

## Recombinant Mononucleosomes H4K20me3 (MLA) - biotin

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**Catalog No:** 81081, 81781

**Lot No:** 35617001

**Expressed In:** *E. coli*

**Quantity:** 20, 1000 µg

**Concentration:** 0.55 µg/µl

**Source:** Human

**Buffer Contents:** Recombinant Mononucleosomes H4K20me3 (MLA) - biotin (20 µg protein + 20 µg DNA) are supplied in 10 mM Tris-HCl pH 8.0, 1 mM EDTA, 2 mM DTT and 20% glycerol.

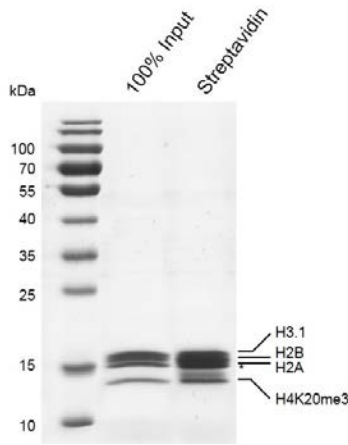
**Background:** Histone H4 is one of the core components of the nucleosome. The nucleosome is the smallest subunit of chromatin and consists of 146 base pairs of DNA wrapped around an octamer of core histone proteins (two each of H2A, H2B, H3 and H4). Histone H1 is a linker histone, present at the interface between the nucleosome core and DNA entry/exit points.

Recombinant Histone H4K20me3 (MLA) has been generated using the patented Methylated Lysine Analog (MLA) technology. In MLA, methylated histones are generated via a chemical alkylation reaction that substitutes a methylated analog of lysine, aminoethylcysteine, for the existing lysine at the desired residue. Aminoethylcysteine is structurally and chemically similar to lysine, though it contains a sulfide substitution in place of the lysine  $\gamma$ -methylene. The MLA technique provides precise control over the site and degree of methylation. The MLA technology is covered under U.S. Patent No. 8,278,112.

**Protein Details:** Recombinant Mononucleosomes H4K20me3 (MLA) - biotin consist of a 167 bp of 601 DNA with a 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 that includes amino acids 1-136 (end) (accession number NP\_003520.1), and H4 trimethyl Lys 20 (H4K20me3) (MLA) that includes amino acids 1-103 (end) (accession number NM\_003548). All of these histones were expressed in *E. coli* cells. The molecular weight of histone octamer is 108 kDa.

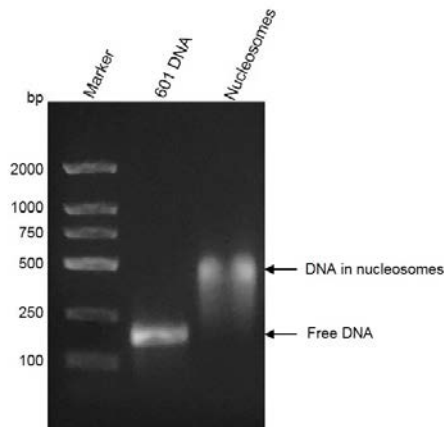
**Application Notes:** Recombinant histones are suitable for use as positive controls in the analysis of histone post-translational modifications, as substrates for histone modification enzymes, or to generate chromatin *in vitro*.

**Storage and Guarantee:** Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



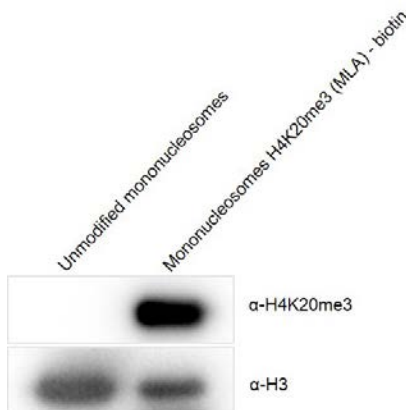
### Recombinant Mononucleosomes H4K20me3 (MLA) - biotin pull-down by streptavidin

Input nucleosomes (Lane 2) and the nucleosomes pulled down by streptavidin (Lane 3) were run on a 13% SDS-PAGE gel and stained with Commassie blue. The SDS-PAGE gel shows that most of biotinylated mononucleosomes H4K20me3 are pulled down by streptavidin beads. \* indicates streptavidin.



### Recombinant Mononucleosomes H4K20me3 (MLA) - biotin agarose gel

Recombinant Mononucleosomes H4K20me3 (MLA) - biotin were run on a 2% agarose gel and stained with ethidium bromide. Lane 1: DNA marker. Lane 2: 601 DNA. Lane 3: Intact mononucleosomes H4K20me3. Intact mononucleosomes H4K20me3 migrated much higher than free 601 DNA. The agarose gel shows that almost all of 601 DNA wrap histone octamers to form nucleosomes.



### Western Blot analysis for Recombinant Mononucleosomes H4K20me3 (MLA) – biotin

Unmodified nucleosomes (Lane 1) and Recombinant Mononucleosomes H4K20me3 (MLA) - biotin (Lane 2) were detected with anti-H4K20me3 antibody (Cat. No. 39671) and anti-H3 antibody (Cat. No. 61475), respectively. H3 was detected as loading control. Only Recombinant Mononucleosomes H4K20me3 (MLA) - biotin can be detected by H4K20me3 antibody.