

Specialized Recombinant Nucleosomes

Functionalized nucleosome substrates for drug discovery and chromatin research

Nucleosomes are the physiological target of readers, writers and erasers that interact with or modify chromatin. The incorporation of nucleosome substrates into drug discovery assays is a dramatic improvement over peptides, providing access to historically challenging targets.

EpiCypher has pioneered the manufacture of nucleosomes for epigenetics research and drug discovery, producing the highest quality products available. We offer a rapidly expanding portfolio of fully defined and homogeneous recombinant nucleosomes incorporating different histone and DNA modifications, site mutations, or histone variants.

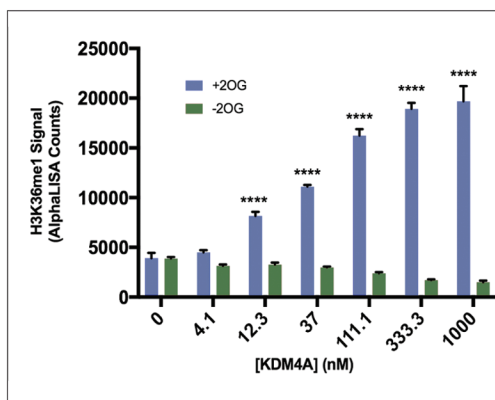
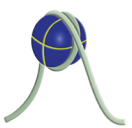
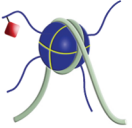


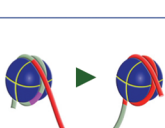


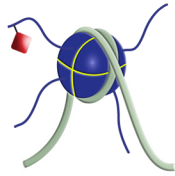
Figure: Histone De-methylase Assay (AlphaNuc™) to detect KDM4A-mediated demethylation using EpiCypher H3K36me3 dNuc substrate (0.1 nM, Cat. No. 16-0320). KDM4A levels were titrated in the presence (+2OG) or absence (-2OG) of the cofactor 2-oxoglutarate. Demethylation was detected by anti-H3K36me1 antibody bound by Protein A Acceptor Beads (PerkinElmer). The addition of Streptavidin Donor beads (PerkinElmer) induced an AlphaLISA signal by binding the biotinylated-dNuc. Asterisks indicate a significant difference between +2OG/-2OG cofactor conditions at the indicated KDM4A concentration. Assay Z' Factor at 111.1 nM KDM4A was 0.72.

Characteristics

Advantages

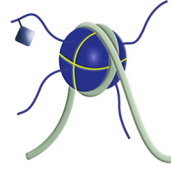
rNucs		Recombinant Nucleosomes <ul style="list-style-type: none"> Fully recombinant human histones 601 Nucleosome positioning sequence (biotinylated) 	<ul style="list-style-type: none"> Devoid of post-translational modifications Stably positioned nucleosome Suitable for enzyme assays, inhibitor testing and high throughput screening (modification addition)
dNucs		Designer Nucleosomes <ul style="list-style-type: none"> Fully recombinant human histones Contain physiological histone PTMs 601 Nucleosome positioning sequence (biotinylated) 	<ul style="list-style-type: none"> Stably positioned nucleosome Suitable for enzyme assays and high throughput screening (modification addition or removal) Suitable for protein-protein interaction studies involving the modification of interest
vNucs		Histone Variant Nucleosomes <ul style="list-style-type: none"> Fully recombinant human histones Includes one of several histone variants 601 Nucleosome positioning sequence (biotinylated) 	<ul style="list-style-type: none"> Stably positioned nucleosome Suitable for enzyme assays and high throughput screening (modification addition or modification removal) Histone deposition studies
oncoNucs		Oncogenic Nucleosomes <ul style="list-style-type: none"> Fully recombinant human histones Contains K-to-M mutations associated with cancer 601 Nucleosome positioning sequence (biotinylated) 	<ul style="list-style-type: none"> Study effects of mutations on enzyme activity Suitable for high throughput screening and inhibitor testing Structural studies
EpiDyne™		Chromatin Remodeling Assay Substrate <ul style="list-style-type: none"> Fully recombinant human histones Nucleosome positioning sequence with an added nucleosome acceptor sequence Functionalized DNA or histones to enable HTS assay development 	<ul style="list-style-type: none"> Stably positioned nucleosome Substrate for nucleosome remodeling assays Suitable for high throughput screening and inhibitor testing

dNucs: Designer Recombinant Nucleosomes With PTMs (Biotinylated)



