

Polynucleosomes Recombinant Protein

Recombinant Polynucleosomes (H3.3)

CATALOG #
AAA59702

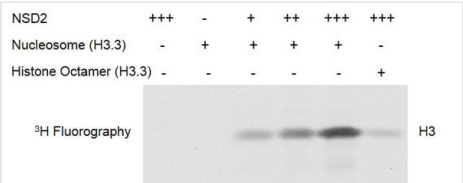
HOST
E Coli

PRODUCT SYNONYMS

Polynucleosomes; Recombinant Polynucleosomes (H3.3); Polynucleosomes recombinant protein

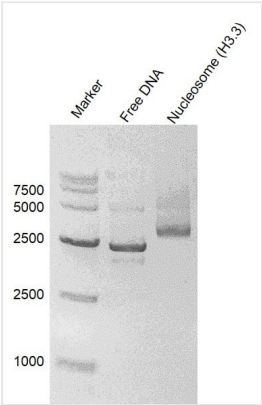
PRODUCT SPECIFICATIONS

Host	E Coli
Purity/Purification	The recombinant protein is >95% pure by SDS-PAGE.
Form/Format	Human recombinant polynucleosomes (H3.3)(20ug protein+ 24ug DNA) are supplied at a protein concentration of 1.4ug/ul in 10mM Tris pH8.0, 1mM EDTA, 2mM DTT, 20% glycerol.
Protein Species	Human
Protein Details	Recombinant Polynucleosomes (H3.3), Human, consist of 5000 bp of DNA (plasmid pG5E4) and two molecules each of histones H2A that includes amino acids 1-130 (end)(accession number NM_003512), H2B that includes amino acids 1-126 (end)(accession number NM_003518), H3.3 that includes amino acids 1-136 (end)(accession number NM_005324), and H4 that includes amino acids 1-103 (end)(accession number NM_003548). Plasmid pG5E4 contains 9 of 5S rDNA nucleosome positioning sequences of L. variegatus, 5 of GAL4 binding sites and E4 promoter. Every 5S rDNA can wrap one histone octamer to form a nucleosome. 5 of GAL4 binding sites and E4 promoter can wrap histone octamers to form dinucleosomes. A pG5E4 plasmid can warp histone octamers to form 11 nucleosomes.
Notes	Recombinant Polynucleosomes (H3.3) are suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.
Dry Ice Note	The product may be shipped with dry ice, and an additional fee may be added to your shipping cost.
Preparation and Storage	Recombinant proteins in solution are temperature sensitive and must be stored at -80 degree C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. Shipping Temp: Dry Ice



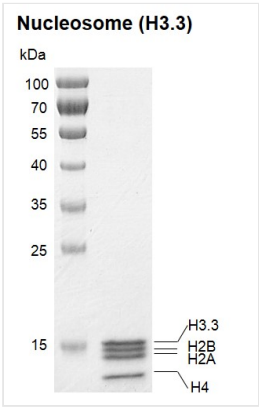
WB (Western Blot)

Histone Methyltransferase (HMT) Assay comparing Recombinant Polynucleosomes (H3.3) and histone octamers as substrates. 2 ug Recombinant Polynucleosomes (H3.3) were incubated with 0 ug , 0.25 ug, 0.5 ug and 1 ug NSD2-SET in reaction buffer for 3 hours at room temperature, respectively. Western Blot was used to detect the generation of reaction products (H3K36me2). NSD2-SET only and polynucleosomes only were used as negative control. The Western Blot result shows that polynucleosomes are more suitable substrate for NSD2 than histone octamers.



Application Data

Recombinant Polynucleosomes (H3.3) protein DNA Gel-shift assay Polynucleosomes (H3.3) and free plasmid DNA were run on 1% agarose gel and stained with ethidium bromide. Intact polynucleosomes migrate much higher than free DNA, thus the DNA resolves at a higher molecular weight when nucleosome-bound.



SDS-PAGE

Recombinant Polynucleosomes (H3.3) protein gel. Recombinant Polynucleosomes (H3.3) were run on a 12% SDS-PAGE gel and stained with Coomassie Blue.

ADDITIONAL INFORMATION

Related Product Information for Polynucleosomes recombinant protein	Short Description: Our Recombinant Polynucleosomes (H3.3) consists of 5000 bp of DNA (plasmid) and two molecules each of histones H2A that includes amino acids 1-130 (end)(accession number NM_003512), H2B that includes amino acids 1-126 (end)(accession number NM_003518), H3.3 that includes amino acids 1-136 (end)(accession number NM_005324), and H4 that includes amino acids 1-103 (end)(accession number NM_003548). Recombinant Polynucleosomes (H3.3) was generated in E Coli and has an observed molecular weight of 108 kDa. Nucleosomes comprise the smallest subunit of chromatin; they consist of 147 bp of DNA wrapped around an octamer of core histone proteins (H2A, H2B, H3 and H4). Therefore, nucleosomes are more physiologically relevant substrates than histones and histone-derived peptides for use in in vitro studies. More importantly, some histone methyltransferases are significantly more active, as well as specific, when using nucleosomal substrates in HMT assays, such as DOT1L and NSD family enzymes. Recombinant Polynucleosomes (H3.3) can be used for enzyme kinetics and inhibitor screening studies. Background: In vivo, histones are wrapped around by DNA in chromatin. Therefore, nucleosomes are more physiologically relevant substrates than histones and histone-derived peptides for in vitro studies. More importantly, some histone methyltransferases are significantly more active, as well as specific, when using nucleosomal substrates in HMT assays, such as DOT1L and NSD family enzymes. Nucleosomes are also widely used in histone methyltransferase screening assays to identify small molecular inhibitors for drug discovery. Histone H3.1 and Histone H3.3 are the two main Histone H3 variants found in plants and animals. They are known to be important for gene regulation. Histone H3.1 and H3.3 have been shown to demonstrate unique genomic localization patterns thought to be associated with their specific functions in regulation of gene activity. Specifically, Histone H3.1 localization is found to coincide with genomic regions containing chromatin repressive marks (H3K9me3, H3K27me3 and DNA methylation), whereas Histone H3.3 primarily colocalizes with marks associated with gene activation (H3K4me3, H2BK120ub1, and RNA pol II occupancy). Deposition of the Histone H3.1 variant into the nucleosome correlates with the canonical DNA synthesis-dependent deposition pathway, whereas Histone H3.3 primarily serves as the replacement Histone H3 variant outside of S-phase, such as during gene transcription. Aberrant localization of these variants is also known to correlate with certain cancers.
Product Categories/Family for Polynucleosomes recombinant protein	Recombinant Proteins; Histone

NCBI AND UNIPROT INFORMATION

NCBI GenBank Nucleotide #	NM_003512
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For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polynucleosomes-recombinant-protein-e-coli/59702>