

Mononucleosomes Recombinant Protein | H2AFX recombinant protein

Recombinant Mononucleosomes (H2A.X)-biotinylated

CATALOG # AAA59761	HOST E Coli
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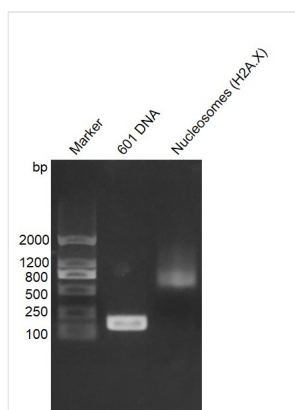
PRODUCT SYNONYMS

Mononucleosomes; Recombinant Mononucleosomes (H2A.X)-biotinylated; H2A Histone Family Member X; H2A/X; H2AFX recombinant protein

PRODUCT SPECIFICATIONS

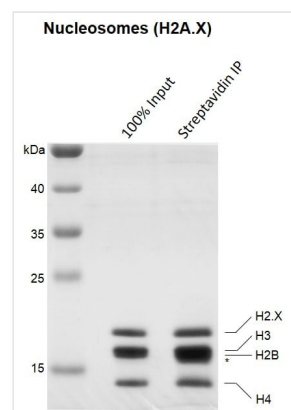
Host	E Coli
Form/Format	Recombinant Mononucleosomes (H2A.X)-biotinylated (20ug protein + 19.2ug DNA) are supplied in 10mM Tris-HCl, pH8.0, 1mM EDTA, 2mM DTT and 20% glycerol.
Protein Species	Human
Conjugation	Biotinylated Tag
Protein Details	Recombinant Mononucleosomes (H2A.X)-biotinylated, consist of 167 bp of 601 DNA with a 5' biotin tag and two molecules each of histones H2A.X that includes amino acids 1-143 (end)(accession number NP_002096.1) with a C-terminal 6xHis-tag, H2B that includes amino acids 1-126 (end)(accession number NP_003509.1), 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 cells.
Notes	Recombinant Mononucleosomes (H2A.X)-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

IMAGES



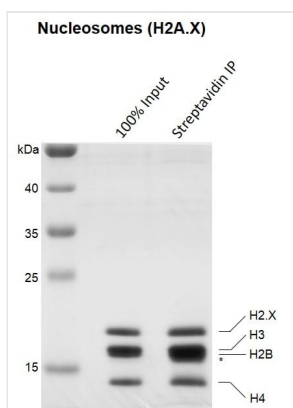
Application Data

Recombinant Mononucleosomes (H2A.X) - biotinylated, DNA gel. Biotinylated mononucleosomes (H2A.X) were run on a 2% agarose gel and stained with ethidium bromide. Lane 1: DNA marker. Lane 2: free 601 DNA. Lane 3: Intact mononucleosomes. Intact mononucleosomes migrate much higher than free 601 DNA. The agarose gel result shows that almost all of 601 DNA wraps histone octamers to form mononucleosomes.



SDS-PAGE

Streptavidin pull-down of Recombinant Mononucleosomes (H2A.X) - biotinylated. Mononucleosomes (H2A.X) were pulled down with 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 gel result shows that almost all biotinylated mononucleosomes (H2A.X) are pulled down by Streptavidin beads.
*Indicates Streptavidin. Nucleosomes = Mononucleosomes



SDS-PAGE

Recombinant Mononucleosomes (H2A.X) - biotinylated, SDS-PAGE. 12.5% SDS-PAGE gel stained with Coomassie Blue. Purity: ? 95%

ADDITIONAL INFORMATION

Related Product Information for H2AFX 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, mono-ubiquitination, etc. 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. H2A.X (also known as H2AFX, Histone Family Member X) is a histone H2A family member. In mammals, variant histone H2A.X represents 10% of the total H2A, whereas in yeast 90% of H2A is of the H2A.X class. The main function of H2AX is associated with the DNA damage repair (DDR) system which is induced by DNA double strand breaks (DSBs). In many species, including *S. cerevisiae*, *Xenopus laevis*, and *Drosophila melanogaster*, the fourth serine residue from the carboxyl-terminal end of histone H2A becomes phosphorylated. In mammals, this event is related to phosphorylation of the H2A.X variant histone on serine 139 by DNA-dependent protein kinases (ATR/ATM/DNA- PK). The phosphorylated form of H2A.X is commonly denoted as γ -H2A.X. This H2A.XS139 phosphorylation facilitates the recruitment of the DNA damage repair machinery, as well as chromatin remodelers such as INO80 and SWR1. H2A.X is a regulator of the epithelial-mesenchymal 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 H2AFX recombinant protein

Recombinant Proteins; Histone

NCBI AND UNIPROT INFORMATION

NCBI GI #	4504253
NCBI GeneID	3014
NCBI Accession #	NP_002096.1; NP_003509.1; NP_003520.1; NP_003539.1
NCBI GenBank Nucleotide #	NM_002105.2
UniProt Accession #	P16104; Q4ZGJ7; Q6IAS5
Molecular Weight	15,145 Da

NCBI Official Full Name	histone H2A.x
NCBI Official Synonym Full Names	H2A histone family, member X
NCBI Official Symbol	H2AFX
NCBI Official Synonym Symbols	H2AX; H2A.X; H2A/X
NCBI Protein Information	histone H2A.x; H2AX histone
UniProt Protein Name	Histone H2A.x
UniProt Gene Name	H2AFX
UniProt Synonym Gene Names	H2AX; H2a/x
UniProt Entry Name	H2AX_HUMAN

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/h2afx-recombinant-protein-e-coli/59761>