pharmaceutics

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Article

Supplementary Material: One-Step Synthesis of Nanoliposomal Copper Diethyldithiocarbamate and its Assessment for Cancer Therapy

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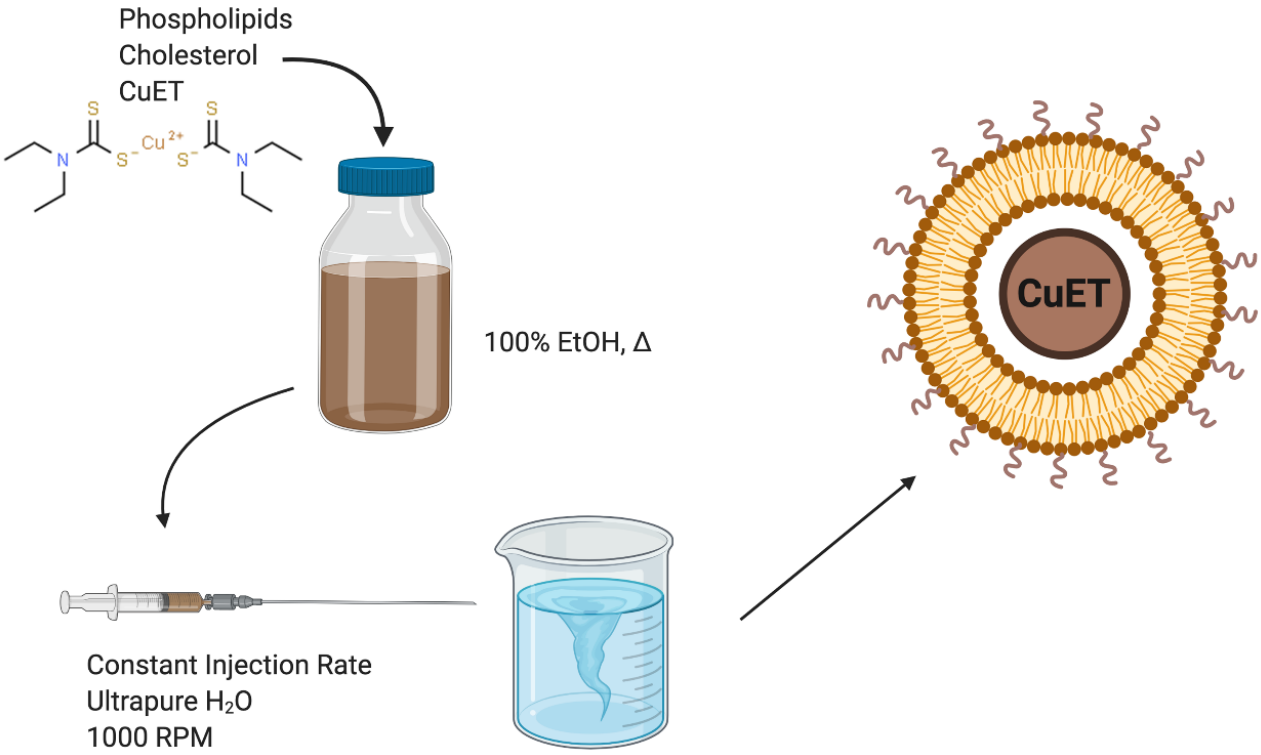

Figure S1. Schematic representation of LP-CuET synthesis using the modified ethanol injection method. CuET, phospholipids, and cholesterol are diluted in absolute ethanol and heated to 50 °C. The hot solution is then injected into rapidly stirring water to obtain LP-CuET.

