SUPPLEMENTARY DATA

Polymorphism of G4 associates: from stacks to wires via interlocks

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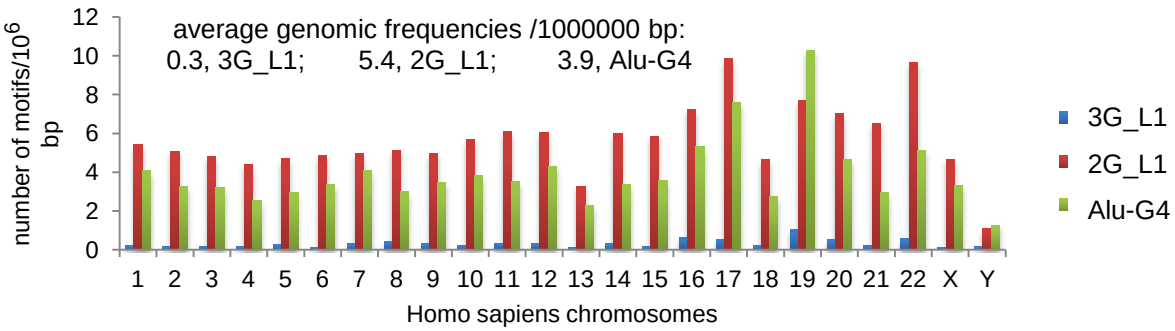

Fig. S1. Genomic distribution of the parallel G4 motifs used in this study.

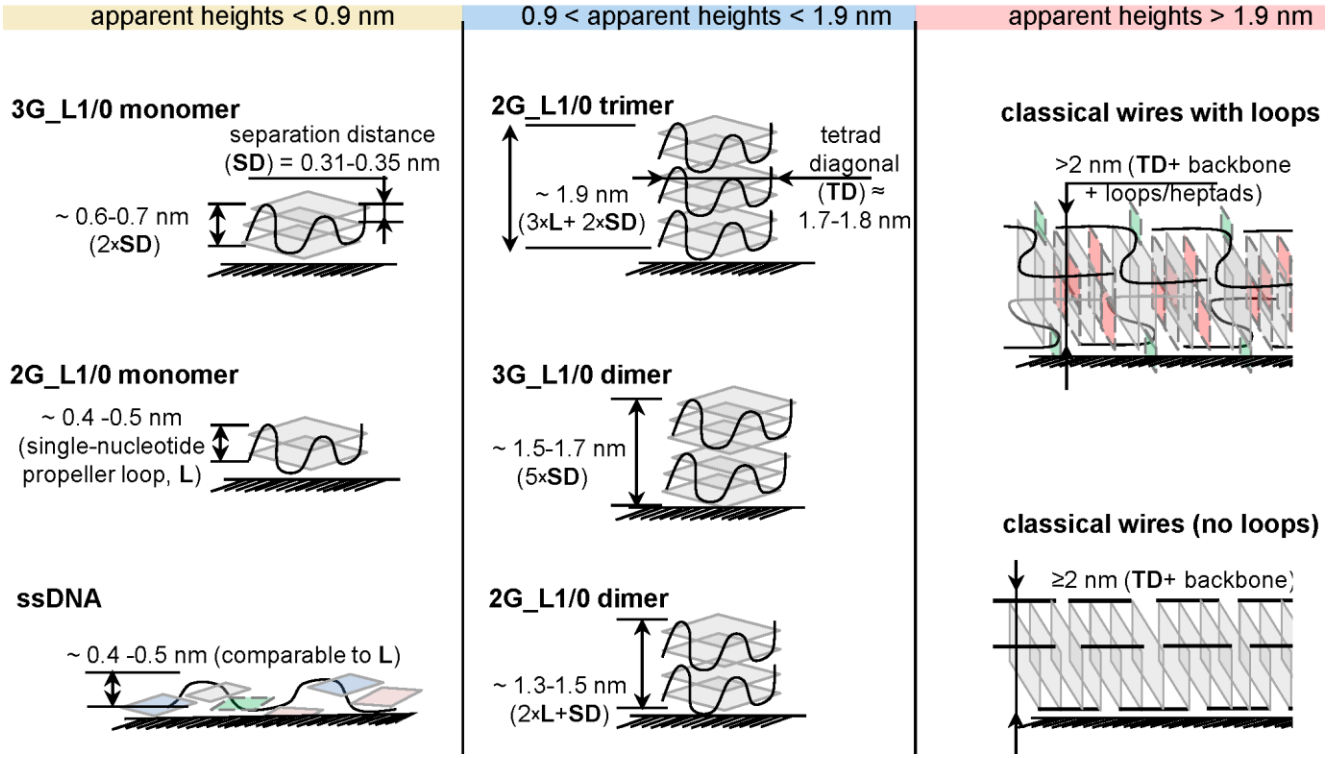

Fig. S2. Expected heights of the G4s adsorbed on a solid support. SD – separation distance; L – single-nucleotide propeller loop, TD – tetrad diagonal.

