

## Recombinant Histone H3.3 (Human)

**Catalog No:** 31295, 31703

**Expressed In:** *E. coli*

**Quantity:** 100, 1000 µg

**Concentration:** 3.2 µg/µl

**Source:** Human

**Buffer Contents:** Full length recombinant Histone H3.3 (Human) is supplied at a concentration of 3.2 µg/µl in 25 mM Tris-HCl, pH 7.5, 150 mM NaCl and 5% glycerol.

**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 H3.1 and Histone H3.3 are the two main Histone H3 variants found in plants and animals. They are known to be important for gene regulation. Histone H3.1 and H3.3 have been shown to demonstrate unique genomic localization patterns thought to be associated with their specific functions in regulation of gene activity. Specifically, Histone H3.1 localization is found to coincide with genomic regions containing chromatin repressive marks (H3K9me3, H3K27me3 and DNA methylation), whereas Histone H3.3 primarily colocalizes with marks associated with gene activation (H3K4me3, H2BK120ub1, and RNA pol II occupancy). Deposition of the Histone H3.1 variant into the nucleosome correlates with the canonical DNA synthesis-dependent deposition pathway, whereas Histone H3.3 primarily serves as the replacement Histone H3 variant outside of S-phase, such as during gene transcription. Aberrant localization of these variants is also known to correlate with certain cancers.

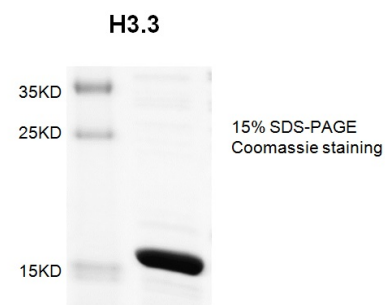
**Protein Details:** Recombinant Histone H3.3 (Human) corresponds to the native histone sequence of mammalian histone H3 variant H3.3 and does not contain any amino acid substitutions or residue analogs. Histone H3.3 is known to be important for gene regulation. Recombinant Histone H3.3 (Human) consists of the full-length sequence of human Histone H3.3 variant (accession number NM\_005324). Recombinant Histone H3.3 (Human) was generated in *E. coli* cells and has an observed molecular weight of 15.4 kDa. The recombinant protein is >92% pure by SDS-PAGE.

**Application Notes:** Recombinant Histone H3.3 (Human) is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

### References:

This product was used in the following publications:  
*Cel Stem Cell* (2019). 22(3):428-444. PMID: 29499155.  
*Biochem. J.* (2019). 476(4):759-768. PMID: 30733258.

**Storage and Guarantee:** 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 for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



### Recombinant Histone H3.3 (Human) protein gel.

Recombinant Histone H3.3 run on an SDS-PAGE gel and stained with Coomassie blue.