Nucleosome, Recombinant Human, H3.1S28phos dNuc, Biotinylated

Catalog No	16-0388	**Species**	Human
Lot No	23017002-04	**Source**	*E. coli* & synthetic DNA
Pack Size	50 µg	**Tag**	Biotinylated
Concentration	5.0 µM	**MW**	199,902.3 Da

DESCRIPTION

Designer mononucleosomes (dNucs) consist of 147 base pairs of DNA wrapped around an octamer of core histone proteins (two each of H2A, H2B, H3.1, and H4) to form a nucleosome, the basic repeating unit of chromatin. Histone H3 (created by a proprietary synthetic method) contains phosphoserine at position 28. The 147 bp 601 sequence, identified by Lowary and Widom [1], has high affinity for histone octamers and is useful for nucleosome assembly. The DNA contains a 5' biotin-TEG group.

TECHNICAL INFORMATION

Storage	Stable for six months at -80°C from date of receipt. For best results, aliquot and avoid freeze/thaws
Formulation	1.0 mg/mL mononucleosome in 50.0 µL 10 mM Tris HCl pH 7.5, 25 mM NaCl, 1 mM EDTA, 2 mM DTT, and 20% glycerol. (27.3 µg protein, 50 µg DNA + protein)

APPLICATION NOTES

H3.1S28phos dNuc is highly purified and suitable for a variety of applications, including use as a substrate in enzyme assays, high-throughput screening and inhibitor testing, chromatin binding studies, protein-protein interaction assays, structural studies, and in effector protein binding experiments.

GENE & PROTEIN INFORMATION

UniProt ID	H2A - P04908 (alt. names: H2A type 1-B/E, H2A.2, H2A/a, H2A/m) H2B - O60814 (alt. names: H2B K, HIRA-interacting protein 1) H3.1 - P68431 (alt.names: H3, H3/a, H3/b, H3/c, H3/d) H4 - P62805

REFERENCES

[1] Lowary & Widom *J. Mol. Biol.* (1998). PMID: 9514715

VALIDATION DATA

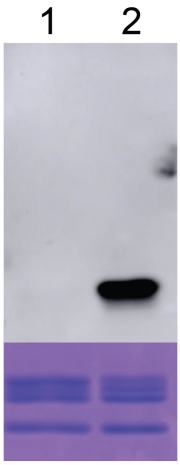

FIGURE 1 Western blot data. Western Analysis of H3.1S28phos dNuc. **Top Panel:** Unmodified (EpiCypher 16-0006; Lane 1) and H3.1S28phos nucleosomes (Lane 2) were probed with an anti-H3.1S28phos antibody and analyzed via ECL readout. Only the H3.1S28phos sample produced a detectable signal. **Bottom Panel:** Detail from Coomassie stained gel showing unmodified (Lane 1) and H3.1S28phos nucleosomes (Lane 2).

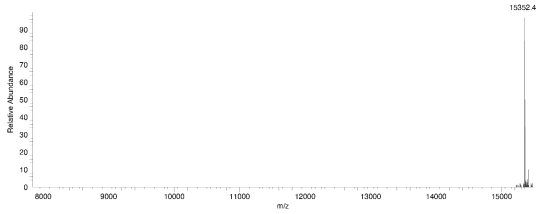

FIGURE 2 Mass spec data. Synthetic H3.1S28phos histone analyzed by high resolution mass spectrometry. Expected mass = 15,352.9 Da. Determined mass = 15,352.4 Da.

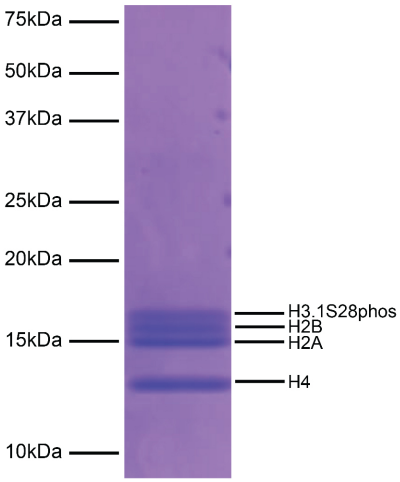

FIGURE 3 Protein gel data. Coomassie stained SDS-PAGE gel of proteins in H3.1S28phos dNuc (1 µg) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2A, H2B, H3.1S28phos and H4) are indicated.

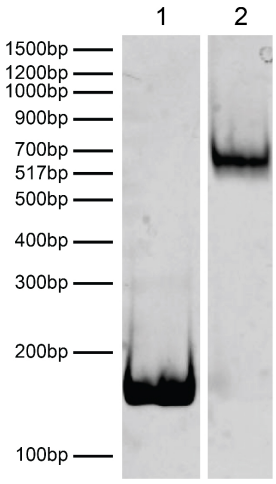

FIGURE 4 DNA gel data. H3.1S28phos dNuc resolved via native PAGE gel and stained with ethidium bromide to visualize DNA. **Lane 1:** Free DNA (EpiCypher 18-0005; 100 ng). **Lane 2:** Intact H3.1S28phos nucleosomes (400 ng).