

Supporting Information

Simultaneous tracking of drug molecules and carriers using aptamer-functionalized fluorescent superstable gold nanorod-carbon nanocapsules during thermo-chemotherapy

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Fig. S1 SEM image of the ordered cocklebur structure of AuNR@Carbons.

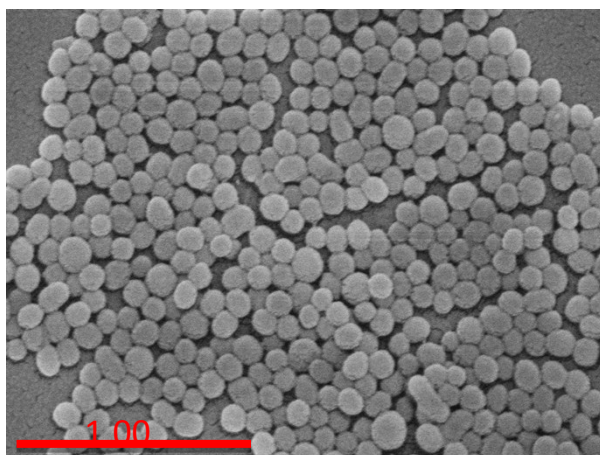


Fig. S2 UV-Vis characterization of the DOX-loaded AuNR@SiO₂. Inset: digital photo of the DOX, AuNR@SiO₂ and AuNR@SiO₂-DOX solutions.

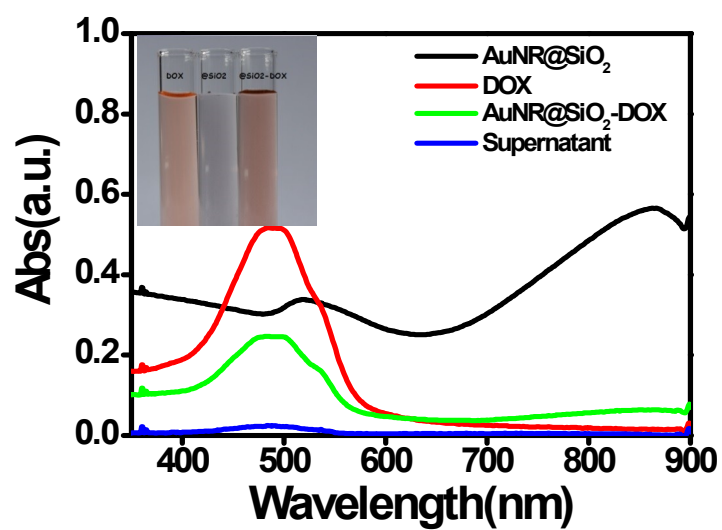


Fig. S3 Raman spectrum of AuNR@Carbons

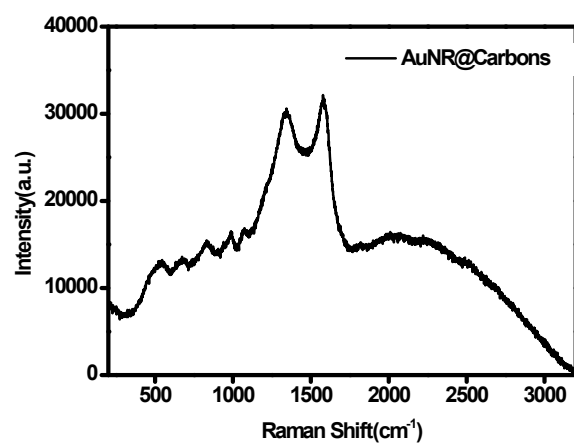


Fig. S4 FTIR spectrum of AuNR@Carbons obtained after hydrothermal treatment.

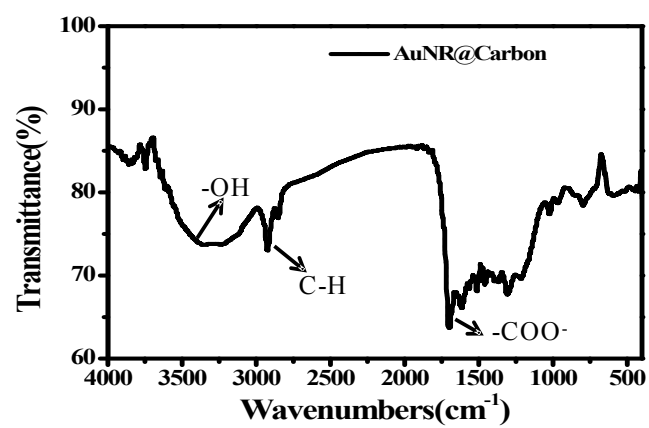


Fig. S5 ζ -potential value of AuNRs, AuNR@SiO₂ and AuNR@Carbons.

