Electronic Supplementary Material (ESI) for Soft Matter

Connecting magnetic micro-particles with DNA G-quadruplexes

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Supporting Information

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SUPPORTING FIGURES

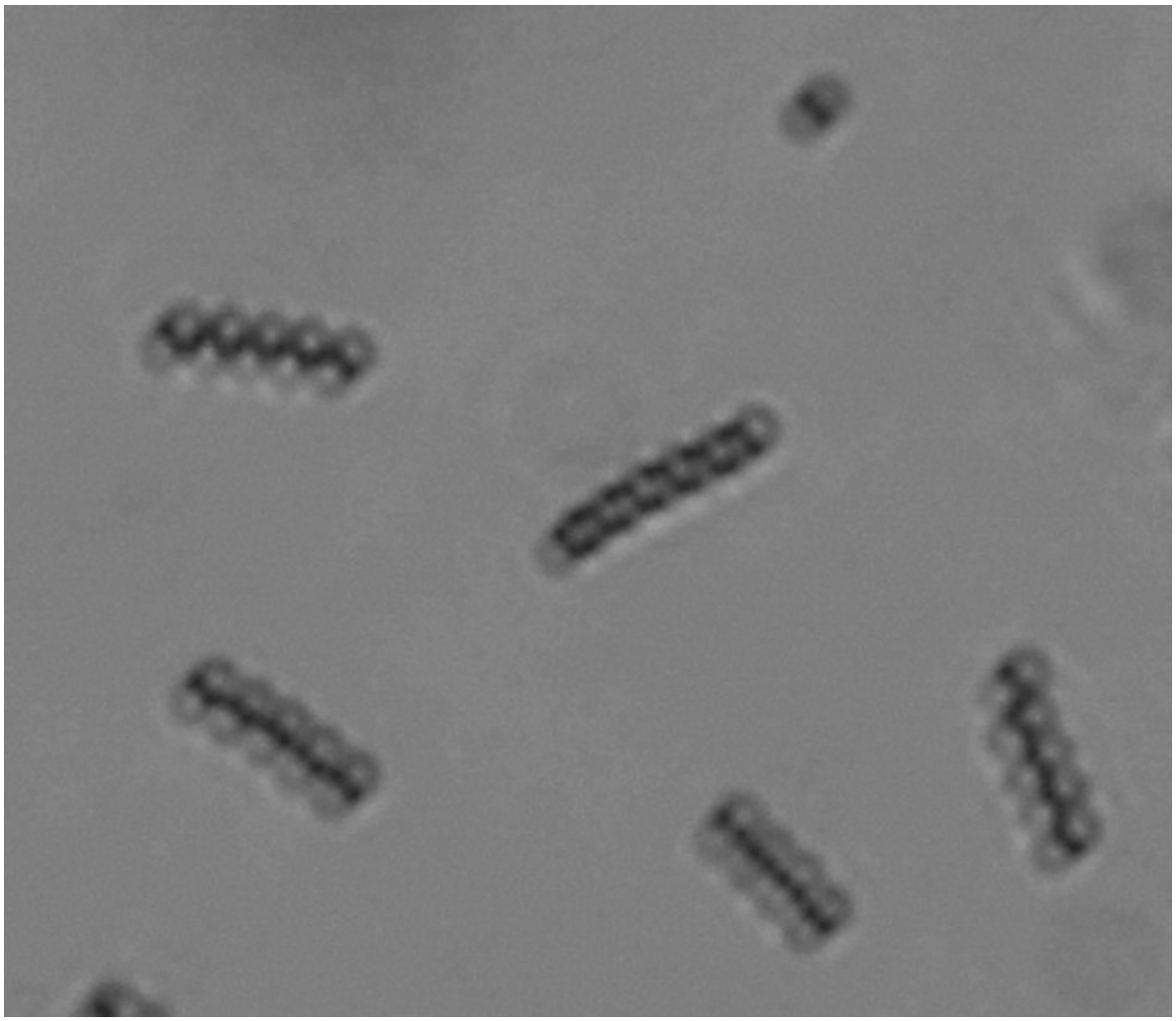

Figure S1. Chains of beads connected by G-quadruplexes.

