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Electronic Supplementary Information

Nanocarriers from dicationic *bis*-imidazolium amphiphiles and their interaction with anionic drugs

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Characterization of **1**

^{1}H NMR: Varian Gemini 300 (300 MHz). ^{13}C NMR: Varian Gemini 400 (100 MHz). NMR spectra were determined in $CDCl_3$ and the chemical shifts are expressed in parts per million (ppm) relative to the central peak of the solvent. Thin Layer Chromatography (TLC) was performed on Merck coated 60 F_{254} silica gel plates; the spots were located with UV light and developed with an iodine/silica or (1% w/v) potassium permanganate solution. Mass Spectra (MS): Electrospray (ESI) in Agilent (2006) LC/MSD-TOF mass spectrometer. High Resolution Mass Spectra (HR-MS): Electrospray (ESI) with high resolution in Agilent (2006) LC/MSD-TOF mass spectrometer. Melting points are incorrected and were measured by Gallenkamp Melting point instrument using crystal capillaries purchased from Afora.

1: ^{1}H NMR (300 MHz, $CDCl_3$): 0.87 (t, *J*=6 Hz, 6H, CH_3); 1.25-1.32 (m, 20H, $(CH_2)_5$); 1.90 (m, 4H, N-CH_2-C**H**$_2$); 4.27 (t, *J*=7.5 Hz, 4H, N-CH_2); 5.64 (s, 4H, CH_2); 7.17 (dd, *J*=6 Hz, *J*=9 Hz, 1H, Ar-H(5)); 7.29 (s, 2H, Im-H(4)); 7.62 (d, 2H, *J*=9 Hz, Ar-H(4,6)); 8.13 (s, 1H, Ar-H(2)); 8.20 (t, 2H, Im-H(5)); 10.45 (s, 2H, Im-H(2)).. ^{13}C NMR (100 MHz, $CDCl_3$): 14.2 (CH_3); 22.7-31.8 ($(CH_2)_6$); 50.4 (N-CH_2); 52.5 (CH_2); 121.9 (Im-C(4)); 123.7 (Im-C(5)); 130.1 (Ar-C(4,5,6)); 130.6 (Ar-C(2)); 134.9 (Ar-C(1,3))/(ImC(2)); 136.8 (Ar-C(1,3))/(ImC(2)). MS (ESI) *m/z*: (232.2, $[(M-2Br)/2]^{2+}$, 100%); (351.3, $[M-(CH_2)_7-CH_3), -2Br]^{+}$, 21%); (464.4, $[M-2Br]^{+}$, 4%); (543.3, $[M-Br]^{+}$, 5%). HRMS (ESI) *m/z*: $(C_{30}H_{48}N_4Br_2 - Br)^{+}$ calculated 543.3056, found 543.3078; $(C_{30}H_{48}N_4Br_2 - 2Br)^{2+}$ calculated 232.1934, found 232.1941. R_f: 0.36 (CH_2Cl_2:MeOH, 9:2

