Histone H10 Human, Recombinant

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

Note: The protein concentration (1 mg/ml, 48 µM) is calculated using the molar extinction coefficient for Histone H1 (3840) and its absorbance at 280 nm (4.5). 1.0 A280 unit = 5.4 mg/ml

Synonyms: Histone H1.0, Histone H1(0), Histone H1+

Quality Control Assays:
SDS-PAGE: 0.5, 1.0, 2.0, 5.0, 10.0 µg of Histone H10 Human, Recombinant were loaded on a 10–20% Tris-Glycine SDS-PAGE gel and stained with Coomassie Blue. The calculated molecular weight is 20731.53 Da. Its apparent molecular weight on 10–20% Tris-Glycine SDS-PAGE gel is ~27 kDa.

Mass Spectrometry: The mass of purified Histone H10 Human, Recombinant is 20731.74 Da as determined by ESI-TOF MS (Electrospray Ionization-Time of Flight Mass Spectrometry). The average mass calculated from primary sequence is 20731.53 Da. This confirms the protein identity of the histone. There is a small percentage of histone H10 with a mass of 20863.27 which is a +131 Da difference from the major species. This correlates to histone H10 with an intact N-terminal methionine (6).

Protease Assay: After incubation of 5 µg of Histone H10 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 H10 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.

Description: Histone H1 acts on the linker region of polynucleosome DNA to condense the chromatin into structures of ~30 nm (1). It is not necessary for octamer or nucleosome core particle formation. Eight different Histone H1 proteins have been identified in the human genome (2). Histone H1 is a non replication-dependent histone that is highly expressed in cells that have terminally differentiated (3).

Source: An E. coli strain that carries a plasmid encoding the human histone H1 gene, H1F0 or H1FV. (Genbank accession number: X03473)
**Endonuclease Assay:** Incubation of a 50 µl reaction containing 10 µg of Histone H1<sup>1</sup> 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:** TENSTSAPAAKPKRAKASKK STDHPKYSDMIVAIAQAEKNRAGSSRSQSIQKYIKSH YKVGENDSQJIKLSIKRLVTTGVLKQTKVGASGS FRLAKSDEPKSVAFKKTKEIKVATPPKASKPKK AASKAPTJKPKATPVKKAKKLAATPKKAKKPVT KAKPKVASKPKKAKPVKAKSSAKRAGKKK (Genbank accession number: P07305)

**References:**