SUPPLEMENTARY MATERIAL FOR

Interpenetrating single helical capsules

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Experimental procedures

Synthesis of 2a. A suspension of **1a** (0.12 g, 0.093 mmol) in CH_2Cl_2 (0. 23 mL) and TFA (0.23 mL, 3 mmol, 32 eq) was stirred at r.t. for 3h. Evaporation of the solvents and three coevaporations using a toluene azeotrope yielded a red-yellow powder. This solid and N,N-diisopropylethylamine (0.18 mL, 5 equiv.) were dissolved in anhydrous NMP (2 mL). A solution of the quinoline dimer acid chloride (0.206 mmol, 2.5 eq) **4b** in dry $CHCl_3$ (6 mL) was added dropwise at 0°C. The reaction was stirred for 30 min at 0°C and then 12 h at r.t. Another 0.1 mmol of acid chloride was added and the reaction was stirred for another 24h. After evaporation, purification by flash chromatography on silica gel eluting with cyclohexane/ethyil acetate from 65:35 to 50:50 vol/vol yielded **2a** as two distinct fractions (total 81 mg, 46 %).

First fraction (double helix). ^{1}H RMN ($CDCl_3$, 300 MHz): δ 1.25-0.89 (m, 36H), 2.06 (m, 2H), 2.31 (m, 2H), 2.62 (m, 1H), 2.88 (m, 1H), 3.22 (s, 3H), 3.56 (m, 3H), 3.81 (m, 4H), 4.03 (m, 2H), 4.29 (m, 3H), 5.38 (s, 1H), 5.60 (t, 1H), 6.33 (m, 3H), 6.44 (m, 2H), 6.72 (m, 9H), 7.13 (m, 2H), 7.2 (m, 2H), 7.48 (m, 4H), 7.72 (m, 3H), 7.94 (m, 2H), 8.1 (m, 2H), 8.22 (m, 3H), 8.41 (d, 1H), 8.55 (m, 4H), 8.75 (d, 2H), 9.1 (s, 1H), 9.54 (s, 1H), 9.6 (s, 1H), 10.06 (s, 1H), 10.81 (s, 1H). SM (ES): m/z = 2118.77 $[M+H]^+$, 2119.23 $[2M+2H]^{2+}$, 2128.82 $[2M+H+Na]^2+$, 2139.77 $[M+Na]^+$, 2140.26 $[2M+2Na]^{2+}$

Second fraction (single helix). ^{1}H RMN ($CDCl_3$, 300 MHz): δ 1.39-1.07 (m, 36H), 2.18 (m, 4H), 2.47 (m, 2H), 2.93 (s, 3H), 3.57 (m, 2H), 3.77 (m, 6H), 4.21 (d, 4H), 6.71 (t, 1H), 6.78 (s, 2H), 6.91 (m, 2H), 7.1 (m, 2H), 7.20 (d, 1H), 7.35 (s, 2H), 7.44 (s, 2H), 7.61 (s, 1H), 7.68 (d, 2H), 7.93 (d, 2H), 8.03 (m, 4H), 8.14 (d, 2H), 8.28 (t, 2H), 8.38 (d, 4H), 8.48 (d, 2H), 8.62 (d, 2H), 9.28 (s, 2H), 10.05 (s, 2H), 10.2 (s, 2H), 10.38 (s, 2H), 11.41 (s, 2H). SM (ES): m/z = 2139.81 $[M+Na]^+$.

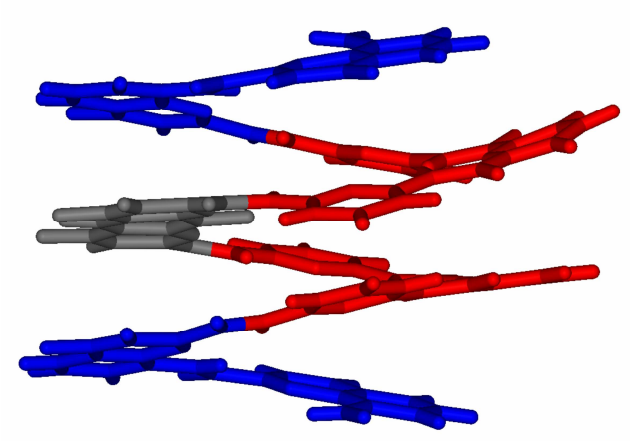

Figure S1- Energy minimized structure of the single helical conformation of **2a** in the MM3 force field. The central diaza-anthracene unit is shown in grey, the pyridine units are in red and the terminal quinoline units are in blue. Isobutoxy side chains have been omitted.

