

Supporting information for: Disassembly of Dimeric Cyanine Dye Supramolecular Assembly by Tetramolecular G-quadruplex Dependence on Linker Length and Layers of G-quartet

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1. The sequences of 5 oligonucleotides in the study

Table S1. Sequences of 5 oligonucleotides

Name	Sequence ^a (from 5' to 3')	Motifs
<i>TG3T</i>	TGGGT	Parallel DNA G-quadruplex
<i>TG4T</i>	TGGGGT	Parallel DNA G-quadruplex
<i>TG5T</i>	TGGGGGT	Parallel DNA G-quadruplex
<i>TG6T</i>	TGGGGGGT	Parallel DNA G-quadruplex
<i>TG8T</i>	TGGGGGGGT	Parallel DNA G-quadruplex

^aThese oligonucleotides were dissolved in PBS (K⁺) (10 mM KH₂PO₄/K₂HPO₄, 70 mM KCl, 1 mM EDTA, pH 7.4)

2. The Structure identification of 5 sequences by CD

spectroscopy.

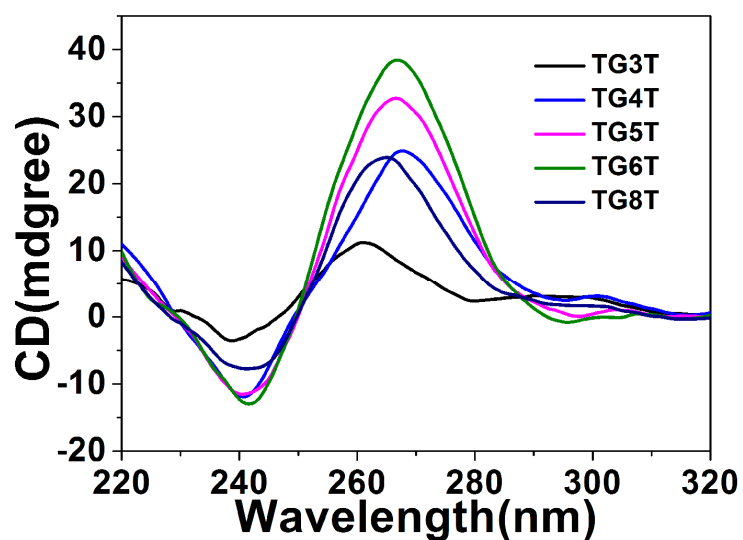


Figure S1. The CD spectra for TG3T, TG4T, TG5T, TG6T and TG8T in 10 mM PBS (K⁺).

2. ¹H-NMR titration of TC-P4 with TG4T in methyl protons.

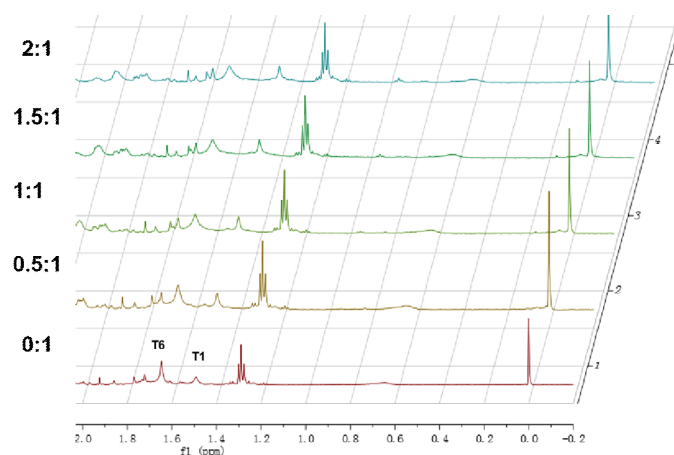


Figure S2. The unambiguously assigned ¹H-NMR titration spectra of 120 μM TG4T with different concentrations of TC-P4 in 0.6 mL PBS (10 mM KH₂PO₄, 70 mM KCl, 1 mM EDTA, pH 7.4 H₂O/D₂O, 9/1, v/v) in methyl protons.

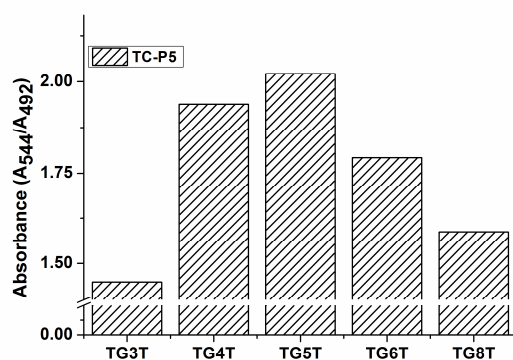


Figure S3. The ratio value of absorbance at 594 nm via absorbance at 492 nm at a function of $[\text{TGnT}]/[\text{TC-P5}] = 4$ ($n=3-6,8$). The concentration of TC-P5 is $5 \mu\text{mol/L}$.