Supporting information for

Hematoporphyrin and doxorubicin co-loaded nanomicelles for the reversal of drug resistance in human breast cancer cells by combining sonodynamic therapy and chemotherapy

Guoyun Wan,[a,†] Yang Liu,[a,b,†] Shurui Shi,[c] Bowei Chen,[a] Yue Wang,[c] Hemei Wang,[a] Lianyun Zhang,[c] Ning Zhang [a,b,*], Yinsong Wang [a,**]

[a] School of Pharmacy, Tianjin Key Laboratory on Technologies Enabling Development of Clinical Therapeutics and Diagnostics (Theranostics) & Research Center of Basic Medical Science, Tianjin Medical University, Tianjin 300070, China

[b] Tianjin Medical University Cancer Institute and Hospital, Laboratory of Breast Cancer Prevention and Therapy, Ministry of Education, Tianjin 300060, China

[c] School of Stomatology, Tianjin Medical University, Tianjin 300070, China

[†] These authors contributed equally.

Assessment of the expressions of P-glycoprotein (P-gp) in MCF-7 and MCF-7/ADR cells by western blotting

MCF-7 or MCF-7/ADR cells were harvested and lysed in RIPA buffer in the presence of protease inhibitors (Roche Molecular Biochemicals). The cell lysates, containing equal amounts of proteins, were separated by SDS-PAGE and transferred onto PVDF membranes (Bio-Rad, Hercules, Calif., USA). After blocking with 5% dry skim milk, the membranes were incubated with the primary antibody against P-gp (Cell Signaling Technology, Inc., Danvers, MA, USA) overnight at 4 °C and then exposed to HRP-conjugated secondary antibody. The

chemiluminescent signals were detected using G:BOX Chemi XT4 gel documentation system (Syngene, Frederick, MD, USA). Densitometric analysis of the bands was performed using Image J software. The results are shown in Fig. S1, MCF-7/ADR cells exhibited very significantly over-expressed P-gp compared to MCF-7 cells, suggesting that MCF-7/ADR cells used in this study possessed the P-gp induced drug resistance.

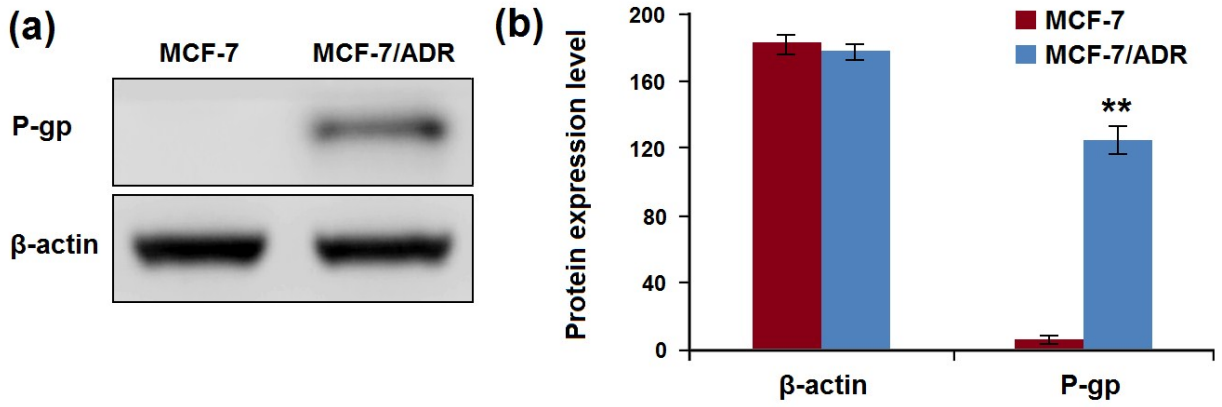

Fig. S1 P-gp expressions in MCF-7 and MCF-7/ADR cells. (a) Western blot analysis of P-gp. (b) Quantitative comparison for P-gp expression levels.

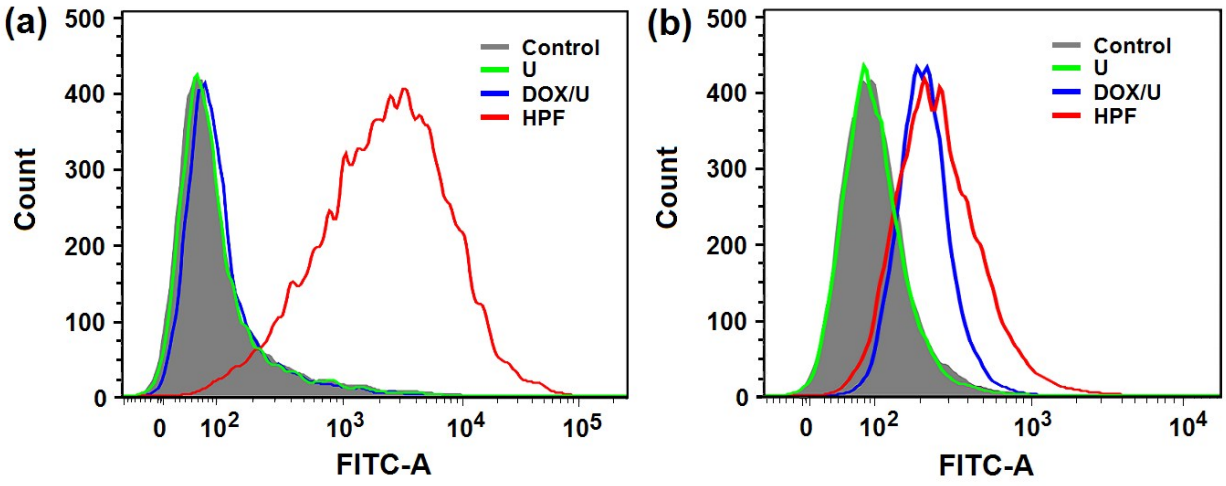

Fig. S2 Flow cytometry profiles of DCFH-DA and rhodamine 123 in MCF-7/ADR cells with treatments of ultrasonic irradiation alone (U), hematoporphyrin-loaded Pluronic F68 nanomicelles (HPF), and doxorubicin combined wih ultrasonic irradiation (DOX/U).