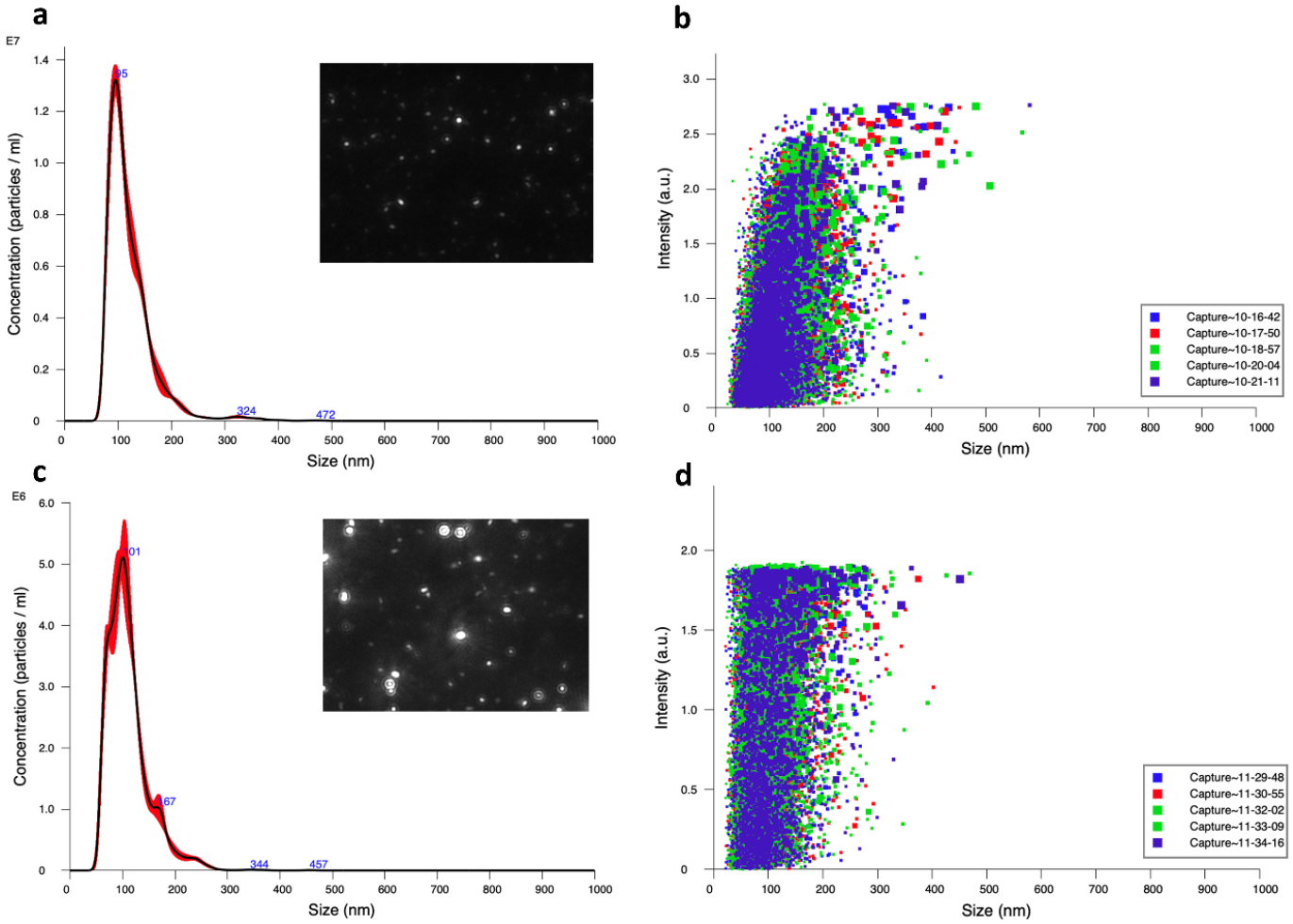

Figure S2. Concentration and intensity scatter plots of **(a–b)** LP-Control and **(c–d)** LP-CuET showing monodisperse distributions of the liposomes and their concentrations. E6, E7 = 106, 107. LP-CuET nanoparticles exhibited a brighter signal (insert) as compared to control liposomes.

