Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Exploring the preferential interaction of quercetin with VEGF promoter G-quadruplex DNA and construction of pH-dependent DNA-based logic gate

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Table S1:

Oligo Name	Length (bases)	Sequence (5'-3')
VEGF	24	d(CCGGGGCGGGCCGGGGGCGGGGTC)
c-MYC	22	d(TGAGGGTGGGTAGGGTGGGTAA)
c-KIT1	22	d(GGGAGGGCGCTGGGAGGGAGGG)
c-KIT2	20	d(GGGCGGGCGCGAGGGAGGGG)
h-TELO	22	d(AGGGTTAGGGTTAGGGTTAGGG)
duplex	26	d(CAATCGGATCGAATTCGATCCGATTG)

Table S1: Oligonucleotide sequences that have been studied in this research work.

Figure S1:

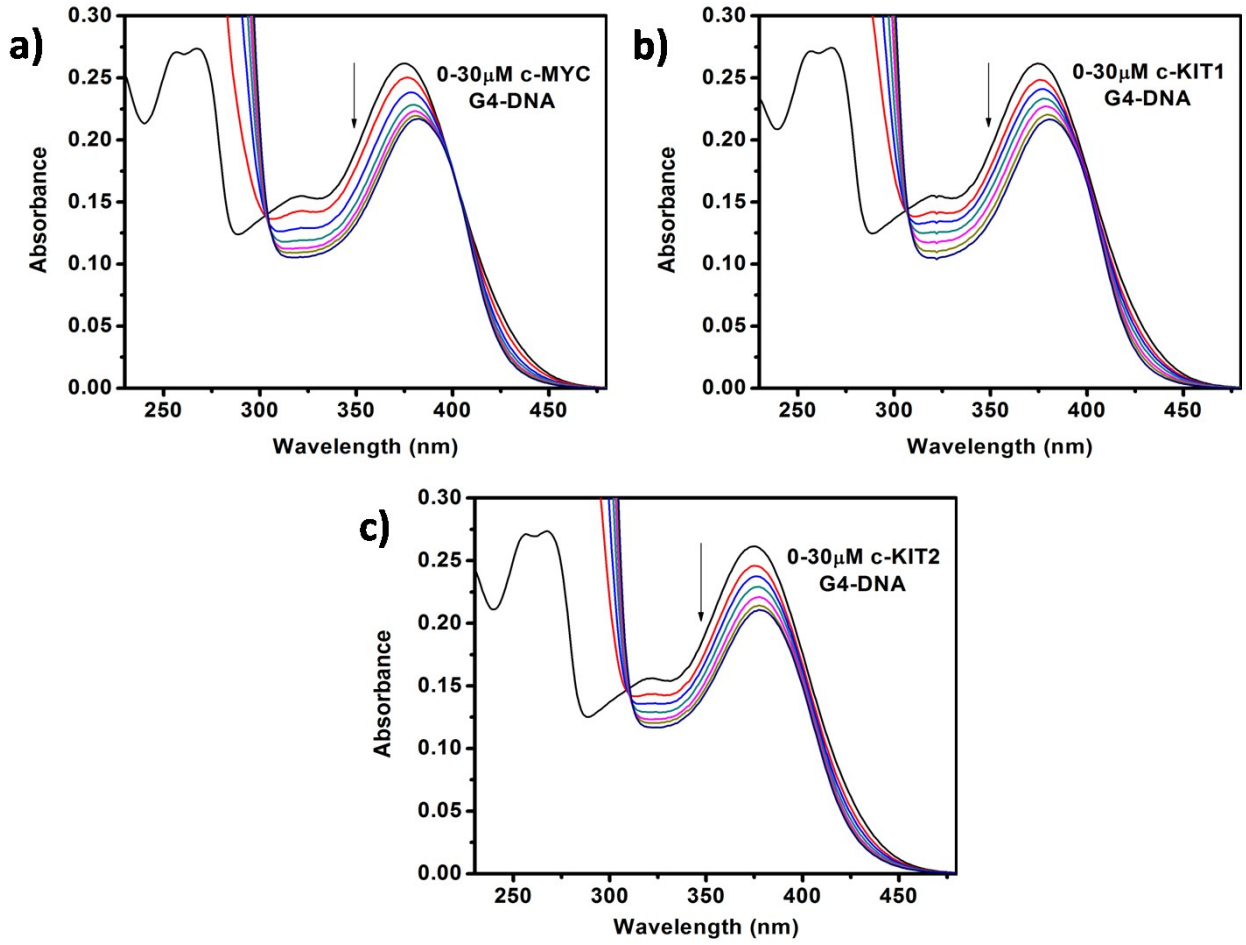

Figure S1: Absorption spectra of Que (15 μM) in the absence and presence of successive additions of a) c-MYC, b) c-KIT1, and c) c-KIT2 G4-DNA.

Figure S2:

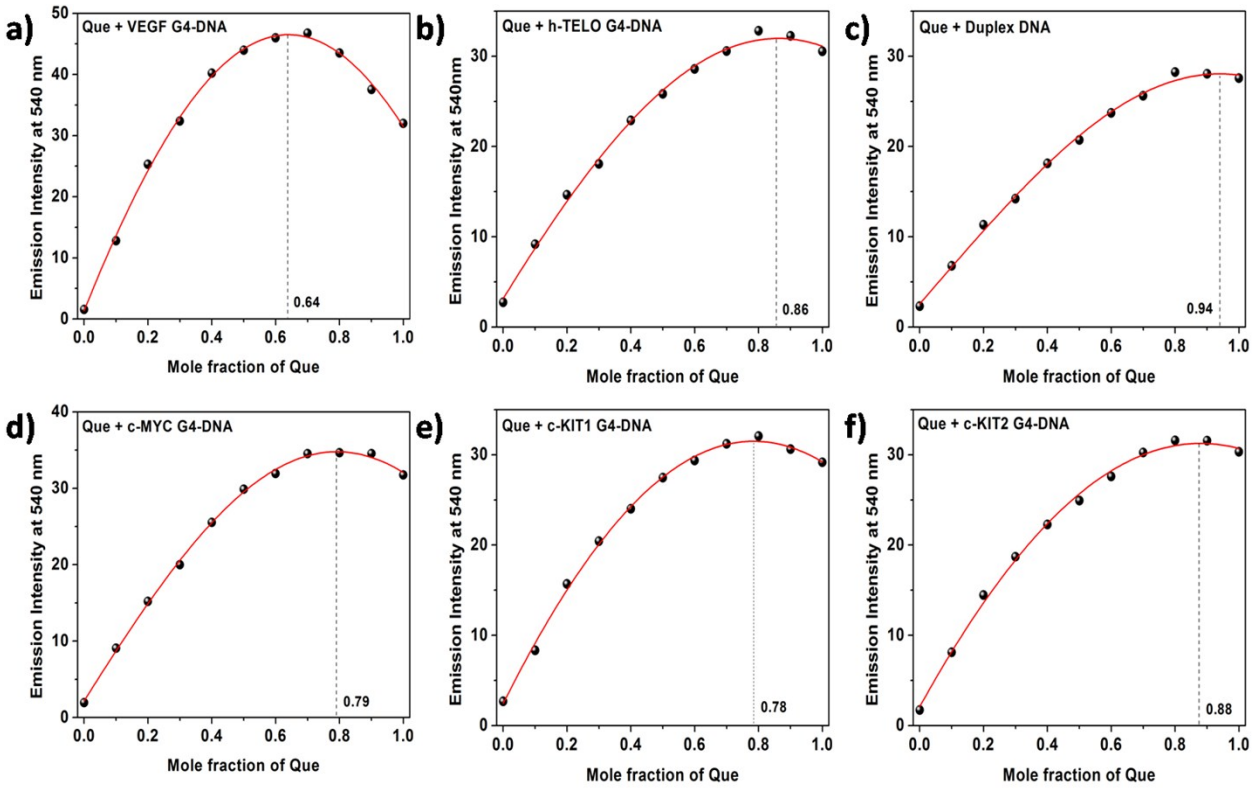

Figure S2: Job plot for the binding of Que to the a) VEGF G4-DNA, b) h-TELO G4-DNA, c) Duplex DNA d) c-MYC G4-DNA, e) c-KIT1 G4-DNA and f) c-KIT2 G4-DNA. Fluorescence enhancement of Que-DNA complexes was monitored at 540 nm (λ_{ex} = 370 nm).

