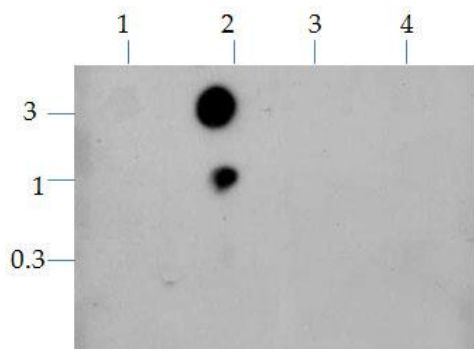


## H3K9AcK14Ac pAb: Cat# NB21-1081

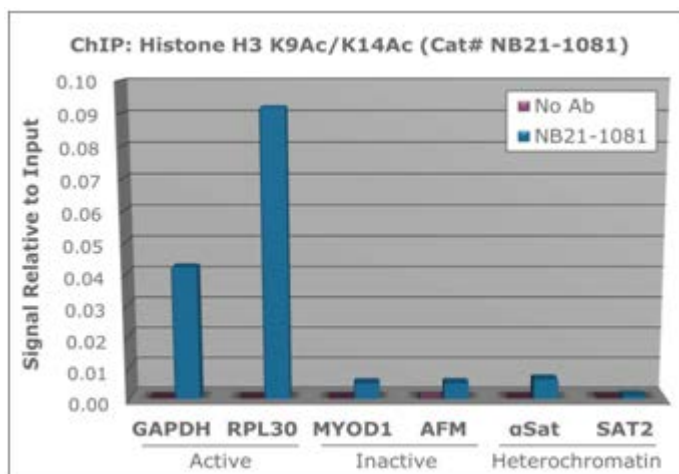
**Description:** Histone H3 acetyl lysine 9 + acetyl lysine 14 antibody  
**Species:** Human, mouse, rat, C. elegans  
**Applications:** Westerns, dot blots, CHIP, ChIP-IP  
**Modification:** K9AcK14Ac  
**Immunogen:** Synthetic peptide containing acetyl lysine 9 and acetyl lysine 14 of histone H3  
**Gene Symbol:** HIST2H3C Entrez: 126961 (hu), 260423 (mu) Swiss Prot: Q71DI3 (hu), P84228 (mu)

**Cat#:** NB21-1081  
**Gene:** HIST2H3C  
**Ab Type:** Rabbit affinity purified pAb  
**Marker:** H3K9AcK14Ac

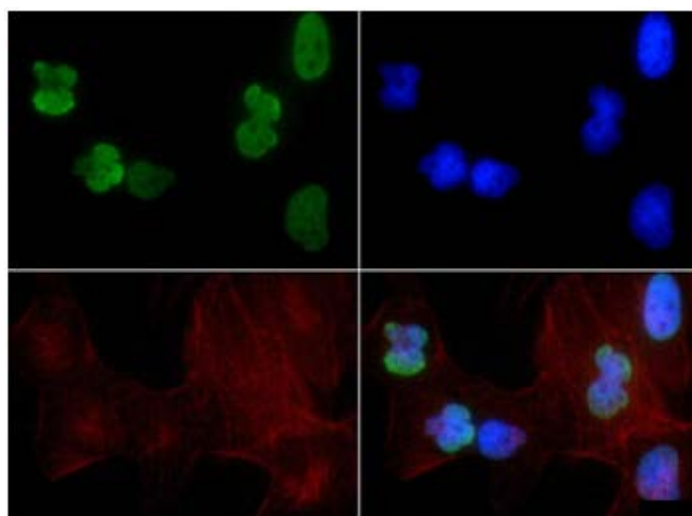
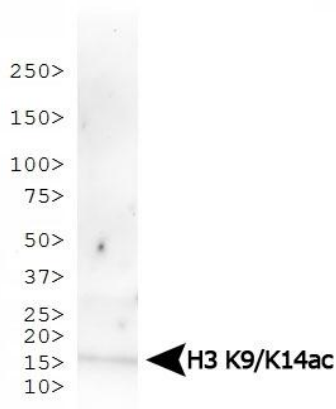
### Images:



1. K9-K14
2. K9-KAc-K14-Kac
3. K9-K14-Kac
4. K9-Ac-K14



### Western blot – HeLa cells nuclear extract



ICC: H3K9ac/K14Ac Cat #NB21-1081 Ab was tested at 1:50 in HeLa cells with FITC (green). Nuclei were counterstained with Dapi (blue). Phalloidin (red) shows actin.

### Background:

The nucleosome is comprised of 146 bp of DNA wrapped around a series of histone proteins arranged as an octamer consisting of 2 copies of histone H2A, H2B, H3 and H4 (1). Within the nucleosome core the histone proteins are covalent modified at specific residues predominantly within the N-terminal tail including lysine (acetylation, methylation, SUMOylation, and ubiquitylation), arginine methylation and citrullination, serine and threonine phosphorylation, as

well as proline isomerization (2,3). The lysine side chains can carry up to three methyl groups (mono-, di- and tri-methylated forms) and the arginine side chain can be monomethylated or can be dimethylated as the symmetric or asymmetric forms. The modifications show temporal, disease-specific, and other types of cell-specific regulation and there are specific families of enzymes that regulate the methylation, demethylation, acetylation, deacetylation and other modifications (4-8). Research has indicated that whereas the histone mark H3K4Me3 (tri-methyl lysine 4 of histone H3) localizes to gene promoter regions (it is associated with transcriptional activation) other modifications at H3K4 such as monomethyl is present predominantly at enhancer sequences (5). Specific marks have been shown to be associated with the activation (H3K9Me1, H3K27Me1, and H4K20Me1) or repression (H3K9Me2 and Me3, H3K27Me2 and Me3, and H4K20Me2 and Me3) of genes. Monomethylation of H4 at K20, catalyzed by SET8, is essential to genome replication and stability. Multiple DNA breaks are associated with demethylation at this site, resulting in activation of p53 to avoid mitosis and aberrant chromosomal activity. In mammalian stem cells, Xist expression blocks the formation of H4K20me1, which is one of the first examples of a direct connection between chromatin and stem cell differentiation.

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2. Berger SL. The complex language of chromatin regulation during transcription. *Nature.* [2007] 447(7143):407-12.
3. Zee, BM, Levin, RS, DiMaggio, PA and Garcia, BA. Global Turnover of histone post-translational modifications and variants in human cells. *Epigenetics and Chromatin.* [2010] 3:22.
4. Couture JF, Trievel RC. Histone-modifying enzymes: encrypting an enigmatic epigenetic code. *Curr Opin Struct Biol.* [2006] 16(6):753-60.
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7. Bernstein BE, Meissner A, Lander ES. The mammalian epigenome. *Cell.* [2007] 128(4):669-81.
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**Dilutions:** DB – 0.5ug/ml; WB – 0.5-1.0ug/ml; ChIP 2-5 micrograms per 10<sup>6</sup> cells.

**Unit Size:** 50 micrograms (0.05mg)

**Storage:** Short term storage at 4°C, long term storage at -20°C. Avoid unnecessary freeze-thaw.

**Buffer:** PBS, pH 7.4 with 30% glycerol

**Preservative:** 0.05% sodium azide

**Limitations:** This product is for research purposes only and is not approved for use in clinical diagnostics or for use in humans.

[Ask a question](#)

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