

Histone H4K12ac antibody (pAb)

Catalog Nos: 39165, 39066, 39166

RRID: AB_2615076

Isotype: Serum

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

Reactivity: Budding Yeast, Human, Mouse, Wide Range Predicted

Volumes: 100 μ l, 50 μ l, 10 μ l

Purification: None

Host: Rabbit

Molecular Weight: 8 kDa

Background: Histone H4 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. The acetylation of histone H4 Lys12 is carried out by several histone acetyltransferases (HATs). Histone H4 Lys12 acetylation by TIP60 occurs in the nucleus, whereas Hat1-mediated acetylation of histone H4 Lys12 occurs in the cytoplasm, indicating the spatial regulation of histone acetylation. The acetylation of histone H4 Lys12 residue is commonly associated with transcriptional activation.

Immunogen: This Histone H4 acetyl Lys12 antibody was raised against a peptide including acetyl-lysine 12 of histone H4.

Buffer: Rabbit serum containing 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic. For your convenience, an IgG version (Catalog No. 39927) of this antibody that was purified by Protein A Chromatography is also available.

Application Notes:

Applications Validated by Active Motif:

ChIP: 2 - 8 μ l per ChIP

ChIP-Seq: 5 μ l each

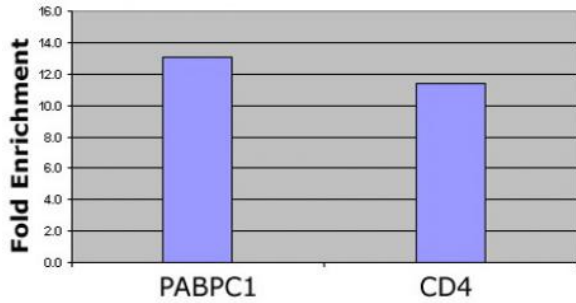
ICC/IF: 1:500 - 1:2,000 dilution

WB: 1:5,000 - 1:20,000 dilution

The modENCODE and NIH Roadmap Epigenomics Mapping Consortiums have implemented rigorous standardization criteria for all assays and reagents to be used. As part of this initiative, antibody specificity testing and the ability of the antibodies to work in ChIP-Seq were assessed in a large-scale study. This Histone H4 acetyl Lys12 antibody was validated for ChIP-Seq in the study (see reference).

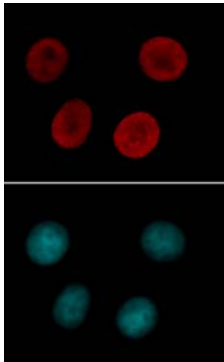
Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product 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 H4 acetyl Lys12 antibody tested by ChIP analysis.

Chromatin IP performed using the ChIP-IT[®] Express Kit (Catalog No. 53008) and HeLa Chromatin (1.5×10^6 cell equivalents per ChIP) using 10 μ l of Histone H4 acetyl Lys12 antibody 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 H4 acetyl Lys12 antibody tested by immunofluorescence.

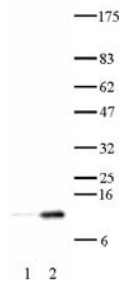
Staining of HeLa cells with Histone H4 acetyl Lys12 antibody (1:500 dilution, top panel) and DAPI (bottom panel).

Histone H4 acetyl Lys12 antibody tested by Western blot.

HeLa acid extract probed with Histone H4 acetyl Lys12 polyclonal antibody (1:10,000 dilution).

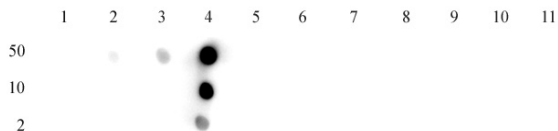
Lane 1: No treatment.

Lane 2: Cells treated with sodium butyrate.



Specificity Data.

Dot blot was used to confirm the specificity of Histone H4K12ac antibody for H4 acetyl Lys12. Acetylated peptides corresponding to the immunogen and related peptides were spotted onto PVDF and probed at a dilution of 1:5,000. The amount of peptide (picomoles) spotted is indicated next to each row.



Column 1: unmod H4K8. Column 2: H4K5ac. Column 3: H4K8ac. Column 4: H4K12ac. Column 5: unmod H4K16. Column 6: H4K16ac. Column 7: H4K20ac. Column 8: unmod H4K31. Column 9: HrK31ac. Column 10: H4K59ac. Column 11: H4K91ac.