

Supplementary Material (SM)

Cholesterol and Phosphatidylethanolamine Lipids Exert Opposite Effects on Membrane Modulations Caused by the M2 Amphipathic Helix

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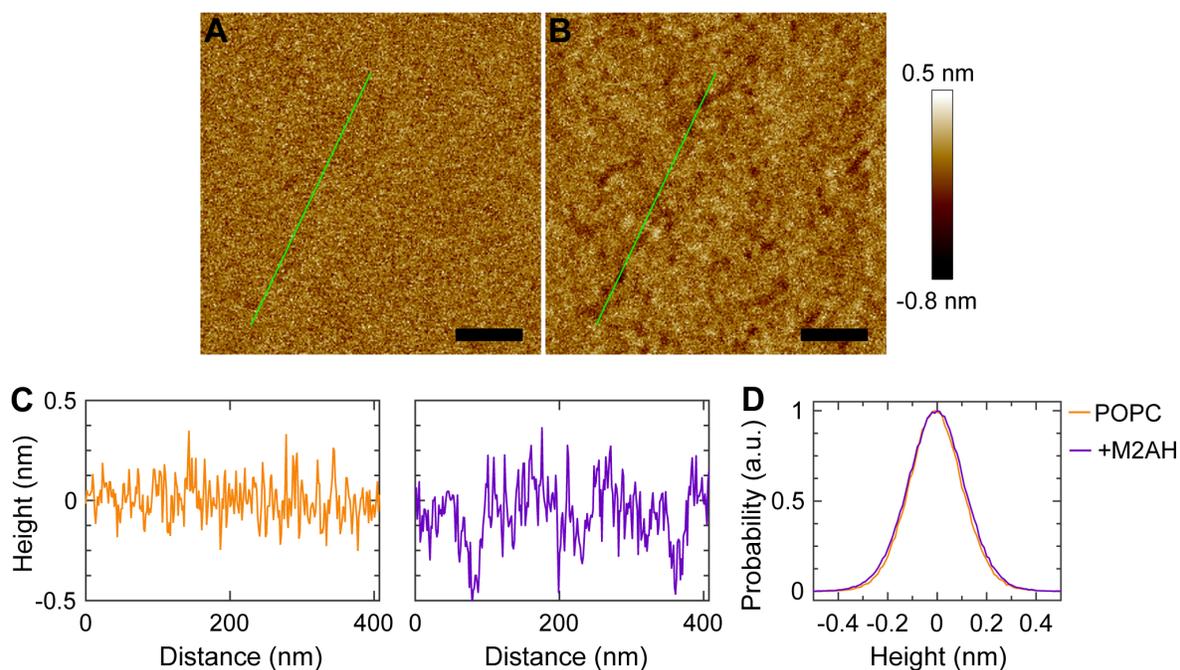


Figure S1 AFM height images of a POPC bilayer before (A) and after (B) treatment with 4 μ M M2AH. Height scale is indicated by the color bar on the right. Scale bars are 100 nm. (C) Height profiles along the green lines shown in A and B. (D) Height probability distributions of the AFM images in A and B. Gaussian curve fitting resulted in a FWHM of 0.25 and 0.27 nm for POPC and POPC + 4 μ M M2AH, respectively.

