

Nucleosome, Recombinant Human, H3K4me2 dNuc, Non-Biotinylated

Catalog No	16-1334	Species	Human
Lot No	23262005-03	Source	<i>E. coli</i> & synthetic DNA
Pack Size	50 µg	Tag	None
Concentration	5.1 µM	MW	199,220.6 Da

DESCRIPTION

Recombinant mononucleosomes (H3K4me2) 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. H3K4me2 dNuc contains dimethyl-lysine at position 4 and has a Cys to Ala substitution at position 110.

TECHNICAL INFORMATION

Storage	Stable for six months at -80°C from date of receipt. For best results, aliquot and avoid freeze/thaws
Formulation	1.01 mg/mL mononucleosome in 49.5 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

H3K4me2 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

UniProt ID	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 H3K4me2 dNuc. **Top Panel:** H3K4me2 (Lane 1) and unmodified (EpiCypher 16-0009; Lane 2) nucleosomes were probed with an anti-H3K4me2 antibody and analyzed via ECL readout. Only the H3K4me2 sample produced a detectable signal. **Bottom Panel:** Detail from Coomassie stained gel showing H3K4me2 (Lane 1) and unmodified (Lane 2) nucleosomes.

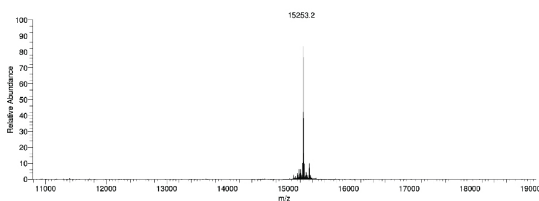


FIGURE 2 Mass spec data. Synthetic H3K4me2 histone analyzed by high resolution mass spectrometry. Expected mass = 15,252.5 Da. Determined mass = 15,253.2 Da.

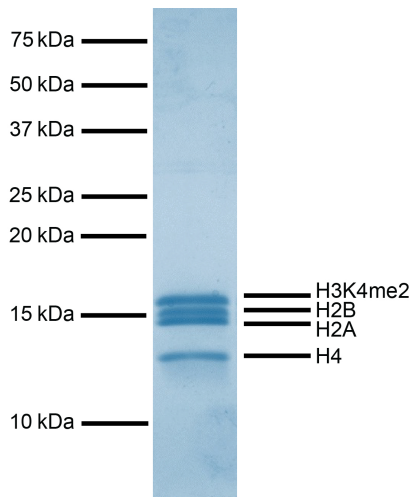


FIGURE 3 Protein gel data. Coomassie stained SDS-PAGE gel of proteins in H3K4me2 dNuc (1 μ g) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2A, H2B, H3K4me2 and H4) are indicated.

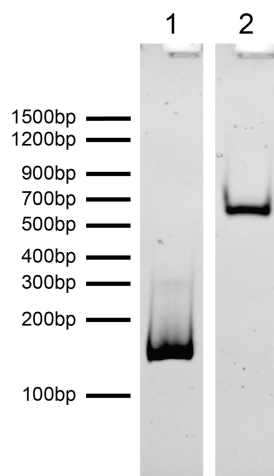


FIGURE 4 DNA gel data. H3K4me2 dNuc resolved by native PAGE and stained with ethidium bromide to visualize DNA. **Lane 1:** Free DNA (EpiCypher 18-0006; 100 ng). **Lane 2:** Intact H3K4me2 nucleosomes (400 ng).