Supplementary Information

Aptamer-guided acridine derivatives for cervical cancer

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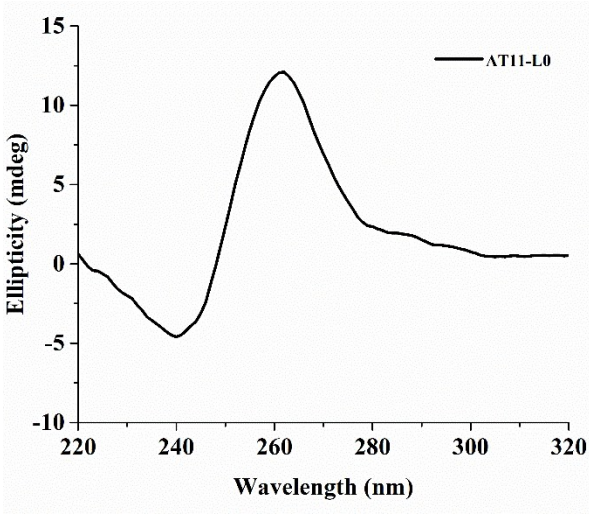

Figure S1. Circular dichroism spectrum of AT11-L0 acquired in 20 mM potassium phosphate buffer containing 65 mM KCl.

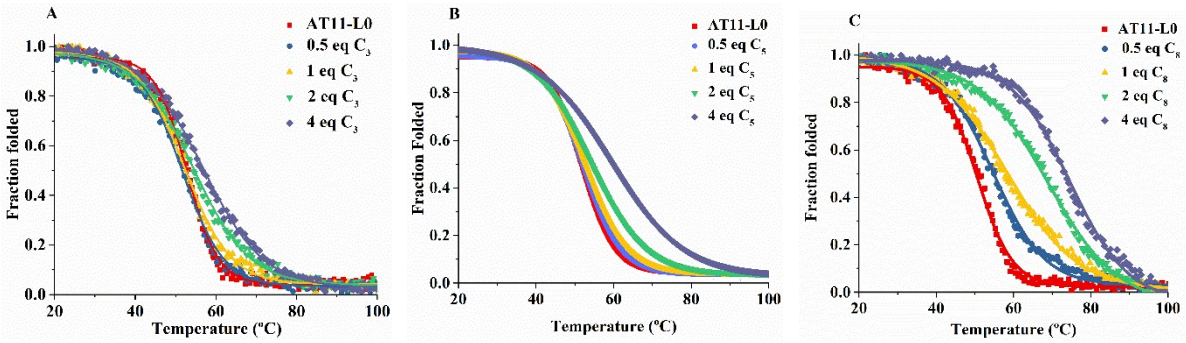

Figure S2. CD melting curves of AT11-L0 with increasing amounts of ligands (A) C_3 (B) C_5 and (C) C_8. Melting curves were obtained by monitoring the ellipticity at 262 nm between 20 and 100 °C.

