Supporting Information for:

Condensed Film Formation and Molecular Packing in Cationic Surfactant – Cholesterol and

Zwitterionic Surfactant – Cholesterol Systems at the Hexane/Water Interface

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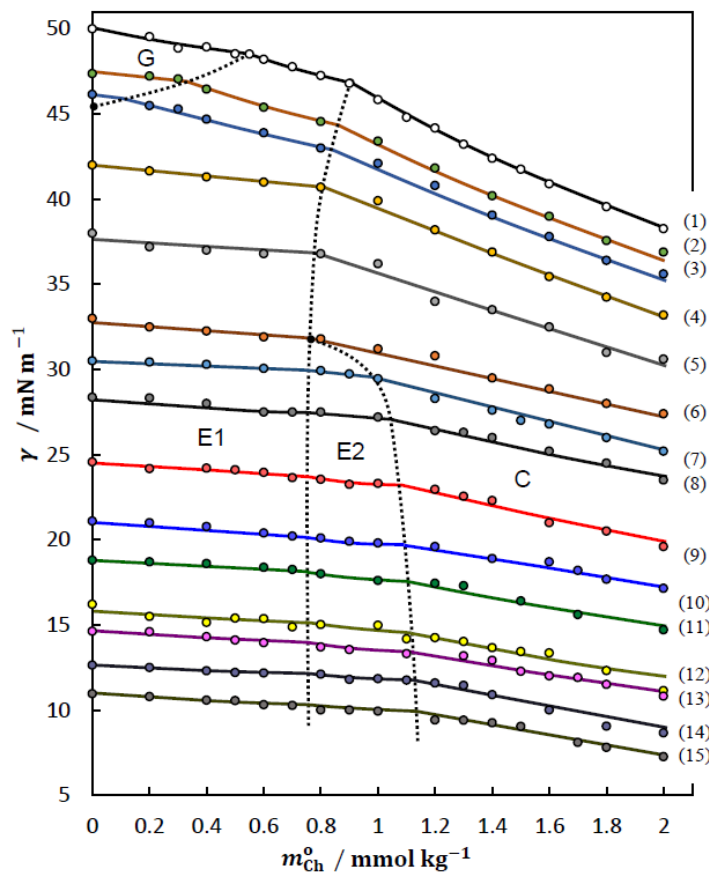
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Figure S1. Interfacial tension vs. cholesterol concentration curves at constant C14PC concentration: $m_{PC} =$ (1) 0 mmol kg^{-1}, (2) 0.001, (3) 0.0015, (4) 0.002, (5) 0.003, (6) 0.004, (7) 0.005, (8) 0.007, (9) 0.01, (10) 0.015, (11) 0.02, (12) 0.03, (13) 0.04, (14) 0.05, (15) 0.06. The dotted lines connect the break points on the interfacial tension vs. concentration curves at phase transition points.
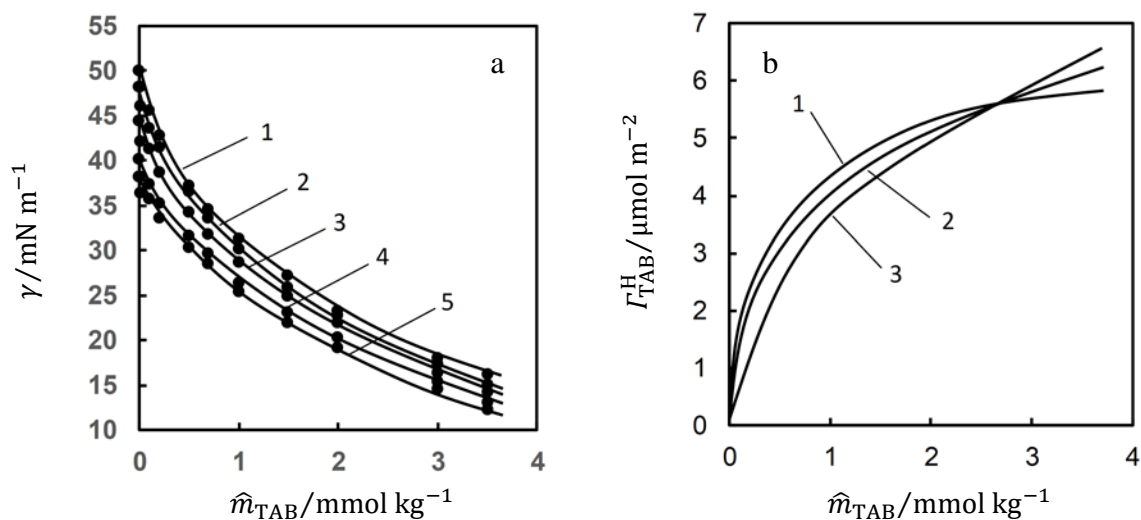
Figure S2. (a) Interfacial tension vs. C14TAB concentration curves at 298.15 K and constant Chol concentration: $m_{Chol} =$ (1) 0 mmol kg^{-1}, (2) 0.6, (3) 1.2, (4) 1.8, (5) 2.1; (b) Interfacial density of C14TAB vs. C14TAB concentration curves at 298.15 K and constant Chol concentration: $m_{Chol} =$ (1) 0 mmol kg^{-1}, (2) 0.9, (3) 1.5.
