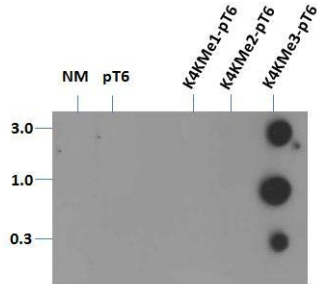
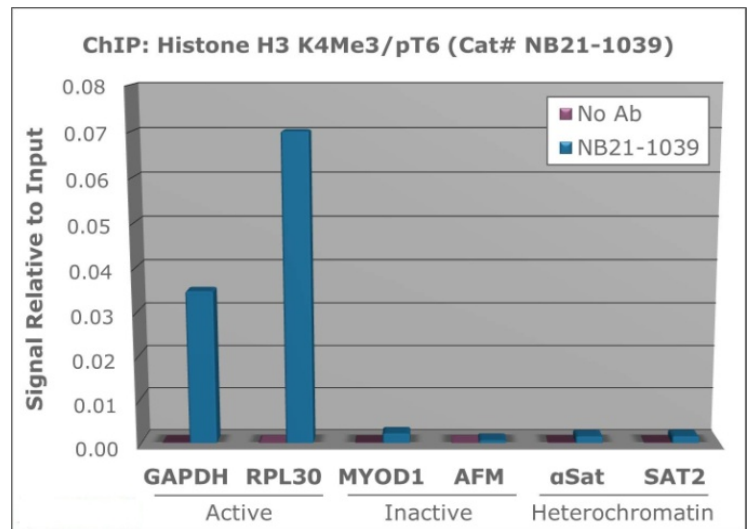


Description: Histone H3 trimethyl lysine 4/phosphorylated threonine 6 antibody **Cat#:** NB21-1039
Species: Human, mouse, rat, C. elegans **Gene:** HIST2H3C
Applications: Westerns, dot blots, ChIP **Ab Type:** Rabbit affinity purified pAb
Modification: K4Me3 + T6 phosphorylated **Marker:** H3K4Me3T6p
Immunogen: Synthetic peptide containing trimethylated lysine 4 + phosphorylated threonine 6 of histone H3
Gene Symbol: HIST2H3C Entrez: 126961 (hu), 260423 (mu) Swiss Prot: Q71DI3 (hu), P84228 (mu)

Images:



Lane 1, unmodified H3 [1-15] peptide; modified peptides: lane 2, T6p; lane 3, H3K4Me1 plus T6p; lane 4, H3K4Me2 plus T6p; lane 5, H3K4Me3 plus T6p.



Western blot – HeLa cells nuclear extract



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 covalently modified at specific residues predominantly within the N-terminal tail including lysine (acetylation, methylation, SUMOylation, and ubiquitinylation), 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 trimethylated 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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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 10⁶ 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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