

Electronic supplementary information

Protection of DNA by metal ions at 95°C: from lower critical solution temperature (LCST) behavior to coordination-driven self-assembly

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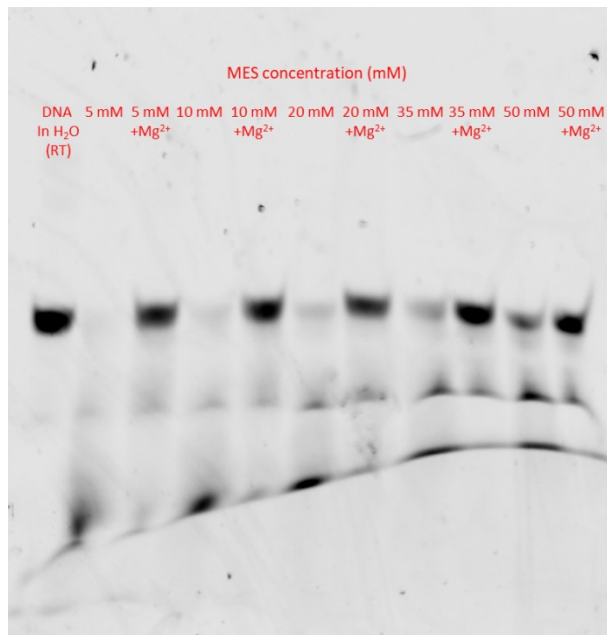


Figure S1. 200 nM FAM-DNA mixed with 3.8 μM non-labeled DNA in different concentrations of MES buffer, pH 6.0 without or with 4 mM Mg^{2+} after heating at 95°C. After cooling to room temperature, 10 μL of the sample was mixed with 10 μL 0.1 \times loading dye in 8 M urea and 5 mM EDTA for dPAGE.

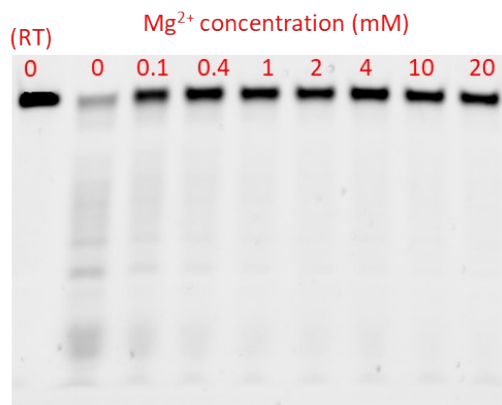


Figure S2. 1 μM FAM-DNA mixed with 3 μM non-labeled DNA in 5 mM MES, pH 6 with different concentrations of Mg^{2+} after heating at 95°C for 1 h. After cooling to room temperature, 2 μL of the sample was mixed with 18 μL 0.1 \times loading dye in 8 M urea and 5 mM EDTA for dPAGE. With a shorter heating time, the DNA was not fully degraded in the Mg^{2+} -free sample.

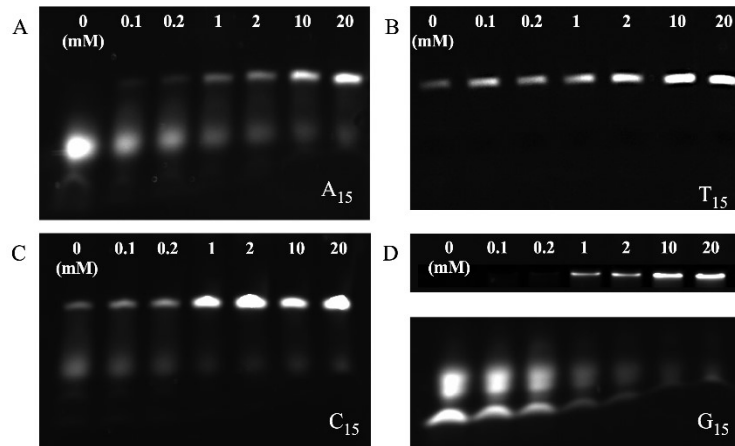


Figure S3. (A) FAM-A₁₅, (B) FAM-T₁₅, (C) FAM-C₁₅ and (D) FAM-G₁₅ mixed with different concentrations of Mg²⁺ at 95°C for 3 h. The concentrations were 0.2 μM FAM-labeled DNA mixed with 3.8 μM non-labeled DNA, except for 0.4 FAM-labeled G₁₅ was used with 4 μM non-labeled G₁₅ due to its lower fluorescence.