

Supplemental material:

Biophysical analysis of gelatin and PLGA nanoparticle interactions with complex biomimetic lung surfactant models

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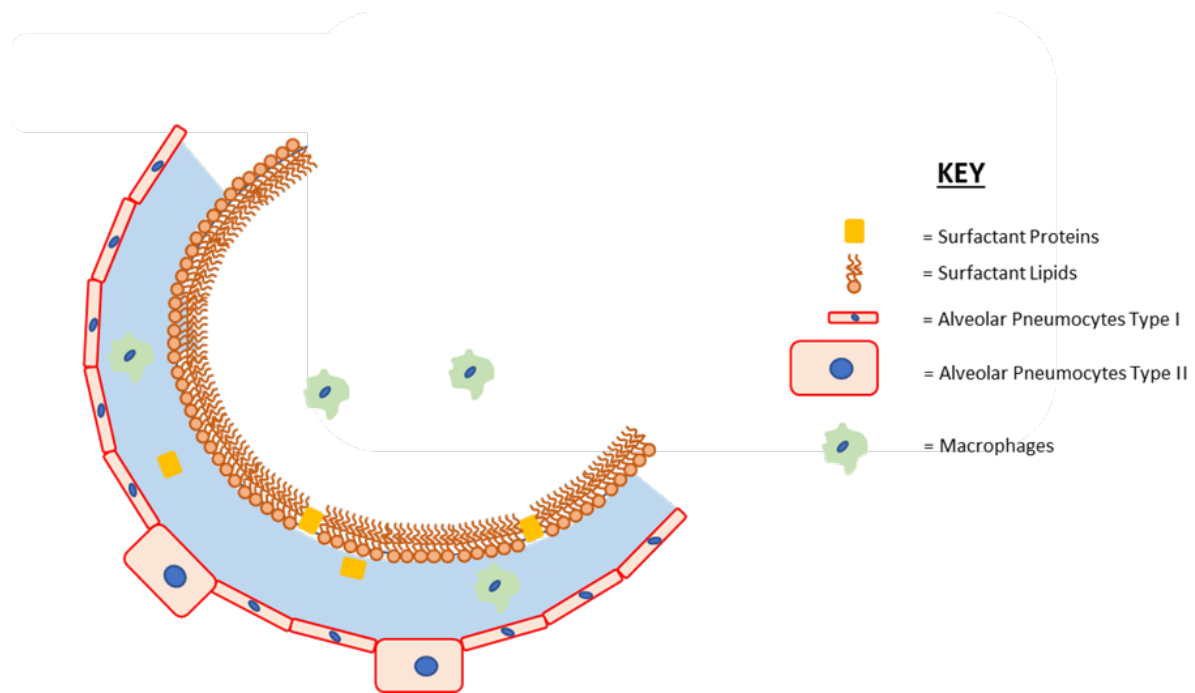


Figure S1. Schematic representation of the anatomy of the 3 layers of the human's alveolus.

