

Technical datasheet

rNuQ H3K27Ac recombinant mononucleosome

Part number: NUC0025

Species: *Human*

Source: *E. coli* and synthetic DNA

Description:

Recombinant nucleosomes were assembled in vitro using a 147 bp of 601 [1] positioning sequence DNA and four core histones (H2A, H2B and H4) purified from *E. coli* inclusion bodies, and histone H3.1 chemically synthesized as H3K27Ac. This histone contains Acetylation at lysine 27 and a 3 amino acid substitution in the histone core [A47C-C96S-C110A], which is located within the nucleosome core and does not affect nucleosome functionality.

Buffer composition: Triethanolamine hydrochloride - NaCl - EDTA - Azide.

Applications: Human mononucleosomes are suitable for chromatin remodeling and accessibility studies, PTM-specific antibody validation [2], chromatin research [3], as well as nucleosome binding assays in drug discovery and high-throughput screening (HTS) applications [4,5].

For a corresponding unmodified control, we recommend NUC0001 - rNuQ H3.1.

Validation data:

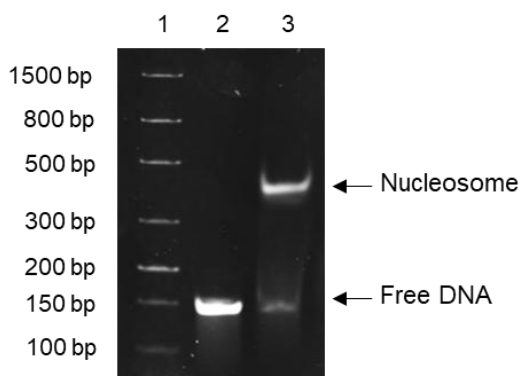


Figure 1 : Native PAGE analysis of rNuQ H3K27Ac mononucleosomes. Lane 1 contains the DNA ladder, lane 2 shows free 147bp 601 DNA, and lane 3 shows intact rNuQ H3K27Ac nucleosomes (500 ng). Samples were resolved on a native PAGE gel and stained with Midori Green to visualize DNA. Intact nucleosomes, in lane 3, display reduced mobility relative to free DNA, consistent with correct nucleosome assembly.

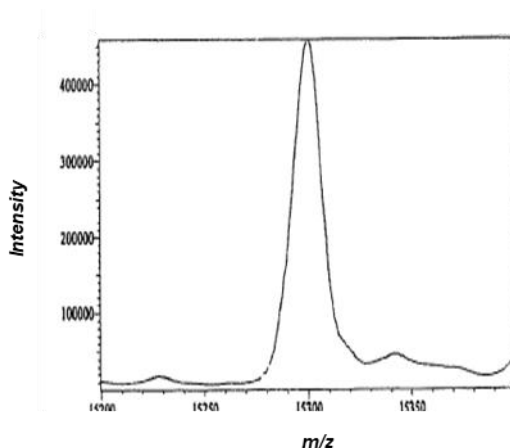


Figure 2 : Mass spectrometry analysis of Synthetic H3K27Ac histone confirms the expected mass (15,299.1Da) matches the observed mass (15,300.3 Da).

Storage and stability: This product must be stored at 2-8°C and is stable for 6 months from date of receipt. Do not freeze. Use surface optimized tubes (e.g. low bind tubes) and tips for handling and storage.

Precautions: This product is for research use only. Not for use in diagnostic procedures. Not intended for use in humans or animals.

Gene and protein information:

UniProt ID:

H2A - P04908

H2B - O60814

H3.1 - P68431

H4 - P62805

References:

- [1] Lowary & Widom, 1998, *J. Mol. Biol.*, 276:19–42.
- [2] Van den Ackerveken et al., 2025, *J. Biol. Chem.*, 301:110352
- [3] Van den Ackerveken et al., 2021, *Sci. Rep.*, 11:7256.
- [4] Kepert et al. (2003), *Biophys. J.*, 85:4012–4022.
- [5] Maluchenko *et al.*, 2022, *Cells*, 11(21):3343