Interaction between the outer layer of mixed ion pair amphiphile/double-chained cationic surfactant vesicle and DNA: a Langmuir monolayer study

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Supplementary Information

Surface activity of DNA

Table S1 lists the reflectivity of the BAM images obtained at air/liquid interfaces with subphases of 10^{-9} and 10^{-7} M DNA aqueous solutions in the absence of a Langmuir monolayer. The increased reflectivity of BAM images on a 10^{-7} M DNA aqueous subphase was detected during the interface compression. The enhanced reflectivity suggested an increased surface concentration of molecules and/or highly ordered conformation of the molecules at the interface. Thus, the surface activity of DNA can not be totally ignored.

The areas per molecule and areas per alkyl chain of a HTMA-DS Langmuir monolayer

Table S2 shows that the area per alkyl chain of the molecules in the HTMA-DS monolayer at high surface pressures is smaller than that in a closely packed monolayer, which is about 20 Å^2.

Table S1. The values of the trough area and reflectivity of BAM images of at air/liquid interfaces with subphases of 10^{-7} M and 10^{-9} M DNA aqueous solution.

DNA (M)	Relative Area (%)	Reflectivity (gray level, au)
10^{-7}	100	19
	24*	26
10^{-9}	100	19
	24*	19

*The smallest relative area was 24 %.

Table S2. The areas per molecule and areas per alkyl chain of the molecules in a HTMA-DS Langmuir monolayer at surface pressures of 40 and 45 mN/m with subphases of pure water and 10^{-9} M DNA aqueous solution.

Subphase	Surface pressure (mN/m)	Area per molecule (Å^2)	Area per alkyl chain (Å^2)
Pure water	40	42	21
	45	41	20.5
10^{-9} M DNA aqueous solution	40	35	17.5
	45	32	16