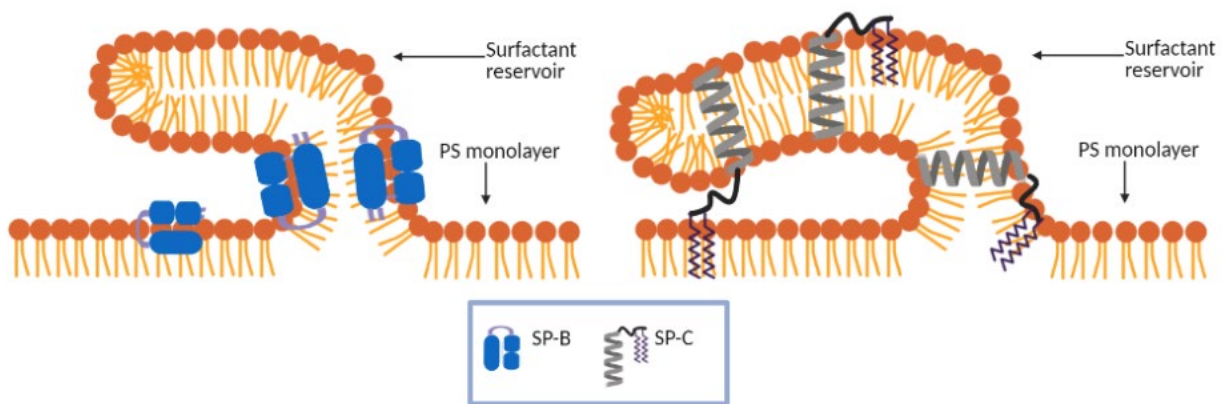


Figure S2. Role of SP-B in the formation of surface associated reservoirs during exhalation of the breathing cycle. The image was published in an open source paper by Dziur et al. ¹