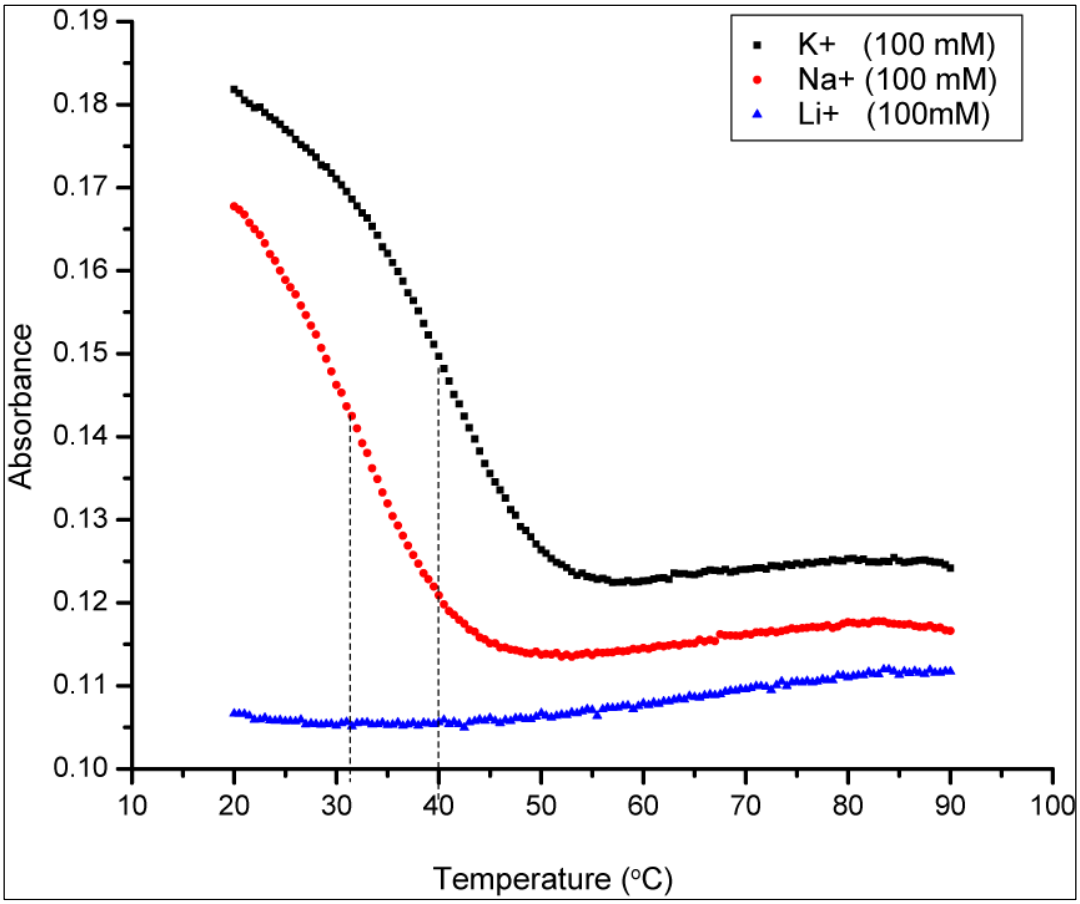

Figure S2. UV-melting data for the d(GGGTTAGGGT) sequence in solution containing 100 mM of K^+ (black squares), Na^+ (red circles), and Li^+ (blue triagles).

