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The effects of cholesterol concentration in lipid packing and domain registration in ternary mixture lipid multilayer¹ YICONG MA, SAJAL GHOSH, LAURA CONNELLY, RATNESHWAR LAL, SUNIL SINHA, University of California, San Diego — The effects of cholesterol in membrane rafts formation remain a mystery even until today. In our study of model membrane multilayer systems consisting of DPPC/DOPC/Cholesterol, we have characterized the morphology changes using AFM and optical microscopy, and the bilayer electron density profile using X-ray reflectivity, as a function of cholesterol concentration. In this presentation, we shall discuss how the cholesterol concentration affects the lipid packing within the bilayer, as well as the interlayer coupling of phase separated domains. X-ray scattering, AFM and optical microscopy which look at different length scales would constitute a complete picture. Our results may shed new light on the understanding of the role of cholesterol in raft formation in biological membranes.

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