Figure S3:

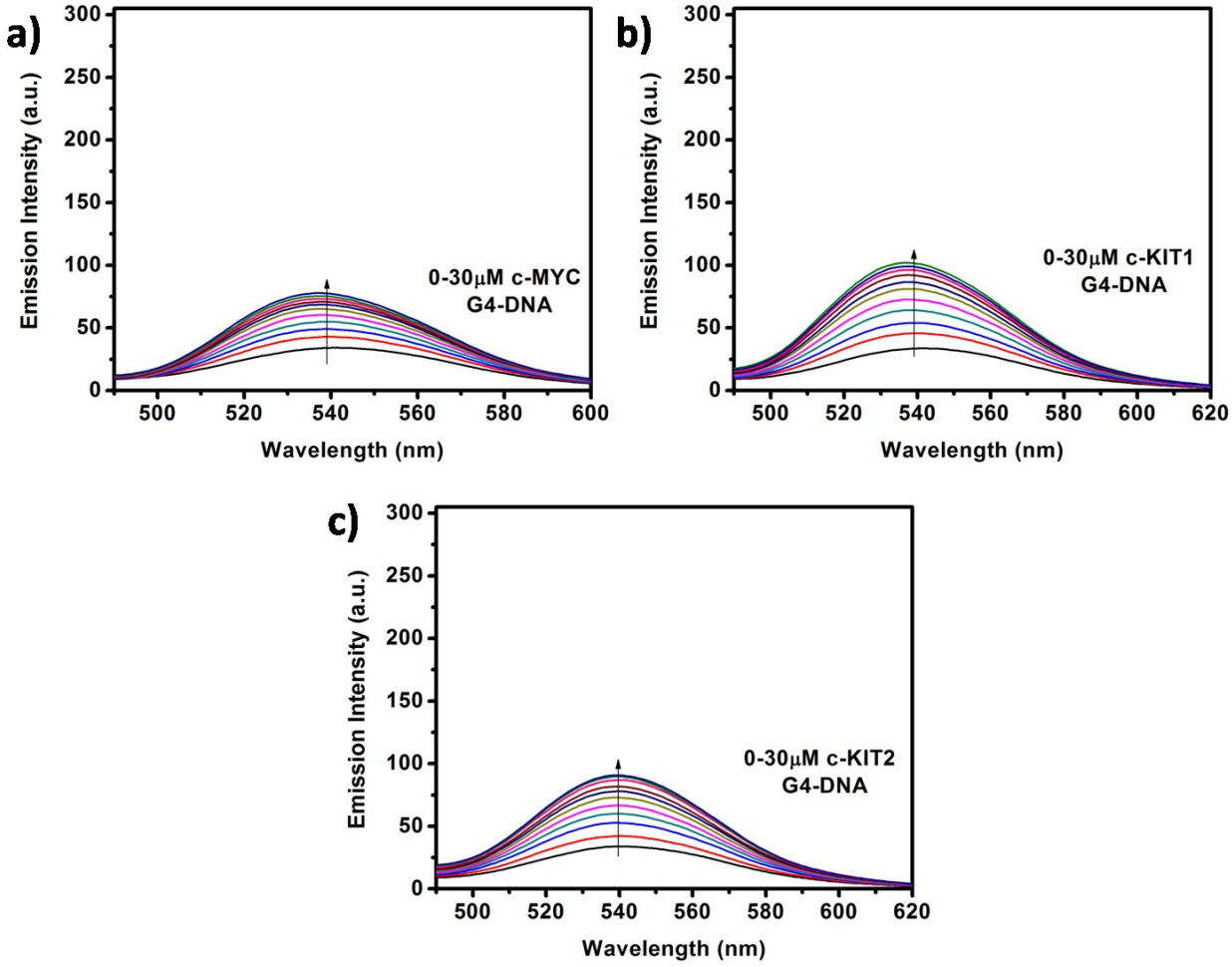

Figure S3: Fluorescence emission spectra of Que (10 μM) with increasing concentrations of a) c-MYC, b) c-KIT1 and c) c-KIT2 G4-DNA. (λ_{ex} = 370 nm).

