

SUPPORTING INFORMATION

Aptamer-Conjugated Graphene oxide/gold
Nanocomposites for Targeted Chemo-Photothermal
Therapy of Cancer Cells

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Figure S1

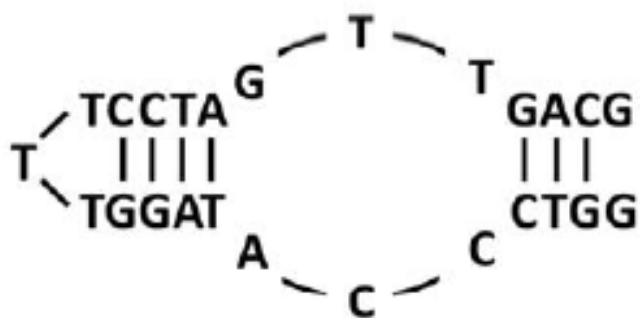


Fig. S1. Structure of MUC1 aptamer S2.2

Figure S2

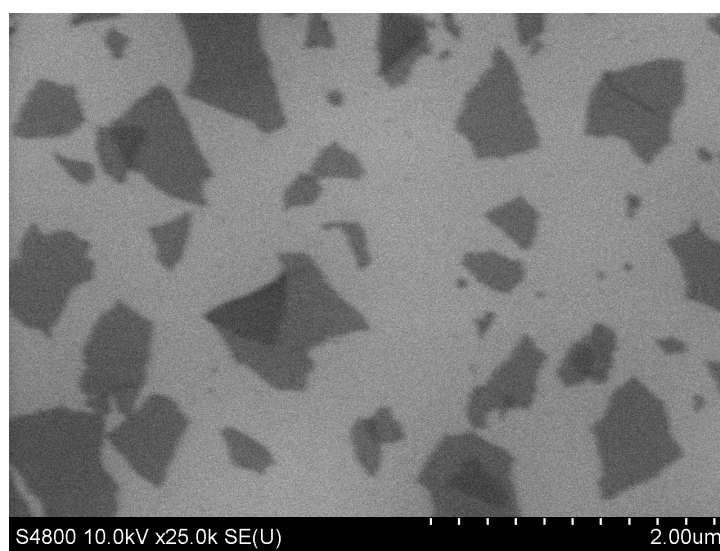


Fig. S2. The SEM image of GO. The size of GO is around 600 nm.

Figure S3

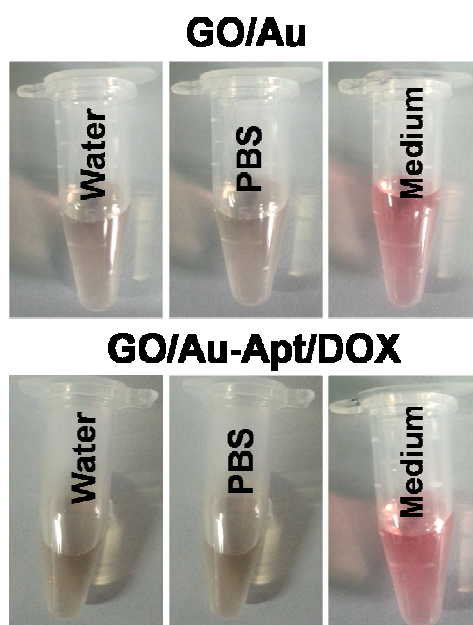


Fig. S3. Photos of GO/Au NPs and GO/Au-Apt-DOX in water, PBS and cell medium after 1,000 rpm centrifugation.

