

Supporting Information

Targeting delivery and deep penetration using multistage nanoparticles for triple-negative breast cancer

Shaobo Ruan^a, Li Zhang^a, Jiantao Chen^a, Tingwei Cao^a, Yuting Yang^a, Yayuan Liu^a,

Qin He^a, Fabao Gao^{b,*} and Huile Gao^{a,*}

^aKey Laboratory of Drug Targeting and Drug Delivery Systems, West China School of Pharmacy, Sichuan University, No. 17, Block 3, Southern Renmin Road, Chengdu 610041, China

^bMolecular Imaging Center, Department of Radiology, West China Hospital, Sichuan University, No. 37 Guo Xue Xiang, Chengdu, Sichuan 610041, China

* Corresponding author: Fax/Tel: 86 28 85502532; E-mail: gaohuile@scu.edu.cn. E-mail: gaofabao@yahoo.com.

Figure S1. DLS data of different particles	3
Figure S2. Fluorescent emission spectra of GNPs-DOX-RRGD	3
Figure S3. Quantitative cellular uptake	4
Figure S4. Subcellular localization	5
Figure S5. Fluorescent distribution in tissue slices	6
Figure S6. Anti-tumor effect	6

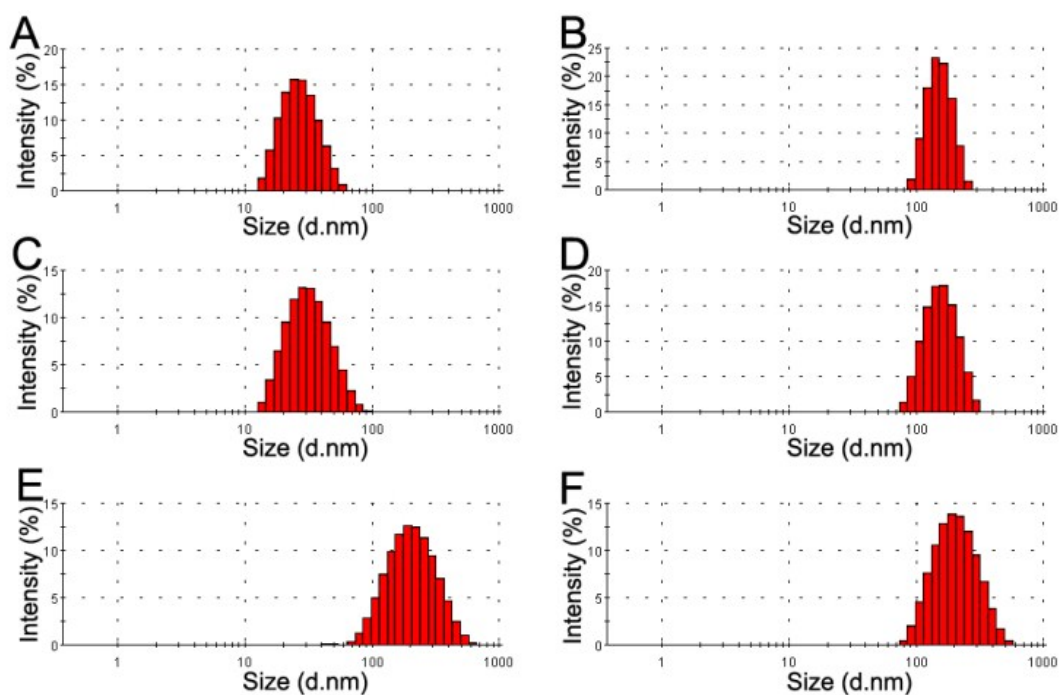


Figure S1. DLS data of different particles. A: AuNPs. B: GNPs. C: AuNPs-DOX-RRGD. D: GNPs-DOX-RRGD. E: G-AuNPs-DOX-PEG. F: G-AuNPs-DOX-RRGD.