Figure S4:

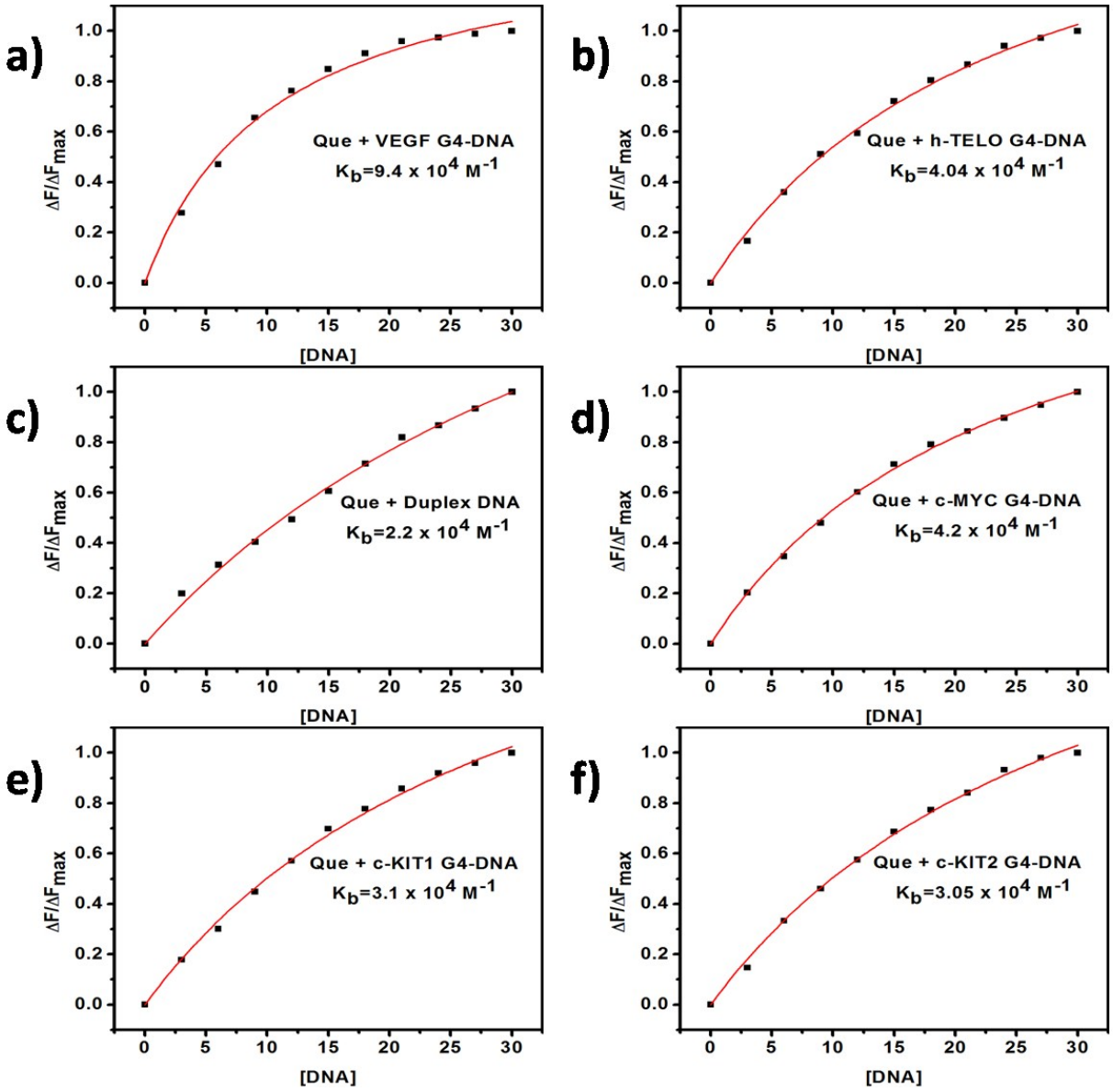

Figure S4: Binding isotherm plots to determine the binding constant (K_b) from fluorescence titration experiment.