Figure S4

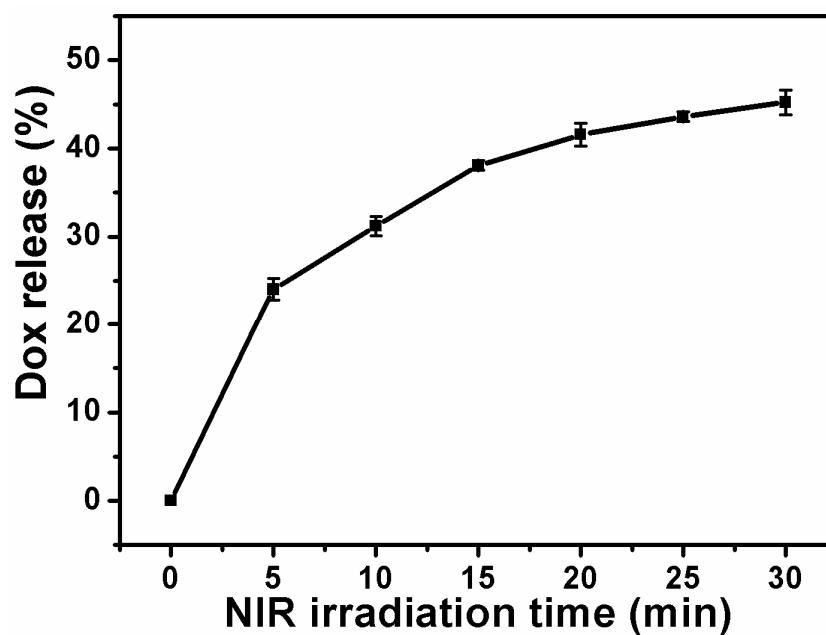


Fig.S4. NIR irradiation time-dependent release profile of DOX from the GO/Au-Apt/DOX.

Figure S5

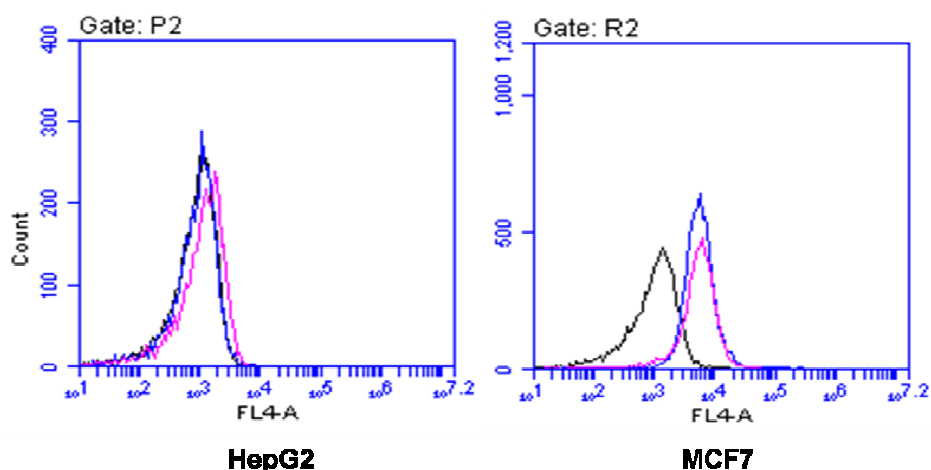


Fig. S5 Flow cytometric assay to study the expression level of the MUC1 protein using anti-MUC1 monoclonal antibody for control cells (HepG2) and target cells (MCF7) before and after treatment of GO/Au-Apt/DOX. The black curve represents the cells only; the blue curves and purple curves represent the anti-MUC1 monoclonal Antibody treated cells before and after treatment of the nanocomposites, respectively.

The target cells (MCF7) and control cells (HepG2) with and without the GO/Au-Apt/DOX treatment were fixed with 4% paraformaldehyde for 10 min and washed three times with PBS. Then the samples were permeabilized with 0.1% Triton X-100 for 10 min and washed by PBS for three times. After that fixed cells were incubated with Anti-MUC1 monoclonal Antibody (C595, Santa Cruz) for 4 h at 37°C, and then washed three times with PBS, followed by donkey anti-mouse secondary antibody conjugated with Alexa Fluor 488 (Invitrogen). As shown in Fig.S5, MUC1 expression level for both MUC1-positive cells and MUC1-negative cells showed little change before and after the treatment of GO/Au-Apt/DOX.