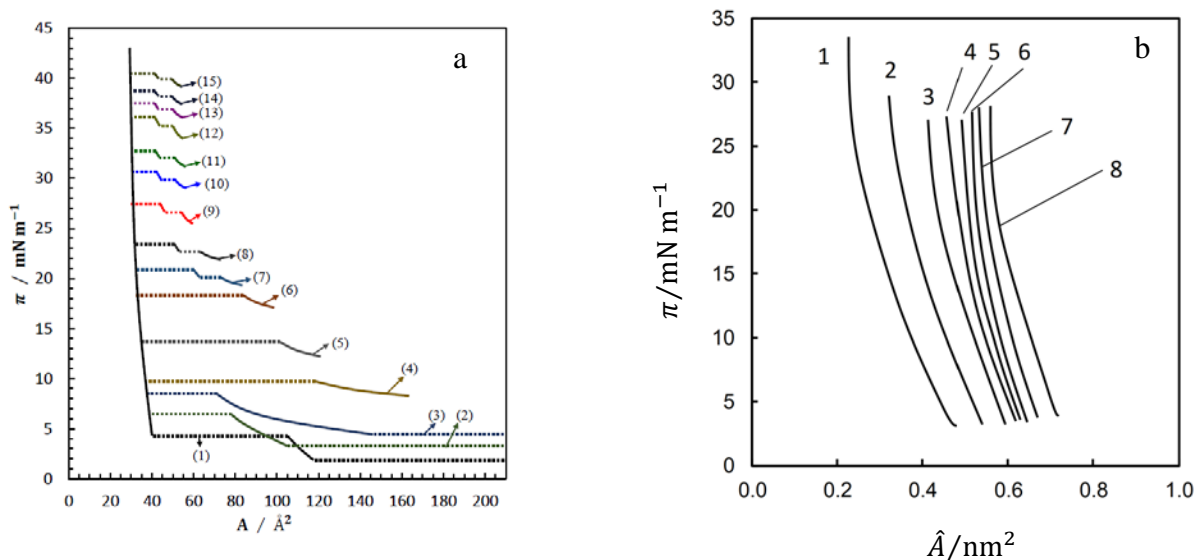
Figure S3. (a) Interfacial pressure vs. mean area per molecule curves of C14PC – Chol system at constant m_{PC} = (1) 0 mmol kg^{-1}, (4) 0.003, (5) 0.004, (6) 0.005, (7) 0.007, (8) 0.01, (9) 0.015, (11) 0.03, (13) 0.05, (15) 0.06; (b) Interfacial pressure vs. mean area per molecule curves of C14TAB – C14PC system at constant bulk composition $\hat{X}_{PC}$ = (1) 0 (C14TAB), (2) 0.02, (3) 0.1, (4) 0.023, (5) 0.5, (6) 0.74, (7) 0.9, (8) 1 (C14PC).

