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Double emulsion templated monodisperse phospholipid liposomes incorporating Doxorubicin hydrochloride MINGTAN HAI, University of Science and Technology Beijing/Harvard University, DAVID WEITZ, Harvard University — We present a novel approach for fabricating monodisperse phospholipid liposomes incorporating water soluble anticancer drug Doxorubicin hydrochloride using controlled w/o/w double emulsions as templates. Glass-capillary microfluidics is used to generate monodisperse w/o/w double emulsion templates and double emulsion droplet size is from 20 to 100 um according to different flow rates. We show that the high uniformity in size and shape of the templates are maintained in the final phospholipid liposomes after a solvent removal step by Nikon eclipse microscopy. The lipid bilayers encapsulating anticancer drug inside is retained after the emulsion drops are converted to vesicles. The liposomes vesicles are promising water soluble anticancer drug delivery vehicles.

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