**Histone H4 Human, Recombinant**

**M2504S**

**100 µg 1.0 mg/ml Lot: 0071606**

**RECOMBINANT Store at –20°C Exp: 6/18**

**Description:** Histone H3 combines with Histone H4 to form the H3/H4 tetramer. Two H2A/H2B heterodimers interact with an H3/H4 tetramer to form the histone octamer (1,2). Histone H4 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 H4 gene, HIST2H4. (Genbank accession number: AF525682)

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

**Note:** The protein concentration (1 mg/ml, 89 µM) is calculated using the molar extinction coefficient for Histone H4 (5120) and its absorbance at 280 nm (3.4). 1.0 A_{280} units = 2.2 mg/ml

Synonyms for HIST2H4 gene: H4/N, H4F2, H4FN

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**Quality Control Assays:**

**SDS-PAGE:**

- SDS-PAGE: 0.5, 1.0, 2.0, 5.0, 10.0 µg of Histone H4 Human, Recombinant were loaded on a 10–20% Tris-Glycine SDS-PAGE gel and stained with Coomassie Blue. The calculated molecular weight is 11236.15 Da. Its apparent molecular weight on 10–20% Tris-Glycine SDS-PAGE gel is ~11 kDa.

**Mass Spectrometry:** The mass of purified Histone H4 Human, Recombinant is 11,236.74 Da as determined by ESI-TOF MS (Electrospray Ionization-Time of Flight Mass Spectrometry). The average mass calculated from primary sequence is 11236.15 Da. This confirms the protein identity.

**Enzyme Modification:** After incubation of a 25 µl reaction containing 10 µg of Histone H4 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 H4 Human, Recombinant with 1 µg 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.

**Protease Assay:** After incubation of 5 µg of Histone H4 Human, Recombinant with 1 µg of a mixture of single and double-stranded [3H] E. coli DNA (200,000 cpm/µg) for 4 hours at 37°C, no proteolytic activity could be detected by SDS-PAGE.
Endonuclease Assay: Incubation of a 50 µl reaction containing 10 µg of Histone H4 Human, Recombinant with 1 µg of φX174 RF I (suprecoiled) 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: SGRGKGGKGLGKGGAKRH RKVLDRNQGITKPAIRRRLARRGGVKRISGLIYEE TRGVLKVFLENVIRDAVTYEHAKRKTVDMMV YAALKROGRTLYFGG (Genbank accession number: AAM83108)

References:

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