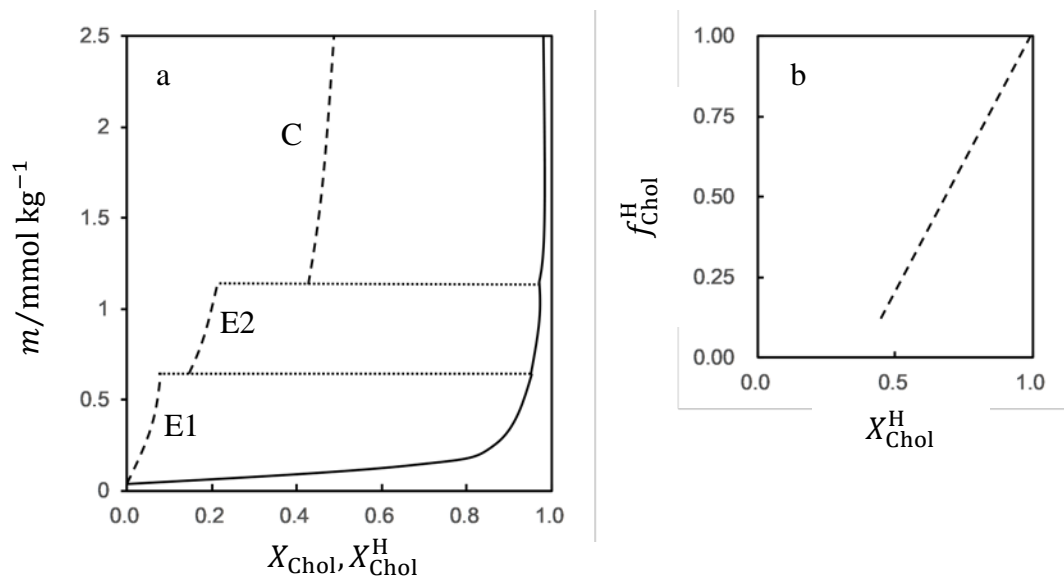**Figure S4.** (a) Phase diagram of adsorption of C14PC – Chol system at $\gamma = 15$ mN m^{-1}. Solid and dashed lines represent respectively m vs. X_{Chol} and m vs. $X_{\text{Chol}}^{\text{H}}$ curves; (b) Activity coefficient of Chol in condensed state (C state) at $\gamma = 15$ mN m^{-1}.
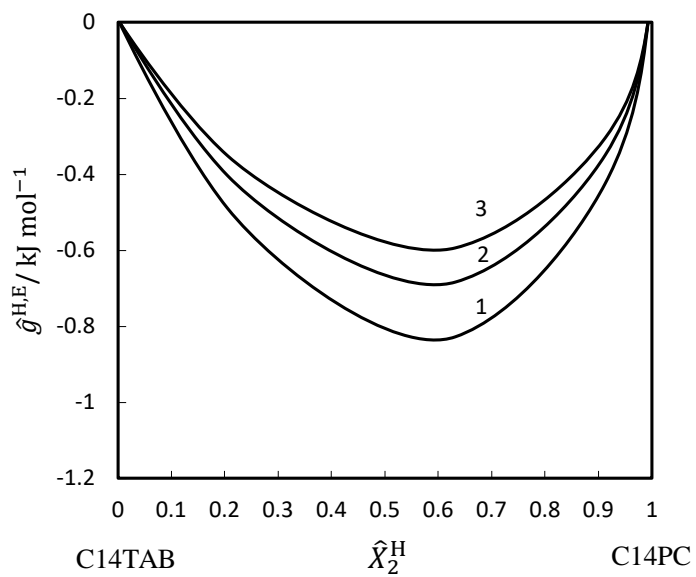
Figure S5. Excess Gibbs energy of adsorbed film vs. film composition curves of C14TAB – C14PC system at given interfacial tension $\gamma =$ (1) 46 mN m^{-1}, (2) 50, (3) 55.