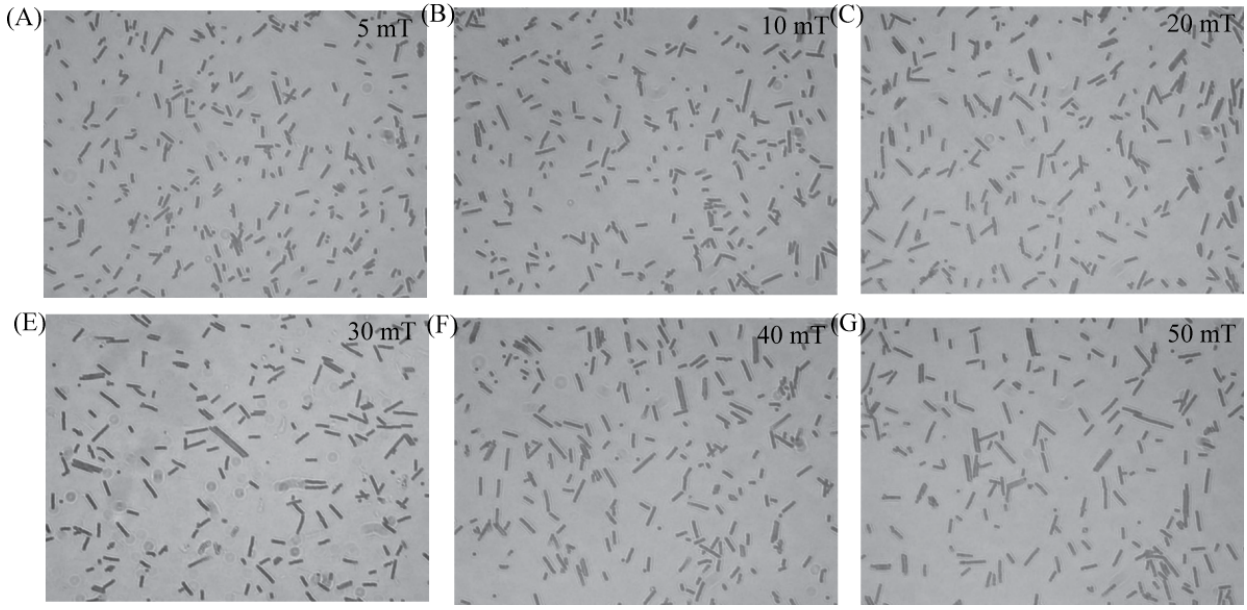

Figure S3. Chains formed by GQ2 at different magnetic field strengths in presence of 100 mM of KCl .Magnetic field is applied for 20 min. (A) 5 mT (B) 10 mT (C) 20 mT (D) 30 mT (E) 40 mT (F) 50 mT.

