Organic Letters

Supplementary Information for

Conformationally Imprinted Receptors: Atropisomers with 'Write', 'Save' and 'Erase' Recognition Properties

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1) General Experimental:

NMR spectra were recorded on a Varian 300 MHz spectrometer. Chemical shifts are reported in ppm (δ) referenced to TMS (δ 0.00 ppm) in ^{1}H NMR. All chemicals were purchased from commercial suppliers and used as received unless otherwise specified. Diacid **1** was synthesized and the *syn*- and *anti*-atropisomers were separated and isolated by column chromatography as previously described.[1] Flash chromatography was performed using silica (Sorbent Technologies, silica gel 60 Å, 200-400 mesh). HPLC was performed using a Varian Prostar HPLC model 210 equipped with a Varian Prostar UV-Vis detector model 320, and a Rainin Dynamax 60 Å silica column. UV detection was performed at 254 nm.

2) Ethyl adenine-9-acetate and *Syn* Diacid Co-crystallization:

An equimolar ratio of *syn*-diacid **1** and EA9A in acetonitrile was slowly evaporated from a septum covered test tube containing a ventilation needle. Crystals appeared in 4-7 days.

3) Titration Study:

Aliquots of the diacid **1** (3 mM) in CD_3CN were added to a 600 μL 1 mM solution of EA9A in CD_3CN. A spectrum was taken after each addition of diacid **1** and the EA9A amine protons were followed.

4) Control Studies:

Solutions were of *anti*-**1** (5 mM) and 20 mM of either 1,4-diazabicyclo[2.2.2]octane (DABCO) or *N*-acyl-2-aminopyridine. The solutions were transferred to NMR tubes, and each was heated at 90 °C for 21 h. The resulting ratio of *syn*- and *anti*-**1** was monitored by HPLC (Rainin Dynamax 60 Å silica gel column with 35% HOAc and 65% $CHCl_3$ as the mobile phase at a flow rate of 1.0 mL/min). A second control study was performed in which a 5 mM solution of *anti* diacid was heated to 90 °C in the presence of 15 mM EA9A in DMSO.

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[1] Degenhardt, C., III; Shortell, D. B.; Adams, R. D.; Shimizu, K. D. *Chem. Comm.* **2000**, 929-930.