Mononucleosomes (H2AX), Human Recombinant

Catalog No 16-1013
Lot No 21169003-61
Pack Size 50 µg

Product Description:

Mononucleosomes assembled from recombinant human histones expressed in *E. coli* (two each of histones H2AX, H2B, H3 and H4. Accession numbers: H2AX-P16104; H2B-O60814; H3.1-P68431; H4-P62805) wrapped by 147 base pairs of 601 positioning sequence DNA. The 601 sequence, identified by Lowary and Widom [1], has high affinity for histone octamers and is useful for nucleosome assembly. H2AX is a variant of histone H2A that is phosphorylated on serine 139 by the ATM and ATR kinases in response to DNA double strand breakage [2]. Phosphorylation of H2AX serves to recruit a number of DNA damage repair proteins, such as BRCA1 and NBS1 [2].

Formulation:

H2AX Mononucleosomes (27.4 µg protein, 50 µg DNA + protein) in 51.8 µL 10 mM Tris-HCl pH 7.5, 1 mM EDTA, 25 mM NaCl, 2 mM DTT, & 20% glycerol. Molarity = 4.77 µM. MW = 201,309 Da.

Storage and Stability:

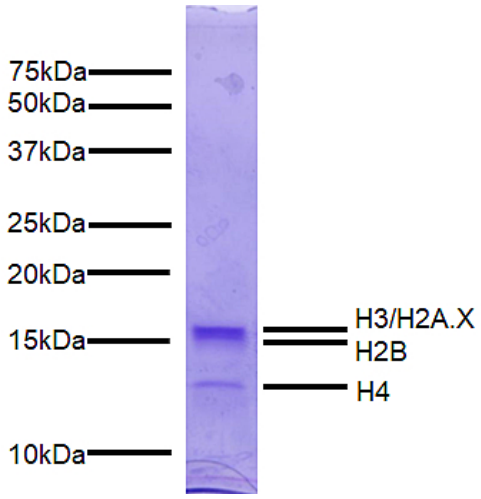
Stable for six (6) months at -80°C from date of receipt. For best results, aliquot and avoid multiple freeze/thaws.

Application Notes:

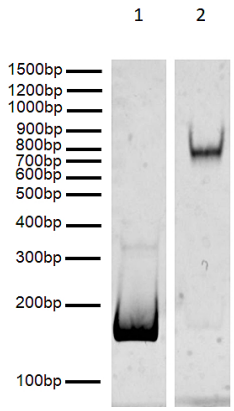
H2AX Mononucleosomes are highly purified and suitable for a variety of applications, including use as a substrate in enzymatic assays or for effector protein binding experiments.

References:

[1] Lowary PT and Widom J (1998) *J Mol Biol* 276:19-42.
[2] Mah L J et al (2010) *Nature* 24:679-686.



Protein Gel Data: Coomassie stained PAGE gel of proteins in H2AX Mononucleosomes (1 µg) to demonstrate the purity of histones in the preparation. Sizes of molecular weight markers and positions of the core histones (H2AX, H2B, H3 and H4) are indicated. Histone H2AX co-migrates with histone H3.



DNA Gel Data: H2AX Mononucleosomes resolved via native PAGE and stained with ethidium bromide to visualize DNA. **Lane 1:** Free DNA (Catalog No 18-0006; 100 ng). **Lane 2:** Intact nucleosomes (400 ng).

Western Blot Data: Western analysis of H2AX Mononucleosomes. **Top Panel:** Unmodified H2A (Lane 1; Catalog No. 16-0009) and H2AX (Lane 2) nucleosomes were probed with an anti-H2AX antibody and analyzed via ECL readout. Only the H2AX samples produced a detectable signal. **Bottom Panel:** Detail from Coomassie stained gel showing histones from unmodified H2A (Lane 1) and H2AX nucleosomes (Lane 2).