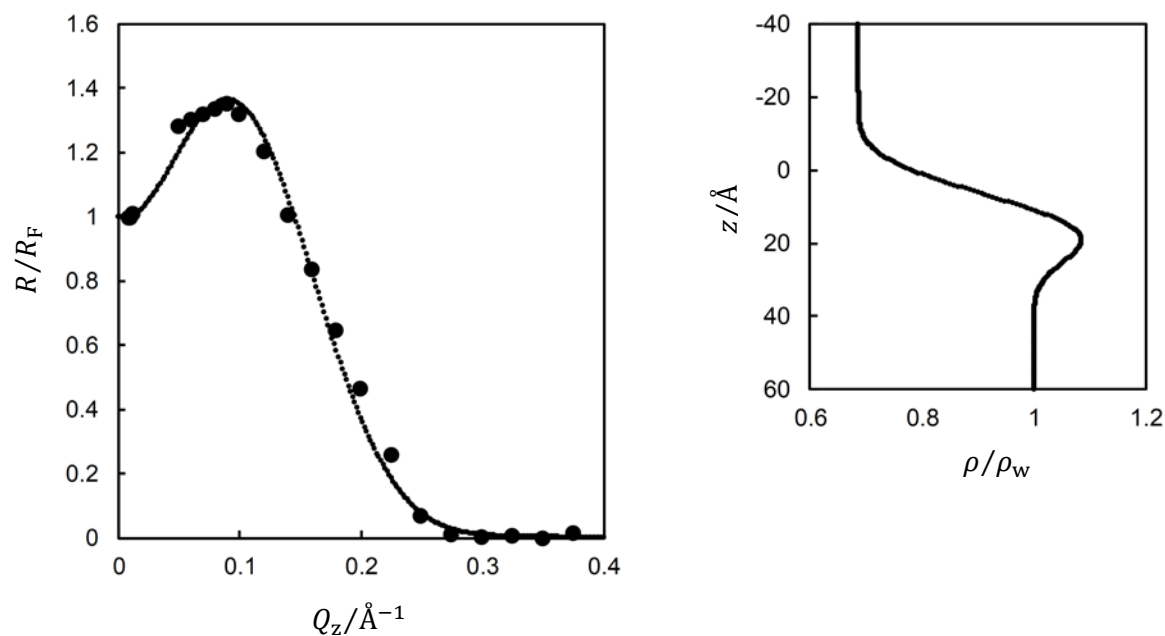
Figure S6. X-ray reflectivity vs. scattering vector normal to interface plot measured in condensed state of C14PC – Chol system at $m_{PC} = 0.03 \, \text{mmol kg}^{-1}$ and $m_{Chol} = 2.0 \, \text{mmol kg}^{-1}$. Dotted line represent the curve fitted by three slab model. The electron density profile is shown in the right side figure.
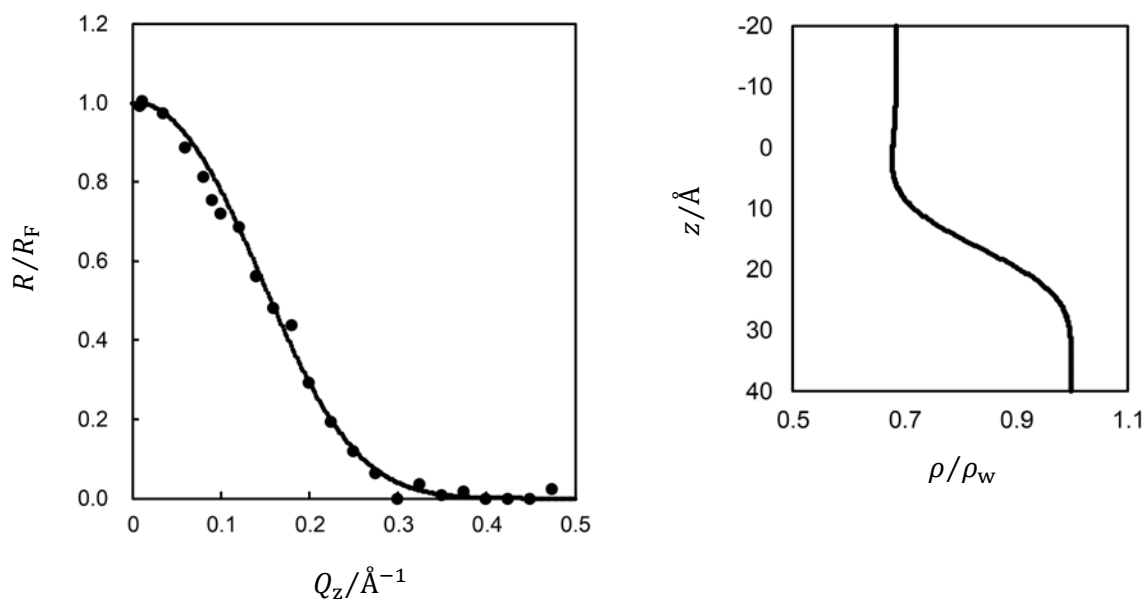
Figure S7. X-ray reflectivity vs. scattering vector normal to interface plot measured in expanded state of C14TAB – Chol system at $m_{TAB} = 3.5$ mmol kg^{-1} and $m_{Chol} = 0.3$ mmol kg^{-1}. Dotted line represent the curve fitted by three slab model. The electron density profile is shown in the right side figure.