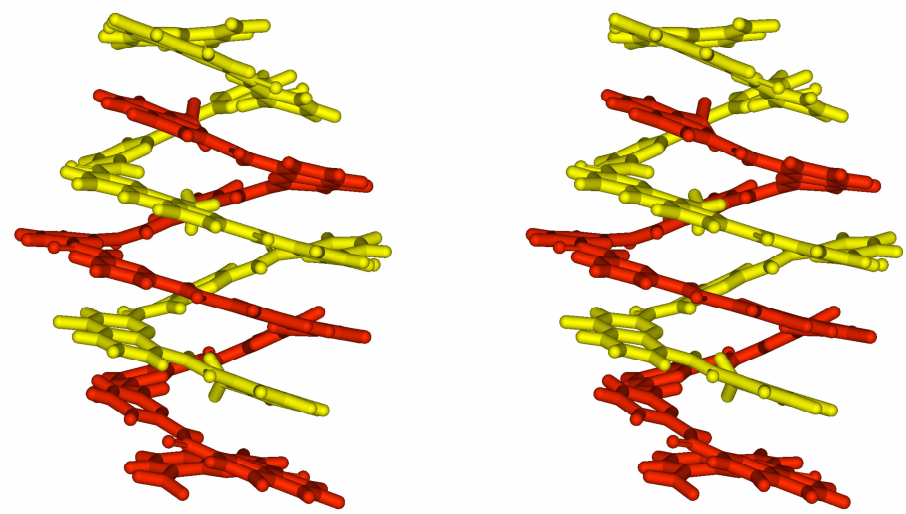

Figure S2. Stereo view of the crystal structure of **2a**. Isobutoxy side chains and included solvent molecules have been omitted for clarity.

Table S1. Aryl- Aryl Dihedral angle values in the crystal structure of **2a**..

	Strand A [b]	Strand B [b]
QQ[a]	25.6°	21.4°
QP	6.5°	9.9°
PP	46.0°	37.5°
PP	2.4°	3.3°
PA	38.3°	39.7°
AP	8.6°	9.1°
PP	23.5°	12.4°
PP	21.3°	27.0°
PQ	39.1°	33.9°
QQ	17.2°	18.2°

[a]Q= Quinoline moiety, P= pyridine moiety, A= diaza–anthracene moiety. [b] For both strands, the first row corresponds to the extremity of the strand pointing away from the duplex and the last row to the extremity of the strand buried in the duplex.

