Electronic Supplementary Information

Photothermal gold nanocages filled with temperature sensitive tetradecanol and encapsulated with glutathione responsive polycurcumin for controlled DOX delivery to maximize anti-MDR tumor effects

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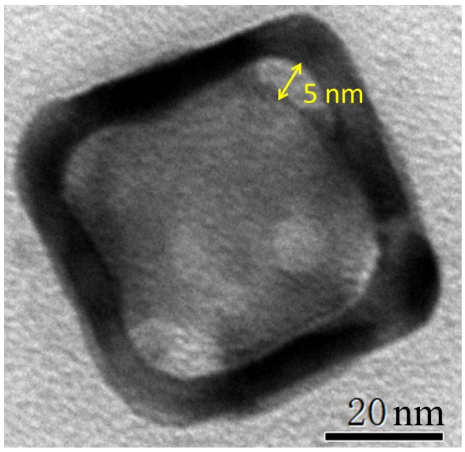

Fig. S1 TEM image of AuNC.

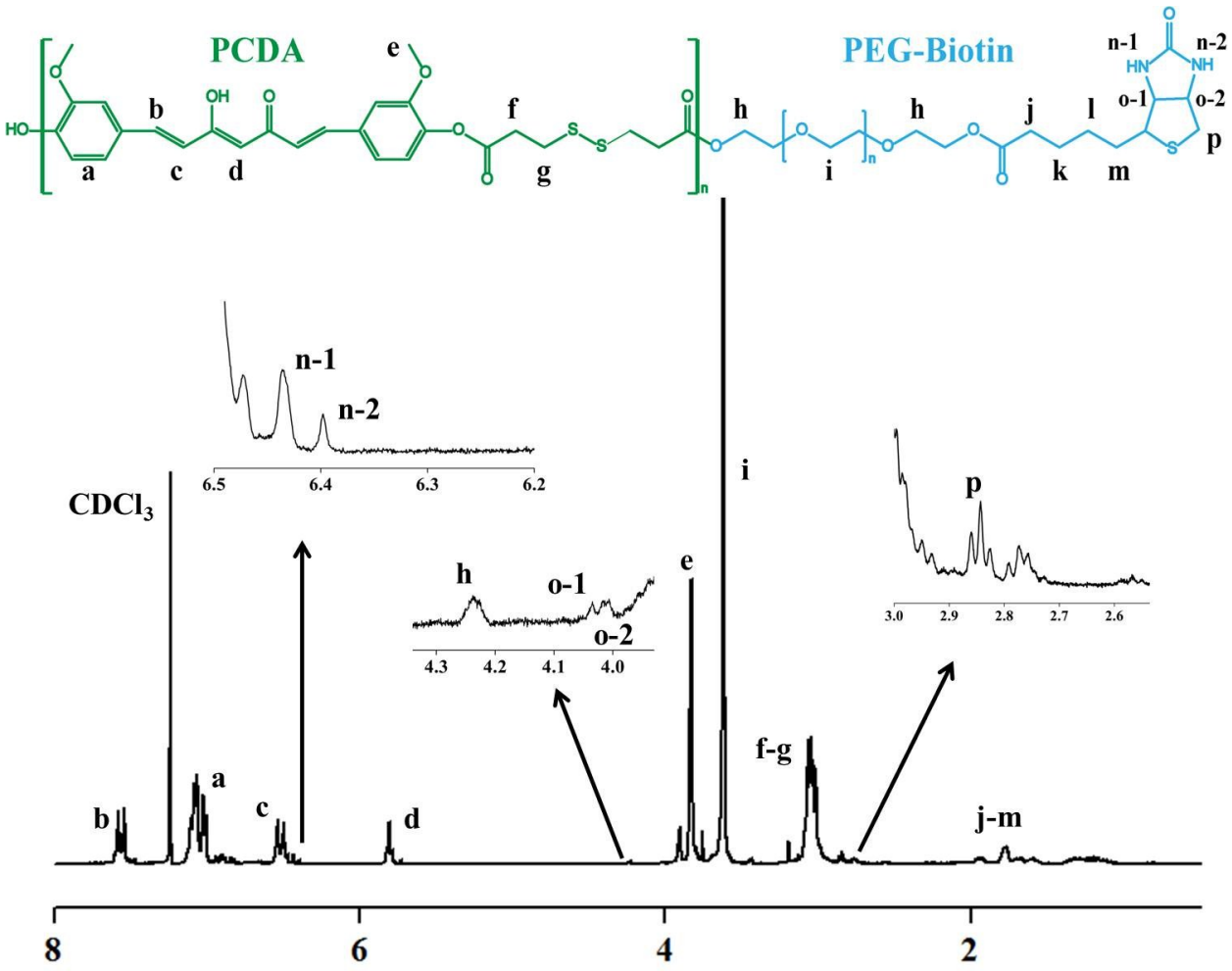

Fig. S2 ^{1}H-NMR spectra of Biotin-PEG-PCDA in $CDCl_3$

