Nucleosome, Recombinant Human, H2AXS139phos dNuc, Biotinylated

Catalog No	16-0366	**Species**	Human
Lot No	22290002-02	**Source**	*E. coli* & synthetic DNA
Pack Size	50 µg	**Tag**	Biotinylated
Concentration	4.9 µM	**MW**	202,066.8 Da

DESCRIPTION

Recombinant mononucleosomes (H2AXS139phos) consist of 147 base pairs of DNA wrapped around an octamer core of histone proteins (two each of H2AX, H2B, H3.1 and H4) to form a nucleosome, the basic repeating unit of chromatin. The 147 bp 601 sequence, identified by Lowary and Widom [1], has high affinity for histone octamers and is useful for nucleosome assembly. H2AXS139phos dNuc contains phosphorylated-serine at position 139 on histone H2AX. The DNA in this nucleosome 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	0.998 mg/mL mononucleosome in 50.5 µL 10 mM Tris HCl pH 7.5, 25 mM NaCl, 1 mM EDTA, 2 mM DTT, 20% glycerol (27.3 µg protein, 50 µg DNA + protein)

APPLICATION NOTES

H2AXS139phos mononucleosome 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	H2AX - P16104 (alt. names: H2a/x, Histone H2A.X) 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 H2AXS139phos dNuc. **Top Panel:** Unmodified (EpiCypher 16-0006; Lane 1) and H2AXS139phos nucleosomes (Lane 2) were probed with an anti-H2AXS139phos antibody and analyzed via ECL readout. Only the H2AXS139phos sample produced a detectable signal. **Bottom Panel:** Detail from Coomassie stained gel showing unmodified nucleosomes (Lane 1) and H2AXS139phos nucleosomes (Lane 2).

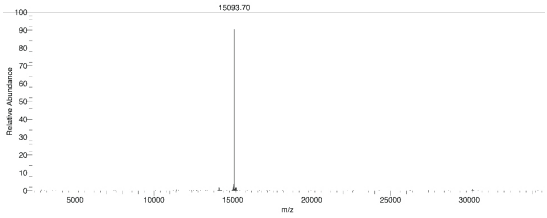

FIGURE 2 Mass spec data. Synthetic H2AXS139phos histone analyzed by high resolution mass spectrometry. Expected mass = 15,092.38 Da. Determined mass = 15,093.70 Da.

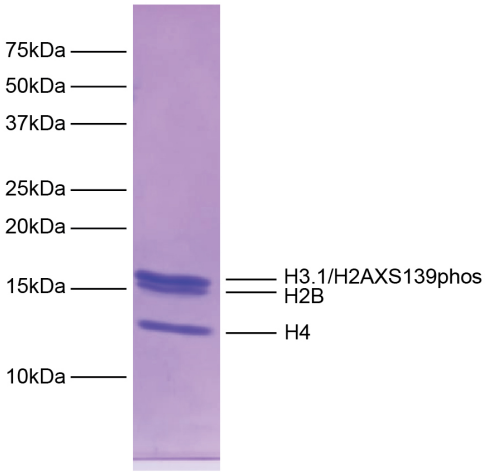

FIGURE 3 Protein gel data. Coomassie stained SDS-PAGE gel of proteins in H2AXS139phos dNuc (1 µg) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2AXS139phos, H2B, H3.1 and H4) are indicated.

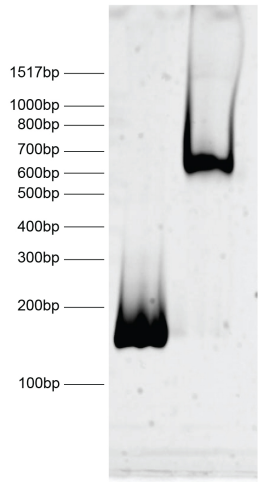

FIGURE 4 DNA gel data. H2AXS139phos dNuc resolved via native PAGE gel and stained with ethidium bromide to visualize DNA. **Lane 1:** Free DNA (EpiCypher 18-0005; 100 ng). **Lane 2:** Intact H2AXS139phos nucleosomes (400 ng).