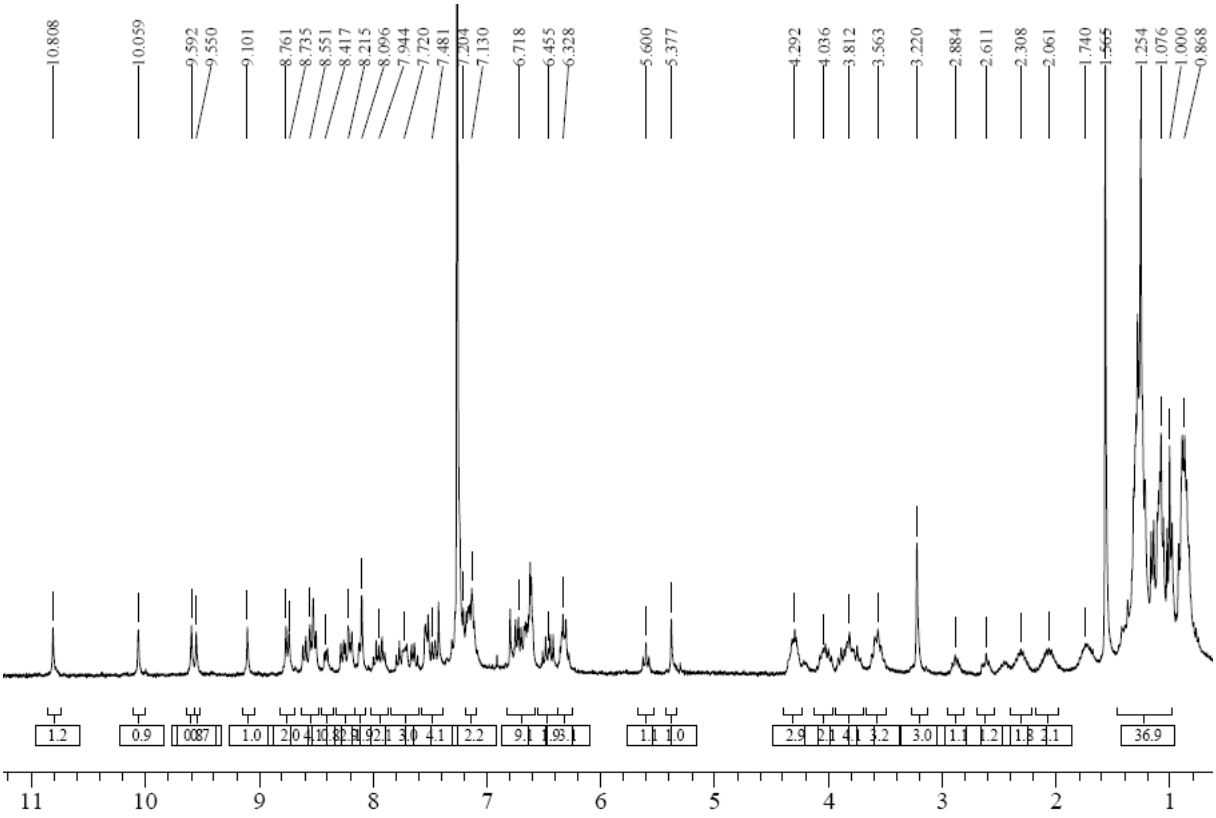

Figure S3. ^{1}H NMR spectra in $CDCl_3$ of **2**a as double helix

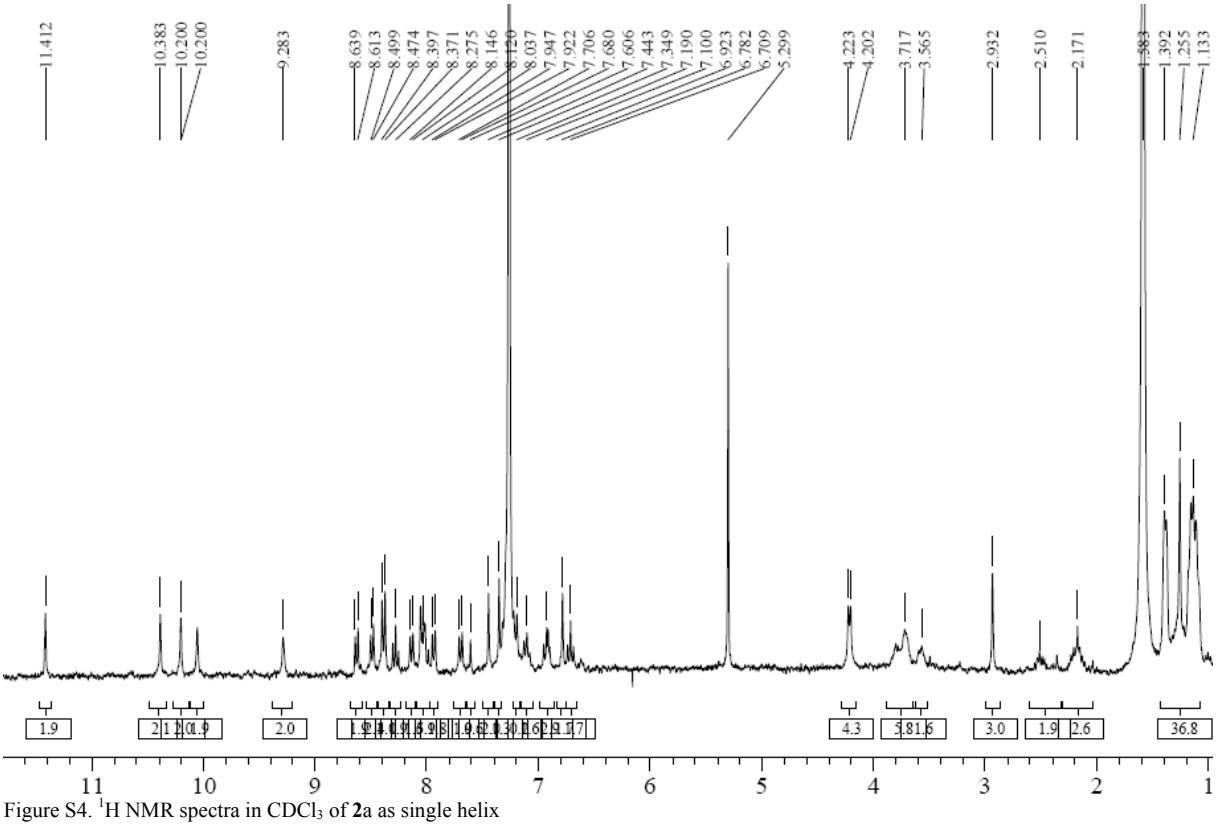

