Asymmetric liposomes as model exosomes

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We use fluidic devices to create asymmetric liposomes and show that these structures can significantly improve the ability to transfect cells with their cargo molecules. The structure of these liposomes resembles exosomes, but these structures do not present the same immunogenicity concerns. Moreover, they can be efficiently loaded with cargo molecules. We show how these structures can be used to efficiently delivery many different cargo molecules into cells. We also investigate the biophysical properties of asymmetric liposome by creating larger vesicles with similar composition using droplet microfluidic methods. These can be easily probed using more traditional methods for the study of vesicles.