Supporting Information

Charge-reversal functionalized PLGA nanobubbles as theranostic agents for ultrasonic imaging-guided combination therapy

Hong Yang 1,3, Xue Shen 1, Jie Yan 1, Xiaoxue Xie 1, Zhongyuan Chen 1, Tingting Li 1,
Shun Li 1,3, Xiang Qin 1,3, Chunhui Wu 1,3, Yiyao Liu 1,2,3 *

1 Department of Biophysics, School of Life Science and Technology, University of Electronic Science and Technology of China; 2 School of Clinical Medicine/the Affiliated Hospital, Chengdu University of Traditional Chinese Medicine; 3 Center for Information in Biology, University of Electronic Science and Technology of China, Chengdu 610054, Sichuan, P. R. China

* To whom correspondence should be addressed:

Prof. Yiyao Liu, Ph.D

Department of Biophysics, School of Life Science and Technology, University of Electronic Science and Technology of China, Chengdu 610054, Sichuan, P. R. China.

Tel: +86-28-8320-3353, fax: +86-28-8320-8238, E-mail: liuyiyao@uestc.edu.cn or liuyiyao@hotmail.com
Figure S1. Characterization of PAH-Cit. (A) Proton nuclear magnetic resonance (\( ^1\)H-NMR) spectrum of PAH-Cit. (B) Fourier transform infrared spectroscopy (FT-IR) spectrum of PAH-Cit.

Figure S2. Cellular uptake of the Dox in MCF-7 and MCF-7/ADR cells treated with free Dox, Dox-NBs/PPP, Dox-NBs/PPP/SC shRNA and Dox-NBs/PPP/P-gp shRNA for 72 h detected by fluorescence activated cell-sorting (FACS) analysis.
Figure S3. In vitro cell viability of HUVEC, HeLa, MCF-7 and MCF-7/ADR cells after treatment with NBs/PPP at the concentration of 0-200 μg/mL for 48 h.

Figure S4. Fluorescence microscopy images of MCF-7 cells (A) and MCF-7/ADR cells (B) after various treatments. All the cells were co-stained with Calcein-AM and propidium iodide. Green and red colors represent live and dead cells, respectively.