

H4K12ac Recombinant Nucleosome, Biotinylated

Catalog No	16-0312	Species	Human
Lot No	25318005-01	Source	<i>E. coli</i> & synthetic DNA
Pack Size	50 µg	Tag	Biotinylated
Concentration	4.7 µM	MW	199,910.3 Da

DESCRIPTION

H4K12ac (histone H4 lysine 12 acetyl) Recombinant Nucleosome, Biotinylated consist of 147 base pairs of DNA wrapped around an octamer core of histone proteins (two each of H2A, H2B, H3.1, 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. H4K12ac contains acetyl-lysine at position 12 on histone H4. The DNA 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	0.94 mg/mL mononucleosome in 53.2 µL 10 mM Tris HCl pH 7.5, 25 mM NaCl, 1 mM EDTA, 2 mM DTT, 20% glycerol (27.2 µg protein, 50 µg DNA + protein).

APPLICATION NOTES

H4K12ac nucleosome 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. For a corresponding unmodified control, we recommend EpiCypher 16-0006.

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

VALIDATION DATA

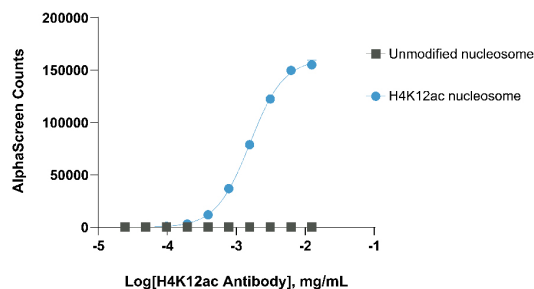


FIGURE 1 Captify nucleosome assay data. Histone H4 lysine 12 acetyl (H4K12ac; circles) was detected using an anti-H4K12ac antibody in the Captify assay format. Antibody binding to biotinylated nucleosomes was measured by proximity-based detection with Streptavidin Donor Beads and Protein A Acceptor Beads (PerkinElmer), with signal quantified on an EnVision plate reader (PerkinElmer) as AlphaScreen counts. Unmodified nucleosomes (EpiCypher 16-0006; squares) were included as a negative control to assess assay specificity.

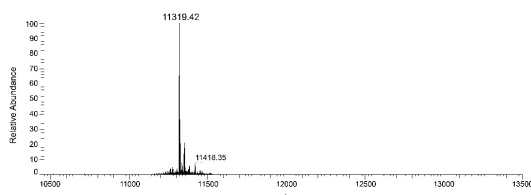


FIGURE 2 Mass spec data. Synthetic H4K12ac histone analyzed by high resolution mass spectrometry. Expected mass = 11,320.2 Da. Determined mass = 11,319.42 Da.

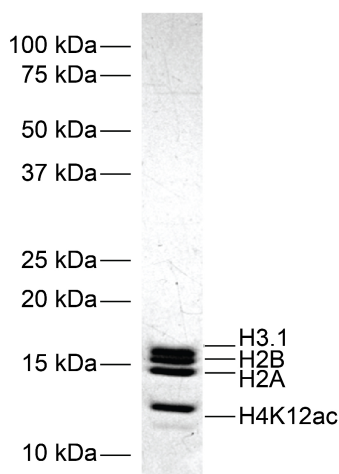


FIGURE 3 Protein gel data. Coomassie stained SDS-PAGE gel of proteins in H4K12ac nucleosome (2 µg) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2A, H2B, H3.1, and H4K12ac) are indicated.

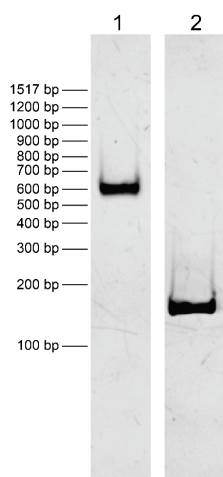


FIGURE 4 DNA gel data. H4K12ac nucleosome resolved via native PAGE gel and stained with ethidium bromide to visualize DNA. All lanes were resolved on a single gel. **Lane 1:** Intact H4K12ac nucleosomes (400 ng). **Lane 2:** Free DNA (EpiCypher 18-0005; 100 ng)