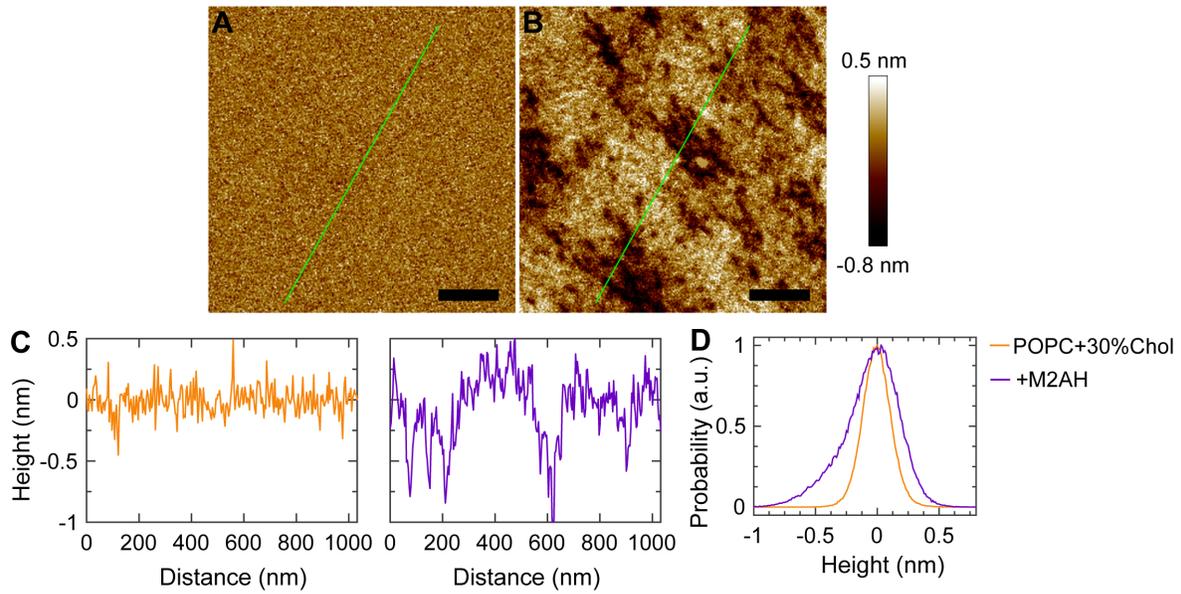


Figure S2 AFM height images of a POPC+30%Chol bilayer before (A) and after (B) treatment with 4 μM M2AH. Scale bars are 200 nm. (C) Height profiles along the green lines shown in A and B. (D) Height probability distributions of the images in A and B. Gaussian curve fitting resulted in a FWHM of 0.26 and 0.48 nm for POPC+30%Chol and (POPC+30%Chol) + 4 μM M2AH, respectively.

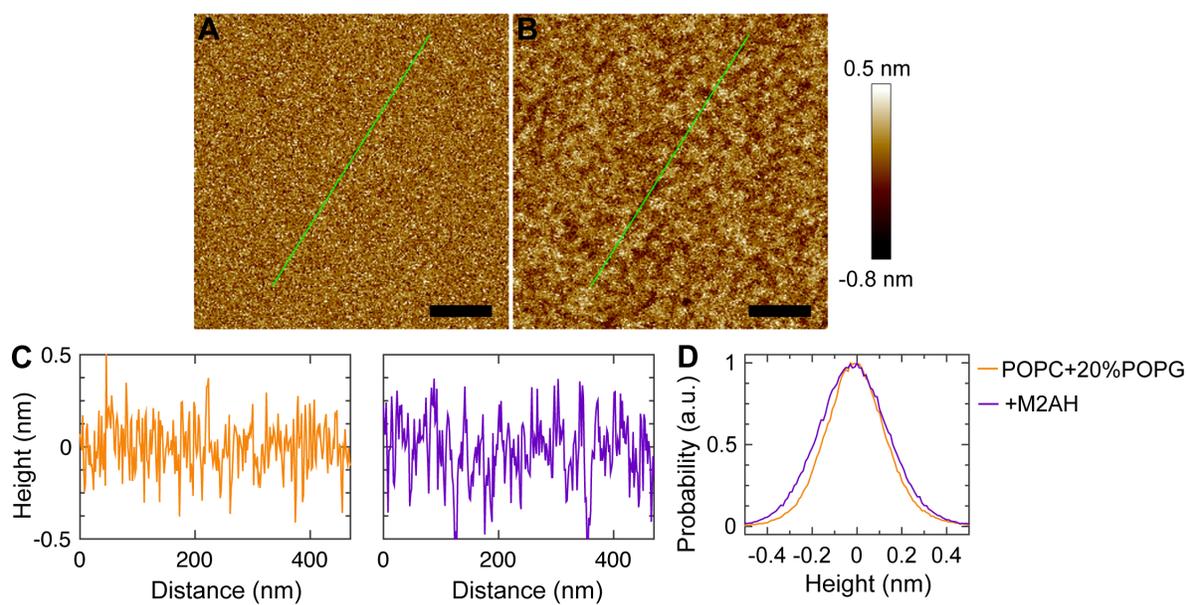


Figure S3 AFM height images of a POPC+20%POPG bilayer before (A) and after (B) treatment with 4 μM M2AH. Scale bars are 100 nm. (C) Height profiles along the green lines shown in A and B. (D) Height probability distributions of the images in A and B. Gaussian curve fitting resulted in a FWHM of 0.31 and 0.37 nm for POPC+20%POPG and (POPC+20%POPG) + 4 μM M2AH, respectively.

