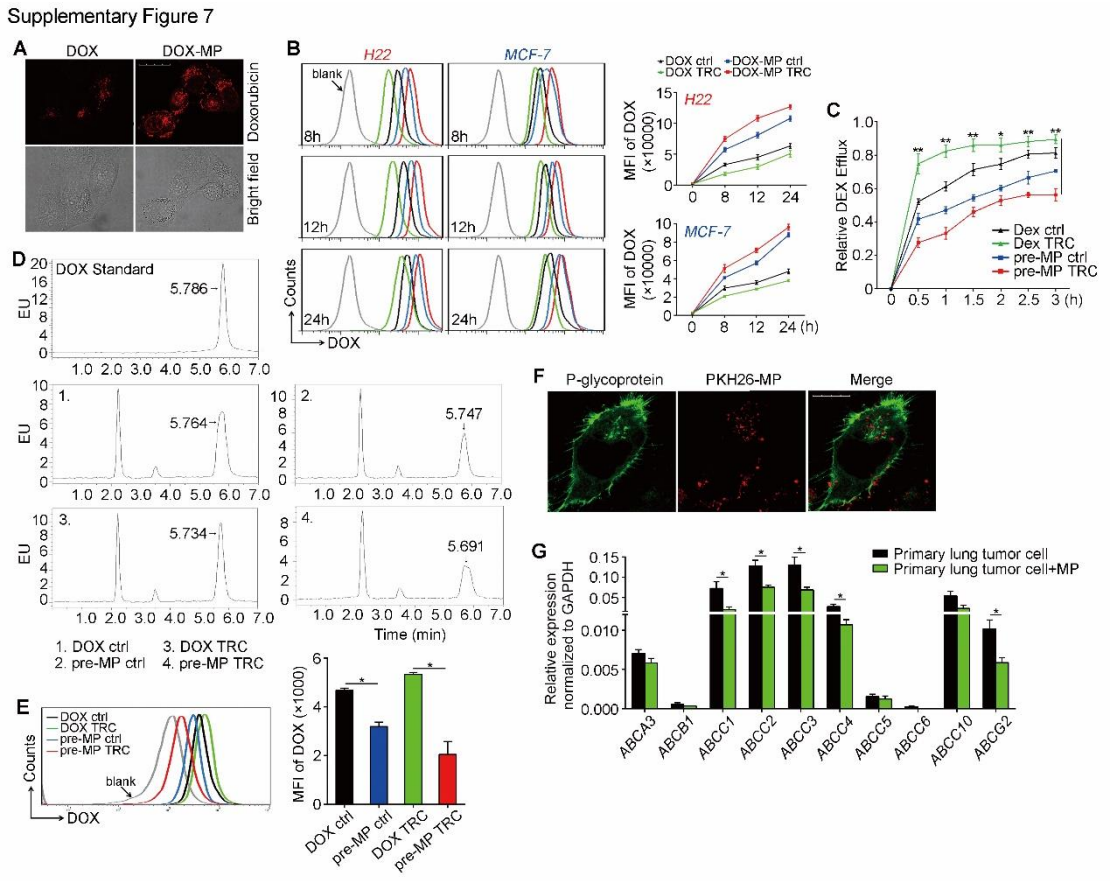

Supplementary information, Figure S7. MPs facilitate retention of drugs and inhibit drug efflux in TRCs (Related to **Figure 4**). (A) DOX-MPs resulted in more DOX retention in TRCs. MCF-7 TRCs were treated with DOX or DOX-MPs for 4 hours. The cells were further incubated in fresh culture medium for another 6 hours. The red fluorescence of DOX was recorded by confocal microscopy. Scale bar, 20 μm. (B) Tumor cells took more DOX with the prolonged time. H22 or MCF-7 TRCs and their control counterparts were incubated with single DOX or DOX-MPs with different times (0 h, 8 h, 12 h and 24 h) under the condition of continuous shaking. The cells were further incubated in fresh culture medium for additional 6 hours. The drug retention was measured by flow cytometric analysis of mean fluorescent intensity of doxorubicin. (C) MCF-7 TRCs or control cells were pre-treated with drug-free MPs for 12 hours, and then treated with 20 μM dexamethasone-FITC for 5 hours. After refreshing the culture medium, cells were further cultured and analyzed by flow cytometry at different time points (0 h, 0.5 h, 1 h, 1.5 h, 2 h, 2.5 h and 3 h). The mean fluorescence intensity (MFI) of dexamethasone at 0 h point was designated as 0, meaning no drug efflux. (D) The original data of Figure 4C. (E) Supernatants from the

above each group at the 24 h point were used to incubate with the same number of H22 tumor cells in the same volume. 4 hours later, H22 cells were analyzed by flow cytometry. (F) MP membranes are not co-localized with P-gp in ADR/MCF-7 cells. ADR/MCF-7 cells were incubated with the PKH26-labeled MPs for 12 hours. The cells were stained with the P-gp antibody (green) and observed under the two-photon confocal microscope. Scale bar, 20 μm. (G) The primary lung tumor cells showed down-regulated expression of multidrug resistance genes after MP treatment by real-time PCR analysis. For all graphs, error bars indicate mean±s.e.m.; n=3 independent experiments. *P<0.05, **P<0.01 (Student's *t-test*).