4 of histone H3 can be mono-, di- or trimethylated by different histone methyltransferases (HMTs) such as SET1 or ASH1. Methylation of Lys4 is often associated with transcriptional activation. The demethylase LSD1 is able to demethylate histone H3 Lys4.

Immunogen: This Histone H3 trimethyl Lys4 antibody was raised against a peptide including trimethyl-lysine 4 of histone H3.

Buffer: Rabbit serum containing 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic. For your convenience, an IgG version (Catalog No. 39915) of this antibody that was purified by Protein A Chromatography is also available.

Application Notes:
Applications Validated by Active Motif:
ChIP: 3 - 5 µl per ChIP
ChIP-Seq: 3 µl each
ICC/IF: 1:500 - 1:1,000 dilution
WB: 1:500 - 1:2,000 dilution
CUT&Tag: 1 µl per 50 µl reaction*
CUT&RUN: 1 µl per 50 µl reaction

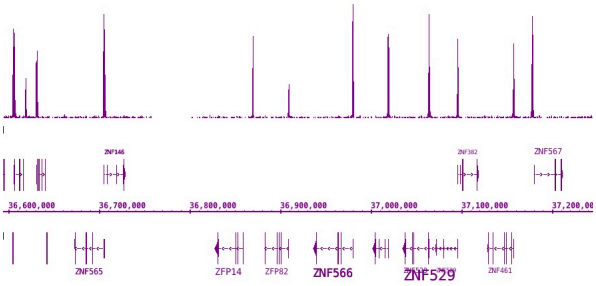
*This antibody has been validated for CUT&Tag using Active Motif's CUT&Tag-IT™ Assay Kit, Catalog No. 53160.

modENCODE validation: this antibody was validated for ChIP-Seq in this study (see reference).

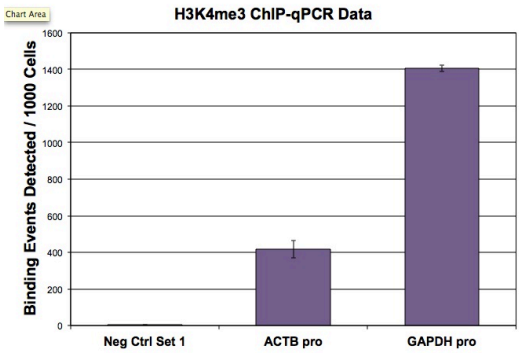
NGS-QC® certification: this antibody has been processed by the NGS-QC® generator. For additional details, click here..

**Note: many chromatin-bound proteins are not soluble in a low salt nuclear extract and fractionate to the pellet. Therefore, we recommend a High Salt / Sonication Protocol when preparing nuclear extracts for Western blot.

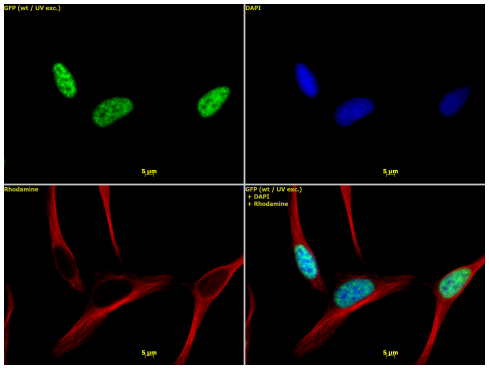
Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product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



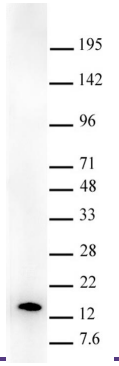
Histone H3K4me3 antibody (pAb) tested by ChIP-Seq.
ChIP was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with 30 µg chromatin from human acute myelocytic leukemia cells and 3 µl of antibody. ChIP DNA was sequenced on the Illumina NextSeq and 12.1 million sequence tags were mapped to identify H3K4me3 binding sites on chromosome 12.



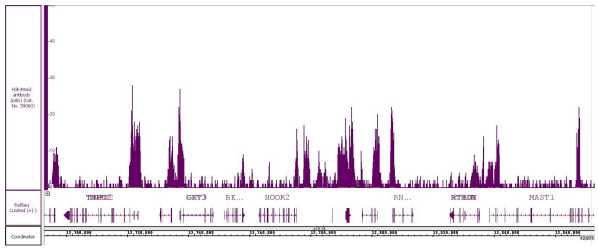
Histone H3 trimethyl Lys4 antibody (pAb) tested by ChIP.
Chromatin immunoprecipitation (ChIP) was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with 2 million HL-60 cells and 3 µl of Histone H3 trimethyl Lys4 antibody. ChIP DNA was used in qPCR with the negative control primer pairs or gene-specific primer pairs as indicated. Data are presented as Binding Events Detected per 1000 Cells using Active Motif's Epigenetic Services normalization scheme which accounts for primer efficiency and the amount of chromatin used in the ChIP reaction.



Histone H3 trimethyl Lys4 antibody tested by immunofluorescence.
HeLa cells stained at 1:1,000 with Histone H3 trimethyl Lys4 antibody. Top left: Histone H3 trimethyl Lys4 antibody.Top right: Stained with DAPI. Bottom left: Same cells stained with alpha Tubulin mAb (Clone 5-B-1-2). Bottom right: Merge of all 3 images.



Histone H3K4me3 antibody (pAb) tested by Western blot.
HeLa nuclear extract (30 µg) was probed with Histone H3K4me3 antibody (pAb) at a 1:1000 dilution. Note: For optimal results, we recommend a High Salt & Sonication Protocol when preparing nuclear extracts. Visit www.activemotif.com to download the protocol. It is also recommended to include 0.05% Tween 20 in all blocking solutions to reduce background. Individual optimization may be required.



H3K4me3 antibody (pAb) tested by CUT&RUN
CUT&RUN was performed using 500,000 K562 nuclei and sequenced using 38 base-pair, paired-end reads on the Illumina NovaSeq. Data was collected from 15 million reads, and H3K4me3 data is shown for Chromosome 19.