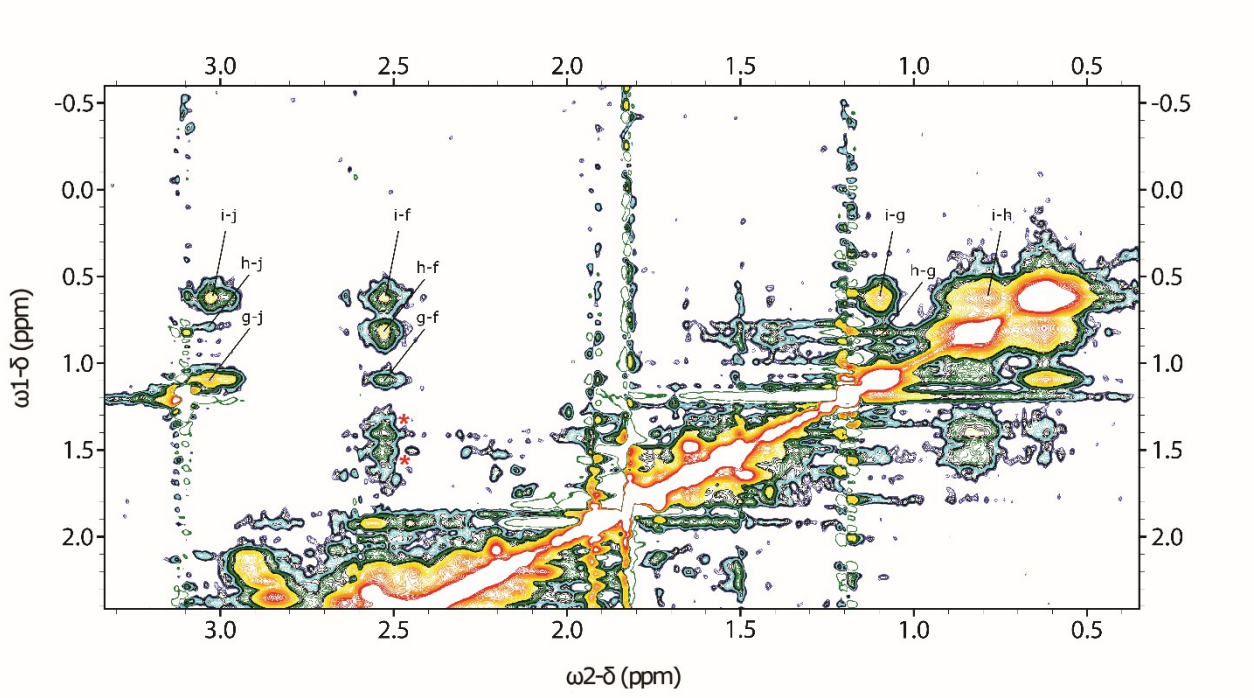

Figure S3. Expanded region of the 2D NOESY spectrum (mixing time 250 ms) showing the intramolecular NOEs of ligand C_8, particularly the aliphatic protons f, g, h, i and j. Intermolecular NOEs are also detected for proton f (highlighted with asterisks).

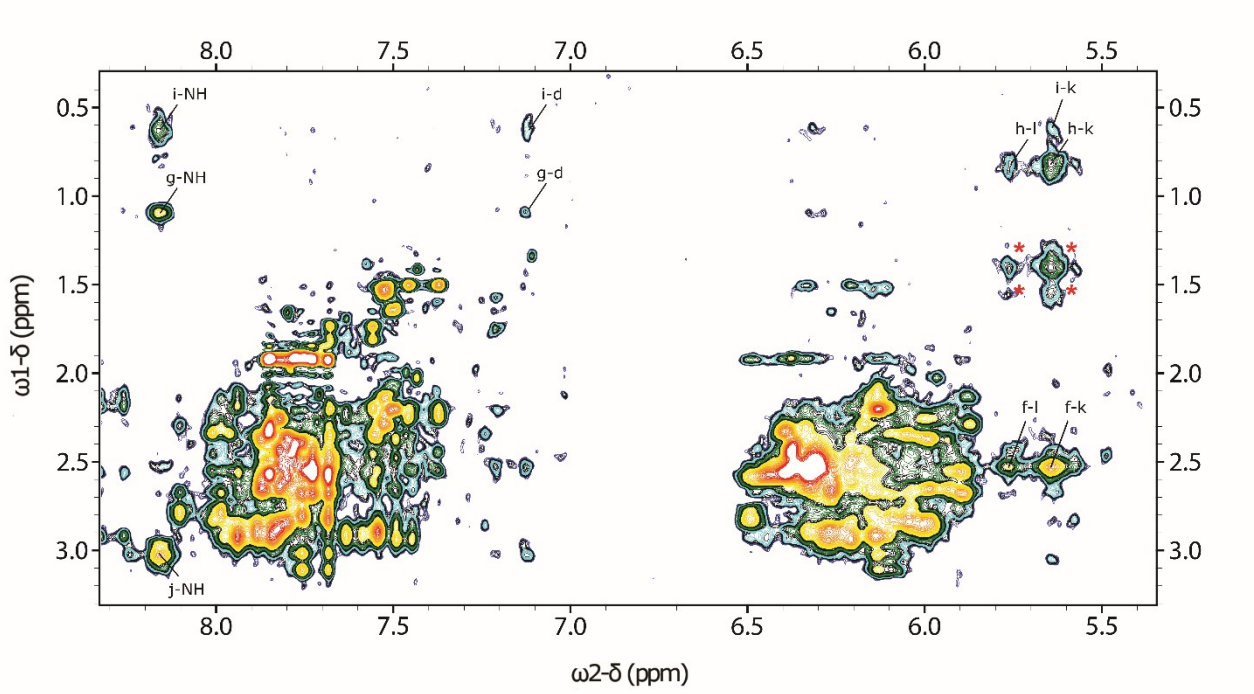

Figure S4. Expanded region of the 2D NOESY spectrum (mixing time 250 ms) showing the intramolecular NOEs of ligand C_8, namely between aliphatic protons g, h, i, j and the acridine/iodobenzene moiety protons d, l and k. This suggests a crescent-shape conformation of

C_8. Intermolecular NOEs are also detected for protons k and l with thymine's CH_3, presumably the capping T1 residue (highlighted with asterisks).