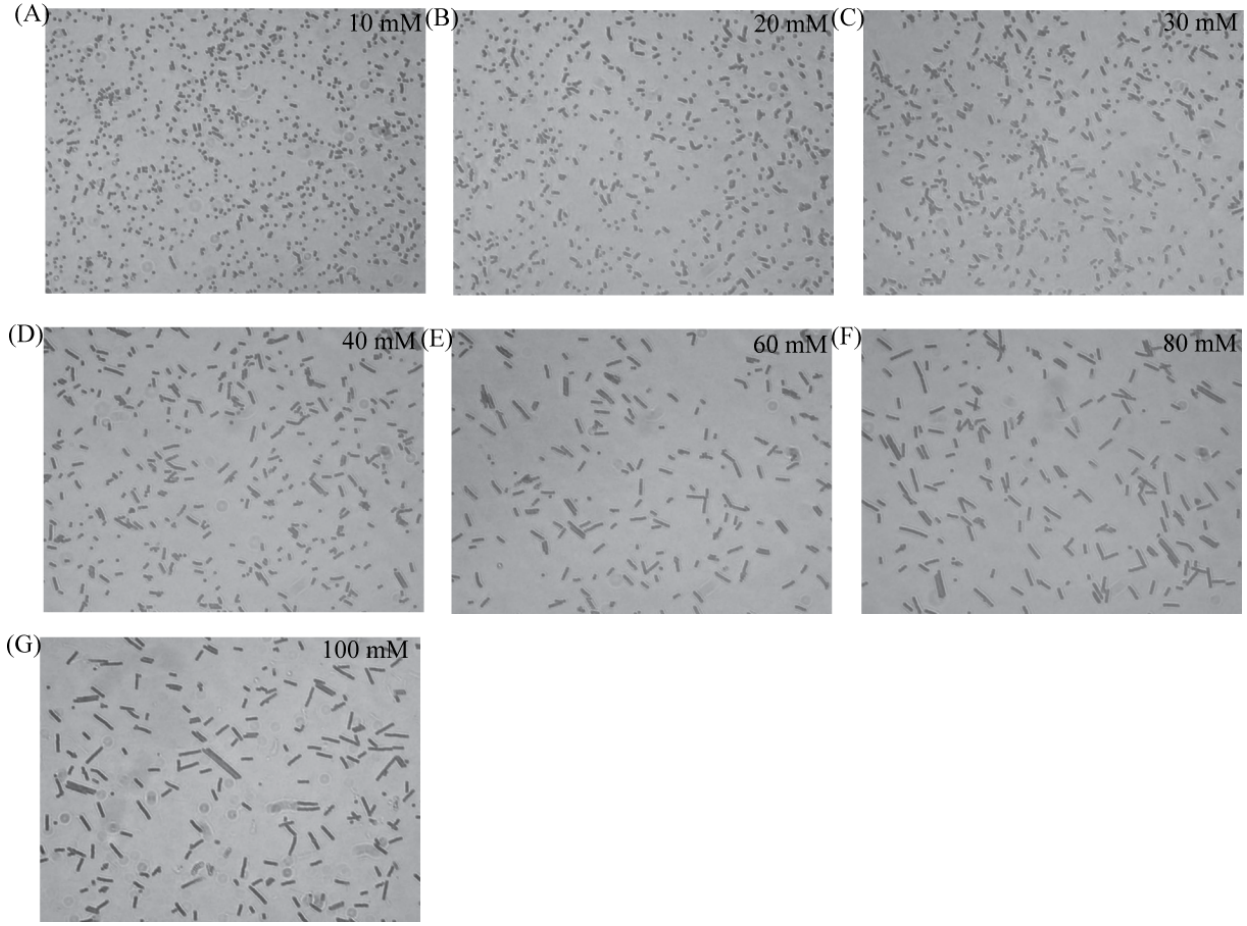

Figure S4. Chains formed by GQ2 at different concentrations of KCl . Magnetic field is applied for 20 min at 30 mT. (A) 10 mM (B) 20 mM (C) 30 mM (D) 40 mM (E) 60 mM (F) 80 mM (G) 100 mM