Figure S4. ^{1}H NMR spectra in $CDCl_3$ of **2**a as single helix

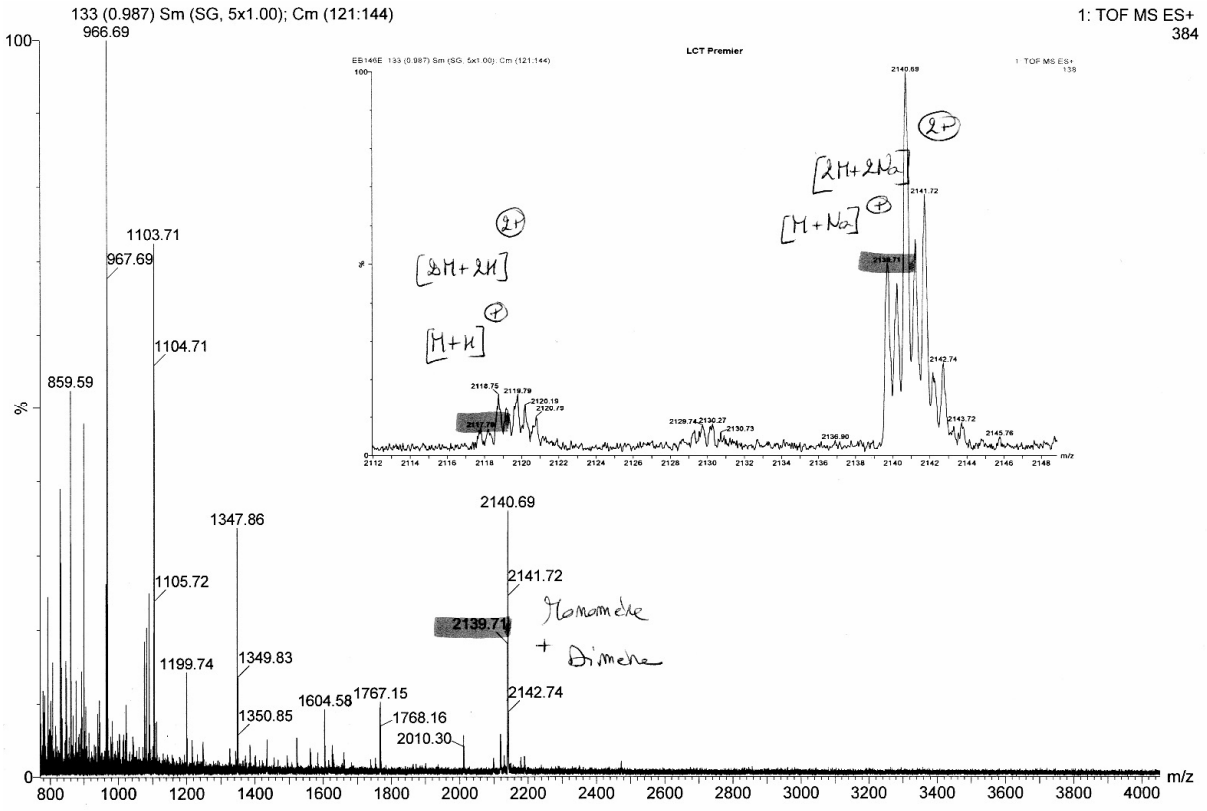

