

Recombinant Histone H3 (C110A)

Catalog No: 31207**Expressed In:** *E. coli***Quantity:** 100 µg**Source:** Xenopus

Buffer Contents: 100 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 H3 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 protein, present at the interface between the nucleosome core and DNA entry/exit points.

Histone H3 (C110A) is a mutant H3 protein that has the single cysteine residue at 110 in the protein mutated to alanine. This mutant is useful for biophysical studies with assembled nucleosomes, and is useful for certain protein ligation and engineering chemistries used to install site specific modifications into the H3 protein (see Simon, *et. al.* Cell 2007, and Shimko, *et.al.* Methods Mol. Biol. 2013).

Protein Details: Recombinant *Xenopus laevis* Histone H3 (C110A) is produced in *E. coli* and purified using FPLC. Protein concentration was determined using the molar extinction coefficient for Histone H3 and absorbance at 280nm. The recombinant histone is >98% pure by SDS-PAGE. Recombinant Histone H3 C110A contains a substitution of cysteine to alanine at amino acid 110. The molecular weight of the protein is 15,239 Daltons. To see a representative mass spectrum, please visit our website at www.activemotif.com and view the product details page.

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*.

References:

This product was used in the following publications:

Cell. 2009 Dec 24;139(7):1303-14.

J Biomol Screen. 2012 Jan;17(1):49-58.

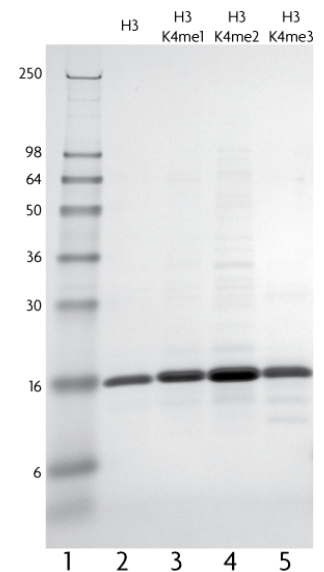
Mol Cancer Ther. 2014 Dec;13(12):3062-73.

Environ Res. 2017 Feb;153:112-119.

Epigenetics. 2017 Jun 3;12(6):484-491.

Biomarkers. 2017 Sep;22(6):584-593.

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.

**Recombinant Histone H3 (C110A) analyzed by SDS-PAGE gel.**

SDS-PAGE analysis of 1.5 µg Recombinant Histone H3 (C110A) (lane 2), Recombinant Histone H3 monomethyl Lys4 (lane 3), Recombinant Histone H3 dimethyl Lys4 (lane 4), and Recombinant Histone H3 trimethyl Lys4 (lane 5). Molecular weight marker is in lane 1.