

Figure 1s. (...) CD-spectrum of γ_1 -peptide in buffer (100 mM phosphate buffer, pH 7), (—) after addition of DPPG vesicles (lipid to peptide ratio 50:1), and (---) in TFE/buffer (50 % v/v).

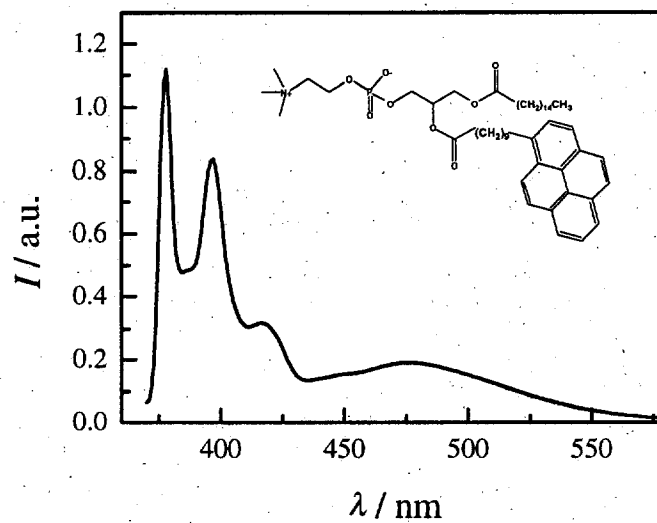


Figure 2s. Fluorescence spectrum of the probe PyrPc. Excimer to monomer (E/M) ratios were calculated from the intensity ratio of the broad excimer band centered at 477 nm to the monomer emission band centered at 377 nm.

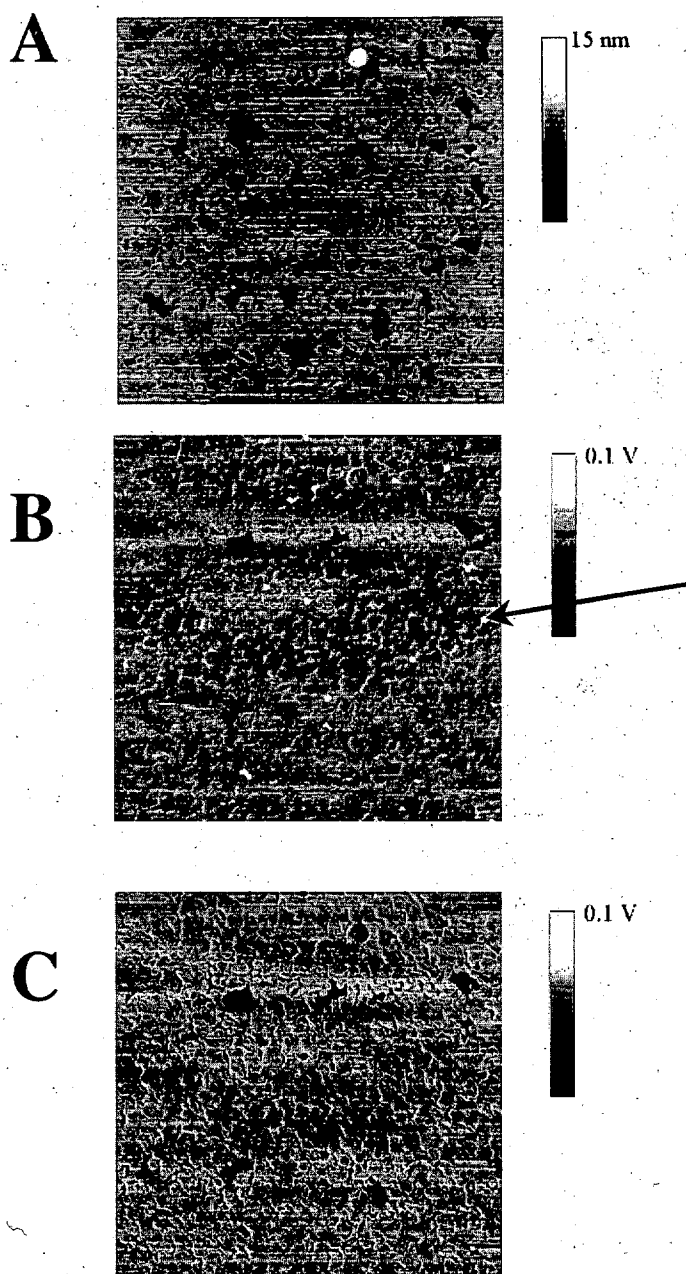


Figure 3s. (A) Topography of DPPC bilayers with 0.05 mol% γ_1 peptide. Interdigitated and non interdigitated domains are *coexisting*. (B) Lateral force microscopy image obtained from the forward scan direction. High friction coefficients are characterized by brighter gray scale, whereas low friction is displayed by darker regions. (C) The image obtained from the backward scan direction shows the expected contrast inversion. The mica surface (bilayer defects) displays stronger interaction with the silicon-nitride tip than the bilayer surface. The friction coefficient of the non-interdigitated, peptide free domains is slightly higher than that of the interdigitated domains, which is presumably due to weaker tip interactions with the exposed hydrophobic acyl chains from the bottom leaflet.

