



Supplementary information, Fig. S12. Competition between MeCP2 and H1.4 for methylated and unmethylated 4x601 NA.

a Titration of Alx488-H1.4 protein into pre-formed Alx568-MeCP2-4x601 NA droplets in the presence of a high 4x601 NA concentration. H1.4 competes with MeCP2 for

4x601 NA and forms distinct small but bright phase droplets within the large MeCP2-4x601 NA droplets. Scale bars, 5 μm . **b** Titration of Alx568-MeCP2 protein into pre-formed Alx488-H1.4-4x601 NA droplets in the presence of a high 4x601 NA concentration. MeCP2 competes with H1.4 for 4x601 NA and forms incomplete droplets around the H1.4-4x601 NA droplets. Scale bars, 5 μm . **c** Left panel, phase diagrams of MeCP2 and H1.4 with DNA oligos, Right panel, phase diagrams of MeCP2 and H1.4 with 5me-DNA oligos. Scale bar, 20 μm . **d** Area occupancy formed by MeCP2 and H1 (P values are labeled in the figure) in Supplementary information, Fig. S12c. **e-f** Phase diagrams of MeCP2 and H1.4 with 4x601 NA or 4x5me-NA in the presence of low 4x601 NA concentrations. All images were taken under equal laser intensity. Alx568-MeCP2 and Alx488-H1.4 were mixed with 4x601 NA at the same time. Scale bars, 10 μm .