

## Supporting Information

# The reductive responsive micelle inverting multidrug resistance of breast cancer by co-delivery DOX and specific antibiotic

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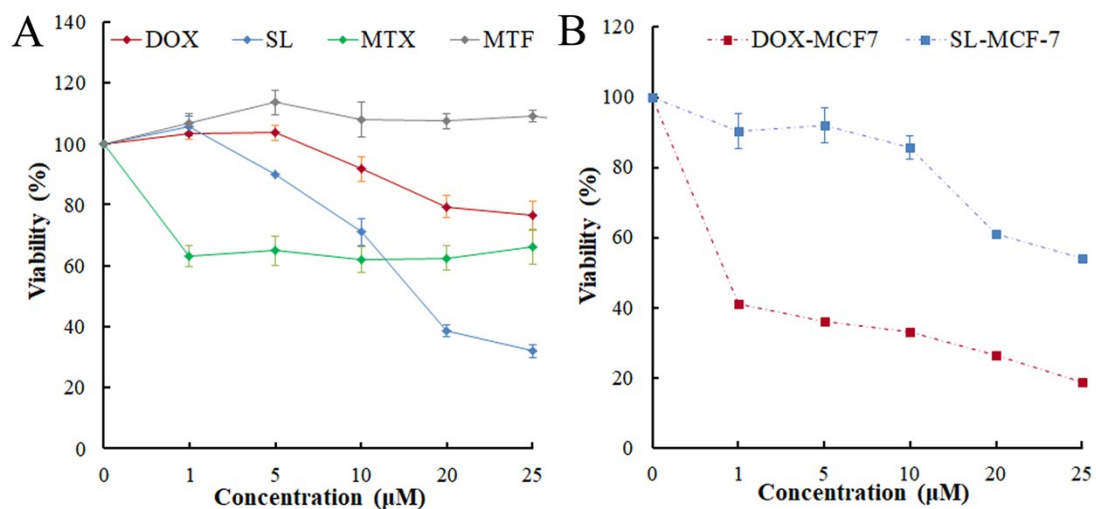
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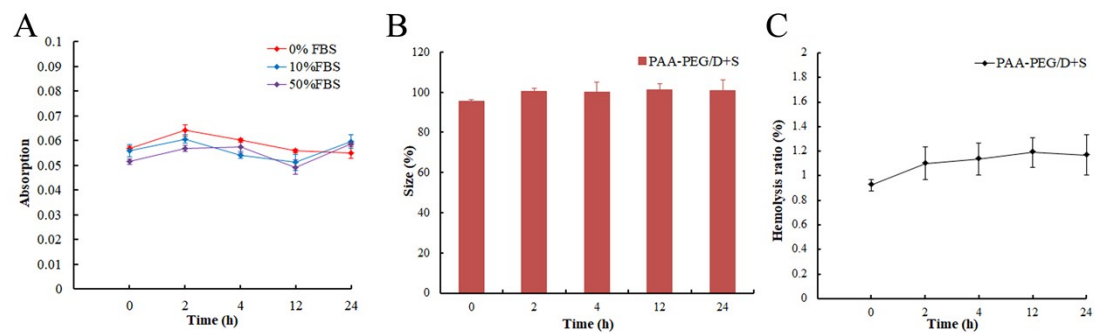
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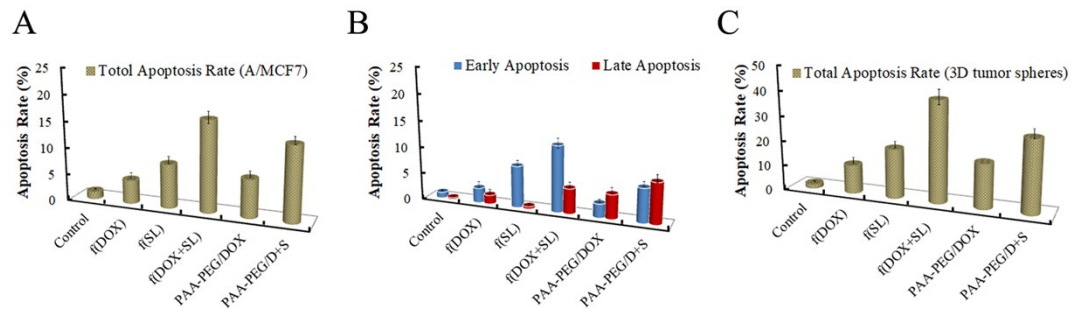
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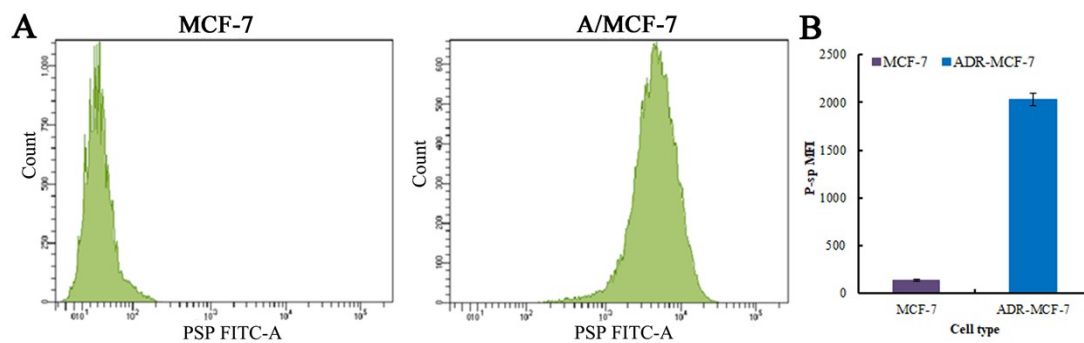
**Figure S1.** (A) Viability of adherent A/MCF-7 after culturing with free DOX, SL, MTX or MTF in different concentration for 72 h. (B) Viability of adherent MCF-7 after culturing with free DOX or SL in different concentration for 72 h. Data are showed as Mean  $\pm$  SD by t-test (n=5).



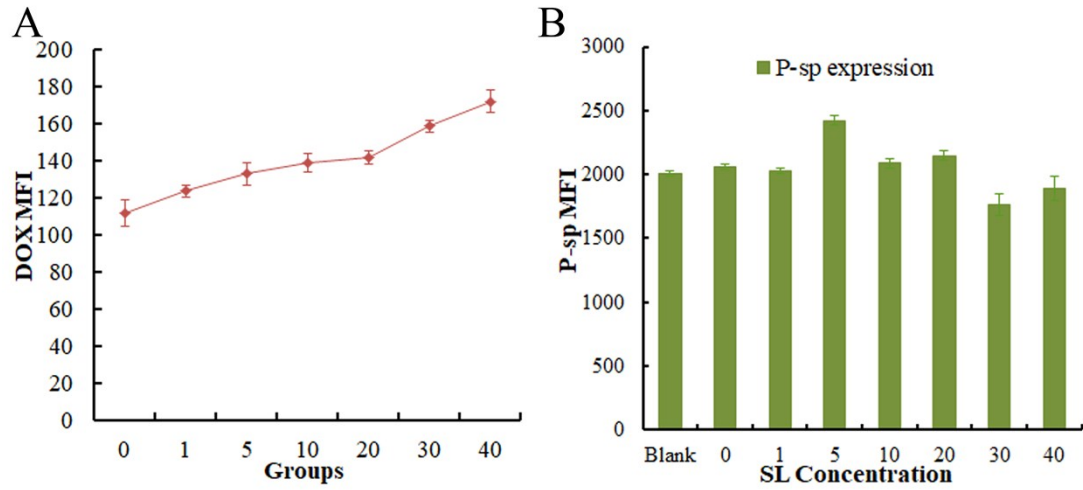
**Figure S2.** (A) Stability evaluation of PAA-PEG/D+S micelles in DMEM medium with 10% FBS. (B) Serum stability of PAA-PEG/D+S micelles in different concentration of FBS. (C) Hemolysis ratio of PAA-PEG/D+S micelles in 2% red blood cells. Data was showed as Mean  $\pm$  SD by t-test (n=3).