Figure S6

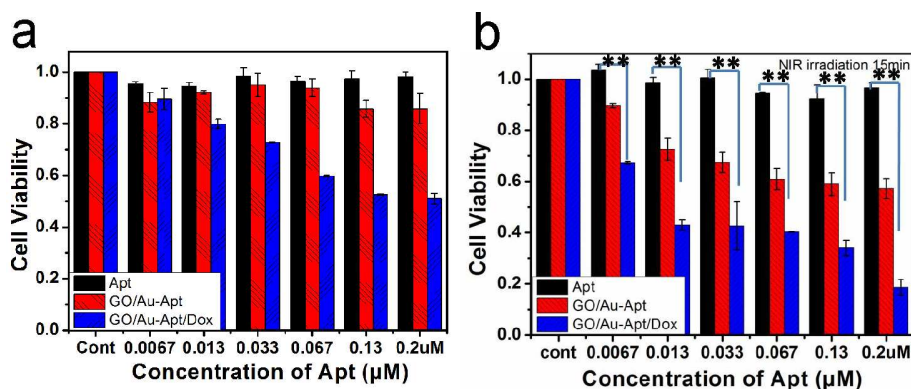


Fig. S6. The viability of MCF7 cells in the presence of Aptamers, GO/Au-Apt, and GO/Au-Apt/DOX at different concentrations without (a) and with (b) NIR irradiation for 15 min.

Figure S7

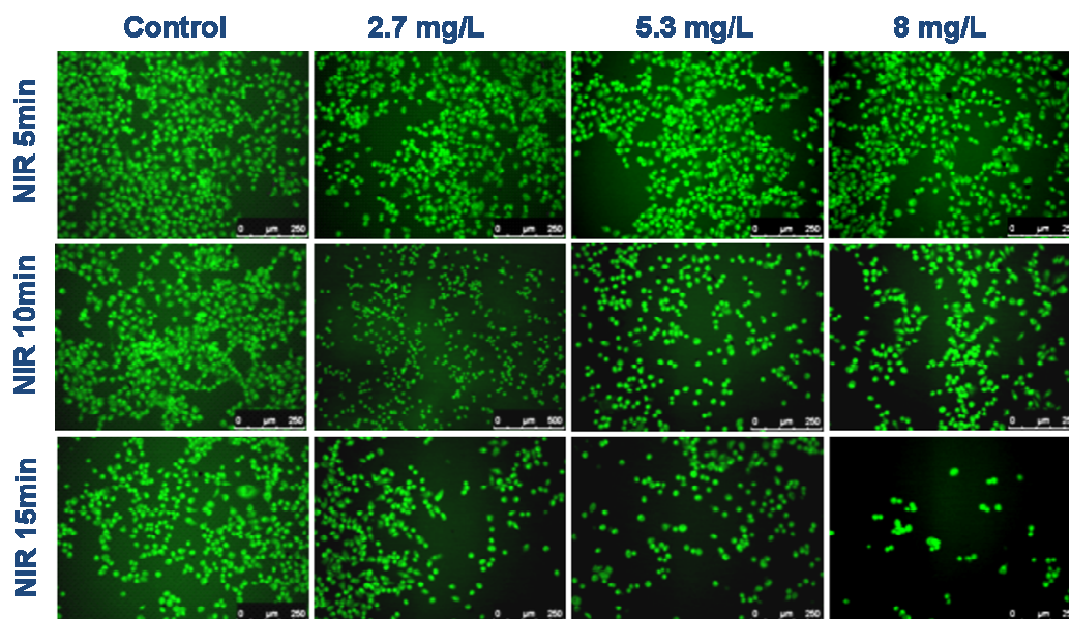


Fig. S7 Fluorescence images of MCF7 cells irradiated by NIR light for different times with or without GO/Au-Apt/DOX at different concentrations.

Figure S8

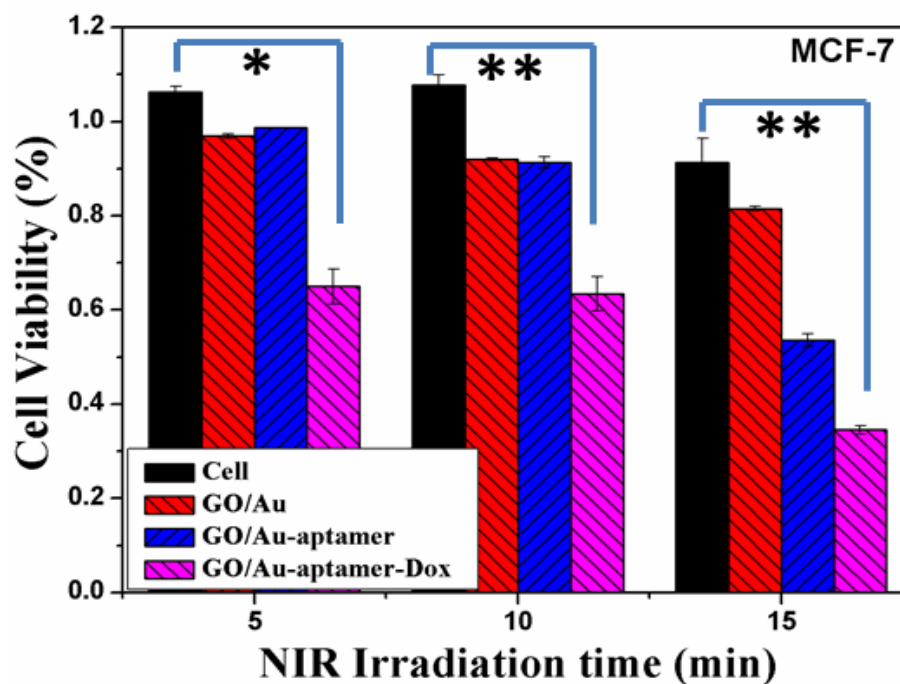


Fig. S8 Cell viability of MCF7 cells incubated with GO/Au, GO/Au-Apt and GO/Au-Apt/DOX (concentration of 8 mg/L) irradiated by NIR light for different times.

Figure S9

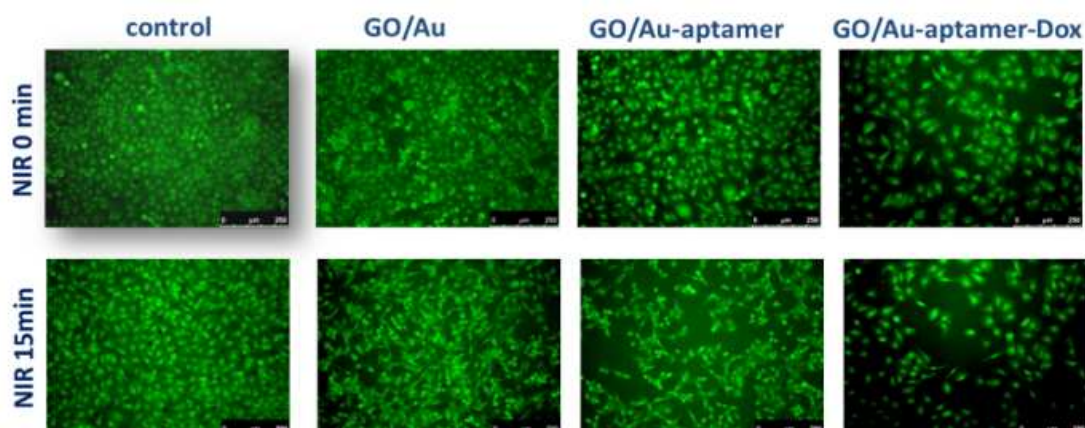


Fig. S9. Fluorescence images of A549 cells incubated with GO/Au, GO/Au-Apt and GO/Au-Apt/DOX (concentration of 8 mg/L) without or with NIR light irradiation for 15 min.

