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Cholesterol Partitioning in Unilamellar Vesicles determined by Small Angle X-ray Scattering PREETI VODNALA, JENNIFER TOURNEAR, Northern Illinois University, SOENKE SEIFERT, Argonne National Laboratory, LAURENCE LURIO, ELIZABETH GAILLARD, KALYAN KARUMANCHI, Northern Illinois University — Liposomes are artificial vesicles that are used for drug encapsulation and administration of pharmaceuticals or cellular nutrients. In this paper, small-angle x-ray scattering(SAXS) was used to study the structural properties of small unilamellar vesicles (SUV). In particular, we studied liposomes composed of 1,2-dipalmitoyl-sn-glycero-3-phosphocholine (DPPC) and cholesterol bilayer. We examined the location of cholesterol by labelling cholesterol with bromine molecule. Lipid bilayers electron density profile has been modeled using a series of Gaussian shells and we reveal asymmetry within inner and outer lipid bilayers leaflet and that cholesterol is located one side of the leaflet adjusting itself to the curvature of a liposome.

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