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The Effects of Concentration and Temperature on Vesicle Adsorption and Bilayer Formation KIMBERLY WEIRICH, JACOB ISRAELACHVILI, DEBORAH FYGENSON, University of California, Santa Barbara — Supported lipid bilayers (SLBs) are pursued as thin surface coatings and as model systems in which to study membrane-bound processes. We investigate the adsorption of small unilamellar phospholipid vesicles onto glass and the subsequent formation of planar SLBs using temperature-controlled, time-resolved fluorescence microscopy. We report the effects of vesicle concentration and temperature on the time course of lipid adsorption. Our results suggest that isolated vesicle rupture is a rare event and that bilayer edge plays a key role in SLB formation. It enhances vesicle-surface affinity and promotes further rupture.

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