# AbFlex® Histone H3K56ac antibody (rAb)

**Catalog Nos: 91127, 91128**
**RRID:** AB_2793784
**Isotype:** IgG2a
**Application(s):** ChIP-Seq, ELISA
**Reactivity:** Human, Wide Range Predicted

**Quantities:** 100 µg, 10 µg
**Purification:** Ni-NTA
**Host:** Mouse
**Concentration:** 1 µg/µl
**Molecular Weight:** 17 kDa

**Background:** AbFlex® antibodies are recombinant antibodies (rAbs) that have been generated using defined DNA sequences to produce highly specific, reproducible antibodies. Each AbFlex antibody contains a 6xHis Tag, a Biotinylation Tag for enzymatic biotin conjugation using the biotin ligase, BirA, and a sortase recognition motif (LPXTG) to attach a variety of labels directly to the antibody including fluorophores, enzymatic substrates (HRP, AP), peptides, drugs as well as solid supports.

AbFlex® Histone H3K56ac antibody was expressed as full-length IgG with mouse immunoglobulin heavy and light chains (IgG2a isotype) in mammalian 293 cells.

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; 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. Acetylation of histone H3 occurs at several different lysine positions in the histone tail, and is performed by Histone Acetyltransferases (HATs) such as CBP/p300. Acetylation of histones is often associated with transcriptional activation. Histone H3 Lys56 acetylation occurs normally during S phase, but disappears in $G_2$. This modification persists in presence of DNA damage and also plays a role in nucleosome assembly. Rtt109 was shown to be the major histone acetyltransferase (HAT) for Lys56 acetylation.

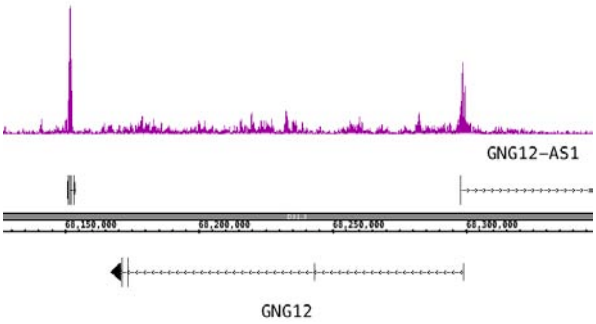
**Immunogen:** This Histone H3 acetyl Lys56 antibody was raised against a peptide containing acetyl-Lys56 of human histone H3.

**Buffer:** Purified IgG in 140 mM Hepes, pH 7.5, 70 mM NaCl, 32 mM NaOAc, 0.035% sodium azide, 30% glycerol. Sodium azide is highly toxic.

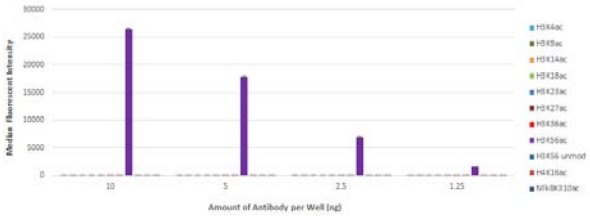
**Application Notes:**
Applications Validated by Active Motif:
ChIP-Seq: 4 µl each
Bead-based ELISA: 25 - 200 ng/ml

AbFlex® recombinant antibodies are genetically derived from DNA sequences of parental hybridoma clones. For details on the parental clone, see Catalog No. 61061.

**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.




AbFlex® Histone H3K56ac antibody (rAb) tested by ChIP-Seq
ChIP was performed using 30 µg of chromatin from the HeLa cell line and 4 µg of antibody. ChIP DNA was sequenced on the Illumina NextSeq 500 and 13.5 million sequence tags were mapped to identify Histone H3K56ac binding sites. The image shows binding across a region of chromosome 1. You can view the complete data set in the UCSC Genome Browser, starting at this specific location, here.




AbFlex® Histone H3K56ac antibody (rAb) tested by Luminex bead-based specificity analysis.
Luminex bead-based specificity analysis was used to confirm the specificity of AbFlex® Histone H3K56ac antibody (rAb) antibody for H3K56ac. Peptides corresponding to regions around major sites of histone H3 acetylation or other acetyl-lysine peptides were conjugated to MagPlex Luminex beads and incubated with various amounts of AbFlex® Histone H3K56ac antibody (rAb). Peptide-bound antibody was detected with anti-mouse IgG-Phycoerythrin and read in a Luminex instrument.

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