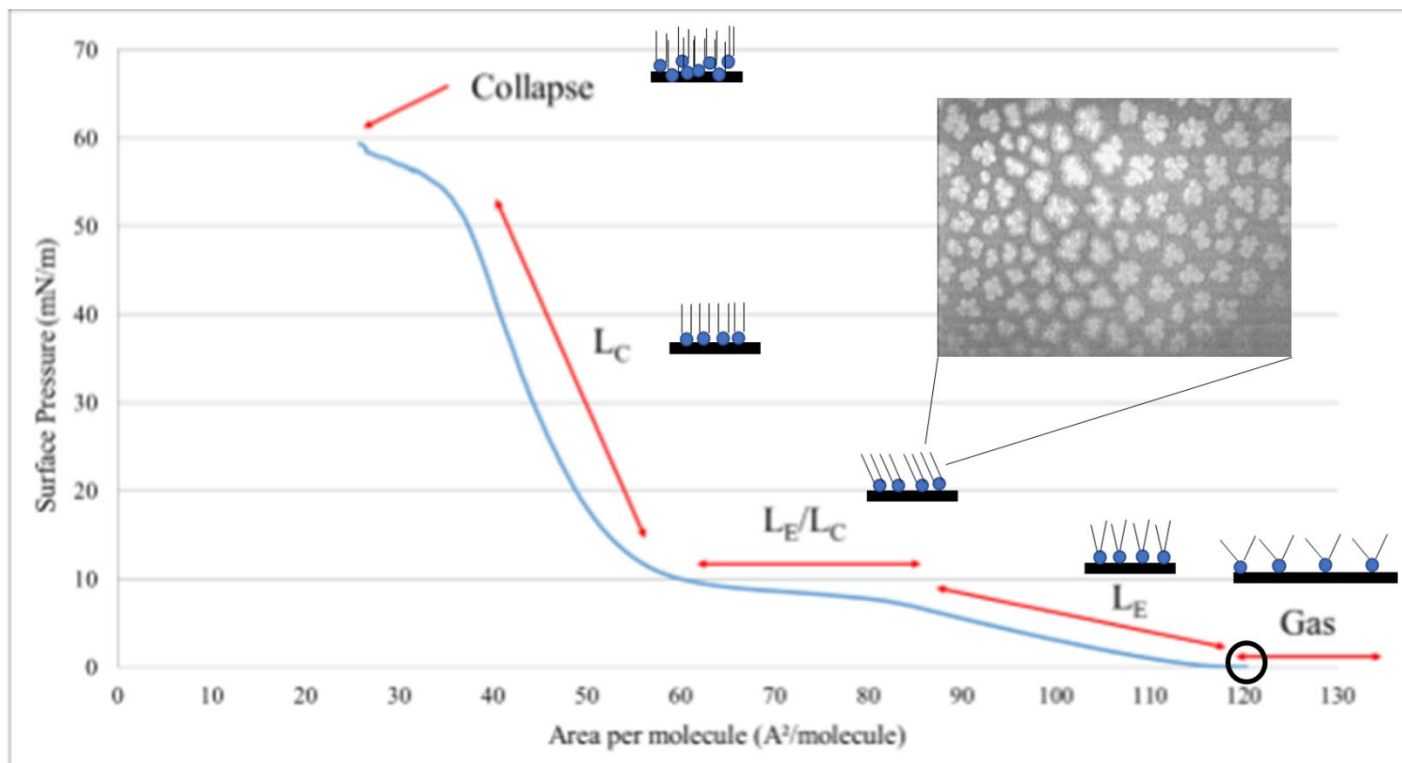


Figure S3. Surface pressure-area isotherms of lipid monolayers recorded on a Langmuir trough. Compression of lipid results in the re-orientation of the lipid molecules and formation of different lipid monolayer phases at increasing surface pressures. The different phases adopted by these lipid systems result in the formation of lipid domains. Moreover, lift off area is denoted by a black circle at the onset of detectable surface pressure.

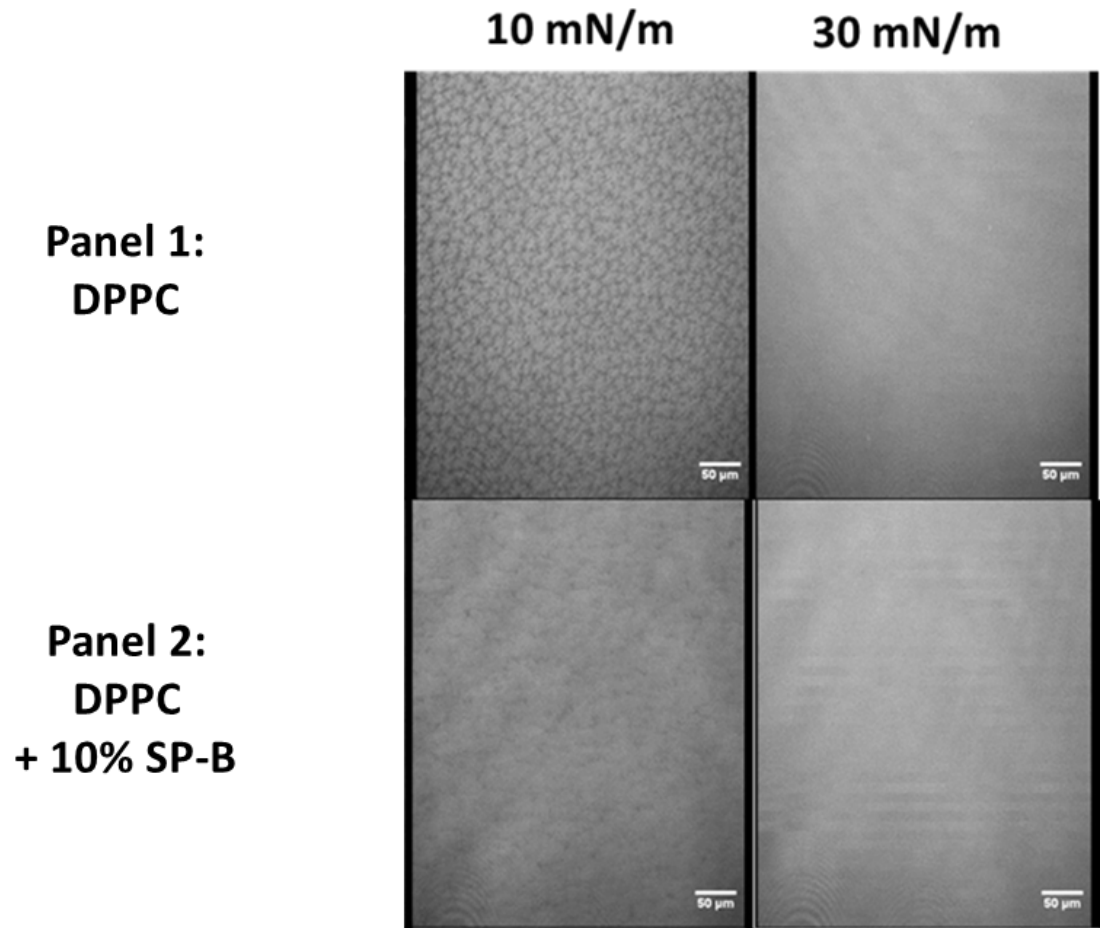


Figure S4. BAM images of the lateral organization of DPPC systems on an aqueous subphase. Panel 1) control DPPC, Panel 2) DPPG in the presence of 10% by weight SP-B₁₋₂₅. Scale bar corresponds to 50 μ m. Each image is a representative sample ($n \geq 3$).

