Supplementary Materials for
A Thiophene Based Diamidine Forms a "Super" AT Binding Minor Groove Agent

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Figure Captions

Figure S1. Differential cleavage plots showing differences in susceptibility of the 117, 160 and 265-bp DNA fragments to DNase I cleavage in the presence of DB818 and DB293 (0.5 μ M each). Vertical scales are in units of $\ln(f_a) - \ln(f_c)$, where f_a is the fractional cleavage at any bond in the presence of the drug and f_c is the fractional cleavage of the same bond in the control, given closely similar extents of overall digestion. Positive values indicate enhancement and negative values blockage.

Figure S2: Absorption spectral changes on titration of DB351 and DB818 with poly(dA-T)₂. The ratios of compound to the DNA for DB351 are 0, 0.56, 1.11, 1.67, 2.22, 2.77, 3.33, 3.88, 4.43. Notice a red shift of 7 nm at $\lambda_{\max}$ upon the addn of DNA to the compound, and an isosbestic point near 376 nm (left). The ratios of compound to the DNA for DB818 are 0, 0.11, 0.22, 0.33, 0.44, 0.55, 0.66, 0.77, 0.88. Notice a blue shift of 3 nm at $\lambda_{\max}$ upon the addition of DNA to the compound, and an isosbestic point near 399 nm (right).

Figure S3: Absorption spectral changes on titration of DB351 and DB818 with poly(dG-C)₂. The ratios of compound to the DNA for DB351 are 0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.0, 7.0. Notice a red shift of 11 nm at $\lambda_{\max}$ upon the addn of DNA to the compound , and an isosbestic point at 382 nm (left). The ratios of compound to the DNA for DB818 are 0, 0.10, 0.21, 0.31, 0.42, 0.52, 0.62, 0.73, 0.83, 1.03, 1.24, 1.44. Notice a blue shift of 3 nm at $\lambda_{\max}$ upon the addition of DNA to the compound, and an isosbestic point at 397 nm. (left).

Figure S4: CD spectra of DB351 and DB818 with poly(dA-T)₂ (A & C) and poly(dG-C)₂ (B & D) respectively. The experiments were conducted in MES10 BUFFER AT 25 °C. In DB351 the ratios of the compound to the DNA from the top to the bottom at 370 nm are 0.06 to 0 (A, B). In DB818 the ratios of the compound to the DNA from the top to the bottom at 370 nm are 0.13 to 0 (C, D).

Figure S1

Figure S2

Figure S3

Figure S4