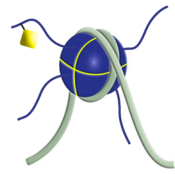
dNucs Histone Lysine Methylation

H3K4me1	16-0321	50 µg
H3K4me2 NEW	16-0334	50 µg
H3K4me3	16-0316	50 µg
H3K9me1	16-0325	50 µg
H3K9me2 NEW	16-0324	50 µg
H3K9me3	16-0315	50 µg
H3K27me1	16-0338	50 µg
H3K27me2 NEW	16-0339	50 µg
H3K27me3 NEW	16-0317	50 µg
H3K36me1	16-0322	50 µg
H3K36me2	16-0319	50 µg
H3K36me3	16-0320	50 µg
H4K20me1 NEW	16-0331	50 µg
H4K20me2 NEW	16-0332	50 µg
H4K20me3 NEW	16-0333	50 µg



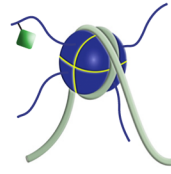
dNucs Histone Acylation

H3K9ac NEW	16-0314	50 µg
H3K9cr <i>coming soon</i>	16-0351	50 µg
H3K14ac NEW	16-0343	50 µg
H3K27ac <i>coming soon</i>	16-0345	50 µg
H4K5ac <i>coming soon</i>	16-0352	50 µg
H4K8ac <i>coming soon</i>	16-0353	50 µg
H4K12ac	16-0312	50 µg
H4K16ac <i>coming soon</i>	16-0354	50 µg
H4K5,8,12,16ac	16-0313	50 µg



dNucs Other PTMs

H3S10ph <i>coming soon</i>	16-0364	50 µg
H2A-Ub* <i>coming soon</i>	16-0363	50 µg
H3Cit2/8/18 <i>coming soon</i>	16-0362	50 µg

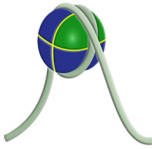


dNucs Histone Arginine Methylation

H2AR3me1 <i>coming soon</i>	16-0359	50 µg
H2AR3me2a <i>coming soon</i>	16-0360	50 µg
H2AR3me2s <i>coming soon</i>	16-0361	50 µg
H3R2me1 NEW	16-0340	50 µg
H3R2me2a NEW	16-0341	50 µg
H3R2me2s <i>coming soon</i>	16-0355	50 µg
H4R3me1 <i>coming soon</i>	16-0356	50 µg
H4R3me2a <i>coming soon</i>	16-0357	50 µg
H4R3me2s <i>coming soon</i>	16-0358	50 µg

*Enzymatically-modified; contains ubiquitination at H2AK13/15 and H2AK119.

Other Recombinant Nucleosomes (Biotinylated)



oncoNucs

AA Substitutions Implicated in Cancer

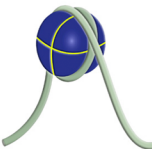
H3.3K4M <i>coming soon</i>	16-0349	50 µg
H3.3K9M <i>coming soon</i>	16-0350	50 µg
H3.3K27M	16-0323	50 µg
H3.3G34R <i>coming soon</i>	16-0346	50 µg
H3.3G34V <i>coming soon</i>	16-0347	50 µg
H3.3G34W <i>coming soon</i>	16-0348	50 µg
H3.3K36M <i>coming soon</i>	16-0344	50 µg



vNucs

Histone Variants

H2AX NEW	16-0013	50 µg
H2AZ.1 NEW	16-0014	50 µg
H2AZ.2 NEW	16-0015	50 µg
H3.3	16-0011	50 µg
H3.3, non-biotinylated	16-0012	100 µg

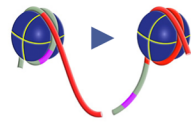


rNucs

Human Recombinant, No PTMs

Mononucleosomes, biotinylated	16-0006	50 µg
Mononucleosomes, non-biotinylated	16-0009	100 µg

Recombinant Nucleosome Remodeling Substrates



EpiDyne™

Monitor Nucleosome Remodeling *in vitro*

EpiDyne Nucleosome Remodeling Assay Substrate ST601-GATC1	16-4101 NEW	50 µg
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EpiDyne Remodeling Assay Substrate DNA ST601-GATC0	18-4100 NEW	50 µg
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EpiDyne Remodeling Assay Substrate DNA ST601-GATC1	18-4101 NEW	50 µg
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Custom nucleosome synthesis available.

Please contact tech@biolynx.ca for more information.



EpiCypher.com

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