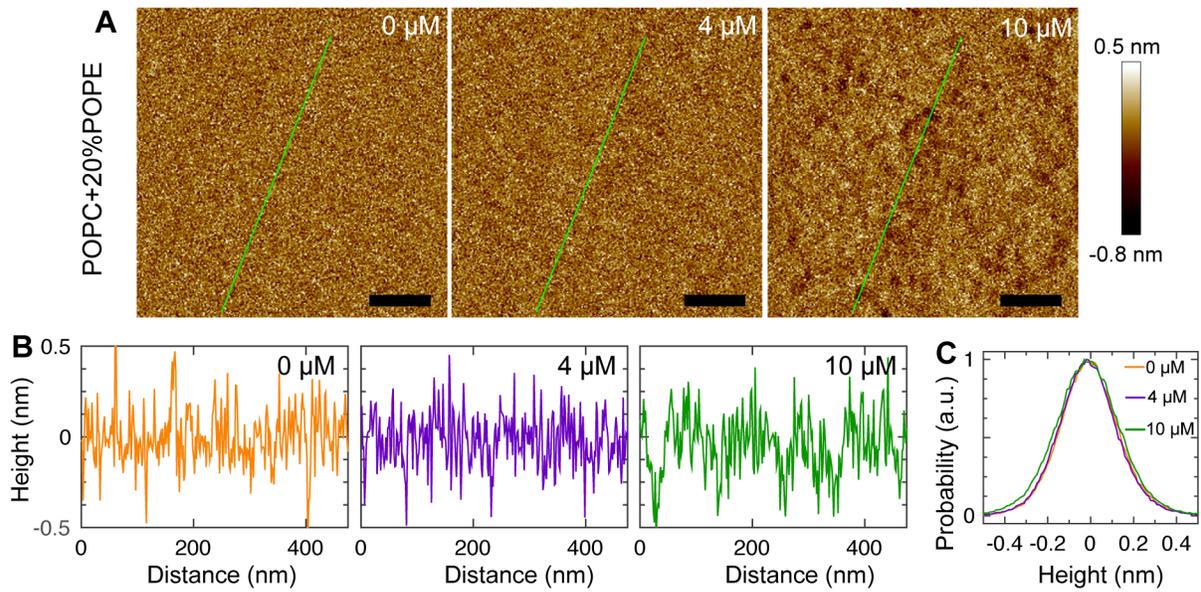


Figure S4 AFM height images of a POPC+20%POPE bilayer treated with 0, 4, and 10 μM M2AH. Scale bars are 100 nm. (B) Height profiles along the green lines shown in A. (C) Height probability distributions of AFM images in A. Gaussian curve fitting resulted in a FWHM of 0.31, 0.31, and 0.34 nm at 0, 4, and 10 μM M2AH, respectively.