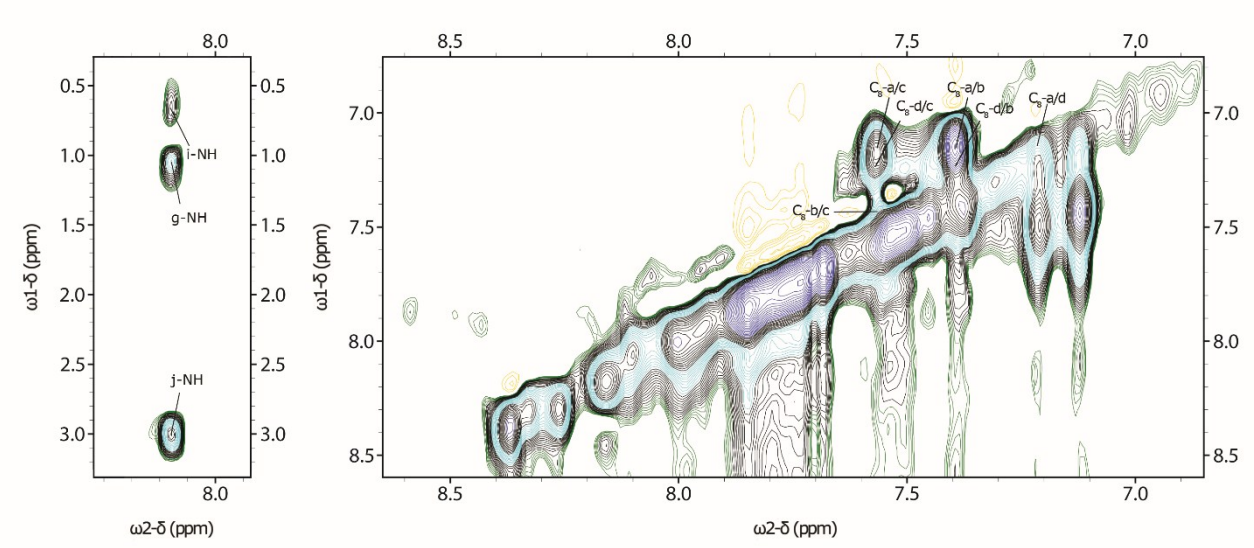

Figure S5. Expanded regions of the 2D TOCSY spectrum (mixing time 1.5 s) showing the C_8 through-bond correlations (assignment assisted by NOESY data, see below) of NH and aliphatic protons g, I (left), and the acridine moiety protons (right).

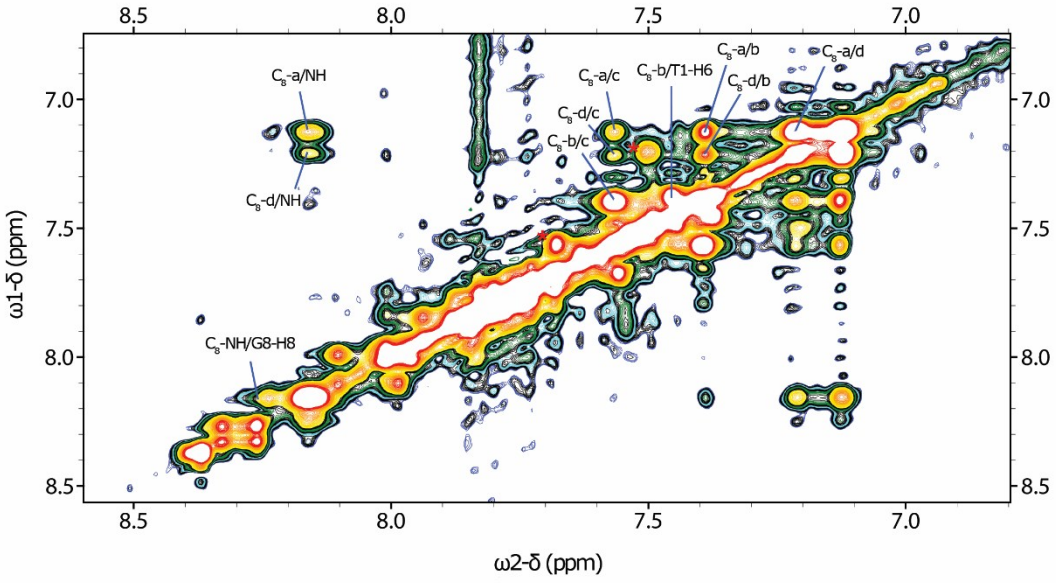

Figure S6. Expanded region of the 2D NOESY spectrum (mixing time 250 ms) showing the C_8 intramolecular NOEs (assigned based on TOCSY data) and intermolecular NOEs between the

AT11-L0 G8-H8 and T1-H6 protons and ligand C_8 NH and acridine groups, respectively. Additional non-assigned intermolecular NOEs are highlighted with asterisks.

