

Mononucleosomes Recombinant Protein

Recombinant Mononucleosomes (H3.3)-biotinylated

CATALOG #
AAA59703

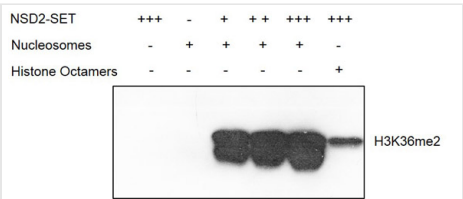
HOST
E Coli

PRODUCT SYNONYMS

Mononucleosomes; Recombinant Mononucleosomes (H3.3)-biotinylated; Mononucleosomes recombinant protein

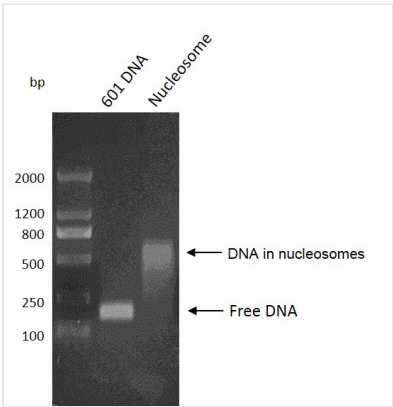
PRODUCT SPECIFICATIONS

Host	E Coli
Purity/Purification	The recombinant protein is >95% pure by SDS-PAGE.
Form/Format	Recombinant Mononucleosomes (H3.3)-biotinylated (20ug protein + 20ug DNA) is supplied in 10mM Tris-HCl, pH8.0, 1mM EDTA, 2mM DTT and 20% glycerol.
Protein Species	Human
Conjugation	Biotinylated
Protein Details	Recombinant Mononucleosomes (H3.3)-biotinylated consists of 167 bp of 601 DNA with 5' biotin tag 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). All of these histones were expressed in E Coli cells.
Notes	Recombinant Mononucleosomes (H3.3)-biotinylated are suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling. HMT Assay Conditions: 2ug mononucleosomes was incubated with different concentration of NSD2-SET in reaction buffer including 50mM TrisCl, pH 8.6, 0.02% Triton X-100, 2mM MgCl ₂ , 1mM TCEP, 50uM SAM for 3 hours at room temperature. Activity was detected by Western blot.
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



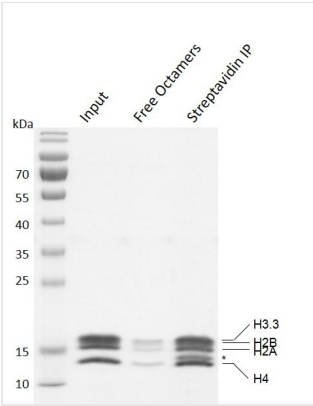
WB (Western Blot)

Recombinant Mononucleosomes (H3.3) - biotinylated activity. 2 µg Mononucleosomes were incubated with 0 µg, 0.25 µg, 0.5 µg, 1 µg NSD2-SET in reaction buffer for 3 h at room temperature, respectively. Western blot was used for detecting the generation of reaction products (H3K36me2). Recombinant Histone Octamers was used as a control substrate. The Western blot result shows that mononucleosomes are a more suitable substrate for NSD2-SET than histone octamers.



Application Data

Recombinant Mononucleosomes (H3.3) - biotinylated DNA gel. Mononucleosomes were run on an agarose gel and stained with ethidium bromide. Lane 1: 601 DNA which was used for assembly of mononucleosomes. Lane 2: Intact mononucleosomes. Intact mononucleosomes migrate much higher than free DNA. The agarose gel result showed almost all of the 601 DNA wrapped histone octamers to form mononucleosomes.



SDS-PAGE

Recombinant Mononucleosomes (H3.3) - biotinylated protein gel. 40 µg mononucleosomes were incubated with 15 µl streptavidin beads for 1 h at 4°C. Samples were centrifuged at 4°C, and supernatant was labeled as free histone octamers. Samples were run on a 12.5% SDS-PAGE gel and stained by Commassie blue. The SDS-PAGE gel result showed that more than 80% biotinylated mononucleosomes were pulled down by streptavidin beads. * indicates streptavidin.

ADDITIONAL INFORMATION

Related Product Information for Mononucleosomes recombinant protein

Short Description: Our Recombinant Mononucleosomes (H3.3)-biotinylated 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) with a C-terminal Biotin tag, and H4 that includes amino acids 1-103 (end)(accession number NM_003548). Recombinant Mononucleosomes (H3.3)-biotinylated was generated in E Coli and has an observed molecular weight of 110 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 Mononucleosomes (H3.3)-biotinylated are for enzyme kinetics and inhibitor screening.

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.

NCBI AND UNIPROT INFORMATION

NCBI GenBank Nucleotide #	NM_003512
Molecular Weight	Molecular weight of histone octamer is 108kDa

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/mononucleosomes-recombinant-protein-e-coli/59703>