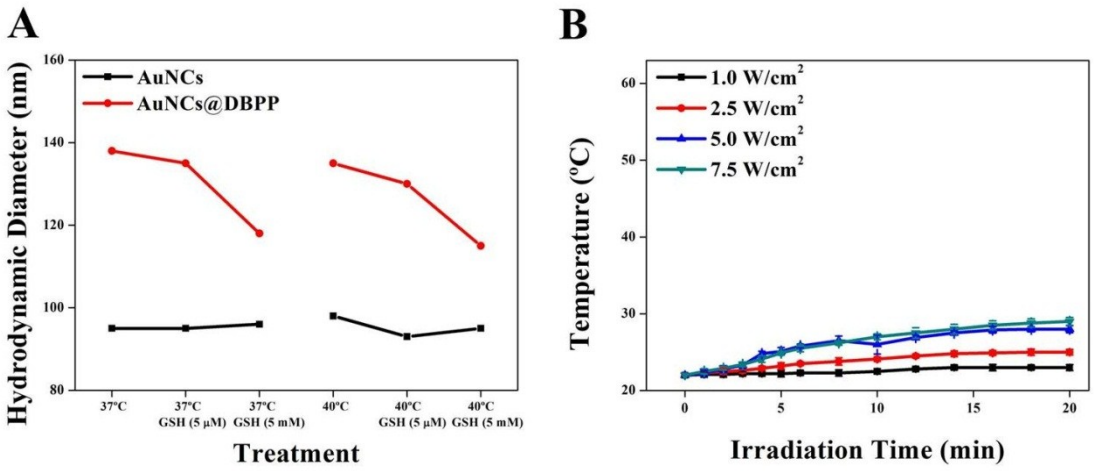

Fig. S3 (A) Change of hydrodynamic diameters of AuNCs and AuNCs@DBPP under the different treatment conditions. (B) Time-dependent change of the temperature of PBS (control) with NIR irradiation at different power densities

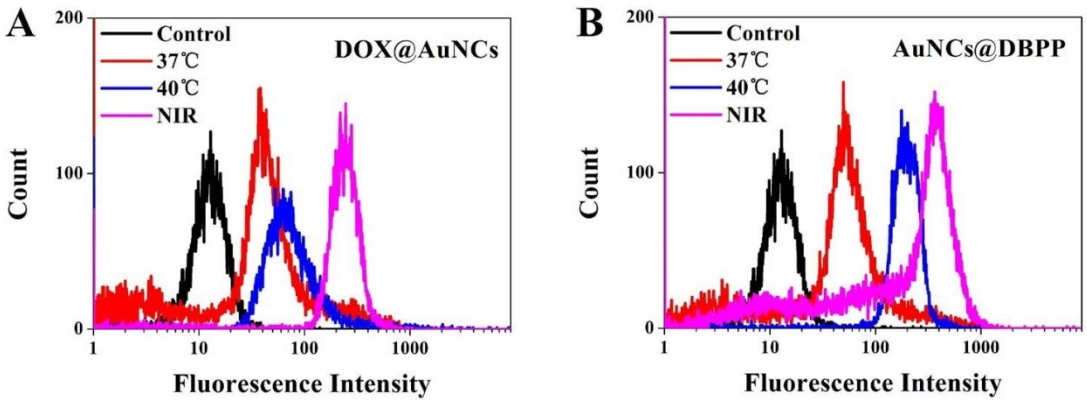

Fig. S4 Fluorescence intensity of (A) DOX@AuNCs and (B) AuNCs@DBPP under the different treatment conditions. Cells incubated with PBS were used as a control

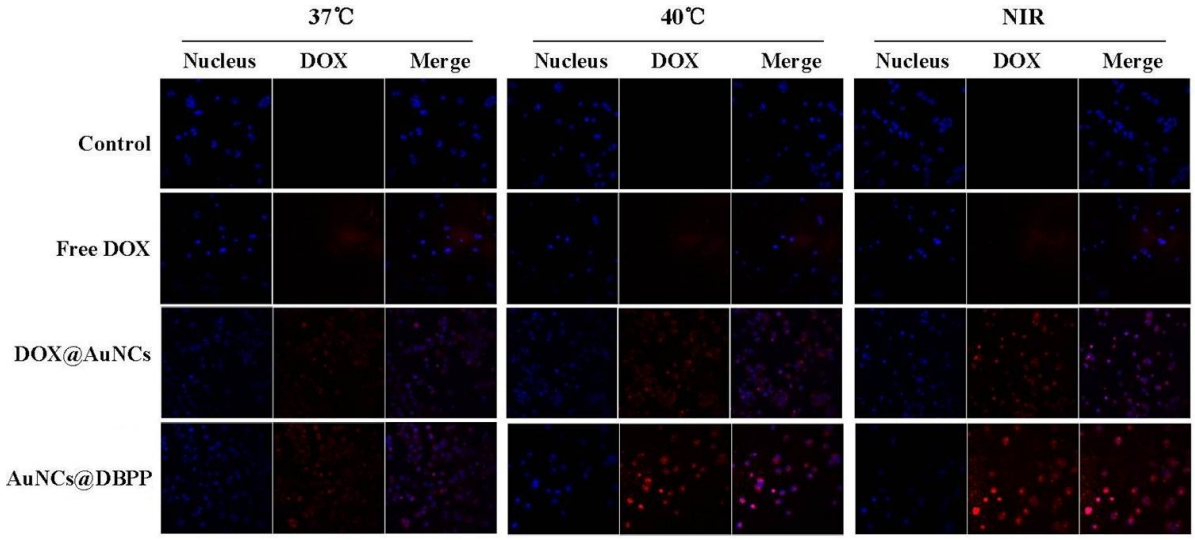

Fig. S5 CLSM images of MCF-7/ADR cells incubated with free DOX, DOX@AuNCs and AuNCs@DBPP at 37°C, at 40°C or under NIR irradiation. Blue fluorescence from Hoechst 33342 used to stain the nuclei; Red fluorescence is expressed by released DOX

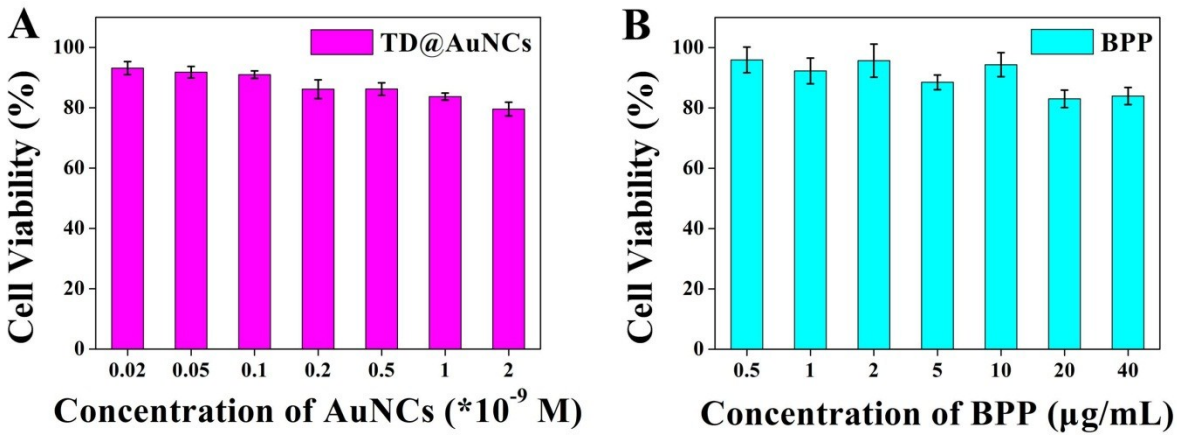

Fig. S6 Viabilities of MCF-7/ADR cells after incubations with (A) TD@AuNCs and (B) BPP.

The concentration for TD@AuNCs is calculated by AuNCs.

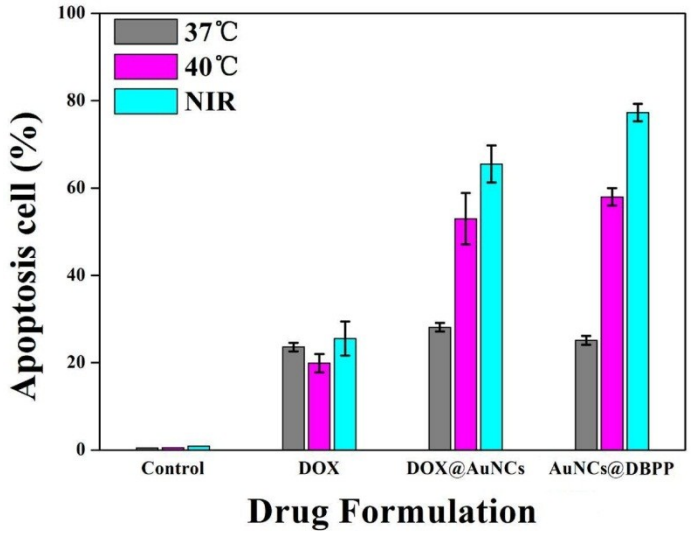

Fig. S7 Histogram showing the percentages of apoptotic cells in Figure 6

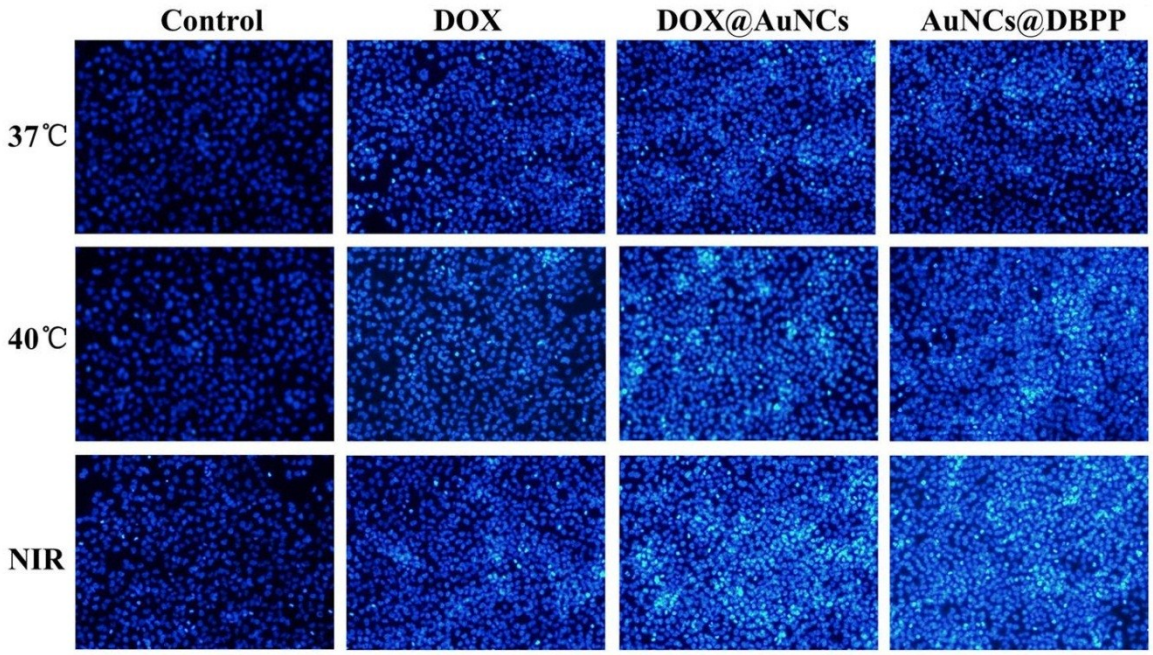

Fig. S8 Nuclear morphologies of MCF-7/ADR cells used Hoechst 33342 staining. Cells were incubated with free DOX, DOX@AuNCs and AuNCs@DBPP under the different treatment conditions

Table S1. IC_{50} and IRDR (index of reversal of drug resistance) of various formulations of DOX against MCF-7/ADR cells cultured at 40°C for 2 h.

Treatment	IC_{50} (μg/mL)	IRDR
DOX	49.55	-
DOX + BPP	16.98	2.92
DOX@AuNCs	6.26	7.91
AuNCs@DBPP	1.08	45.88

IRDR (index of reversal of drug resistance) = IC_{50} (DOX) / IC_{50} (various formulations of DOX)