Figure S5:

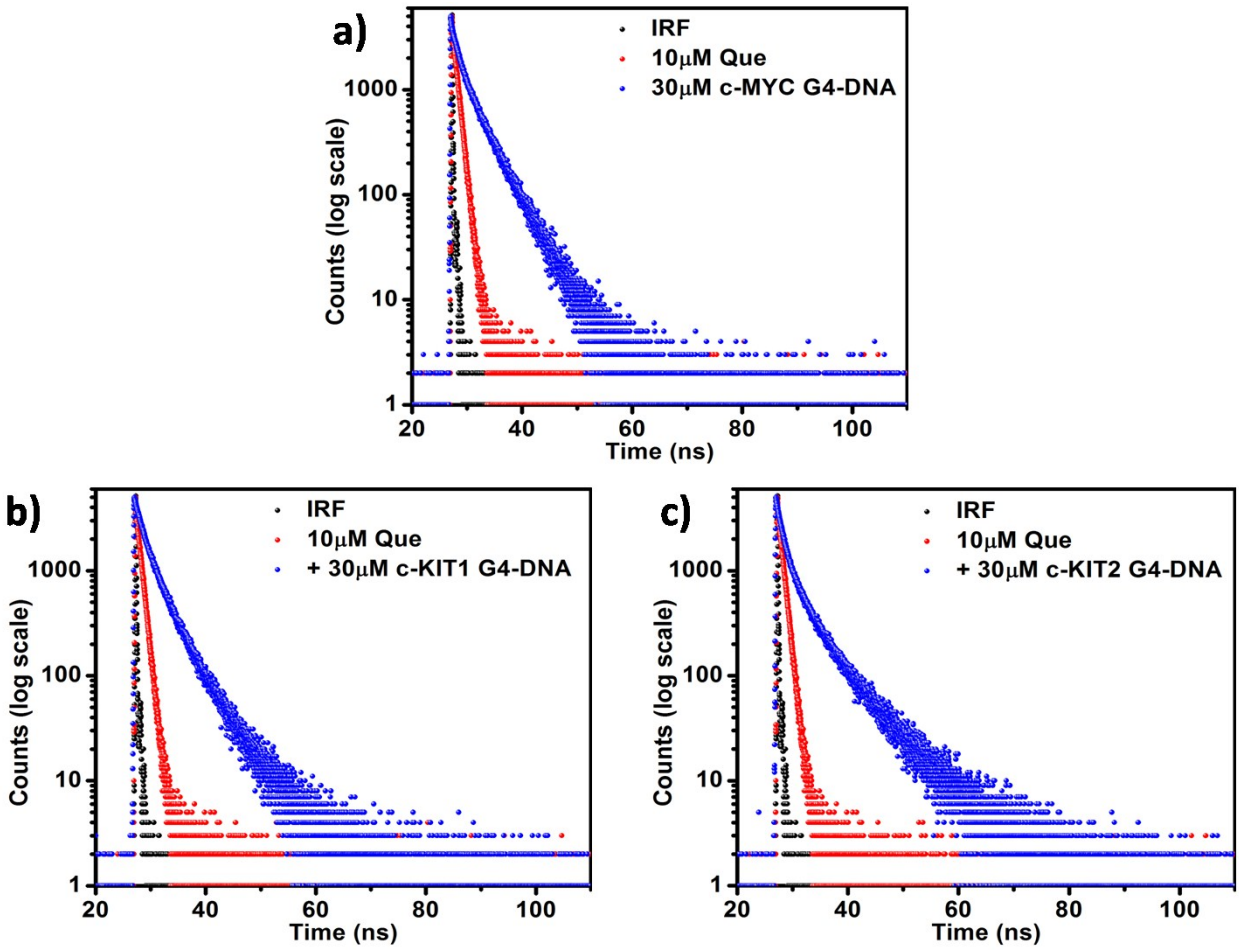

Figure S5: Fluorescence lifetime decay profiles of 10 μM Que in aqueous buffer and in the presence of a) c-MYC, b) c-KIT1 and c) c-KIT2 G4-DNA. [DNA] = 30 μM; (λ_{ex} = 375 nm and λ_{em} = 540 nm).

