

H2BS6ar1 Recombinant Nucleosome, Biotinylated

Catalog No	16-0422	Species	Human
Lot No	25038001-01	Source	<i>E. coli</i> & synthetic DNA
Pack Size	25 µg	Tag	Biotinylated
Concentration	4.48 µM	MW	200,856.4 Da

DESCRIPTION

ADP-ribosylation (ADPr) is a reversible histone modification that regulates chromatin structure, transcription, DNA replication, and DNA damage repair [1]. Occurring as either mono- or poly-ADP-ribose, ADPr supports recruitment of DNA repair proteins and chromatin remodelers [1]. Recombinant ADPr nucleosomes provide a defined platform for studying biological, chromatin-based functions of ADP-ribosylation.

Product Highlights:

- **Physiologically relevant binding** – Nucleosomes provide a physiologically relevant substrate for studying chromatin biology, capturing the multivalent binding environment that many chromatin-associated proteins require.
- **Built for versatility** – Designed for broad biochemical assays, these nucleosome substrates enable robust, quantitative analysis of protein binding, enzymatic activity, and chromatin interactions in a defined relevant format.
- **Research ready performance** – Built on deep nucleosome design expertise: EpiCypher's designer nucleosomes are supported by > 1,000 publications across diverse research applications including immunology, cancer, and molecular biology.

H2BS6ar1 (histone H2B serine 6 mono-ADPr) Recombinant Nucleosome, Biotinylated consists of 147 base pairs of 601 sequence DNA [2] 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. The DNA contains a 5' biotin-TEG group. H2BS6ar1 nucleosome contains H2B with mono-ADP-ribosylated serine at position 6. H2BS6ar1 is ADP-ribosylated by poly-ADPr polymerase 1 (PARP1) and PARP2, and ADPr removal is achieved by the glycohydrolase ARH3 [1].

TECHNICAL INFORMATION

Storage	Stable for six months at -80°C from date of receipt. For best results, aliquot and avoid freeze/thaws.
Formulation	0.90 mg/mL mononucleosome in 27.8 µL 10 mM Tris HCl pH 7.5, 25 mM NaCl, 1 mM EDTA, 2 mM DTT, 20% glycerol (13.6 µg protein, 25 µg DNA + protein).

APPLICATION NOTES

H2BS6ar1 nucleosome 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. For a corresponding unmodified control, we recommend EpiCypher 16-0006.

GENE & PROTEIN INFORMATION

UniProt ID	H2A - P04908 (alt. names: H2A type 1-B/E, H2A.2, H2A/a, H2A/m) H2B - P62807 (alt. names: H2B type 1-C/E/F/G/I) H3.1 - P68431 (alt. names: H3, H3/a, H3/b, H3/d) H4 - P62805
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REFERENCES

- [1] Longarini & Matic *DNA Repair*. (2022). PMID: 35963141
[2] Lowary & Widom *J. Mol. Biol.* (1998). PMID: 9514715



FIGURE 1 Western blot data. Western analysis of H2BS6ar1 nucleosome. All lanes were resolved on a single gel. **Top Panel:** Unmodified (EpiCypher 16-0006; Lane 1) and H2BS6ar1 (Lane 2) nucleosomes were probed with an anti-Poly/Mono-ADP Ribose antibody and analyzed via enhanced chemiluminescence (ECL). Only the H2BS6ar1 sample produced a detectable signal. **Bottom Panel:** Detail from Coomassie stained gel showing unmodified (Lane 1) and H2BS6ar1 (Lane 2) nucleosomes.

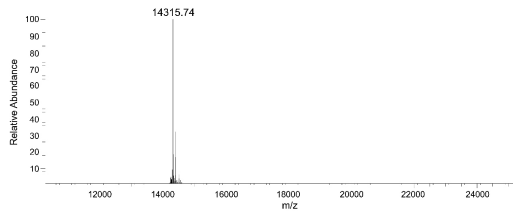


FIGURE 2 Mass spec data. H2BS6ar1 histone analyzed by high resolution mass spectrometry. Expected mass = 14316.00 Da. Determined mass = 14315.74 Da.

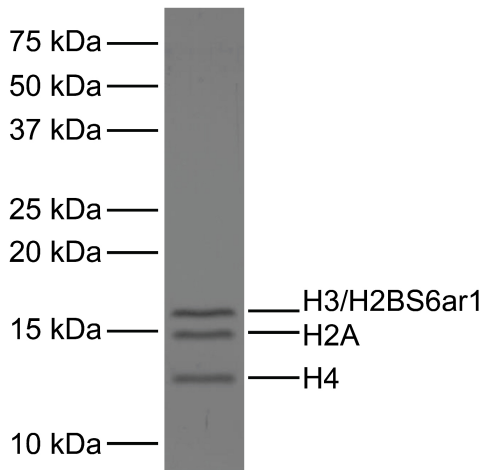


FIGURE 3 Protein gel data. Coomassie stained SDS-PAGE gel of proteins in H2BS6ar1 nucleosome (2 µg) demonstrates the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2A, H2BS6ar1, H3.1, and H4) are indicated. H2BS6ar1 co-migrates with H3.

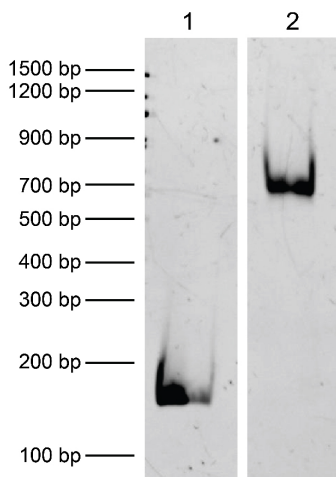


FIGURE 4 DNA gel data. H2BS6ar1 nucleosome resolved via native PAGE and stained with ethidium bromide to visualize DNA. All lanes were resolved on a single gel. **Lane 1:** Free DNA (EpiCypher 18-0005; 100 ng). **Lane 2:** Intact H2BS6ar1 nucleosomes (400 ng).