Histone H2A Human, Recombinant

100 µg 1.0 mg/ml Lot: 0041211
RECOMBINANT Store at –20°C Exp: 11/14

Description: Histone H2A combines with Histone H2B to form the H2A-H2B heterodimer. Two H2A/H2B heterodimers interact with an H3/H4 tetramer to form the histone octamer (1,2). Histone H2A is also modified by various enzymes and can act as a substrate for them. These modifications have been shown to be important in gene regulation.

Source: An E. coli strain that carries a plasmid encoding the cloned human Histone H2A gene, HIST3H2A. (Genbank accession number: AY131974)

Supplied in: 20 mM Sodium Phosphate (pH 7.0), 300 mM NaCl and 1 mM EDTA.

Note: The protein concentration (1 mg/ml or 71 µM) is calculated using the molar extinction coefficient for Histone H2A (3840) and its absorbance at 280 nm (3.4). 1.0 A280 units = 3.6 mg/ml

Quality Control Assays:
SDS-PAGE: 0.5, 1.0, 2.0, 5.0, 10.0 µg of Histone H2A Human, Recombinant were loaded on a 10–20% Tris-Glycine SDS-PAGE gel and stained with Coomassie Blue. The calculated molecular weight is 13990.24 Da. Its apparent molecular weight on 10–20% Tris-Glycine SDS-PAGE gel is ~15 kDa.

Mass Spectrometry: The mass of purified Histone H2A Human, Recombinant is 13,990.27 Da as determined by ESI-TOF MS (Electrospray Ionization-Time of Flight Mass Spectrometry). The average mass calculated from primary sequence is 13990.24 Da. This confirms the protein identity as well as the absence of any modifications of the histone.

N-terminal Protein Sequencing: Protein identity was confirmed using Edman Degradation to sequence the intact protein.

Protease Assay: After incubation of 5 µg of Histone H2A Human, Recombinant with a standard mixture of proteins for 4 hours at 37°C, no proteolytic activity could be detected by SDS-PAGE.

Exonuclease Assay: Incubation of a 50 µl reaction containing 10 µg of Histone H2A Human, Recombinant with 1 µM of a mixture of single and double-stranded [3H] E. coli DNA (200,000 cpm/µg) for 4 hours at 37°C released < 0.1% of the total radioactivity.

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Endonuclease Assay: Incubation of a 50 µl reaction containing 10 µg of Histone H2A Human, Recombinant with 1 µg of φX174 RF I (supercoiled) plasmid DNA for 4 hours at 37°C resulted in < 5.0% conversion to RF II form (nicked circle) as determined by agarose gel electrophoresis.

Protein Sequence: SGRGKQGGKARAKRSRSRAGLQFPVGRHLLRLRNKNSERVAGAPVVLAAVLEYLTAEILELAGNARSDKKTRIIPHRHQLAIKND EELNKLLGVTIAQGGVLPNQAVLLPKTESHHKAKGK (Genbank accession number: AAN59960)

References: