Supplementary information

Charge Reversal Hairpin Peptides Modified Synergy Therapeutic Nanoplatforms for Tumor Specific Drug Shuttling

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**Fig. S1** Analysis of drug loading of GCP<sub>DOX</sub>. (a) UV spectra of the free drugs obtained by different amounts of DOX under the condition that GO is fixed at 1mg. (b) Standard
curve measured by ultraviolet spectrophotometry at 480 nm with various concentration of DOX (5 to 125 μg/mL).

**Fig. S2** Study of the storage stability of GCP<sub>DOX</sub>. The change in the particle size and PDI of GCP<sub>DOX</sub> nanoparticles at 4 °C for 30 d.

**Fig. S3** Study of the serum stability of GCP<sub>DOX</sub>. (a)The change in the particle size and PDI of GCP<sub>DOX</sub> nanoparticles at 10% FBS for 24 h. (b)The change in the entrapment efficiency of GCP<sub>DOX</sub> nanoparticles at 10% FBS for 24 h.
**Fig. S4** Cellular uptake of GP\textsubscript{DOX} nanoparticles by 4T1 cells during the predetermined time intervals at pH 7.4. Nuclei (blue) were stained with DAPI, and DOX was shown in red.

**Fig. S5** *In vivo* safety profile. Body weight change of the study groups (n=8).