

Mononucleosomes Recombinant Protein | HIST1H2AC recombinant protein

Recombinant Mononucleosomes (TH2B)-biotinylated

CATALOG #
AAA59748

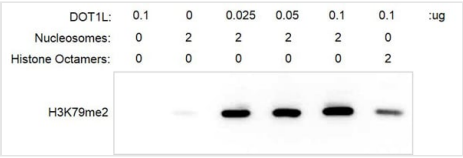
HOST
E Coli

PRODUCT SYNONYMS

Mononucleosomes; Recombinant Mononucleosomes (TH2B)-biotinylated; TH2B; testis-specific H2B; testis-specific Histone 2B; HIST1H2AC recombinant protein

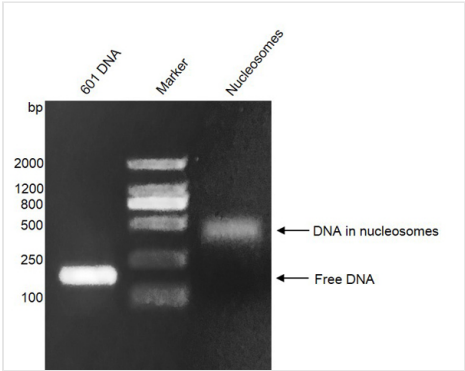
PRODUCT SPECIFICATIONS

Host	E Coli
Purity/Purification	The recombinant protein is >95% pure by SDS-PAGE.
Form/Format	Recombinant Mononucleosomes (TH2B)-biotinylated (20ug protein + 20ug DNA) are supplied in 10mM Tris-HCl, pH8.0, 1mM EDTA, 2mM DTT and 20% glycerol. Please refer to product insert upon arrival for lot-specific concentration.
Protein Species	Human
Conjugation	Biotinylated
Protein Details	Recombinant Mononucleosomes (TH2B)-biotinylated, consist 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 NP_003503.1), TH2B that includes amino acids 1-127 (end)(accession number NP_733759.1), H3 that includes amino acids 1-136 (end)(accession number NP_003520.1), and H4 that includes amino acids 1-103 (end)(accession number NP_003539.1). All of these histones were expressed in E Coli.
Notes	Recombinant Mononucleosomes (TH2B)-biotinylated are suitable for use as substrates 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



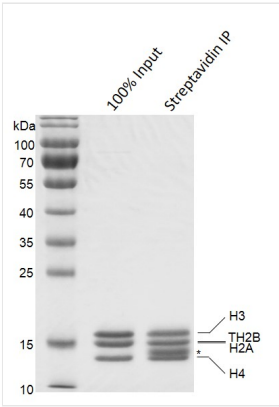
WB (Western Blot)

Western Blot analysis for Recombinant Mononucleosomes (TH2B) - biotinylated 2 ug Recombinant Mononucleosomes (TH2B) were incubated with DOT1L in reaction buffer for 3 h at room temperature. Western Blot was used for detecting the generation of reaction products (H3K79me2). DOT1L only and mononucleosomes only were used as negative control. The Western Blot results show that mononucleosomes are a more suitable substrate for DOT1L than histone octamers. Nucleosomes = Mononucleosomes.



Application Data

Recombinant Mononucleosomes (TH2B) - biotinylated DNA gel Biotinylated Mononucleosomes (TH2B) were run on a 2% agarose gel and stained with ethidium bromide. Lane 1: 601 DNA which was used for assembly of nucleosomes. Lane 2: MW. Lane 3: Intact mononucleosomes. Intact mononucleosomes migrate much higher than free DNA. The agarose gel result shows that almost all of 601 DNA wrap histone octamers to form mononucleosomes.



SDS-PAGE

Streptavidin Pull-down for Recombinant Mononucleosomes (TH2B) - biotinylated Mononucleosomes (TH2B) were pulled down by streptavidin beads. Input mononucleosomes (Lane 1) and the mononucleosomes pulled down by streptavidin (Lane 2) were run on a 12.5% SDS-PAGE gel and stained with Coomassie Blue. The SDS-PAGE gel result shows that more than 80% biotinylated nucleosomes (TH2B) are pulled down by streptavidin beads. * indicates streptavidin.

ADDITIONAL INFORMATION

Related Product Information for HIST1H2AC 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 biology processes including chromosome segregation, DNA repair, transcriptional regulation and mRNA processing. TH2B (testis-specific H2B) is originally identified as a testis-specific variant of histone H2B. TH2A is a testis-specific variant of histone H2A. They are abundant in the testis, oocytes and fertilized eggs. TH2A and TH2B are controlled by a shared promoter that is located between them. Disruption of Th2a and Th2b genes causes defects in spermatogenesis. TH2A/TH2B may enhance reprogramming by introducing processes that normally operate in zygotes and during SCNT. TH2A and TH2B induce nucleosome instability. TH2B controls the chromatin-to-nucleoprotamine transition. 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 HIST1H2AC recombinant protein	Recombinant Proteins; Histone

NCBI AND UNIPROT INFORMATION

NCBI GI #	4504245
NCBI GeneID	8334
NCBI Accession #	NP_003503.1; NP_733759.1; NP_003520.1; NP_003539.1
NCBI GenBank Nucleotide #	NM_003512.3
UniProt Accession #	Q93077; O00775; O00776; O00777; O00778; Q540R1; B2R4F7
Molecular Weight	14,105 Da
NCBI Official Full Name	histone H2A type 1-C
NCBI Official Synonym Full Names	histone cluster 1 H2A family member c
NCBI Official Symbol	HIST1H2AC
NCBI Official Synonym Symbols	H2A/I; H2AFL; dJ221C16.4
NCBI Protein Information	histone H2A type 1-C
UniProt Protein Name	Histone H2A type 1-C
UniProt Gene Name	HIST1H2AC
UniProt Synonym Gene Names	H2AFL

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.