Expanded View Figures

Figure EV1. Differential centrifugation assay for the oligomer formation of 601 nucleosomal array, 5S array, and H1-array, and fluorescence microscopy (FM) imaging of 5S array oligomers. 
A The differential centrifugation assay was performed as described in Gordon et al (2005).
B 5S array oligomers were stained with DAPI and examined using FM as described in the Materials and Methods section. Shown are representative images obtained in 5 and 10 mM MgCl$_2$.
C Control FM images obtained in 0, 1, and 2.5 mM MgCl$_2$. 

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Globular structures of nucleosomal arrays

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EV1
Figure EV2. Nucleosomal array oligomerization is reversible upon the removal of salt.
Sedimentation velocity analysis of reconstituted nucleosomal arrays in 10 mM Tris pH 7.8, 0.25 mM EDTA, 2.5 mM NaCl (0 mM MgCl$_2$ buffer). Shown is the integral distribution of sedimentation coefficients (diamonds). A portion of the same sample was then incubated in 8 mM MgCl$_2$ to induce oligomerization. The oligomers were pelleted, the supernatant was removed from the cell, and the pelleted oligomers were resuspended in 0 mM MgCl$_2$ buffer. The cell was shaken and left at room temperature for 1 h. Triangles show the integral distribution of sedimentation coefficients of the resuspended oligomers.

Figure EV3. Nucleosomal arrays fold with increasing concentrations of salt.
Sedimentation velocity experiments of reconstituted nucleosomal arrays in 0 (blue), 1 (red), and 2.5 mM MgCl$_2$ (black) analyzed to obtain the integral distribution of sedimentation coefficients.
**Figure EV4.** H1-oligomers are smaller than nucleosomal array oligomers at equivalent extents of self-association.

A. The second moment sedimentation coefficients for oligomeric nucleosomal arrays (black) and H1-arrays (red) are plotted against the fraction of the sample that is oligomeric.

B. The sedimentation data for nucleosomal arrays and H1-nucleosomal arrays in 4 mM MgCl2 were analyzed by the time-derivative method to obtain the g(s*), which was then converted to the distribution of Mb DNA per oligomer as in Table 1.

**Figure EV5.** H1-array folds extensively in the presence of salt. Shown are the integral distributions of sedimentation coefficients obtained for H1-arrays in 0, 1, and 2.5 mM MgCl2.