

## Dinucleosomes, Recombinant Human, Biotinylated

<b>Catalog No</b>	16-3004	<b>Species</b>	Human
<b>Lot No</b>	25204004-02	<b>Source</b>	<i>E. coli</i> & synthetic DNA
<b>Pack Size</b>	25 µg	<b>Tag</b>	Biotinylated
<b>Concentration</b>	1.51 µM	<b>MW</b>	490,573 Da

### DESCRIPTION

Products in EpiCypher's IDEA Toolbox (Innovation and Discovery of Epigenetic Applications) offer access to reagents without known or fully defined uses, enabling researchers to explore cutting-edge applications. Due to their novelty and unexplored potential, EpiCypher will engage in limited technical support.

Dinucleosomes are comprised of two recombinant octamers (each containing two copies of histone proteins H2A, H2B, H3.1, and H4) positioned on a single, 442 base pair DNA template. Mononucleosomes are the basic repeating unit of chromatin; however, a dinucleosome substrate enables studying longer range chromatin interactions. The DNA contains two 601 positioning sequences (underlined, below) separated by a 60 base pair linker and a 5' biotin-TEG group. The 601 sequence, identified by Lowary & Widom [1], has high affinity for histone octamers and is useful for nucleosome assembly.

### 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>	0.74 mg/mL dinucleosome in 34.7 µL 10 mM Tris pH 7.5, 25 mM NaCl, 1 mM EDTA, 2 mM DTT, 20% glycerol (11.1 µg protein, 25 µg DNA + protein)

### APPLICATION NOTES

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

### DNA SEQUENCE

5'Biotin-TEG-GCCAGTGCCAAGCTTACTAGATATCGGACCCTATACGCGGCCGCCCTGGAGAATCCCGGTGCCGAGGCCGCT  
 CAATTGGTTCGTAGCAAGCTCTAGCACCGCTTAAACGCACGTACGCGCTGTCCCCGCGTTTTAACCGCCAAGGGGATTACTCC  
 CTAGTCTCCAGGCACGTGTCAGATATATACATCCTGTGCATGTGGATCCGAATTCATATTAATTAATACTAGATATCGGACCC  
 TATACGCGGCCGCCCTGGAGAATCCCGGTGCCGAGGCCGCTCAATTGGTTCGTAGCAAGCTCTAGCACCGCTTAAACGCACGT  
 ACGCGCTGTCCCCGCGTTTTAACCGCCAAGGGGATTACTCCCTAGTCTCCAGGCACGTGTCAGATATATACATCCTGTGCAT  
 GTGGATCCGAATTCATATTAATTAATGGTACCGAGCTCG-3'

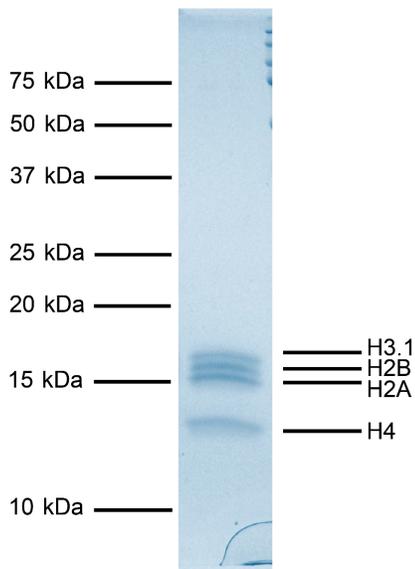
### GENE & PROTEIN INFORMATION

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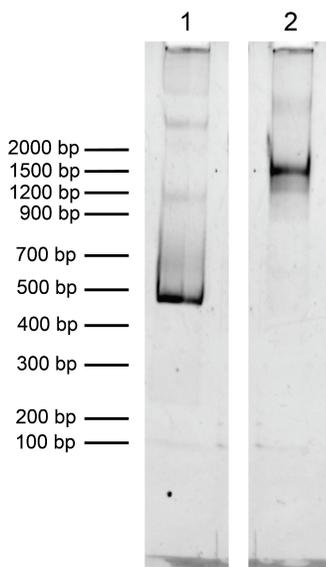
### REFERENCES

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

## VALIDATION DATA



**FIGURE 1: Protein gel data.** Coomassie stained SDS-PAGE gel of proteins in Dinucleosomes (1 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 H4) are indicated.



**FIGURE 2: DNA gel data.** Dinucleosomes resolved via native PAGE and stained with ethidium bromide to visualize DNA. All lanes were resolved on a single gel. **Lane 1:** Free DNA (100 ng). **Lane 2:** Intact dinucleosomes (400 ng).