

Polynucleosomes H3.3 Recombinant Protein | H3.3 recombinant protein

Recombinant Polynucleosomes H3.3 (K36M)

CATALOG #
AAA59752

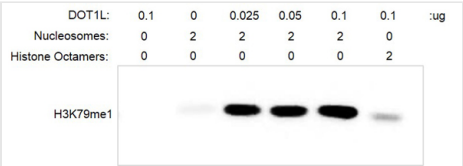
HOST
E Coli

PRODUCT SYNONYMS

Polynucleosomes H3.3; Recombinant Polynucleosomes H3.3 (K36M); H3.3 recombinant protein

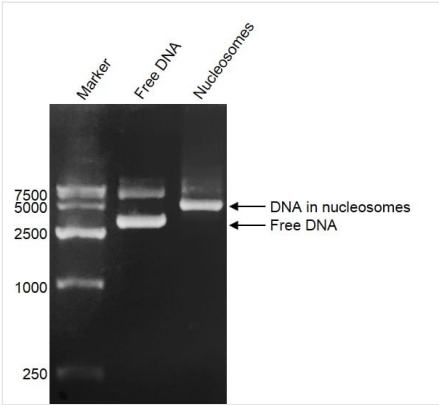
PRODUCT SPECIFICATIONS

Host	E Coli
Purity/Purification	The recombinant protein is >95% pure by SDS-PAGE
Form/Format	Human Recombinant Polynucleosomes H3.3 (K36M)(20ug protein+ 24ug DNA) are supplied in 10mM Tris pH8.0, 1mM EDTA, 2mM DTT, 20% glycerol.
Protein Species	Human
Protein Details	Recombinant Polynucleosomes H3.3 (K36M), 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) with a point mutation Lys36Met, 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 wrap histone octamers to form 11 nucleosomes.
Notes	Recombinant Polynucleosomes H3.3 (K36M) are suitable as substrate 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



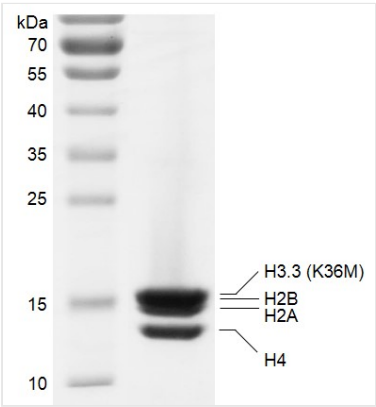
WB (Western Blot)

Histone methyltransferase activity assay comparing recombinant polynucleosomes and histone octamers as substrates. 2 ug Recombinant Polynucleosomes H3.3 (K36M) were incubated with DOT1L in reaction buffer for 3 hours at room temperature. Western Blot was used for detecting the generation of reaction products (H3K79me1). DOT1L only and polynucleosomes only were used as negative control. The Western Blot result shows that polynucleosomes are more suitable substrate for DOT1L than histone octamers.



Application Data

DNA Gel-shift assay for Recombinant Polynucleosomes H3.3 (K36M). Polynucleosomes H3.3 (K36M) and free plasmid DNA were run on a 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 (K36M) Polynucleosomes were run on a 12% SDS-PAGE gel and stained with Coomassie Blue. The purity of the polynucleosomes H3.3 (K36M) is ? 95%.

ADDITIONAL INFORMATION

Related Product Information for H3.3 recombinant protein	Short Description: 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. Nucleosomes are also widely used in histone methyltransferase screening assays to identify small molecular inhibitors for drug discovery. Background: In vivo, the nucleosome is the basic structural unit of chromatin. It is comprised of about 146 bp of DNA wrapped around a core of eight histones of four different types: H2A, H2B, H3 and H4. Histones are subject to posttranslational modifications, such as methylation, acetylation, phosphorylation and mono-ubiquitination. Histone modifications influence multiple chromatin-templated processes such as gene transcription, DNA repair and recombination. Besides the "major" histones, there are some histone variants in specific regions of chromatin or in specific cell types. Histone variants are involved in multiple processes including chromosome segregation, DNA repair, transcriptional regulation and mRNA processing. Histone H3.3 point mutations (K27 and G34) are found in 1/3 of pediatric glioblastomas. Up to 78% of diffuse intrinsic pontine gliomas (DIPGs) carry K27M and 36% of non-brainstem gliomas carry either K27M or G34R/V mutations. High- frequency mutation of histone H3 to K36M is observed in chondroblastomas, as is the mutation G34W/L in giant cell tumors of bone, diseases of adolescents and young adults. Histone H3.3 mutations drive pediatric glioblastoma through upregulation of MYCN. 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.
Product Categories/Family for H3.3 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-h3-3-recombinant-protein-e-coli/59752>