

Histone H3K4me1 antibody (pAb)

Catalog Nos: 61633, 61634

RRID: AB_2793712

Isotype: IgG

Application(s): ChIP, DB, WB

Reactivity: Human, Wide Range Predicted

Quantities: 100 µg, 10 µg

Purification: Protein A Chromatography

Host: Rabbit

Concentration: 1 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 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 antibody was raised against a peptide including monomethyl-lysine 4 of human Histone H3.

Buffer: Purified IgG in PBS with 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic. For your convenience, a sera version (Catalog No. 39297) of this antibody is also available.

Application Notes:

Applications Validated by Active Motif:

ChIP: 5 - 10 µg per ChIP

WB*: 0.2 - 2 µg/ml dilution

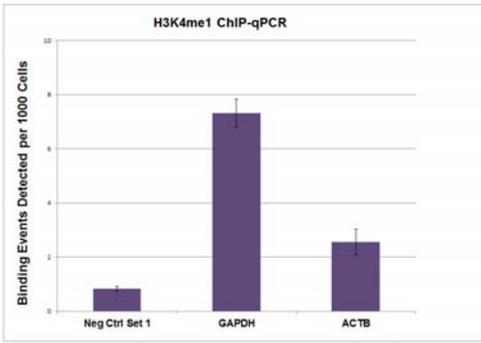
DB: 1 µg/ml dilution

*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.

For Histone H3K4me1, we also offer AbFlex[®] Histone H3K4me1 Recombinant Antibody (rAb). For details, see Catalog No. 91289.

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.

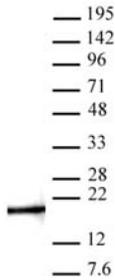


H3K4me1 antibody (pAb) tested by ChIP.

Chromatin immunoprecipitation (ChIP) was performed using the ChIP-IT[®] High Sensitivity Kit (Cat. No. 53040) with 15 µg of chromatin from both HeLa cells and 10 µg H3K4me1 antibody. ChIP DNA was used in qPCR with the gene-specific primer or gene-specific primer pairs *within an intron* 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 H3K4me1 antibody (pAb) tested by Western blot.

HeLa nuclear extract (20 µg) probed with Histone H3K4me1 antibody (pAb) at a 1 µg/ml dilution.



Histone H3K4me1 antibody (pAb) tested by dot blot.

Specificity Data: Dot blot analysis was used to confirm the specificity of H3K4me1 antibody (pAb). Peptides corresponding to regions around major sites of histone H3 methylation (lysine 4, lysine 9, lysine 27) were spotted onto PVDF and probed at a dilution of 1 µg/ml. The amount of peptide (in picomoles) spotted is indicated next to each row. Top panel - Lane 1: unmodified H3K4. Lane 2: H3K4me1. Lane 3: H3K4me2. Lane 4: H3K4me3. Lane 5: unmodified H3K9. Lane 6: H3K9me1. Lane 7: H3K9me2. Lane 8: H3K9me3. Lane 9: unmodified H3K79. Lane 10: H3K79me1. Lane 11: H3K79me2. Lane 12: H3K79me3. Bottom panel - Lane 1: unmodified H3K23. Lane 2: H3K23me1. Lane 3: H3K23me3. Lane 4: H3K23me3. Lane 5: unmodified H3K27. Lane 6: H3K27me1. Lane 7: H3K27me2. Lane 8: H3K27me3. Lane 9: unmodified H3K36. Lane 10: H3K36me1. Lane 11: H3K36me2. Lane 12: H3K36me3