Figure S6:

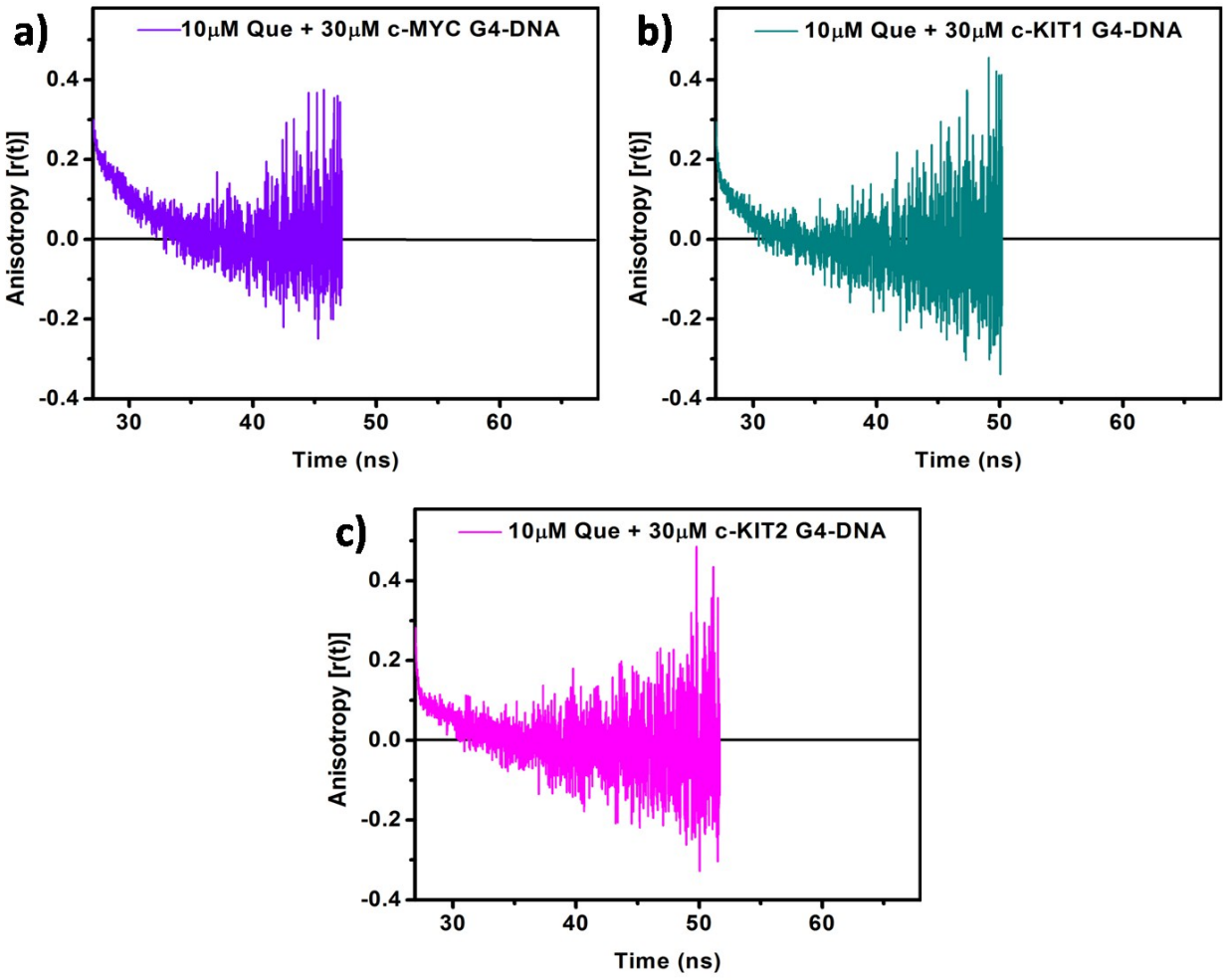

Figure S6: Time-resolved fluorescence anisotropy decay profiles of 10 μM Que in the presence of a) c-MYC, b) c-KIT1, and c) c-KIT2 G4-DNA. [DNA] = 30 μM; (λ_{ex} = 375 nm and λ_{em} = 540 nm).