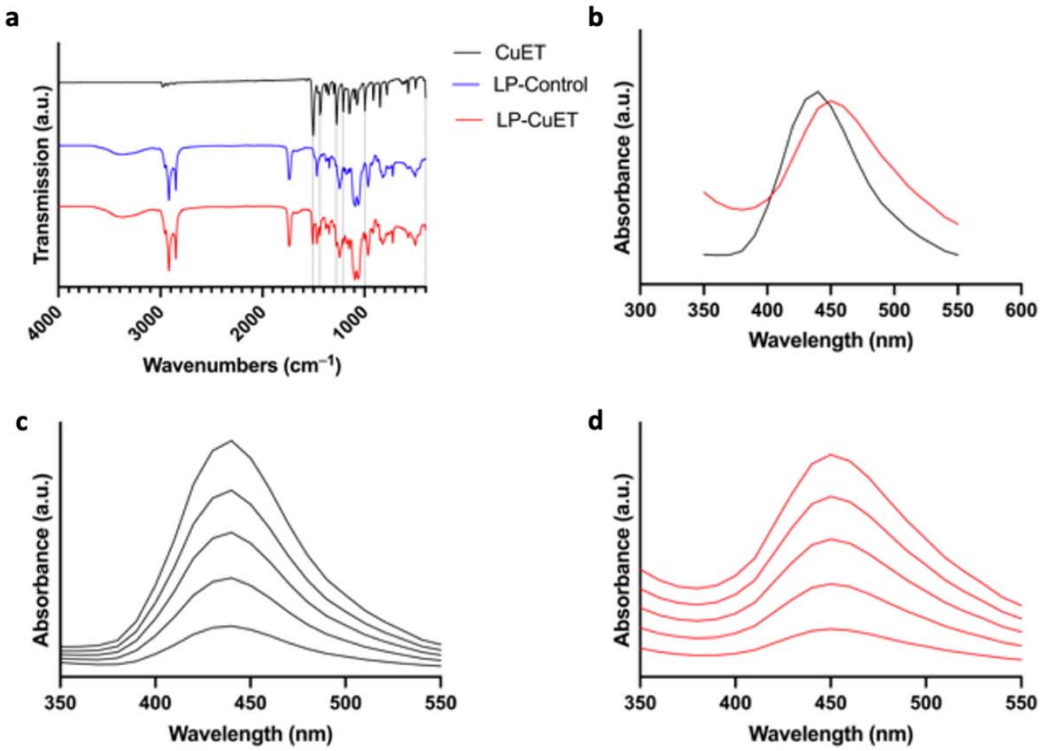

Figure S3. (**a**) Zoomed out FTIR graph of CuET, LP-Control, and LP-CuET. **(b)** Overlapping absorbance spectra of CuET in DMSO and LP-CuET in water, 450 nm was used for extrapolation measurements. **(c,d)** Concentration-dependent absorption spectra of CuET in DMSO and LP-CuET in water used for the standard curves.