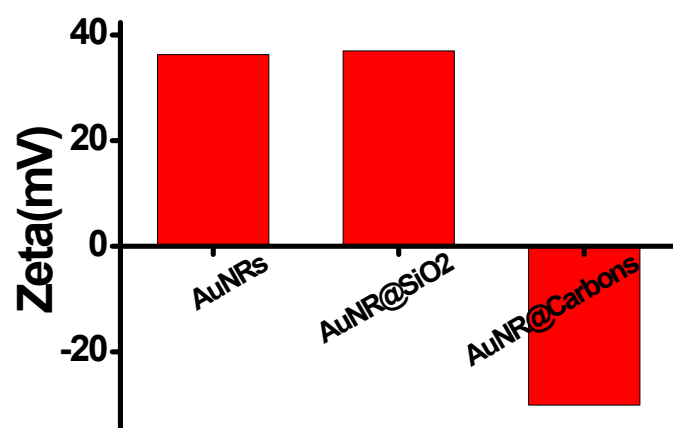


Fig. S6 a) Stability of AuNR@Carbons in different PH conditions; b) Digital photo of AuNR@Carbons in different PH conditions; c) UV-Vis spectra of AuNR@Carbons in water and cell culture, respectively.



Fig. S7 UV-Vis spectrum of AuNR@Carbons.

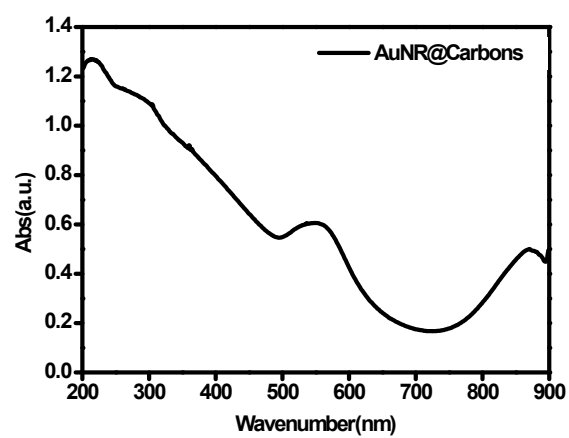


Fig. S8 Fluorescence spectra of 50nm FAM-Aptamer mixed with 30 μ L AuNR@Carbons in DPBS, DMEM and cell culture, respectively.

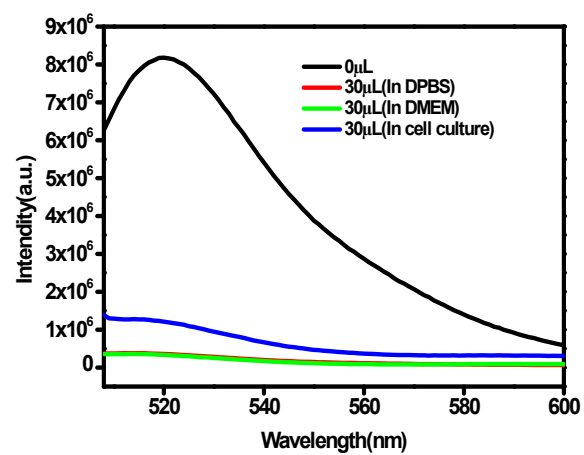


Fig. S9 CLSM images (Ex=405nm) of MCF-7 cells incubated with AuNR@Carbons and AuNR@Carbons-Aptamer for 0.5 h at 4 °C.

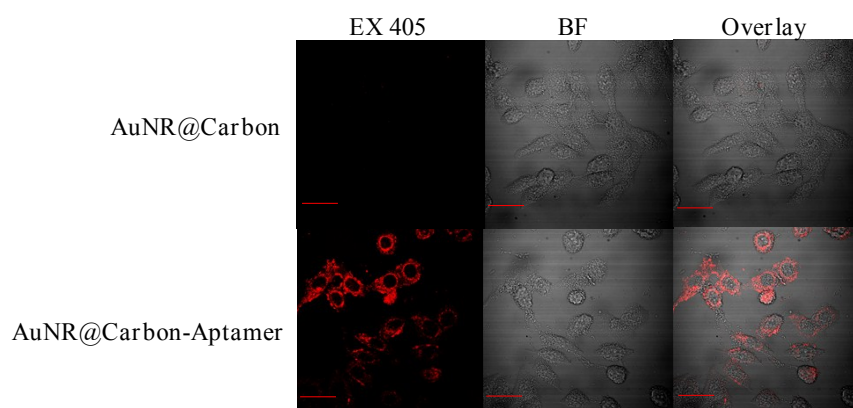


Fig. S10 NIR photothermal effect of AuNR@Carbons. Bright field microscopy images of trypan blue-stained MCF-7 cells after different NIR photothermal treatments. Relative cell viability after treatment with different AuNR@Carbons concentrations and different 808 nm laser irradiation times, respectively

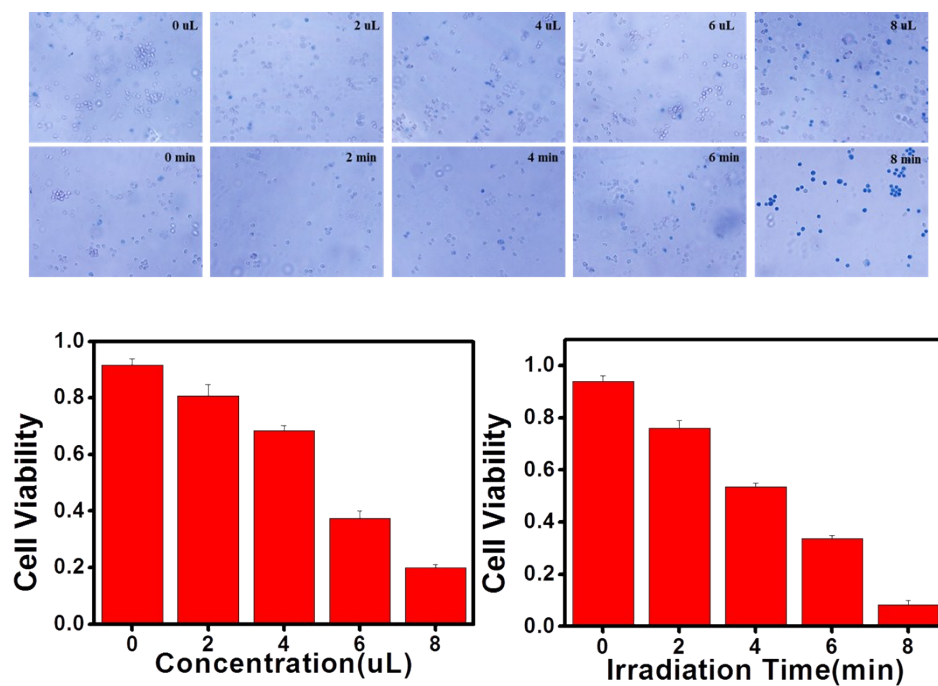


Fig. S11 a) Adsorption time curves of AuNR@SiO₂ and AuNR@Carbons. b) Adsorption concentration curves of AuNR@SiO₂ and AuNR@Carbons.

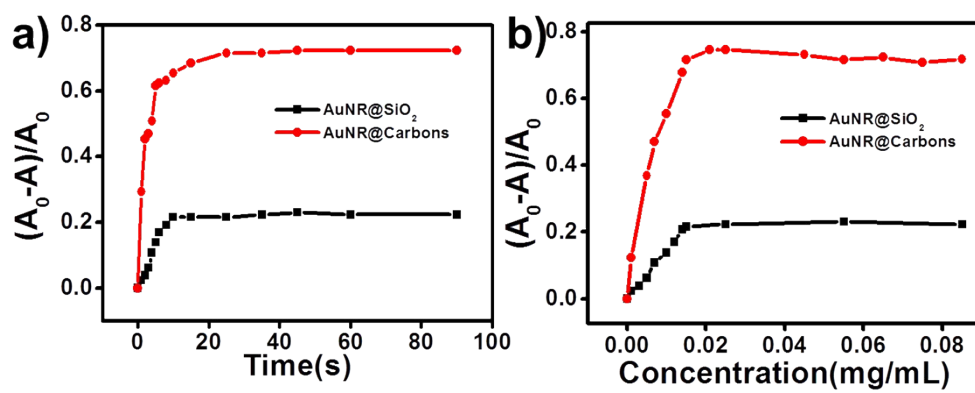


Fig. S12 a) UV-Vis characterization of DOX with different concentration(inset:linear relationship of UV-Vis absorption and DOX concentration); b) UV-Vis characterization of DOX and the supernatant of AuNR@Carbons mixed with DOX.

