

Histone H3K4ac antibody (pAb)

Catalog Nos: 39381, 39481, 39382

Isotype: Serum

Application(s): ChIP, ChIP-Seq, DB, ICC, IF, WB

Reactivity: Human, Wide Range Predicted

Volumes: 100 µl, 50 µl, 10 µl

Purification: None

Host: Rabbit

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). 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.

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. Histone acetylation is often associated with transcriptional activation.

Lysine 4 of histone H3 can also be mono-, di- or trimethylated. This methylation is associated with transcriptional activation.

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

Buffer: Rabbit serum containing 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic.

Application Notes:

Applications Validated by Active Motif:

ChIP: 5 - 10 µl per ChIP

ChIP-Seq: 5 - 10 µl each

ICC/IF: 1:500 - 1:2,000 dilution

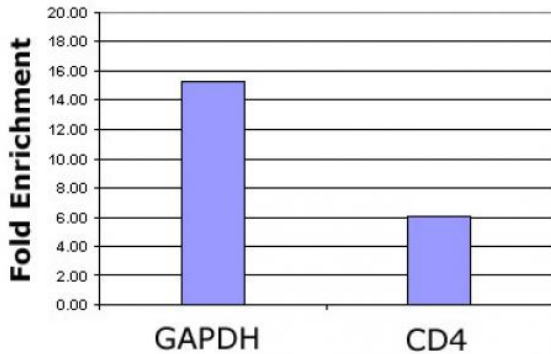
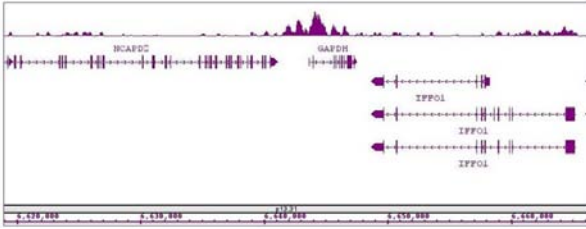
WB: 1:1,000 - 1:2,000 dilution

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.

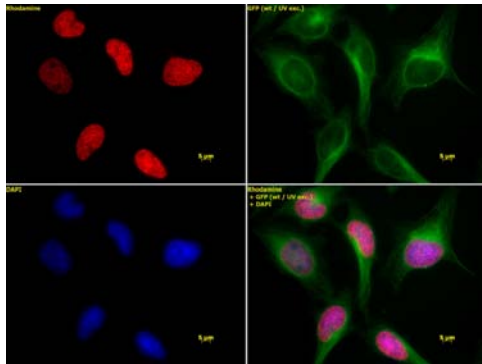
Histone H3K4ac antibody (pAb) tested by ChIP-Seq.

ChIP was performed using the ChIP-IT[®] High Sensitivity Kit (Cat. No. 53040) with 30 ug of chromatin from a human medulloblastoma cell line and 4 µl of antibody. ChIP DNA was sequenced on the Illumina HiSeq and 15 million sequence tags were mapped to identify Histone H3K4ac binding sites. The image shows binding of GAPDH on chromosome 12.



Histone H3K4ac antibody (pAb) tested by ChIP analysis.

Chromatin IP performed using the ChIP-IT[®] Express Kit (Catalog No. 53008) and HeLa Chromatin (1.5 x 10⁶ cell equivalents per ChIP) using 10 µl of Histone H3 acetyl Lys4 pAb or the equivalent amount of rabbit IgG as a negative control. Real time, quantitative PCR (RT-qPCR) was performed on DNA purified from each of the ChIP reactions using a primer pair specific for the indicated gene. Data are presented as Fold Enrichment of the ChIP antibody signal versus the negative control IgG using the ddCT method.



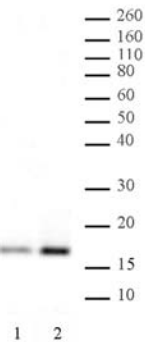
Histone H3K4ac antibody (pAb) tested by immunofluorescence.

Top left: HeLa cells stained with Histone H3 acetyl Lys4 pAb (1:1,000). Top right: Same cells stained with alpha Tubulin mAb (Clone 5-B-1-2). Bottom left: Same cells stained with DAPI. Bottom right: Merge of all 3 images.

Histone H3K4ac antibody (pAb) tested by Western blot.

Western Blot: A549 whole-cell extract (20 µg per lane) probed with Histone H3 acetyl Lys4 pAb (1:2,000 dilution).

- Lane 1: Untreated cells.
- Lane 2: Cells treated with Trichostatin A.



Histone H3K4ac antibody (pAb) tested by dot blot analysis.

Dot blot analysis was used to confirm the specificity of Histone H3K4ac antibody. Acetylated peptides corresponding to the immunogen and related peptides were spotted onto PVDF and probed with the antibody at 1:1,000. The amount of peptide (picomoles) spotted is indicated next to each row.



Column 1: H3K4ac peptide. Column 2: unmodified H3K9 peptide. Column 3: H3K9ac peptide. Column 4: unmodified H3K14 peptide. Column 5: H3K14ac peptide. Column 6: H3K18ac peptide. Column 7: H3K23ac peptide. Column 8: H3K27ac peptide.