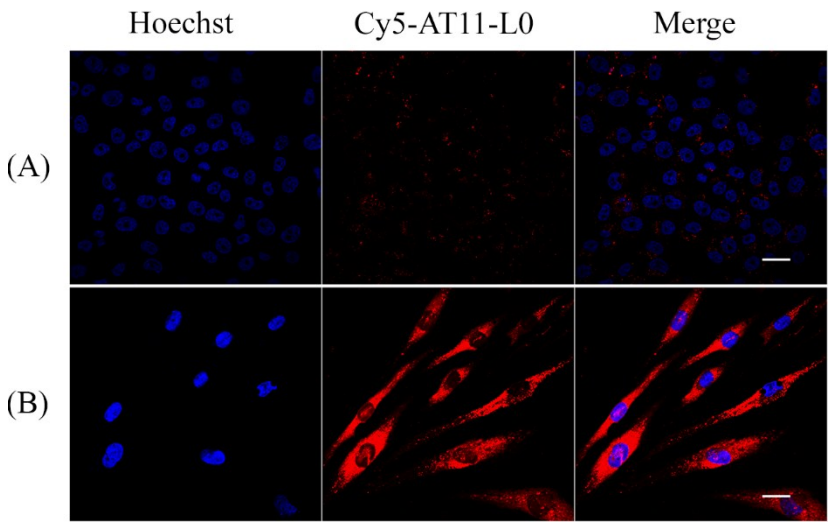

Figure S7. Confocal microscopy images of (A) HeLa cells and (B) NHDF cells incubated with Cy5-AT11-L0 for 5 days. Cell nuclei are stained with Hoechst 33342 (blue), C_8 emits green fluorescence and Cy5-AT11-L0 is shown in red. Scale bar: 25 μm.

Compound Characterization

C_3: 1H NMR (600.10 MHz, DMSO-d6) δ 1.89 (m, 2H, CH2), 2.15 (m, 2H, CH2), 3.16 (s, 12H, CH3), 4.74 (t, 2H, CH2), 6.62 (s, 2H, CH), 7.25 (d, 2H, CH), 7.62 (d, 2H, CH), 7.84 (d, 2H, CH), 8.92 (d, 2H, CH), 8.77 (s, 1H, CH), 8.87 (t, 1H, NH). 13C NMR (150.91 MHz, DMSO-d6) δ 26.13, 35.53, 45.52, 53.42, 72.16, 92.65, 114.93, 117.02, 129.61, 133.61, 134.00, 137.71, 142.80, 143.45, 155.96, 167.35. ESI-MS m/z calcd for $C_{27}H_{30}N_4OI_2$ ([M]+): 553.1, found 553.2.

Mas C_5: 1H NMR (600.10 MHz, DMSO-d6) δ 1.58 (m, 2H, CH2), 1.66 (m, 2H, CH2), 1.93 (m, 4H, CH2), 3.25 (s, 12H, CH3), 4.73 (t, 2H, CH2), 6.67 (s, 2H, CH), 7.29 (d, 2H, CH), 7.55 (d, 2H, CH), 7.82 (d, 2H, CH), 7.95 (d, 2H, CH), 8.48 (t, 1H, NH), 8.82 (s, 1H, CH). 13C NMR (150.91 MHz, DMSO-d6) δ 24.36, 25.90, 28.15, 35.87, 47.10, 50.61, 72.71, 93.17, 115.15, 117.08, 129.94, 133.40, 134.50, 137.54, 142.93, 143.63, 155.79, 165.88. ESI-MS m/z calcd for $C_{29}H_{34}N_4OI_2$ ([M]+): 581.2, found 581.4.

C_8: 1H NMR (600.10 MHz, DMSO-d6) δ 1.42 (m, 6H, CH2), 1.49 (m, 2H, CH2), 1.55 (m, 4H, CH2), 1.87 (m, 2H, CH2), 3.26 (s, 12H, CH3), 4.70 (m, 2H, CH2), 6.66 (s, 2H, CH), 7.29 (d, 2H, CH), 7.56 (d, 2H, CH), 7.81 (d, 2H, CH), 7.95 (d, 2H, CH), 8.48 (t, 1H, NH), 8.82 (s, 1H, CH). 13C NMR (150.91 MHz, DMSO-d6) δ 25.80, 26.65, 26.83, 29.14, 29.47, 45.72, 46.69, 47.18, 72.42, 93.03, 115.09, 116.88, 129.72, 133.54, 134.60, 137.52, 142.80, 143.62, 156.23, 156.23. ESI-MS m/z calcd for $C_{32}H_{40}N_4OI_2$ ([M]+): 623.2, found 623.6.