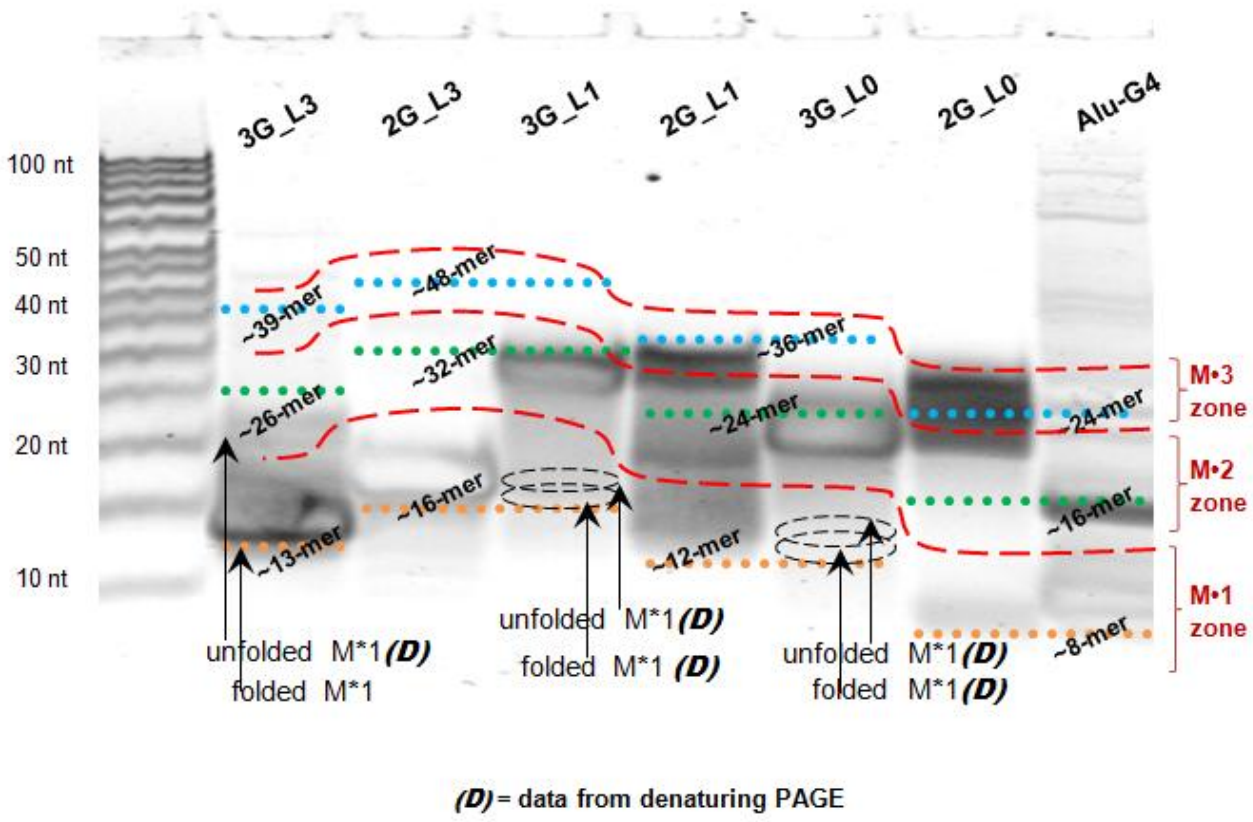

Fig. S3. Detailed analysis of G4 migration rates in native PAAG (from Fig. 5A – 10 mM KCl, rapid annealing). Yellow dotted lines mark positions of the folded monomers. Green and blue dotted lines mark the presumed positions of dimers (M*2) and trimers (M*3), respectively (determined based on the actual M*1 positions).