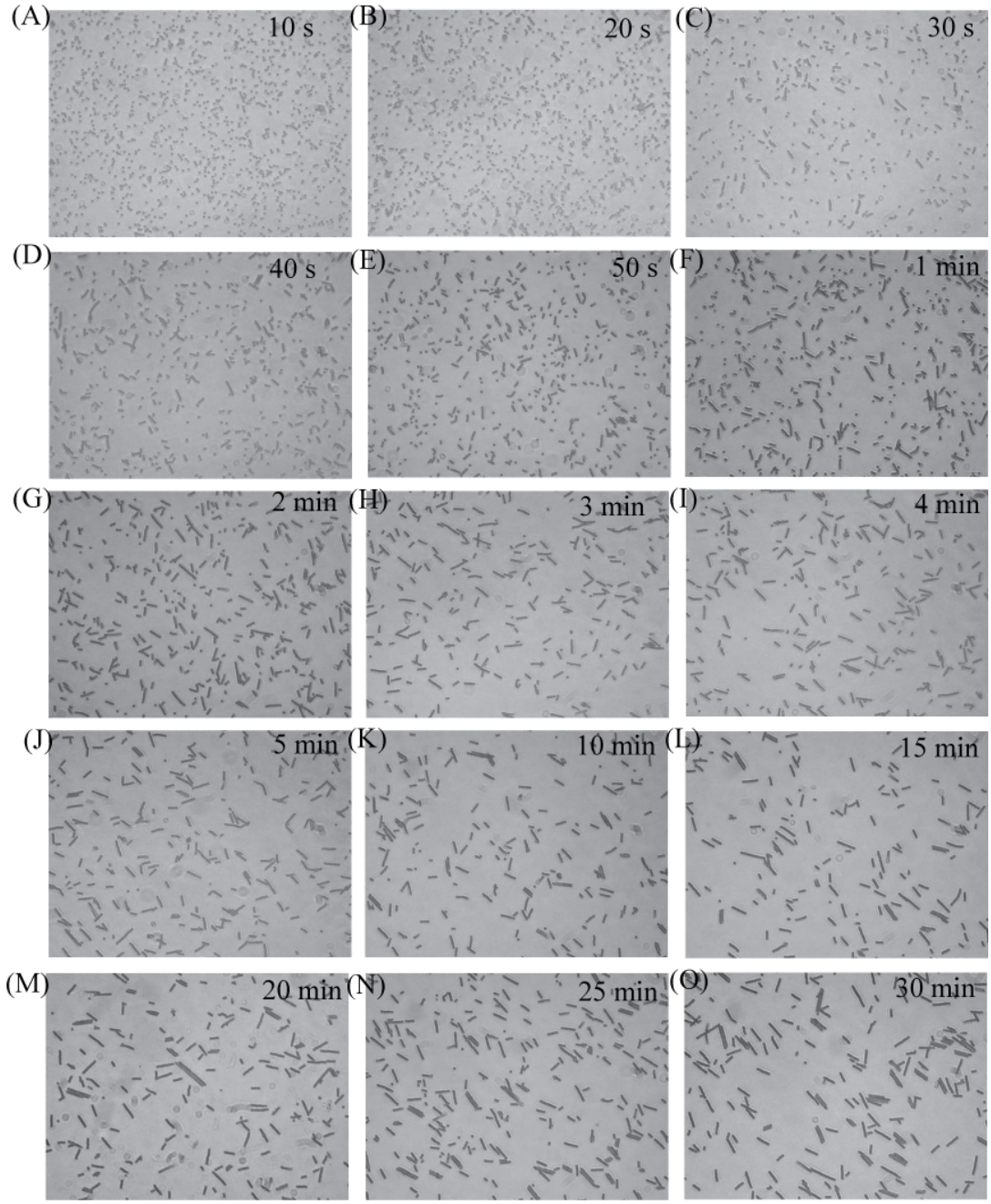

Figure S5. Chains formed by the GQ2 for different durations of the magnetic field. Strength of the magnetic field is 30 mT and the salt concentration is 100 mM KCl. (A) 10 s (B) 20 s (C) 30 s (D) 40 s (E) 50 s (F) 1 min (G) 2 min (H) 3 min (I) 4 min (J) 5 min (K) 10 min (L) 15 min (M) 20 min (N) 25 min (O) 30 min

