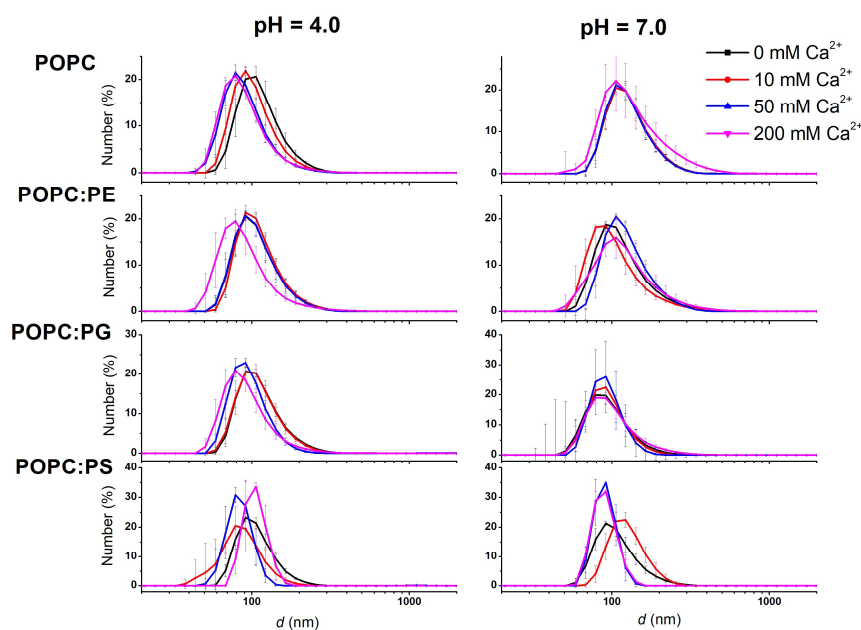


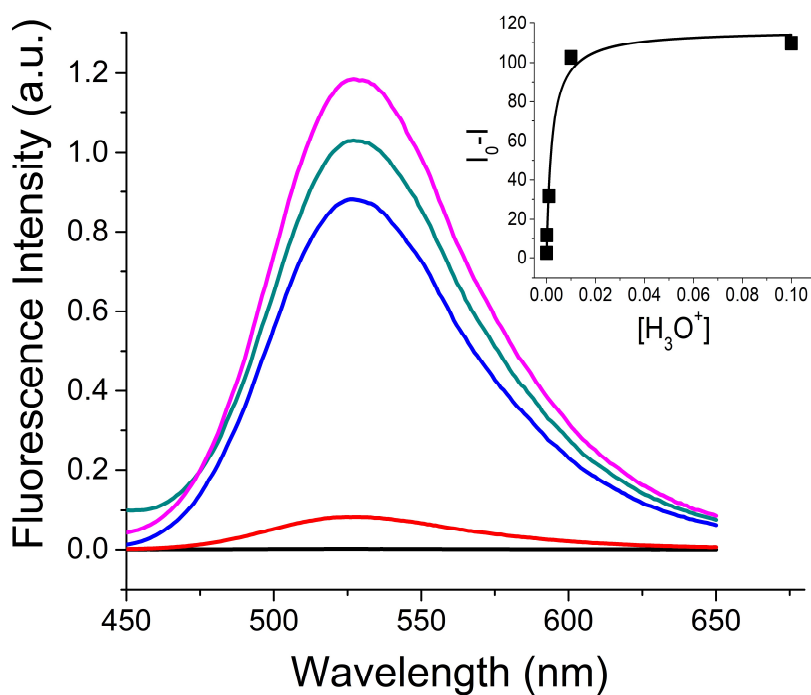
## Supplementary Information

### Modulation of Anionic Lipid Bilayers by Specific Interplay of Protons and Calcium Ions

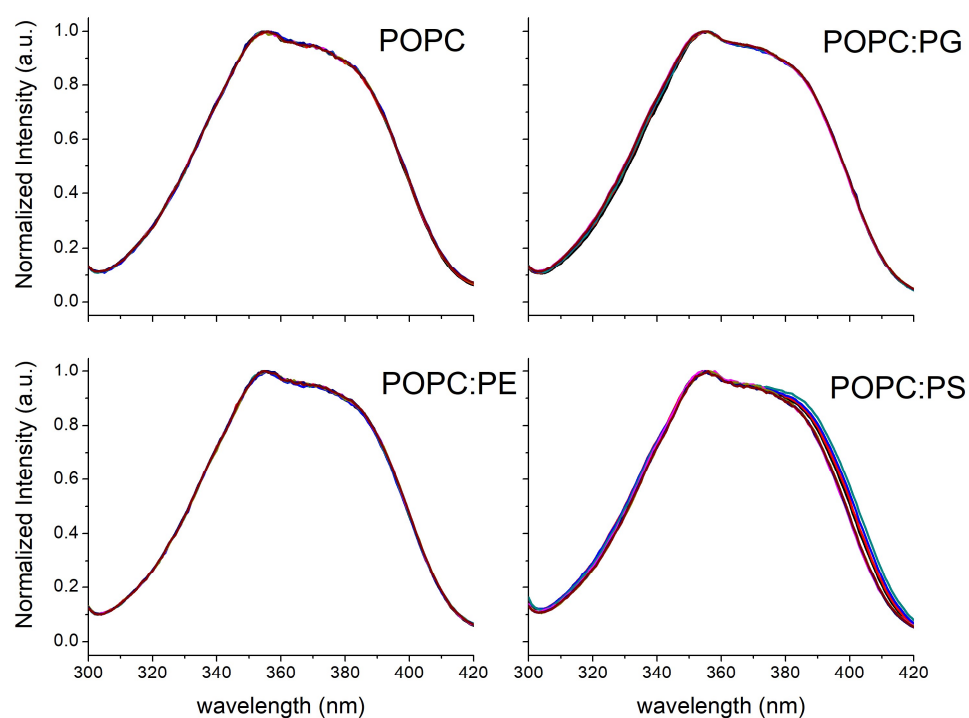
Abhinav <sup>1</sup>, Piotr Jurkiewicz <sup>1</sup>, Martin Hof <sup>1</sup>, Christoph Allolio <sup>2</sup> and Jan Sýkora <sup>1,\*</sup>



**Figure S1:** Number weighted size distributions of the investigated liposomes of varying compositions recorded at different Ca<sup>2+</sup> concentrations. The DLS data were accumulated five times yielding 5 independent read-outs of the number weighted size distributions. These sets of 5 data sets were statistically treated yielding the standard deviation for each particular size.



**Figure S2:** Emission spectra of Prodan recorded at different pHs. The fluorescence intensity gets strongly reduced with decreasing pH due to the protonation of the dimethyl-amino group of Prodan molecule. The apparent  $pK_a$  for the Prodan protonation in water was estimated to be 2.7 (gained by the hyperbolic fit of the  $[H_3O^+]$  dependence on  $I_0 - I$ , where  $I_0$  and  $I$  denote the integrated emission of fully deprotonated Prodan (at pH 7.0) and at the given pH, respectively).



**Figure S3:** Excitation spectra of Laurdan embedded in the liposomes of various compositions under the investigated range of pHs and  $\text{Ca}^{2+}$  contents. No severe changes in the spectral lineshape indicate that phase separation and/or phase transition has not occurred under any of the applied conditions.