Figure S5. Mass spectra of **2**a as double helix

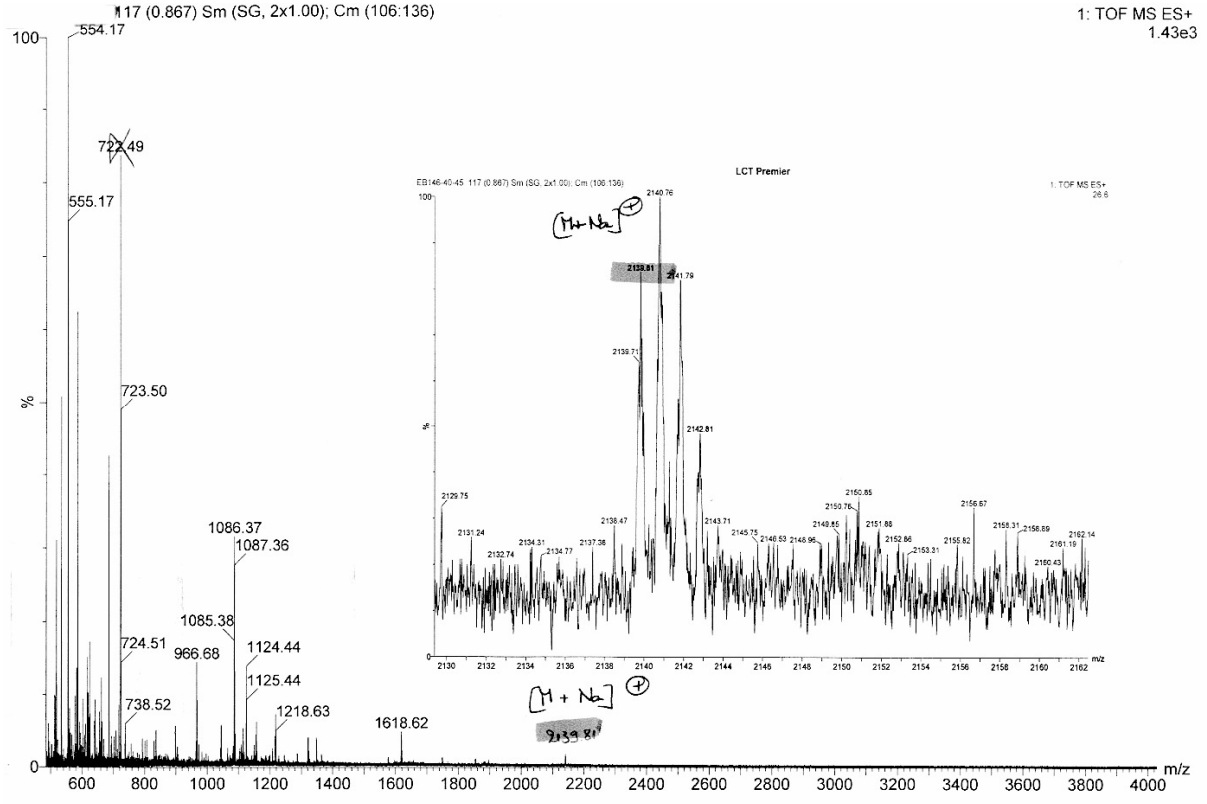

Figure S6. Mass spectra of **2**a as single helix