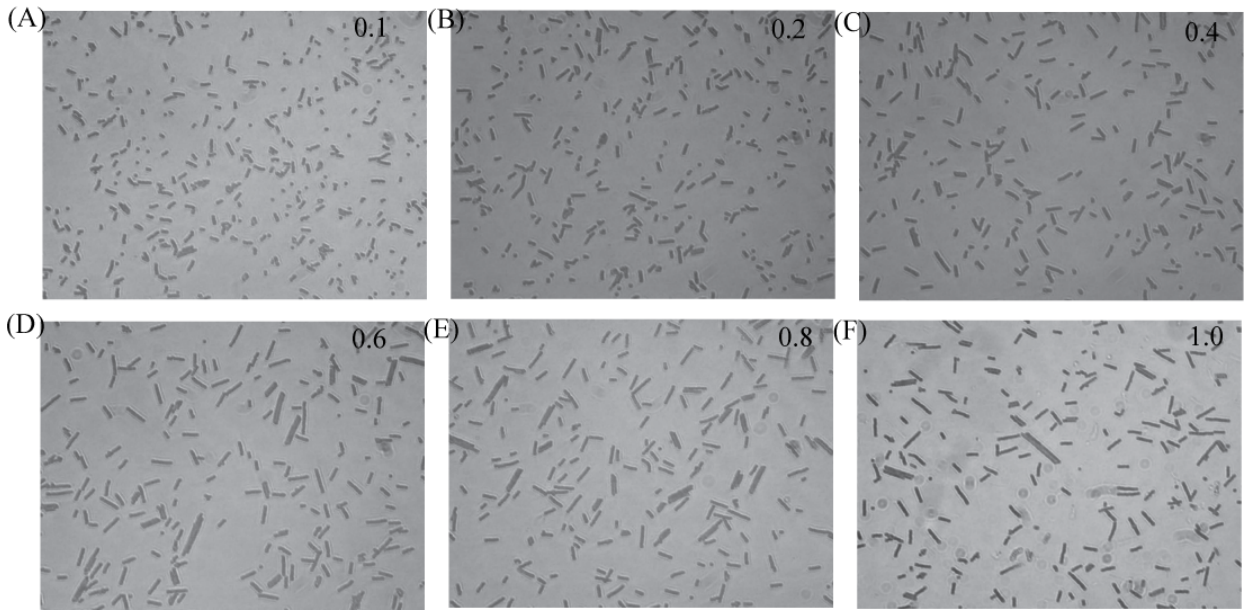

Figure S6. Chains formed by GQ2 for different fractions of G-DNA density on the bead surface. Salt concentration is 100 mM KCl and magnetic field is applied for 20 min at 30 mT. (A) 0 .1 (B) 0.2 (C) 0.4 (D) 0.6 (E) 0.8 (F) 1.0

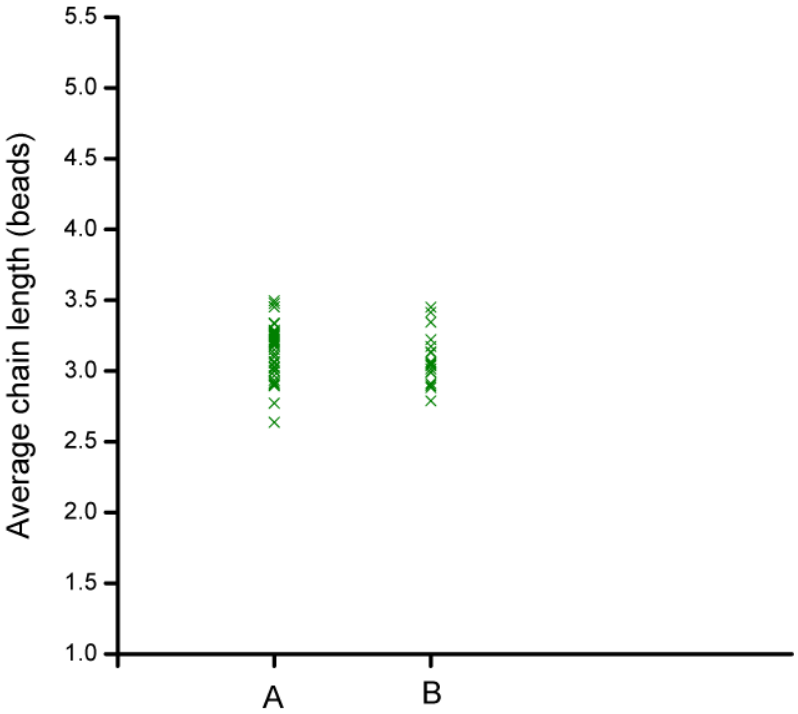

Figure S7. Average chain lengths observed for beads coated with (20% of GQ2 and 80% T10) in presence of 100 mM KCl. The amount of DNA used of immobilization on the bead surface is two times for (B) than (A). Magnetic field is applied for 20 min at 30 mT

