

Recombinant Histone H4K5me2 (MLA)

Catalog No: 31266

Expressed In: *E. coli*

Quantity: 50 µg

Source: Xenopus

Methylated Lysine Analog: Recombinant Histone H4K5me2 (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 γ -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.

Buffer Contents: 50 µg supplied as lyophilized powder. Recombinant histones can be resuspended in water or any suitable buffer. We recommend a starting concentration of 1 mg/ml. To fully solubilize the histone we suggest resuspension in the buffer of choice at room temperature for 20-30 minutes with occasional pipetting. Addition of salt or Tris to the resuspension buffer may enhance histone solubility.

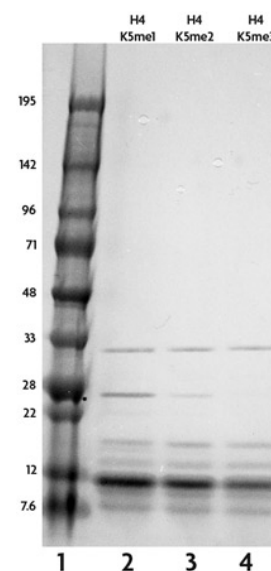
Background: Histone H4 is one of the core components of the nucleosome. The nucleosome is the smallest subunit of chromatin and consists of 146 base pairs of DNA wrapped around an octamer of core histone proteins (two each of H2A, H2B, H3 and H4). Histone H1 is a linker histone, present at the interface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

Protein Details: Recombinant *Xenopus laevis* Histone H4 dimethyl Lys5 (H4K5me2) is produced in *E. coli* and purified using FPLC. Recombinant methylated histones are specifically methylated via a chemical alkylation reaction that introduces a methyl lysine analog (MLA). This specific chemical treatment enables the site and degree of methylation to be controlled precisely. Each methylation reaction is over 99% complete, as verified by high-resolution ESI-TOF mass spectrometry. Protein concentration was determined using the molar extinction coefficient for Histone H4 and absorbance at 280nm. The recombinant histone is >98% pure by SDS-PAGE. The molecular weight of the recombinant histone is 11,283 Daltons.

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: Lyophilized proteins can be stored at -20°C or -80°C, preferably desiccated. 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 guaranteed for 6 months from date of receipt.

This product is for research use only and is not for use in diagnostic procedures.



Recombinant Histone H4 dimethyl Lys5 tested by SDS-PAGE gel.

SDS-PAGE analysis of 5 µg Recombinant Histone H4 monomethyl Lys5 (lane 2), Recombinant Histone H4 dimethyl Lys5 (lane 3), and Recombinant Histone H4 trimethyl Lys5 (lane 4). Molecular weight marker is in lane 1.