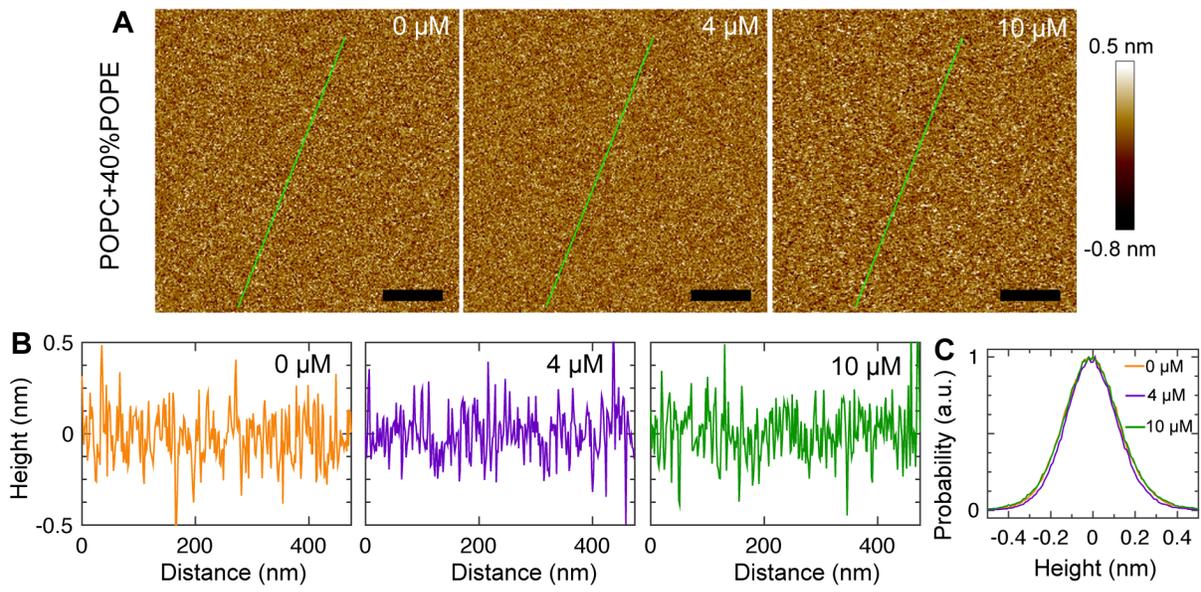


Figure S5 AFM height images of a POPC+40%POPE bilayer treated with 0, 4, and 10 μM M2AH. Scale bars are 100 nm. (B) Height profiles along the green lines shown in A. (C) Height probability distributions of AFM images in A. Gaussian curve fitting resulted in a FWHM of 0.31, 0.31, and 0.32 nm at 0, 4, and 10 μM M2AH, respectively.

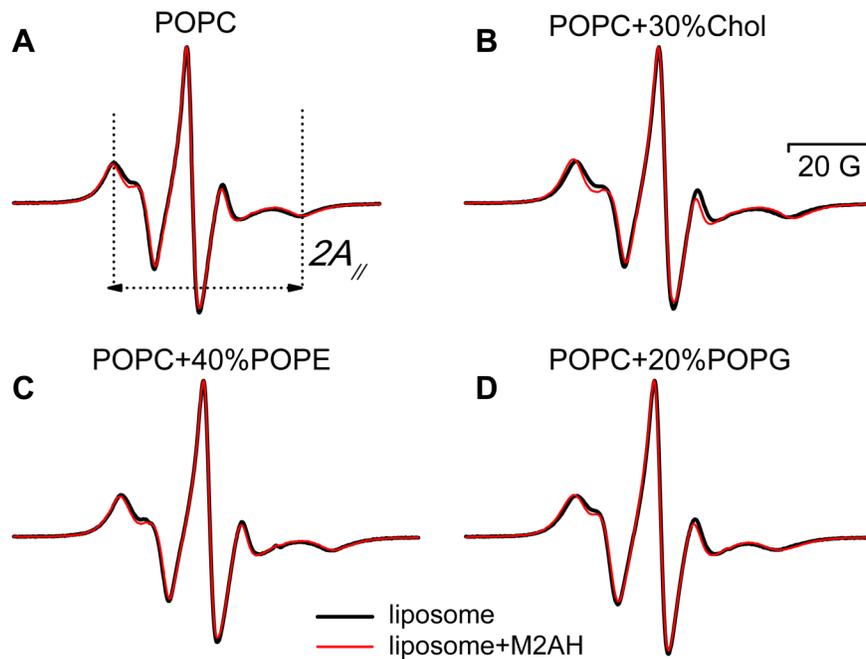


Figure S6 EPR spectra of liposomes labeled with 5-SASL for (A) POPC, (B) POPC+30%Chol, (C) POPC+40%POPE, and (D) POPC+20%POPG. The spectra were recorded at 295 K at P/L = 1/50. EPR spectra of bare liposomes (black) are overlaid with the spectra in the presence of M2AH (red).