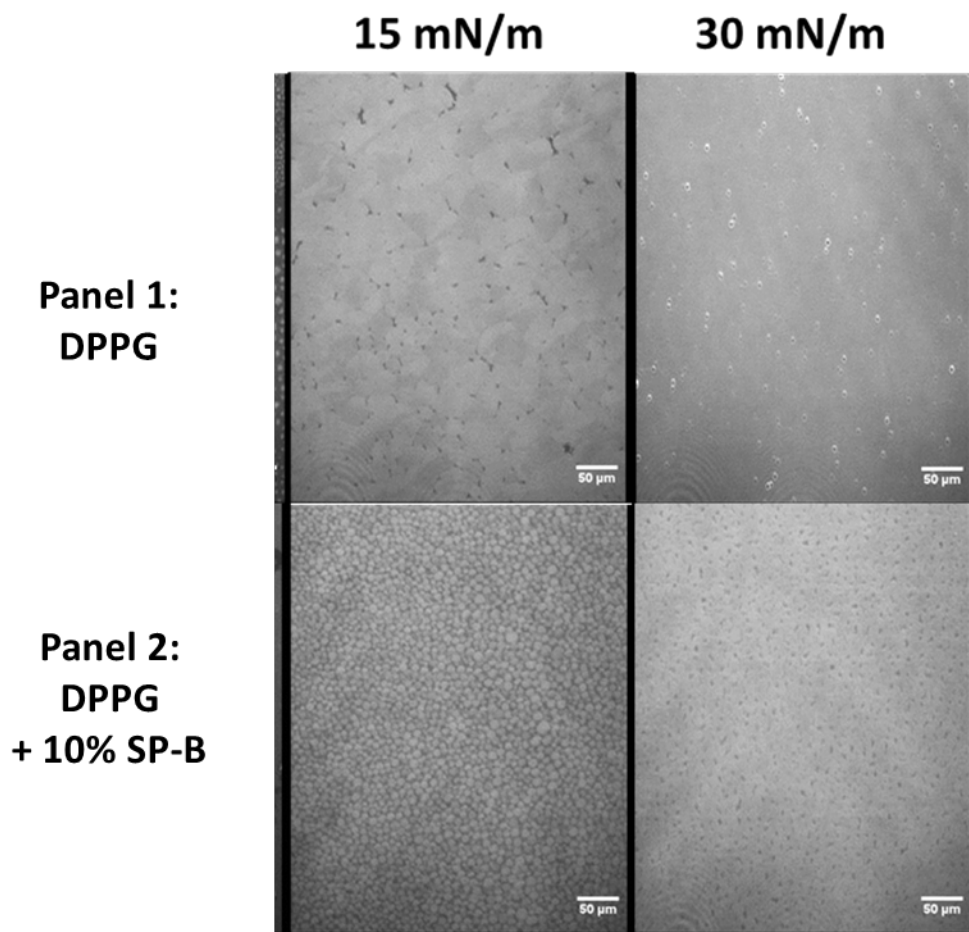


Figure S5. BAM images of the lateral organization of DPPG systems on an aqueous subphase. Panel 1) control DPPG, Panel 2) DPPG in the presence of 10% by weight SP-B₁₋₂₅. Scale bar corresponds to 50μm. Each image is a representative sample (n≥3).

References:

- 1 M. Dziura, B. Mansour, M. DiPasquale, P. C. Chandrasekera, J. W. Gauld and D. Marquardt, *Symmetry (Basel)*., 2021, **13**, 1259.