The Effects on Chain-chain Packing Induced by Gramicidin A and Cholesterol

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As a key component of cell, membrane is not only a "Wall" to support and protect the cell but also the interface to control the materials to go into and out of the cell. By interacting with membrane directly, biological molecules can change either its structure or membrane structure to work well. Lipid chain-chain packing (CCP) is one of important structures correlated to membrane thickness, lipid lateral diffusion and membrane domain formation. We used grazing incident X-ray diffraction to probe lipid chain-chain packing. The 12keV X-ray light source in BL13A beam line of NSRRC and home-made humidity-temperature controlled chamber will be applied in the measurements. The ion channel peptide Gramicidin A (GA) and cholesterol (CL) will be used to interact with model membrane to study their effects on chain-chain packing

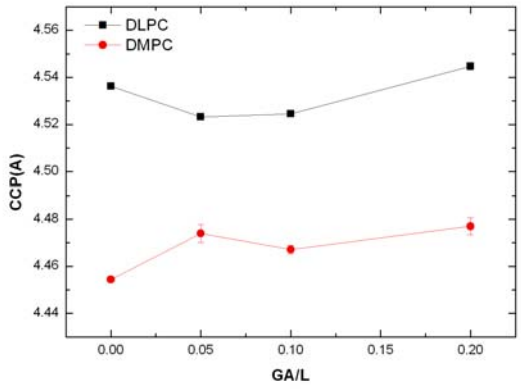

Fig. 1: The CCP change induced by GA binding to different lipid bilayers vs. GA-to-Lipid ratio

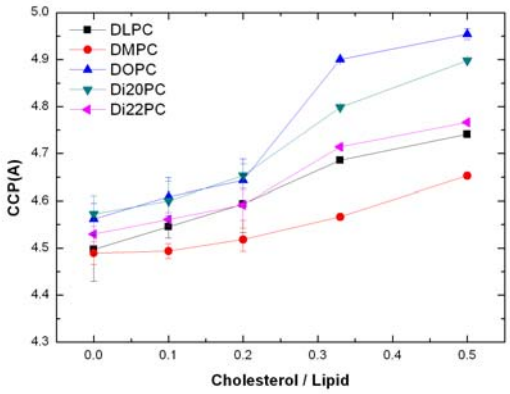

Fig. 2: The CCP change induced by CL binding to different lipid bilayers vs. CL-to-Lipid ratio