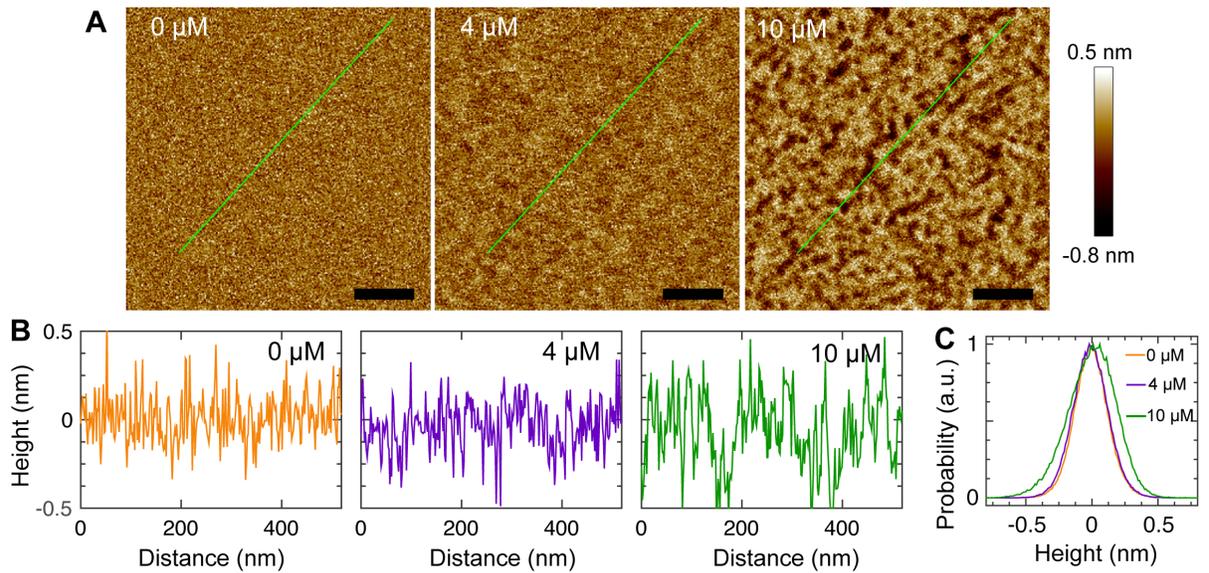


Figure S7 AFM height images of a POPC+17%Chol bilayer treated with 0, 4, and 10 μM M2AH. Scale bars are 100 nm. (B) Height profiles along the green lines shown in A. (C) Height probability distributions of the AFM images in A. Gaussian curve fitting resulted in a FWHM of 0.29, 0.31, and 0.42 nm at 0, 4, and 10 μM M2AH, respectively.

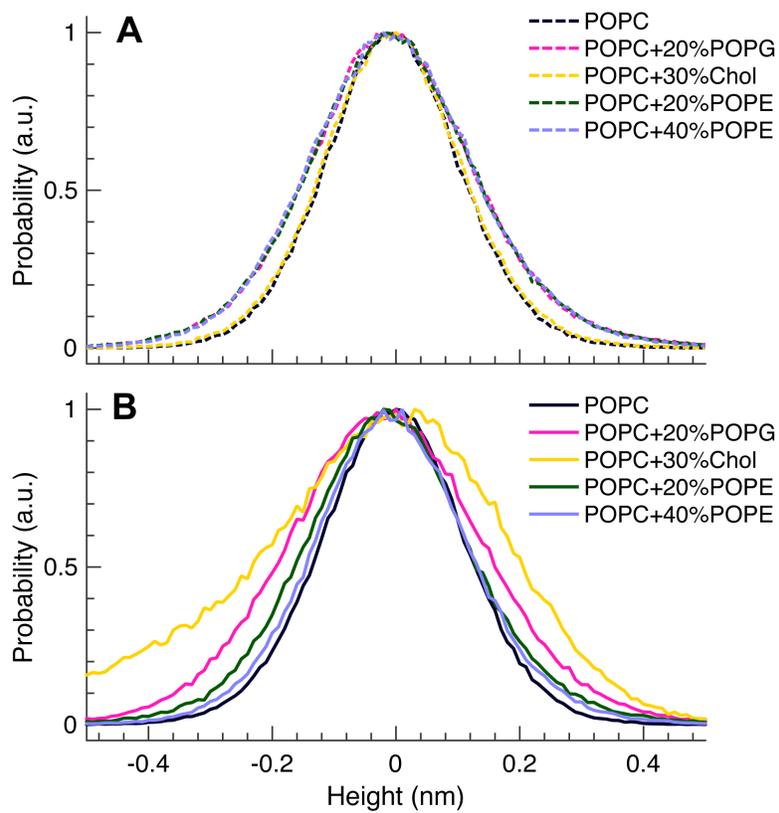


Figure S8 Height probability distributions of AFM images for various lipid bilayers before (A) and after (B) exposure to 4 μM M2AH.