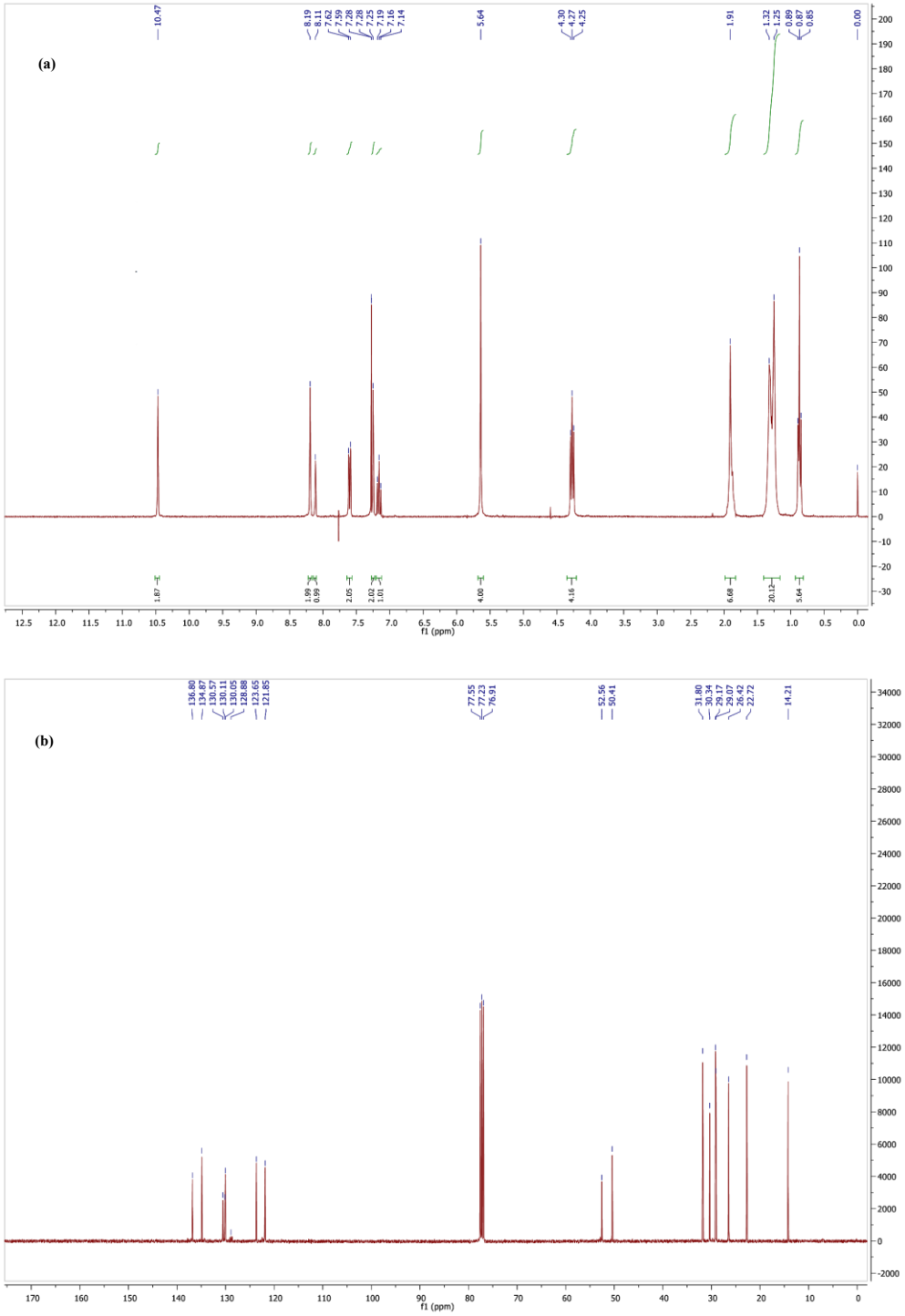

Fig S1. NMR spectra for **1**: (a) ^{1}H NMR (300 MHz, $CDCl_3$) and ^{13}C NMR (100 MHz, $CDCl_3$).

Fluorescence emission spectra of pyrene containing surfactant solution

Fig. 2 shows an example of the experimental results for **2** by plotting the intensity as a function the wavelength for increasing concentration of surfactant (0.2 – 1.2 mM) in aqueous solution with a fixed concentration of pyrene (10^{-6} M). The fluorescence intensity was normalized by I_1/I_3 (I_1 and I_3 correspond to the wavelengths of 373 nm and 384 nm, respectively).

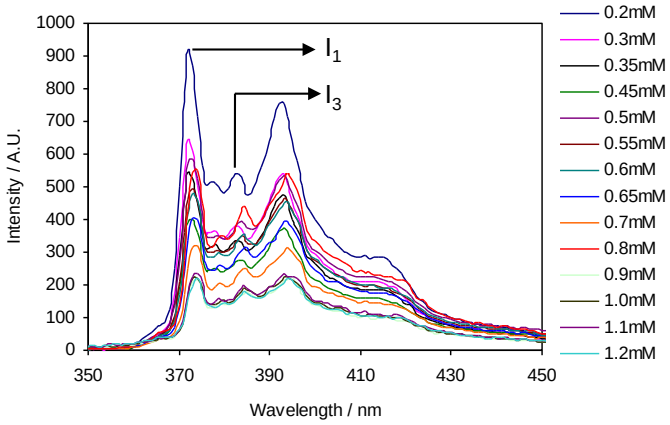

Fig. S2 Fluorescence spectra of aqueous solutions of **2**.

SANS curve for **1**

The flat SANS curves showed in Fig. 3S suggest that surfactant molecules of **1** in 10 mM and 15 mM aqueous solutions at 25°C do not have the capability to self-assemble into aggregates.

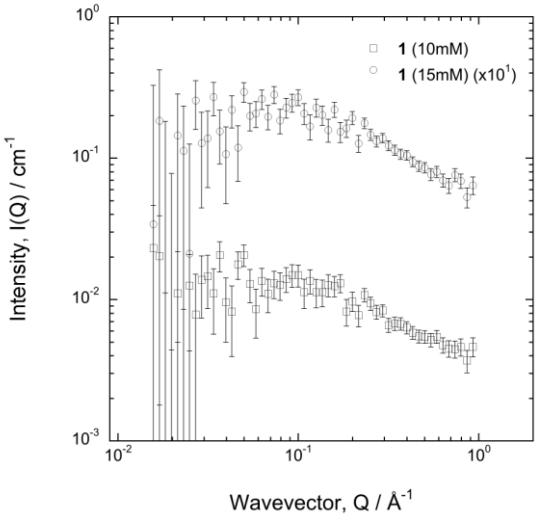

Fig. S3 SANS curves obtained for 10 mM and 15 mM aqueous solutions containing **1**.