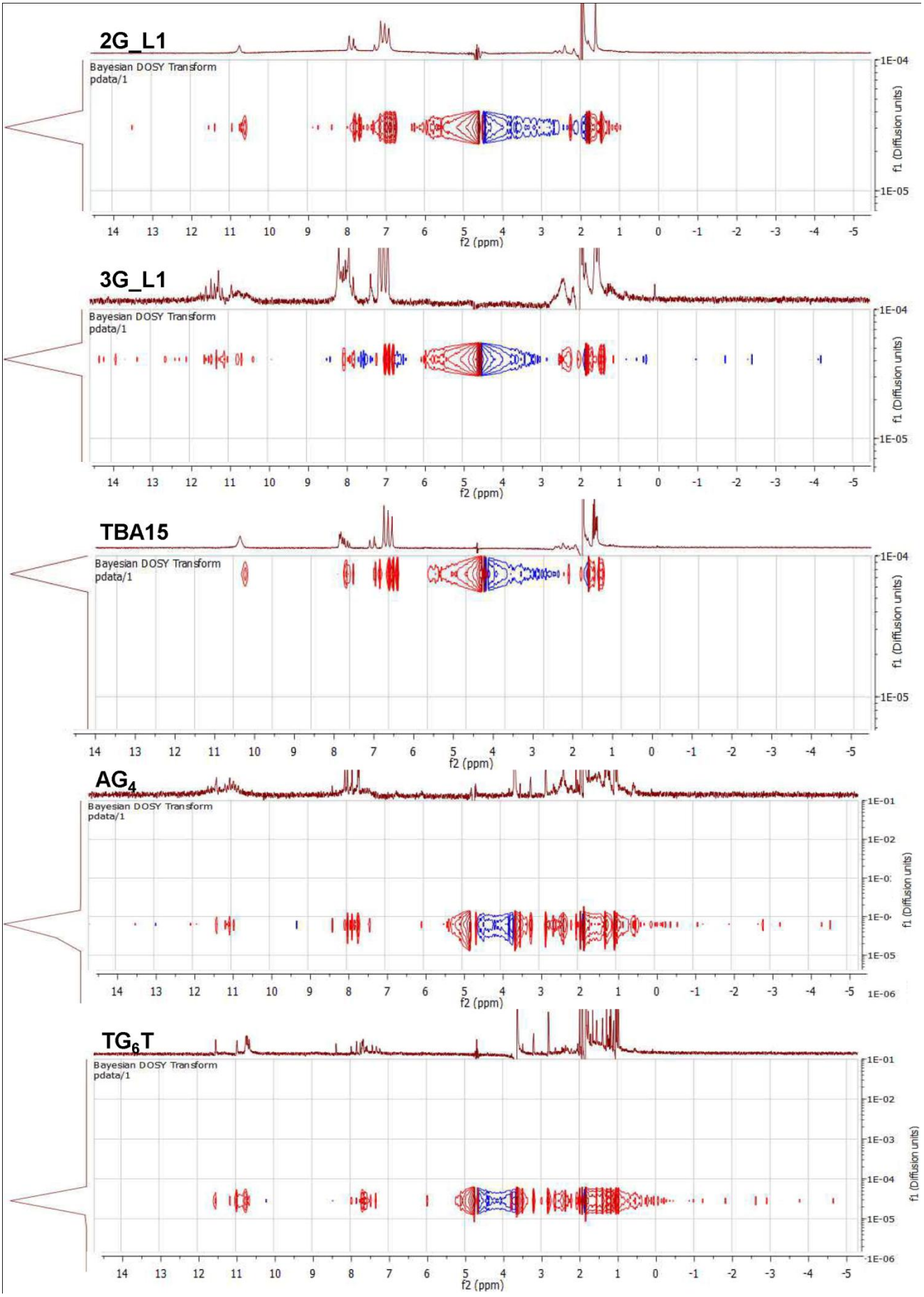

Fig. S4. DOSY-NMR spectra of the G4s. Conditions: 0.1 mM ON, 20 mM Tris-HCl (pH 7.6), 10 mM KCl. 3G_L0, 3G_L1, 2G_L1 and TBA15 samples were annealed rapidly prior to the experiments. AG_4 and TG_6T samples were annealed slowly prior to the experiments.

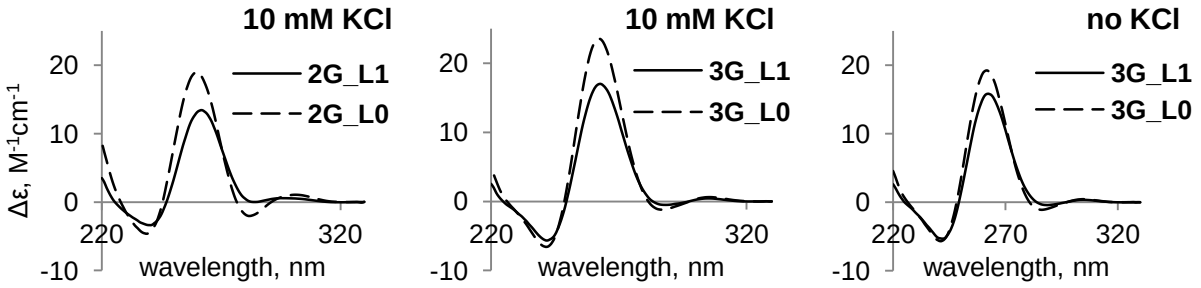

Fig. S5. CD spectra of G4s with single-T or modified loops obtained at NMR and PAGE ON concentration (100 μM). The spectra were recorded at 5°C. Ellipticity is given per mole of nt. The samples were annealed under rapidly in the presence of 20 mM Tris-HCl (pH 7.6) with 10 mM KCl or without KCl prior to the experiments.

