## **Supplementary information**

## Improved effectiveness of X-PDT against human triple-negative breast cancer cells through the use

## of liposomes co-loaded with protoporphyrin IX and perfluorooctyl bromide

Biyao Yang <sup>a</sup>, Rui Sang <sup>a</sup>, Yi Li <sup>a</sup>, Ewa Goldys <sup>†a</sup>, Wei Deng <sup>\*b</sup>

a. Graduate School of Biomedical Engineering, ARC Centre of Excellence in Nanoscale Biophotonics, Faculty of Engineering, UNSW Sydney, NSW 2052, Australia

b. School of Biomedical Engineering, University of Technology Sydney, Sydney, NSW 2007, Australia

\*Corresponding author: Wei Deng, <u>Wei.Deng@uts.edu.au</u>; <sup>†</sup>Senior author: Ewa Goldys

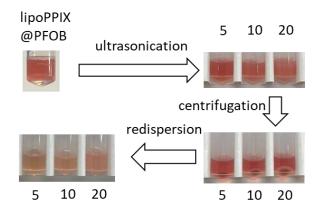


Figure S1. The photographs of lipoPPIX@PFOB preparation including lipoPPIX@PFOB before and after ultrasonication, and lipoPPIX@PFOB before and after centrifugation. 5, 10, 20 indicates the amount of PFOB loaded in lipoPPIX@PFOB.

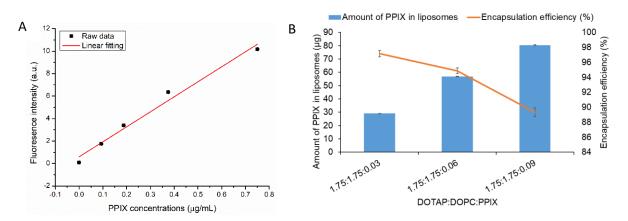


Figure S2. The encapsulation efficiency of PPIX in liposomes with different feeding ratio. (A) The standard curve correlates PPIX concentration with fluorescence intensity. (B) The amount and encapsulation efficiency of PPIX in liposomes with different amount ratio of DOTAP, DOPC, and PPIX in formulations.

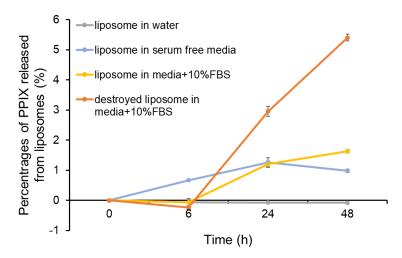


Figure S3. The stability of drug-loaded liposomes in water, serum free media and media with 10% FBS solutions.

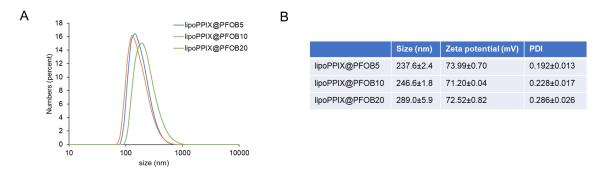


Figure S4. Optimization of lipoPPIX@PFOB formulation. (A) Size distribution of lipoPPIX@PFOBx samples. (B) Size, zeta potential and PDI of lipoPPIX@PFOBx samples.

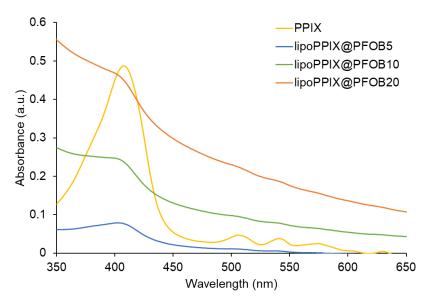


Figure S5. Absorption spectra of PPIX, and lipoPPIX@PFOBx samples.