LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human Histon H3.3 Protein
Catalog Number: hRP-1090
Manufacturer: LD Biopharma, Inc.

Introduction

Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes. Two molecules of each of the four core histones (H2A, H2B, H3, and H4) form an octamer, around which approximately 146 bp of DNA is wrapped in repeating units, called nucleosomes. The linker histone, H1, interacts with linker DNA between nucleosomes and functions in the compaction of chromatin into higher order structures. Human histone 3.3 gene contains introns and its mRNA is polyadenylated, unlike most histone genes. The protein encoded is a replication-independent member of the histone H3 family. Recent data indicated that H3.3 interacts with HIRA protein, and plays a important role in promoting pluripotentcy during cell reprogramming.

Full-length human Histone 3.3 (H2F3A) cDNA (136aa, which derived from BC066901) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein was expressed in E. coli as inclusion bodies, refolded using our unique "temperature shift inclusion body refolding" technology and chromatographically purified.

Gene Symbol:	H3F3A (H3.3A' H3F3)
Accession Number:	NP_002098.1
Species:	Human
Size:	50 µg / Vial
Composition:	0.25 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Glycerol.
Storage:	In Liquid. Keep at -20°C for long term storage. Product is stable at 4 °C for at least 30 days.

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Key References

Khuong-Quang,D.A., et al., *Dynamics of histone H3 deposition in vivo reveal a nucleosomes gap-filling mechanism for H3.3 to maintain chromatin integrity*. Mol. Cell 44 (6), 928-941 (2011)

Soloaga,A., et al., *MSK2 and MSK1 mediate the mitogen- and stress-induced phosphorylation of histone H3 and HMG-14*. EMBO J. 22 (11), 2788-2797 (2003)

Applications

1. May be used for in vitro Histone 3.3 mediated HIRA-dependent H3.3 deposition in cell reprogramming regulation study with “ProFectin” based intracellular delivery of this protein.
2. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for H3.3 protein-protein interaction mapping.
4. May be used as antigen for specific antibody production.

Quality Control

1. Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHGNLYFQGGEFARTKQTARKSTGGKAPRKQLATKAARKSAPSTGGV
KKPHRYRPGTVALREIRRYQKSTELLIRKLPFQRLVREIAQDFKTDLRFQSAAIGALQEASEAY
LVGLFEDTNLCAIHAKRVTIMPKDIQLARRIRGERA