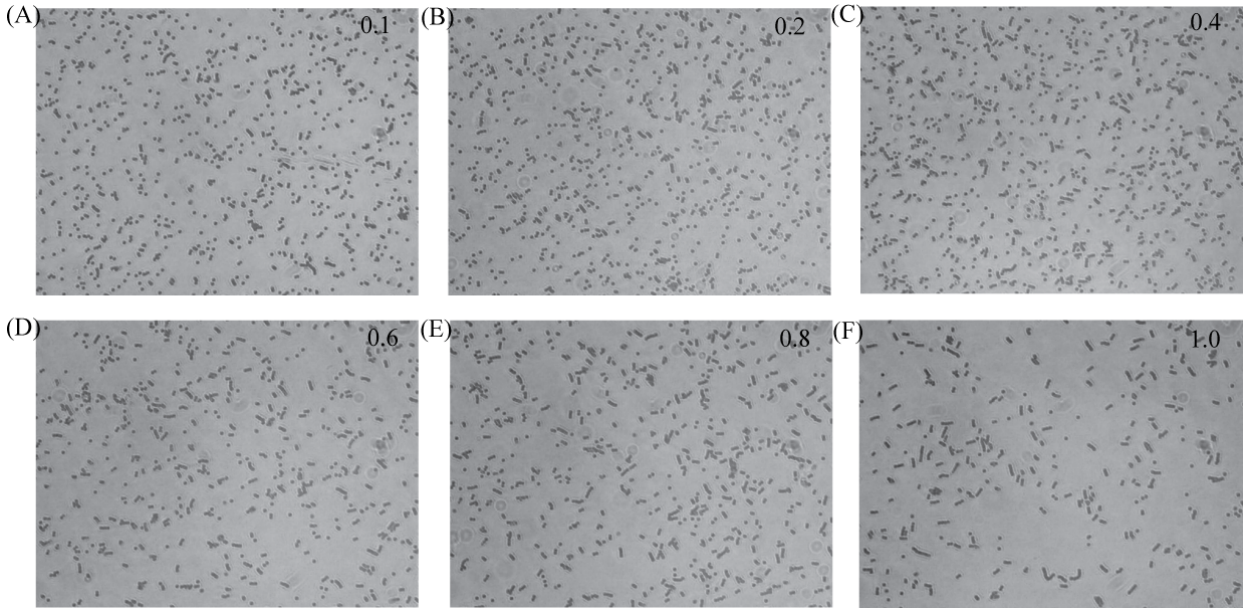

Figure S8. Chains formed by GQ1 for different fractions of DNA density on the bead surface in 100 mM KCl . Magnetic field is applied for 20 min at 30 mT. (A) 0.1 (B) 0.2 (C) 0.4 (D) 0.6 (E) 0.8 (F) 1.0

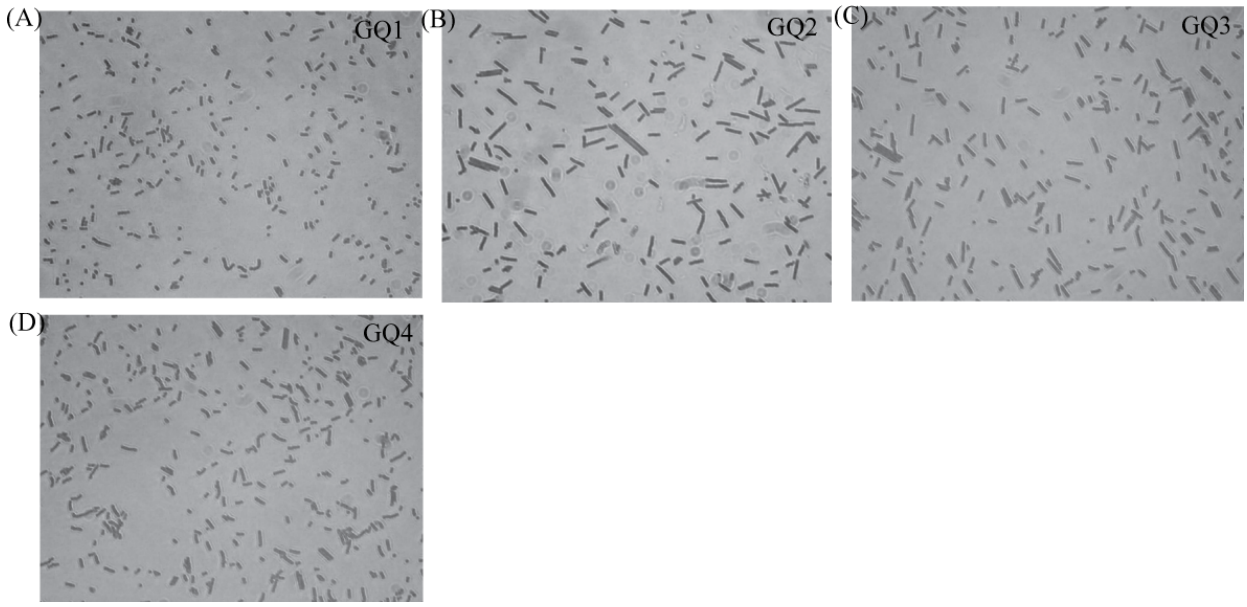

Figure S9. Chains formed by the four different sequences in 100 mM KCl. Magnetic field is applied for 20 min at 30 mT. (A) GQ1 (one-G-tract) (B) GQ2 (two-G-tract) (C) GQ3 (three-G-tract) (D) GQ4 (four-G-tract).