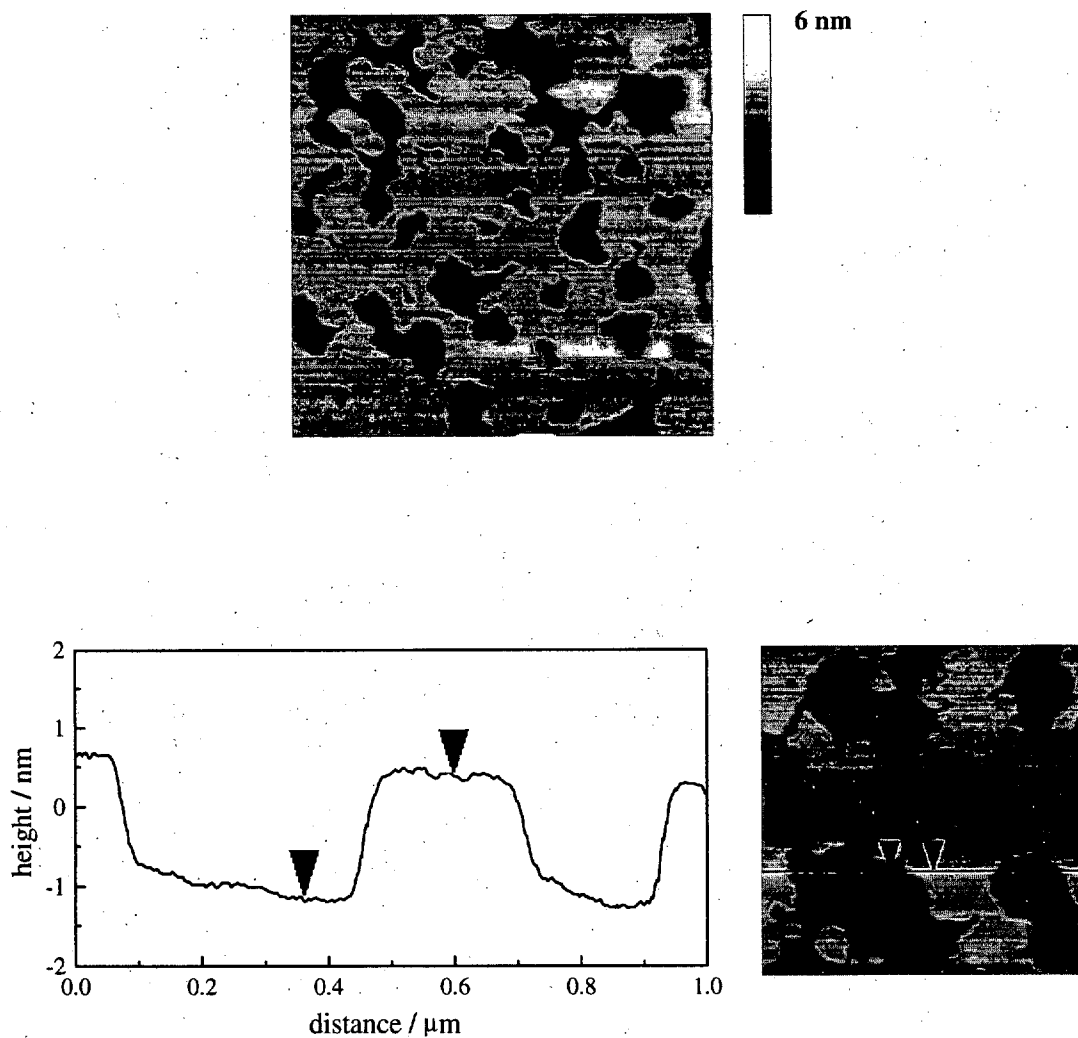


Figure 4s. Scanning force microscopy image ($2.5 \times 2.5 \mu\text{m}$) of DPPC membranes spread on a mica-surface after incubation in ethanol-buffer solution (5 % v/v) obtained in 20 mM NaCl solution at room temperature. Ethanol containing electrolyte was added to a preformed DPPC bilayer and the solid supported membrane was incubated at 55°C for 15 min in a closed SFM-cell. The height difference between the two phases obtained from the average of 50 measurements is about $1.6 \pm 0.2 \text{ nm}$.

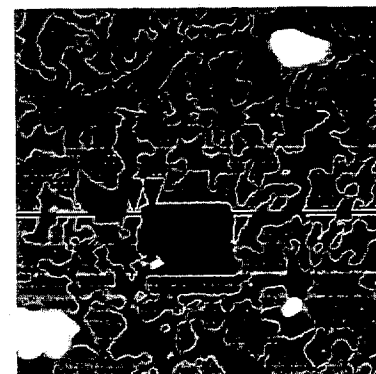
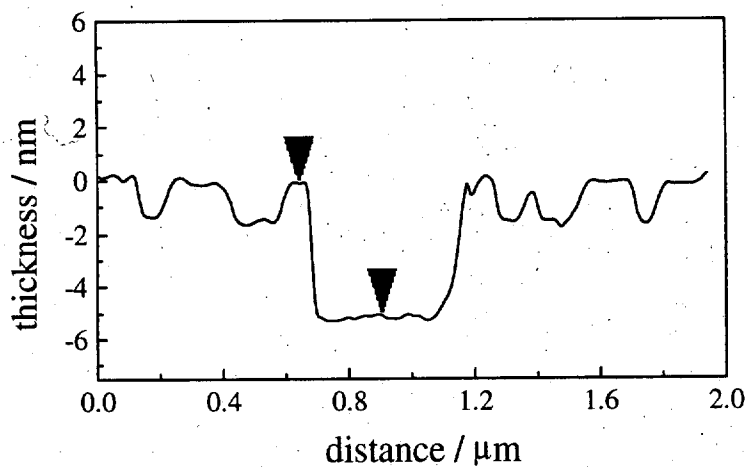


Figure 5s. Scanning force microscopy image of interdigitated domains induced by γ_1 peptide coexisting with the L_{β} phase of DPPC taken in the vicinity of a scan window (obtained by scanning with high loading force and velocity): The height profile demonstrates that the thickness of the L_{β} phase is preserved (5.5 nm), while the thinner domains exhibit heights of app. 3.9 nm.