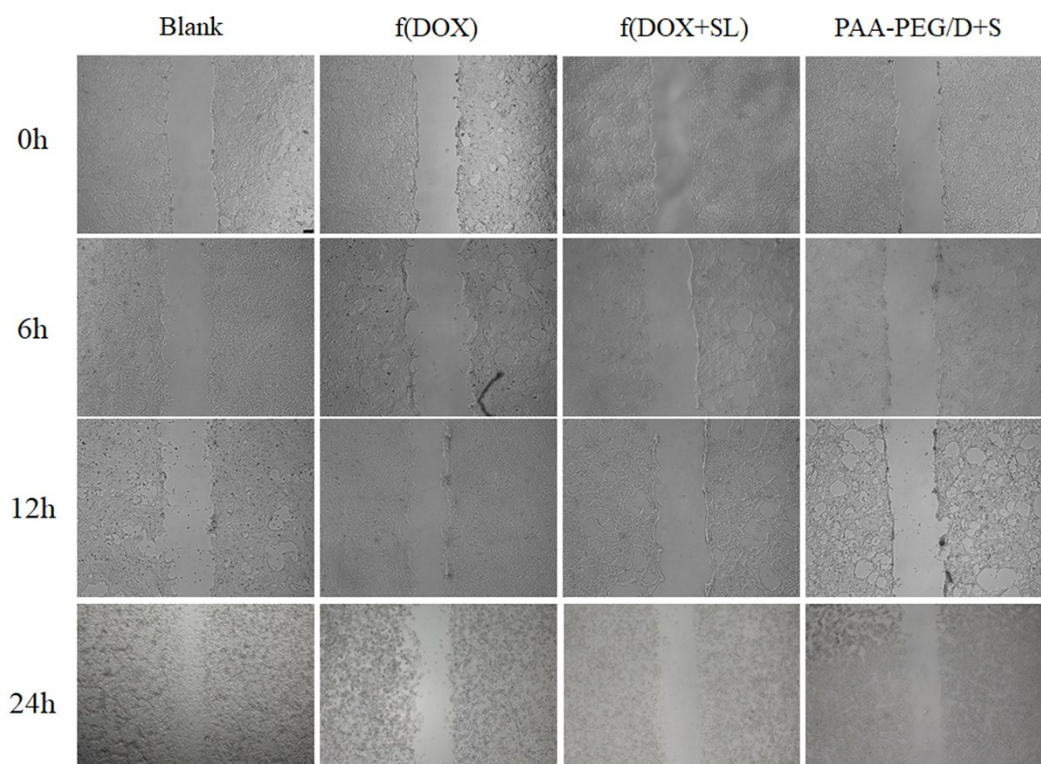
**Figure S3.** (A) The total apoptosis rate of A/MCF-7 cells after treatment with various formulations for 48 h. (B) The early apoptosis rate and late apoptosis rate of A/MCF-7 cells after treatment with various formulations for 48 h. (C) The total apoptosis rate of tumor spheres after treatment with various formulations for 24 h. Data are showed as Mean  $\pm$  SD by t-test (n=3).



**Figure S4.** (A) Flow cytometry analyses of expression of P glycoprotein (P-sp) in MCF-7 and A/MCF-7 cells. (B) Histogram of mean fluorescence intensity (MFI) of the expression of P-sp in MCF-7 and A/MCF-7 cells. Data are showed as Mean  $\pm$  SD by t-test (n=3).



**Figure S5.** (A) The represented the mean fluorescence intensity (MFI) of DOX in A/MCF-7 cells with various concentrations of SL at 20  $\mu$ M DOX. (B) The represented the mean fluorescence intensity (MFI) of the expression of P-sp in A/MCF-7 cells with various concentrations of SL at 20  $\mu$ M DOX. Data are showed as Mean  $\pm$  SD by t-test (n=3).



**Figure S6.** Typical images of wound-healing response showed the change of scratch wound in 4T1 cells after treatment with various formulations for 0, 6, 12 and 24 h. (Scale bars: 100  $\mu$ m).