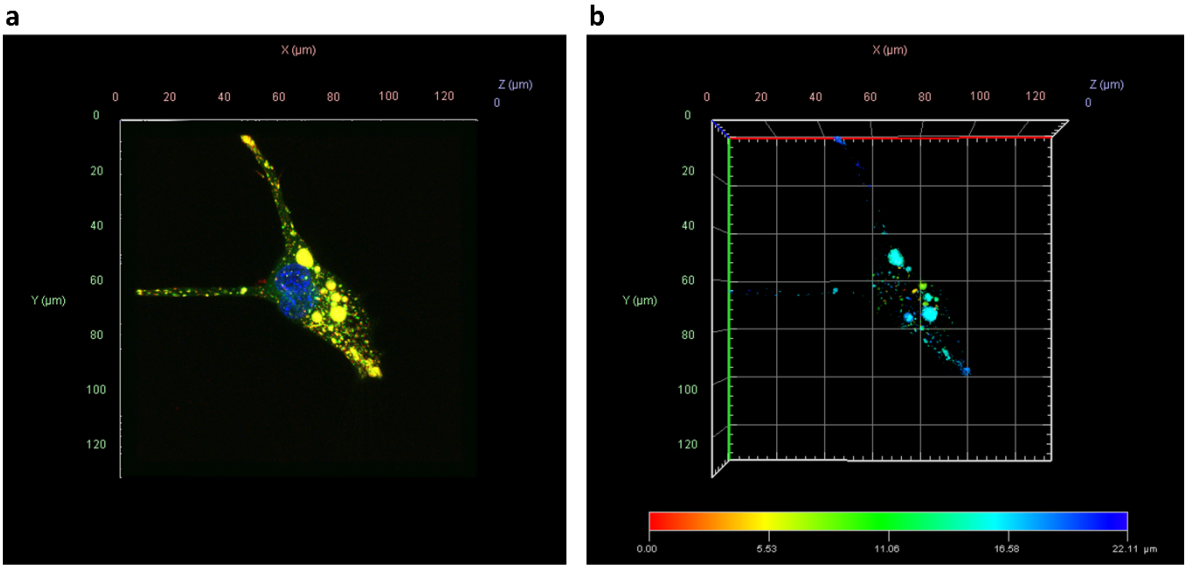

Figure S4. (a) two-dimensional and **(b)** depth plot of confocal images of live YUMM 1.7 cells treated with fluorescent LP-Control (red) and the acidic vesicle stain cytopainter (green) for 6h. Images are showing the spatial cellular distribution of drug-containing endocytic vesicles, including larger agglomerations around the nucleus.