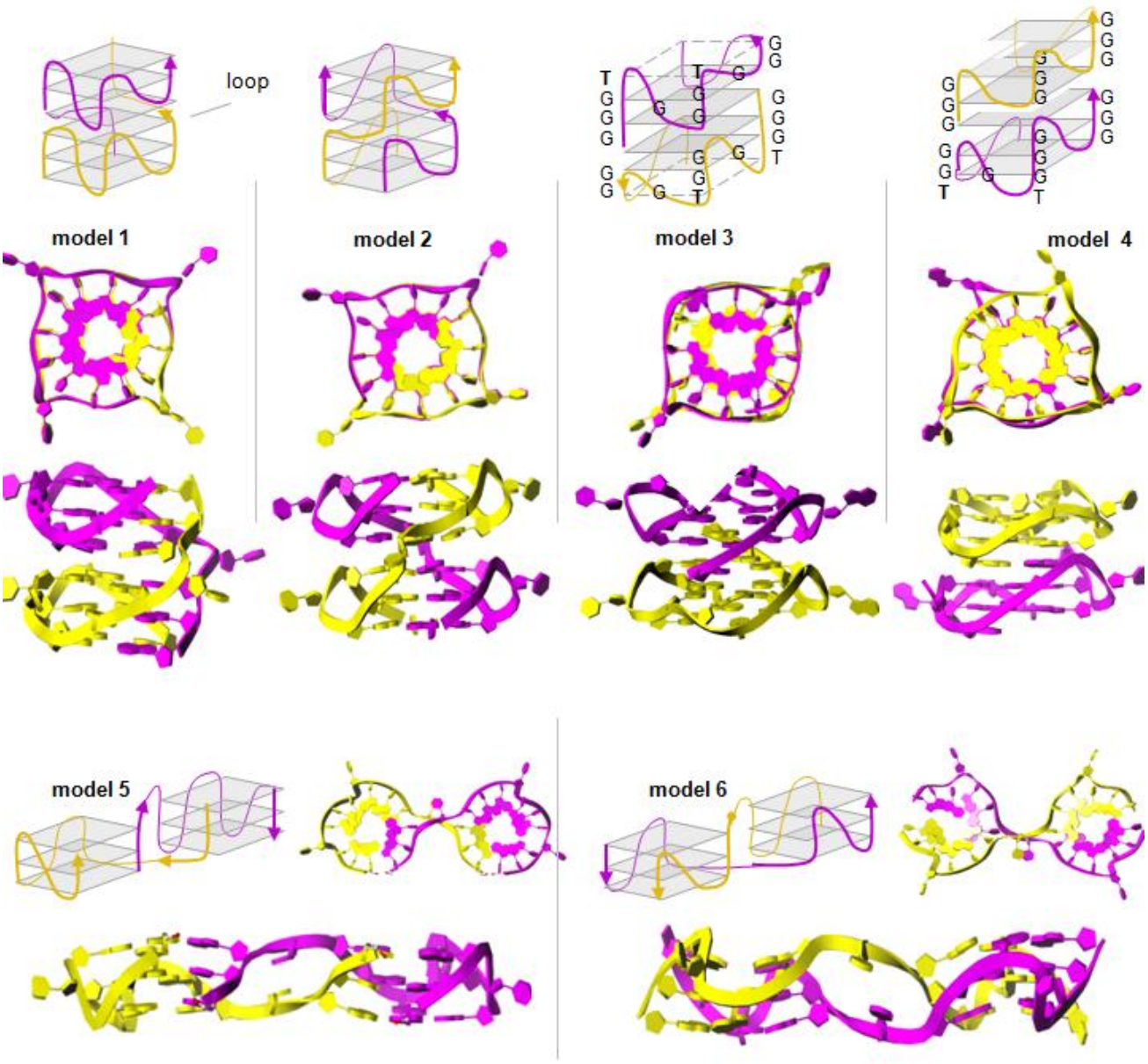

Fig. S6. Molecular modeling of interlocked 3G_L1 dimers (schemes, top views and front views). Model 1 – vertical interlocking via single G-track; model 2 - vertical interlocking via two G-tracks; model 3 - vertical interlocking via single nucleotides (head-to-head); model 4 - vertical interlocking via single nucleotides (head-to-tail); model 5 – side-by-side interlocking via single G-track; model 6 – side-by-side interlocking via two G-tracks.