Figure S7:

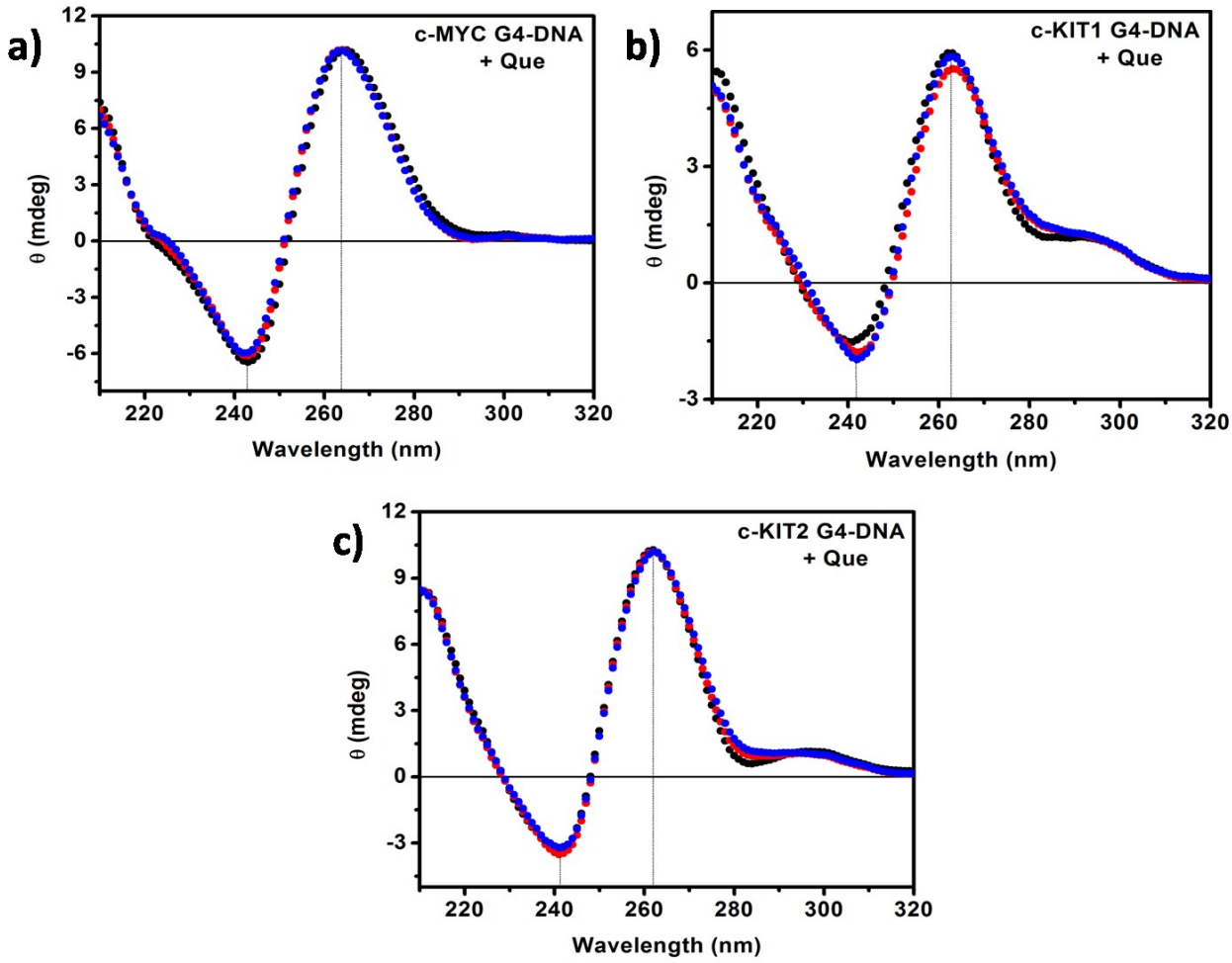

Figure S7: CD spectra of a) c-MYC, b) c-KIT1 and c) c-KIT2 G4-DNA in the absence (black) and presence of 50 µM (red) and 100 µM (blue) Que, respectively. [DNA] = 20 µM.