Figure S10

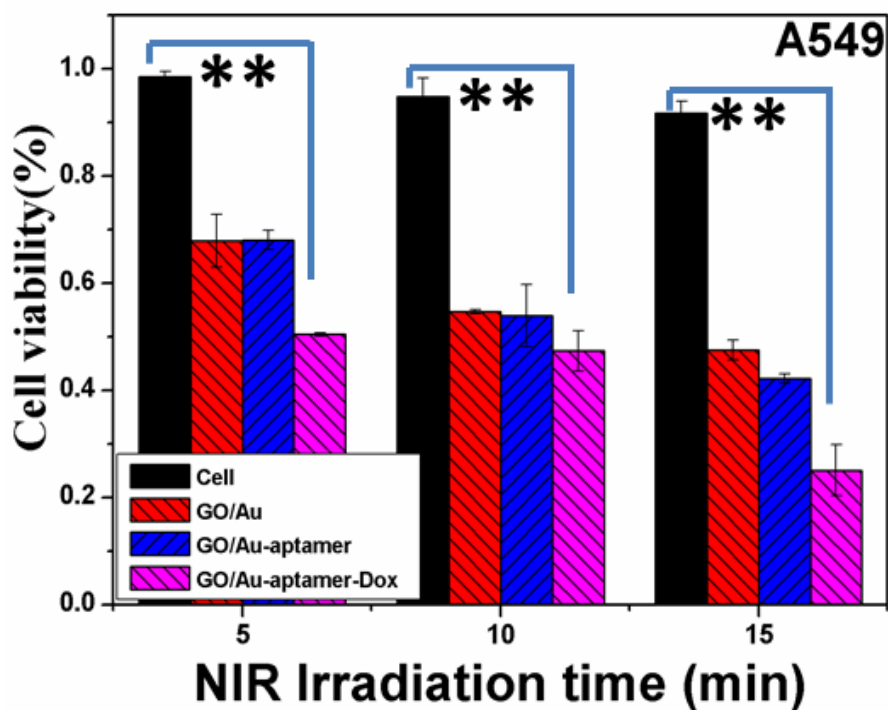


Fig. S10. Cell viability of A549 cells incubated with GO/Au, GO/Au-Apt and GO/Au-Apt/DOX (concentration of 8 mg/L) irradiated by NIR light for different times.

Figure S11

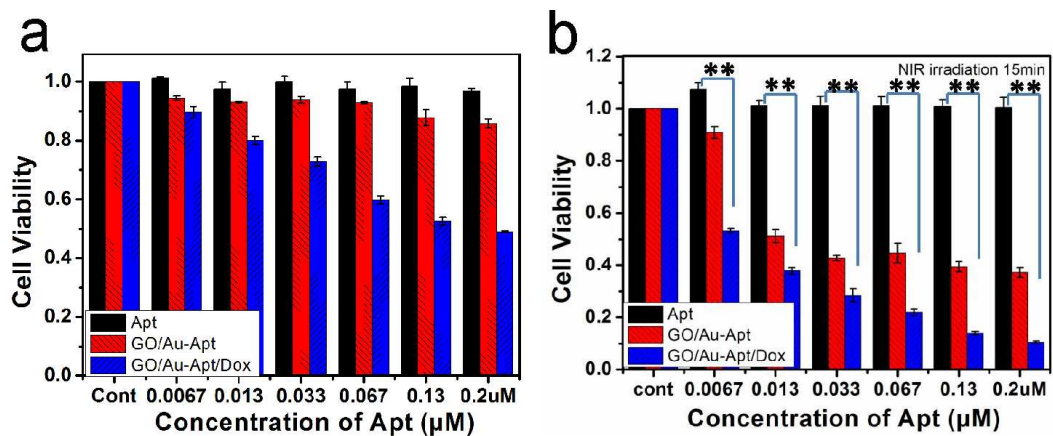


Fig.S11 Cell viability of A549 cells with different concentrations of Aptamers, GO/Au-Apt and GO/Au-Apt/DOX without (a) or with (b) NIR irradiation for 15 min.