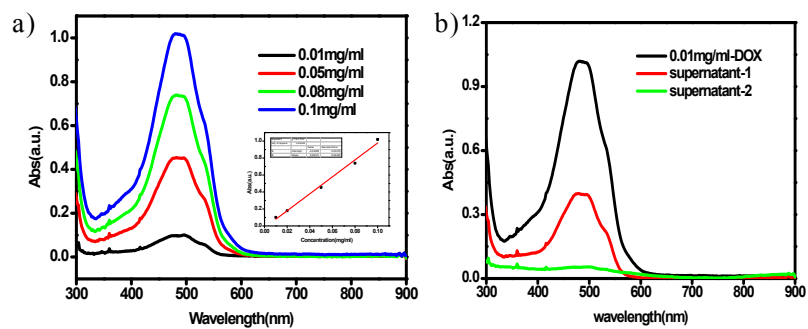


Fig. S13 Fluorescence spectroscopy characterization of DOX loading efficiency on AuNR@SiO₂ and AuNR@Carbons (Ex=488 nm). Inset: digital photo of the DOX, AuNR@SiO₂-DOX and AuNR@Carbons solutions.

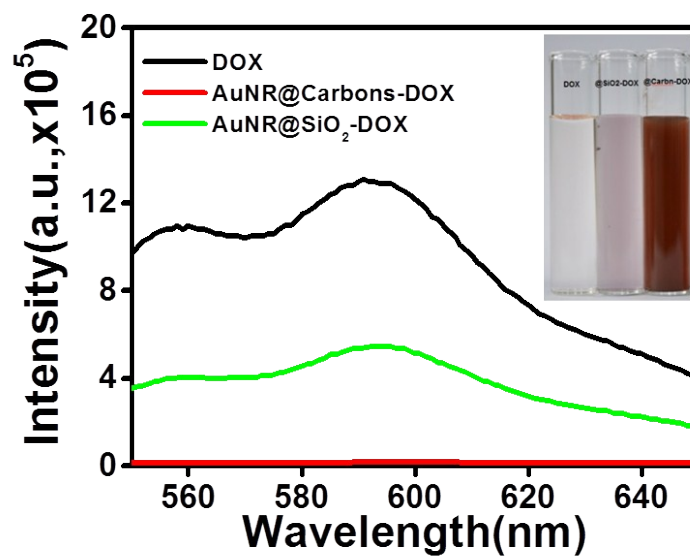


Fig. S14 Dox release profiles from AuNR@Carbon-DOX complexes without NIR laser irradiation at different pH values.

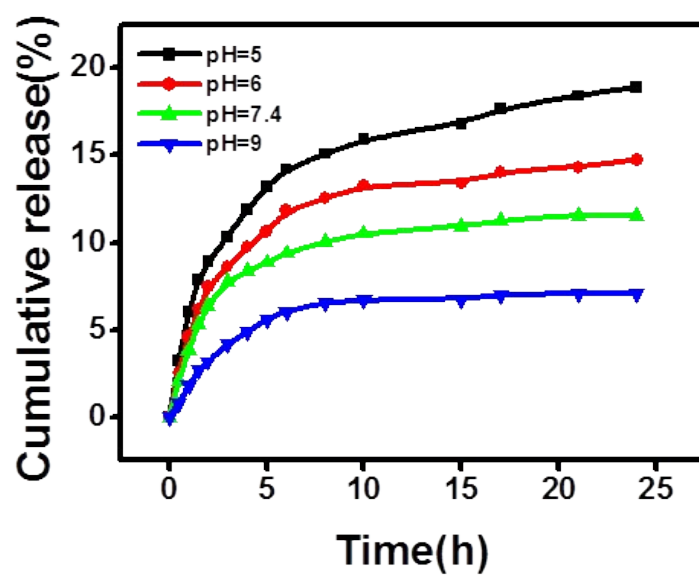


Fig. S15 Fluorescence spectra of DOX , AuNR@Carbons-DOX in DPBS and cell culture, AuNR@Carbons-DOX mixed with 50 nm Aptamers in DPBS and cell culture.

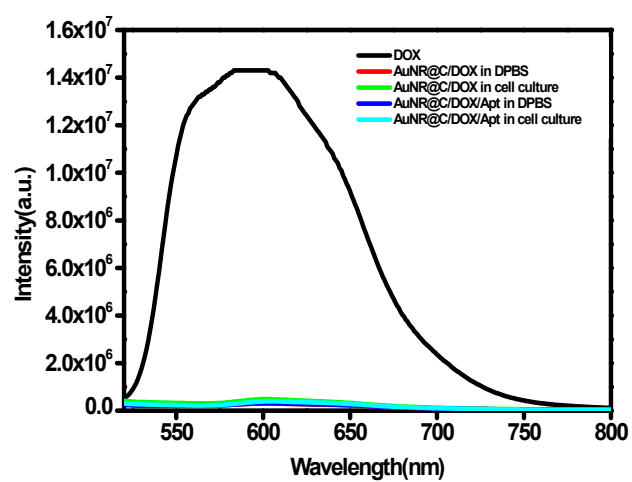


Fig. S16 UV-Vis spectra of DOX and the supernatant of DOX mixed with 50nm Apatmer.