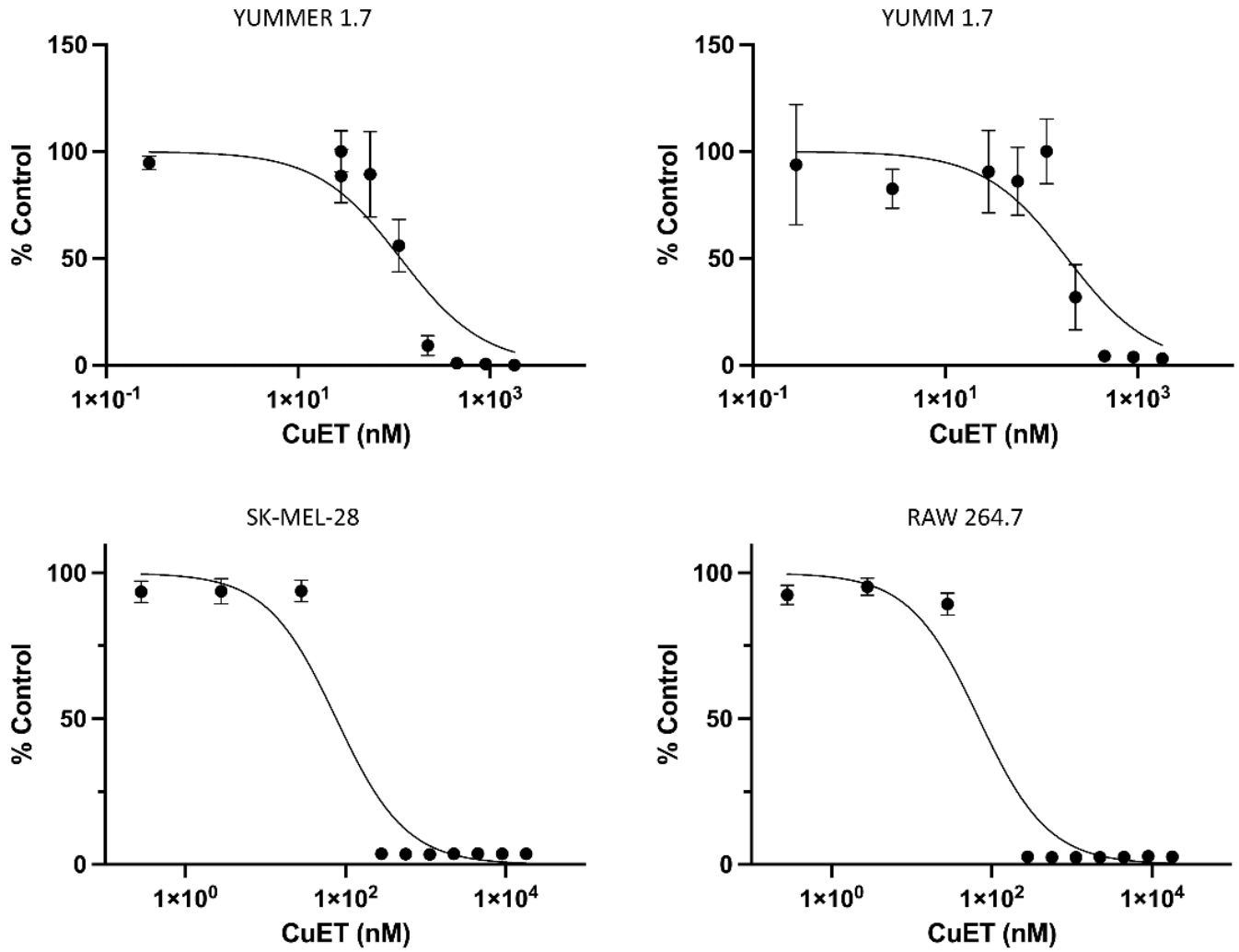

Figure S5. Representative IC50 curves of individual experiments of LP-CuET treated cells. IC50 values were obtained by taking the CuET concentration at 50%. Data plotted as mean ± SD, $n = 3$.

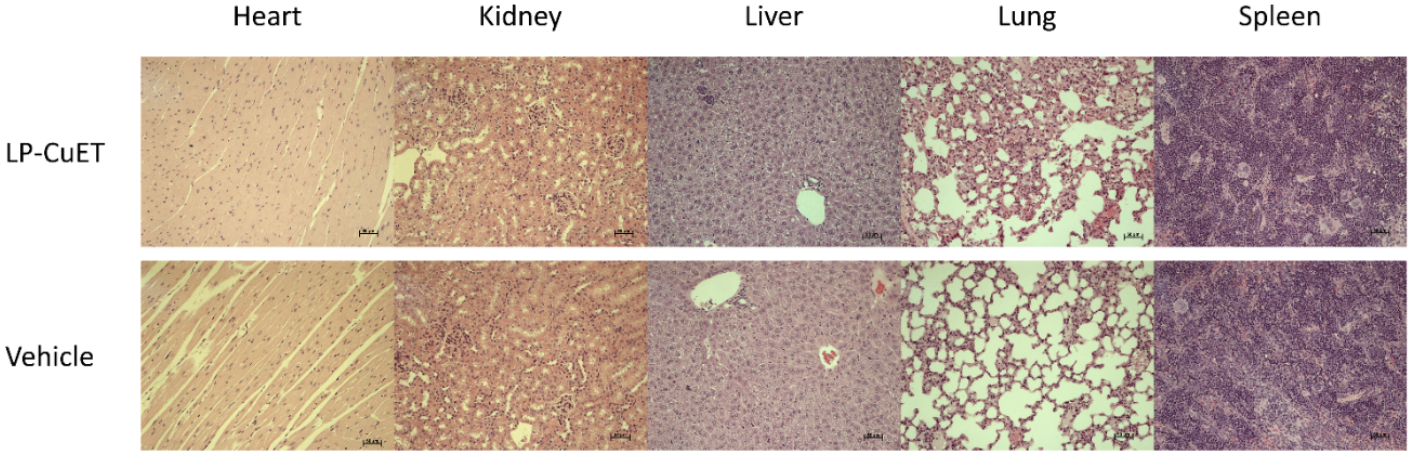

Figure S6. Hematoxylin and eosin (H&E) staining of major mouse organs. After 24 h of 1 mg.kg⁻1 LP-CuET treatment, mice were sacrificed and organs excised, fixed in 10% formalin, stained and imaged. No major morphological sign of acute cytotoxicity or tissue necrosis is observed in any of the studied organs. Scale bar: 50 μm.