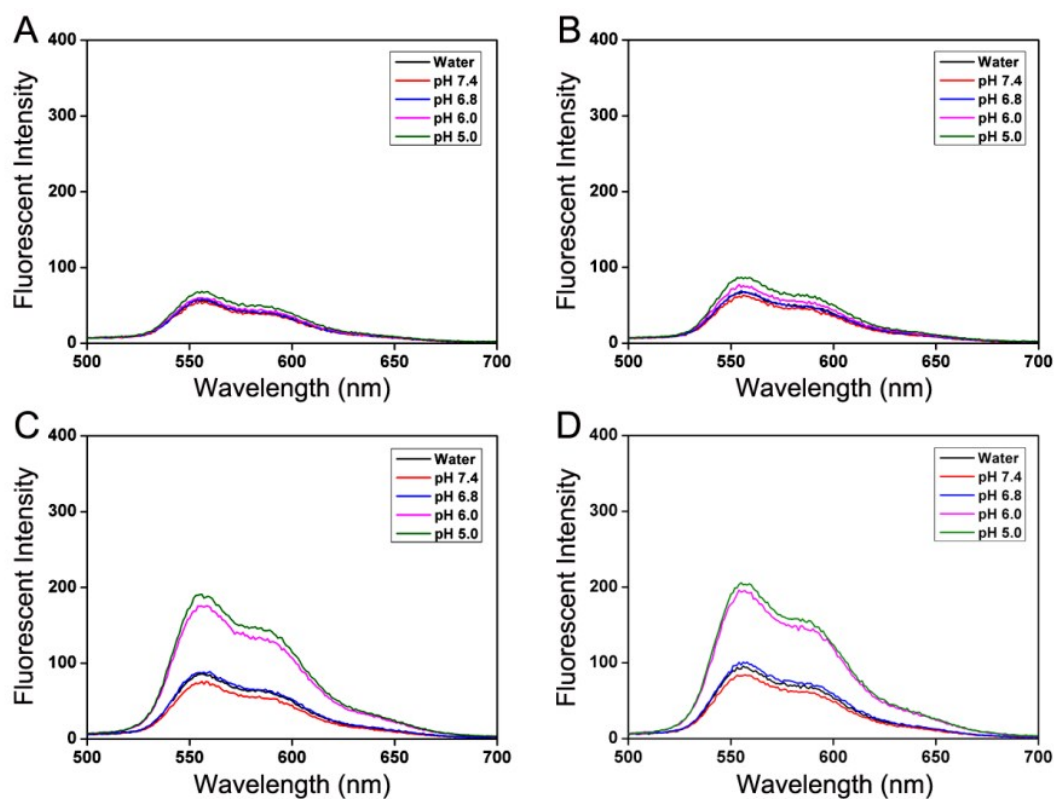


Figure S2. Fluorescent emission spectra of GNPs-DOX-RRGD after incubation in different pH of PBS (pH 7.4, 6.8, 6.0 and 5.0). A: 0 h. B: 0.16 h. C: 2 h. D: 4 h.

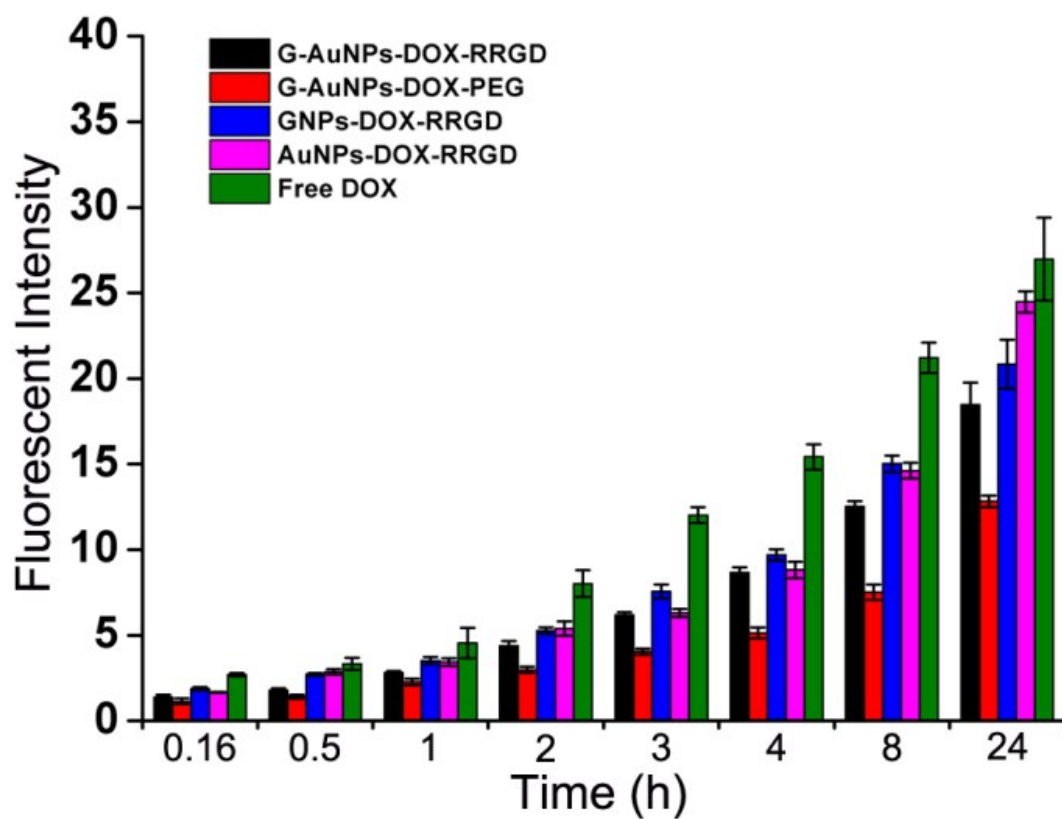


Figure S3. Quantitative cellular uptake of G-AuNPs-DOX-RRGD, G-AuNPs-DOX-PEG, GNPs-DOX-RRGD, AuNPs-DOX-RRGD and free DOX at different time intervals by 4T1 cells.

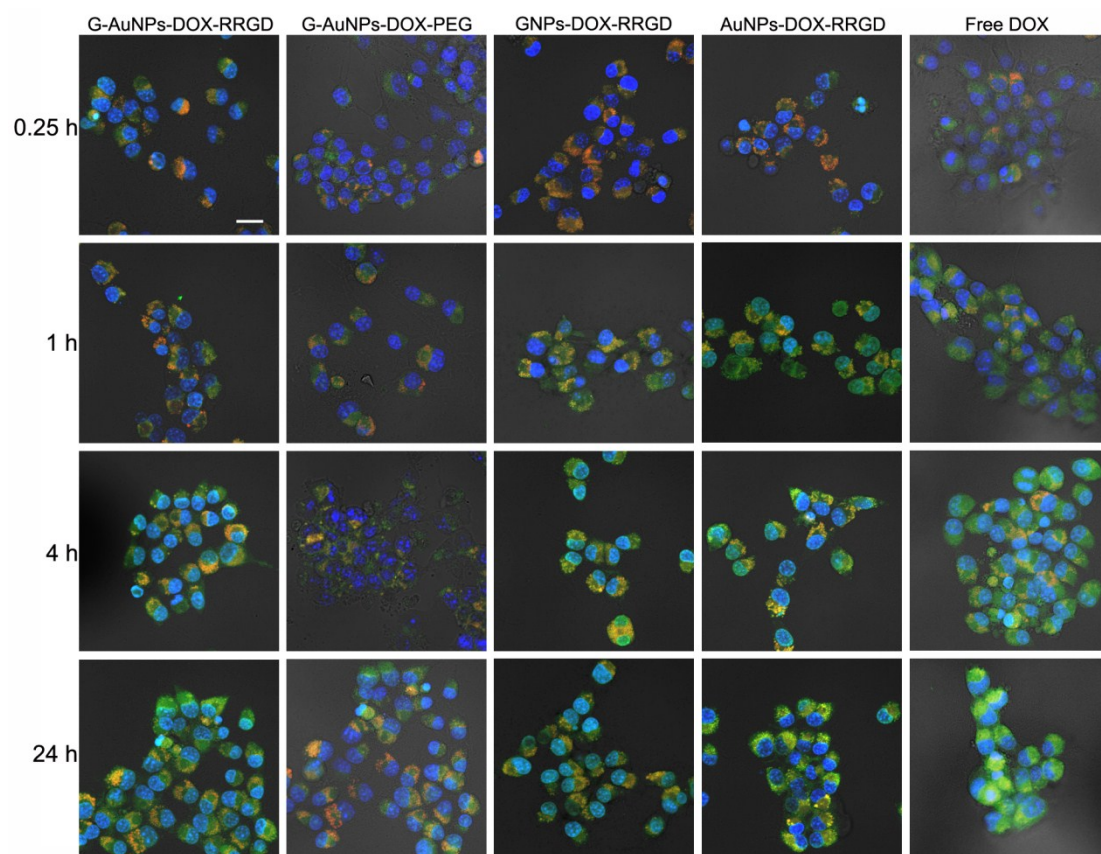


Figure S4. Subcellular localization of G-AuNPs-DOX-RRGD, G-AuNPs-DOX-PEG, GNPs-DOX-RRGD, AuNPs-DOX-RRGD and free DOX with endosomes after 0.25 h, 1 h, 4 h and 24 h incubation, bar represents 20 μm .

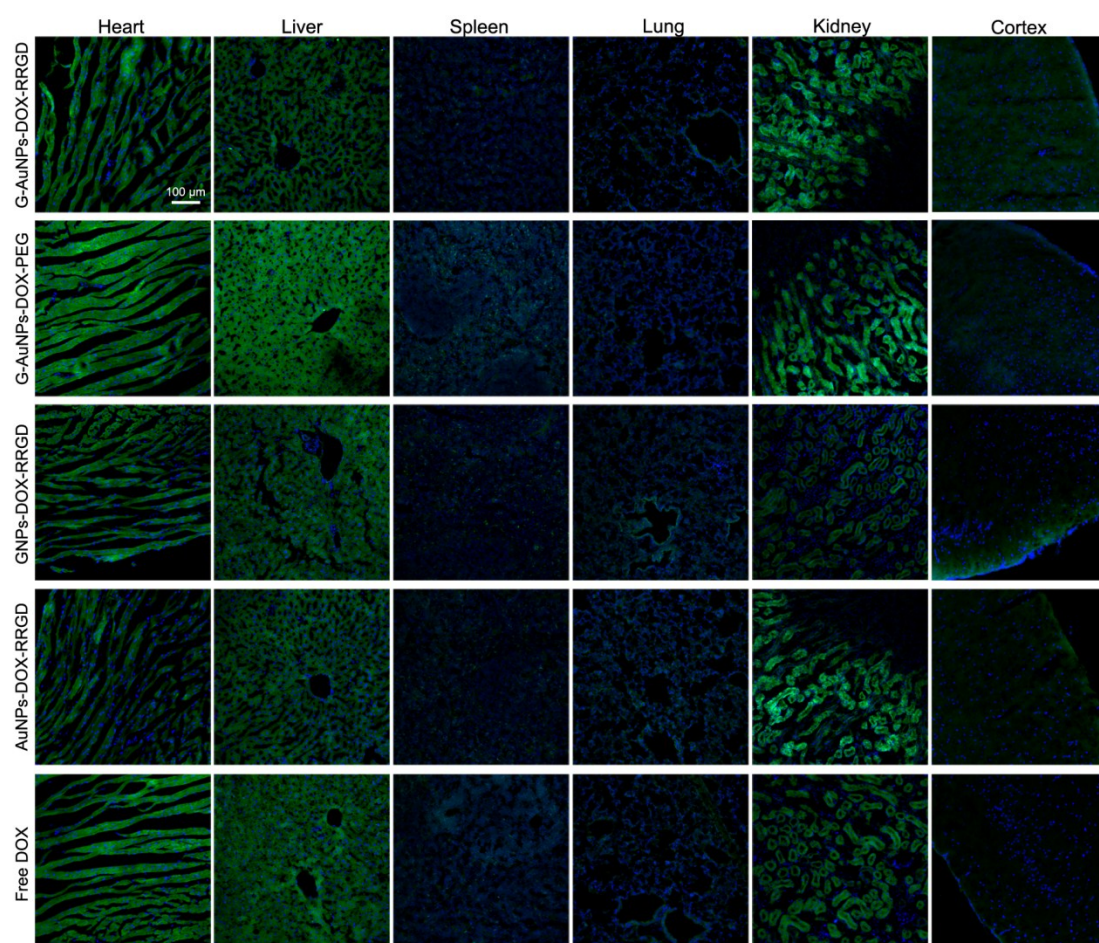


Figure S5. Fluorescent distribution of G-AuNPs-DOX-RRGD, G-AuNPs-DOX-PEG, GNP-DOX-RRGD, AuNPs-DOX-RRGD and free DOX in tissues slices at 24 h after tail vein injection, bar represents 100 μm .

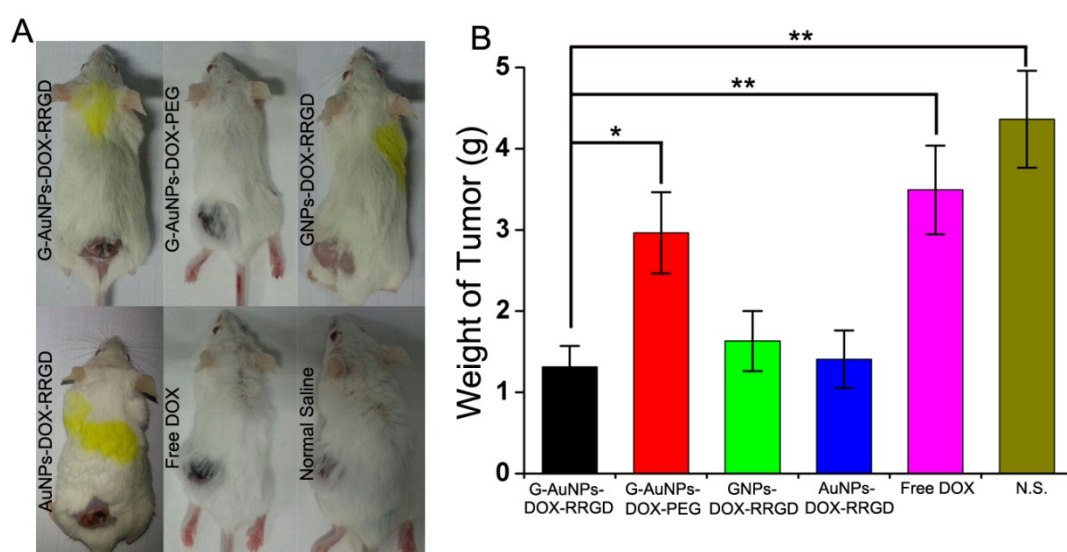


Figure S6. Anti-tumor effect of G-AuNPs-DOX-RRGD, G-AuNPs-DOX-PEG, GNP-DOX-RRGD, AuNPs-DOX-RRGD, free DOX and normal saline. A: Photo images of 4T1 tumor

bearing BALB/c mice after last injection. B: Weight of stripping tumors from mice after last injection, * $p < 0.05$, ** $p < 0.01$.