

Nucleosome, Recombinant Human, H4K20ac dNuc, Biotinylated

Catalog No	16-0377	Species	Human
Lot No	22194004-01	Source	<i>E. coli</i> & synthetic DNA
Pack Size	50 µg	Tag	Biotinylated
Concentration	4.0 µM	MW	200,026.8 Da

DESCRIPTION

EpiCypher dNucs™ are semi-synthetic recombinant nucleosomes, containing one or more histone post translational modifications (PTMs). Nucleosomes, the basic repeating unit of chromatin, are the natural targets of chromatin readers and modifying enzymes, providing a physiologically relevant substrate for characterization of epigenetic proteins. dNucs consist of 147 base pairs of DNA wrapped around an octamer core of histone proteins (two each of H2A, H2B, H3.1, and H4). The 147 bp 601 sequence, identified by Lowary and Widom [1], has high affinity for histone octamers and is useful for nucleosome assembly. H4K20ac dNuc is acetylated at position 20 on histone H4. The DNA in this nucleosome contains a 5'biotin-TEG group.

TECHNICAL INFORMATION

Storage	Stable for six months at -80°C from date of receipt. For best results, aliquot and avoid freeze/thaws.
Formulation	0.8 mg/mL mononucleosome in 62.5 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

H4K20ac dNuc 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) H3.1 - P68431 (alt. names: H3, H3/a, H3/b, H3/c, H3/d) H4 - P62805
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REFERENCES

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

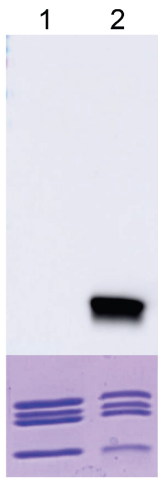


FIGURE 1: Western blot data. Western Analysis of H4K20ac dNuc. **Top Panel:** Unmodified (EpiCypher 16-0006; Lane 1) and H4K20ac nucleosomes (Lane 2) were probed with an anti-H4K20ac antibody and analyzed via ECL readout. Only the H4K20ac sample produced a detectable signal. **Bottom Panel:** Detail from Coomassie stained gel showing unmodified (Lane 1) and H4K20ac nucleosomes (Lane 2).

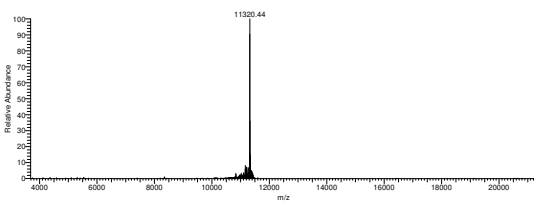


FIGURE 2: Mass spec data. Semi-synthetic H4K20ac histone analyzed by high resolution mass spectrometry. Expected mass = 11,318.15 Da. Determined mass = 11,320.44 Da.

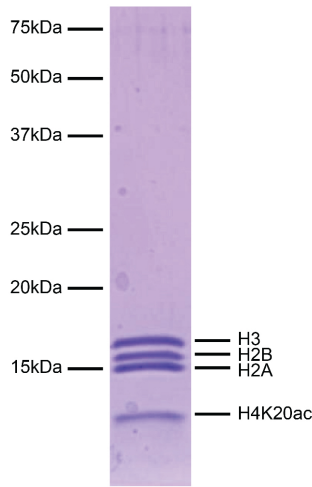


FIGURE 3: Protein gel data. Coomassie stained SDS-PAGE gel of proteins in H4K20ac dNuc (1 µg) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2A, H2B, H3 and H4K20ac) are indicated.

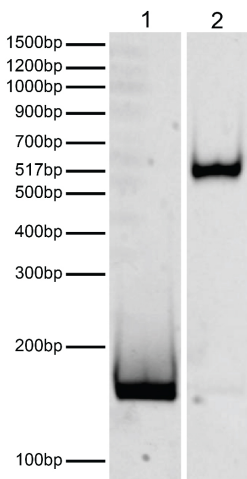


FIGURE 4: DNA gel data. H4K20ac dNuc resolved via native PAGE gel and stained with ethidium bromide to visualize DNA. **Lane 1:** Free DNA (EpiCypher 18-0005; 100 ng). **Lane 2:** Intact H4K20ac nucleosomes (400 ng).