

Mononucleosomes (H3.3), Human Recombinant Biotinylated

Catalog No	16-0011	Species	Human
Lot No	25210003-01	Source	<i>E. coli</i> & synthetic DNA
Pack Size	50 µg	Tag	Biotinylated
Concentration	5.66 µM	MW	199,589 Da

DESCRIPTION

Mononucleosomes assembled from recombinant human histones expressed in *E. coli* (two each of histones H2A, H2B, H3.3, and H4) wrapped by 147 base pairs of 601 sequence DNA. The nucleosome is the basic subunit of chromatin. The 601 sequence, identified by Lowary and Widom [1], has high affinity for histone octamers and is useful for nucleosome assembly. H3.3 is a histone variant, found in regions of high chromatin turnover outside of S-phase (e.g. at actively transcribed genes) [2]. 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	1.13 mg/mL purified recombinant mononucleosomes in 44.2 µL 10 mM Tris-HCl pH 7.5, 1 mM EDTA, 25 mM NaCl, 2 mM DTT, 20% glycerol (27.2 µg protein by mass, 50 µg protein + DNA).

APPLICATION NOTES

Recombinant mononucleosomes are highly purified and are suitable for use as substrates in enzyme screening assays or for nucleosome binding experiments. The absence of post-translational histone modifications makes them ideal for conducting enzyme activity and screening assays. EpiCypher Mononucleosomes (H3.3), Human Recombinant Biotinylated do not contain free DNA which could alter assayed activities.

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) H3.3 - P84243 H4 - P62805
-------------------	--

REFERENCES

- [1] Lowary & Widom *J. Mol. Biol.* (1998). PMID: 9514715
[2] Ahmad & Henikoff *Mol Cell* (2002). PMID: 12086617

VALIDATION DATA

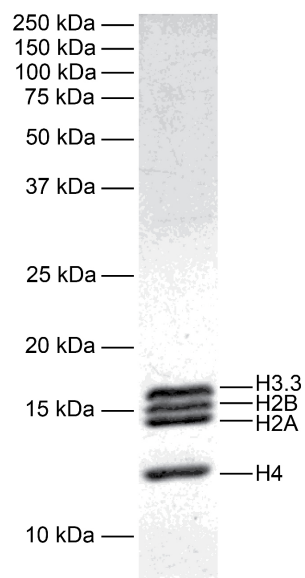


FIGURE 1 Protein gel data. Coomassie stained SDS-PAGE gel of proteins in recombinant H3.3 mononucleosomes (2 µg) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2A, H2B, H3.3, and H4) are indicated.

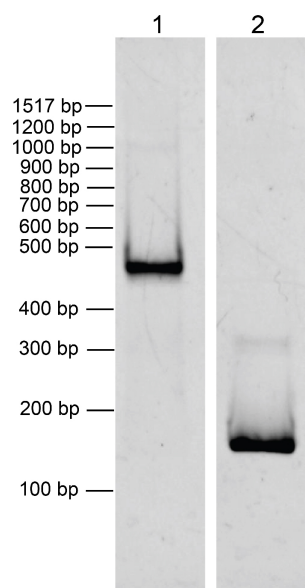


FIGURE 2 DNA gel data. Recombinant H3.3 mononucleosomes resolved via native PAGE and stained with ethidium bromide to visualize DNA. All lanes were resolved on a single gel. **Lane 1:** Intact nucleosomes (400 ng). **Lane 2:** Free DNA (EpiCypher 18-0005; 100 ng).

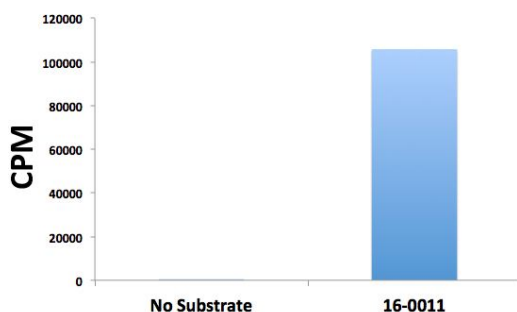


FIGURE 3 Histone methyltransferase assay data. The data shown are representative results from a methyltransferase assay. Recombinant SET8 histone methyltransferase was used in radioactive methyltransferase assays with a variety of substrates as indicated, with SET8 exhibiting the highest level of activity in combination with recombinant H3.3 mononucleosomes (16-0011).