

## Nucleosome, Recombinant Human, H3K4me3 dNuc, Biotinylated

<b>Catalog No</b>	16-0316	<b>Species</b>	Human
<b>Lot No</b>	23079009-01	<b>Source</b>	<i>E. coli</i> & synthetic DNA
<b>Pack Size</b>	50 µg	<b>Tag</b>	Biotinylated
<b>Concentration</b>	5.0 µM	<b>MW</b>	199,732.1 Da

### DESCRIPTION

Recombinant mononucleosomes (H3K4me3) consist of 147 base pairs of DNA wrapped around an octamer core of histone proteins (two each of H2A, H2B, H3.2, and H4) to form a nucleosome, the basic repeating unit of chromatin. The 147 bp 601 sequence, identified by Lowary and Widom [1], has high affinity for histone octamers and is useful for nucleosome assembly. H3K4me3 dNuc contains trimethyl-lysine at position 4 on histone H3.2. H3K4me3 has a Cys to Ala substitution at position 110. The DNA contains a 5' biotin-TEG group.

### TECHNICAL INFORMATION

<b>Storage</b>	Stable for six months at -80°C from date of receipt. For best results, aliquot and avoid freeze/thaws
<b>Formulation</b>	1.0 mg/mL mononucleosome in 50.1 µL 10 mM Tris HCl pH 7.5, 25 mM NaCl, 1 mM EDTA, 2 mM DTT, 20% glycerol (27.3 µg protein, 50 µg DNA + protein)

### APPLICATION NOTES

H3K4me3 mononucleosome is highly purified and suitable for a variety of applications, including use as a substrate in enzyme assays, high-throughput screening and inhibitor testing, chromatin binding studies, protein-protein interaction assays, structural studies, and in effector protein binding experiments.

### GENE & PROTEIN INFORMATION

<b>UniProt ID</b>	H2A - P04908 (alt. names: H2A type 1-B/E, H2A.2, H2A/a, H2A/m) H2B - O60814 (alt. names: H2B K, HIRA-interacting protein 1) H3.2 - Q71DI3 H4 - P62805
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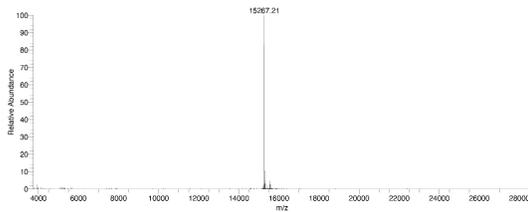
### REFERENCES

[1] Lowary & Widom *J. Mol. Biol.* (1998). PMID: 9514715

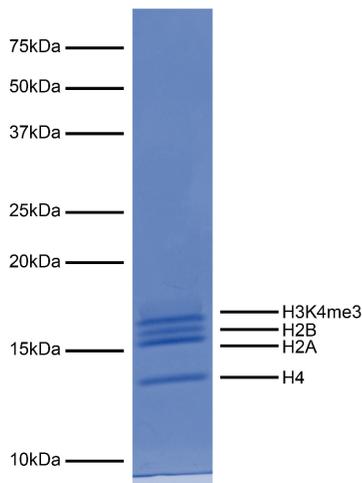
## VALIDATION DATA



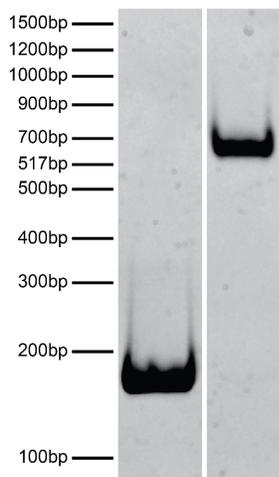
**FIGURE 1 Western blot data.** Western Analysis of H3K4me3 dNuc. **Top Panel:** Unmodified (EpiCypher 16-0006; Lane 1) and H3K4me3 (Lane 2) nucleosomes were probed with an anti-H3K4me3 antibody and analyzed via ECL readout. Only the H3K4me3 sample produced a detectable signal. **Bottom Panel:** Detail from Coomassie stained gel showing unmodified (Lane 1) and H3K4me3 (Lane 2) nucleosomes.



**FIGURE 2 Mass spec data.** Synthetic H3K4me3 histone analyzed by high resolution mass spectrometry. Expected mass = 15,267.77 Da. Determined mass = 15,267.21 Da.



**FIGURE 3 Protein gel data.** Coomassie stained SDS-PAGE gel of proteins in H3K4me3 dNuc (1  $\mu$ g) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2A, H2B, H3K4me3 and H4) are indicated.



**FIGURE 4 DNA gel data.** H3K4me3 dNuc resolved via native PAGE gel and stained with ethidium bromide to visualize DNA. **Lane 1:** Free DNA (EpiCypher 18-0005; 100 ng). **Lane 2:** Intact H3K4me3 nucleosomes (400 ng).