Supporting information

A Drug Loaded Aptamer-Gold Nanoparticle Bioconjugate for Combined CT Imaging and Therapy of Prostate Cancer

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Quantification of cellular uptake of GNPs by ICP-AES: Amounts of PSMA aptamer-conjugated GNPs taken up by cells was quantified using ICP-AES. Briefly 5×10^4 cells were seeded on 24-well plates for 24 h. Prior to incubation with the GNPs cells were pre-incubated with OPTI-MEM media for half an hour, followed by incubation with PSMA aptamer-conjugated GNPs (5 nM) for 2 h. The cells were washed with PBS, trypsinized, centrifuged at 1000 rpm for 3 minutes and resuspended in OPTI-MEM for ICP-AES analysis.

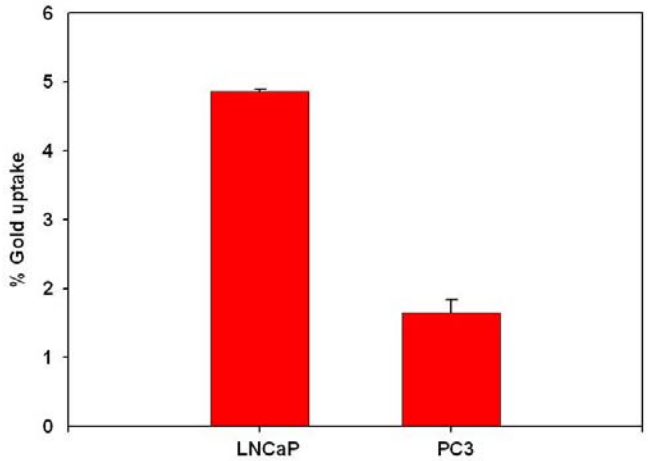

Figure S1. The relative amounts of the PSMA aptamer-conjugated GNPs taken up by LNCaP and PC3 cells, repectively, which are measured by ICP-AES and denoted as % gold uptake.

Confocal laser scanning microscopy: LNCaP and PC3 cells (5×10^4 cells/mL) were grown in 24-well plates using RPMI 1640 media with 10% fetal bovine serum for 24 h to attain 70% confluence. Prior to incubation cells were pre-incubated with OPTI-MEM media for half an hour, followed by incubation with Dox loaded aptamer-conjugated GNPs (1.5 μM of Dox) for 2 h. The cells were washed with PBS twice, fixed with 4% HCHO for 5 minutes, washed, mounted with Vector mounting media and cover slipped. Confocal microscopy images were obtained using a CLSM (Olympus FV1000, Ar laser 488, 20X).

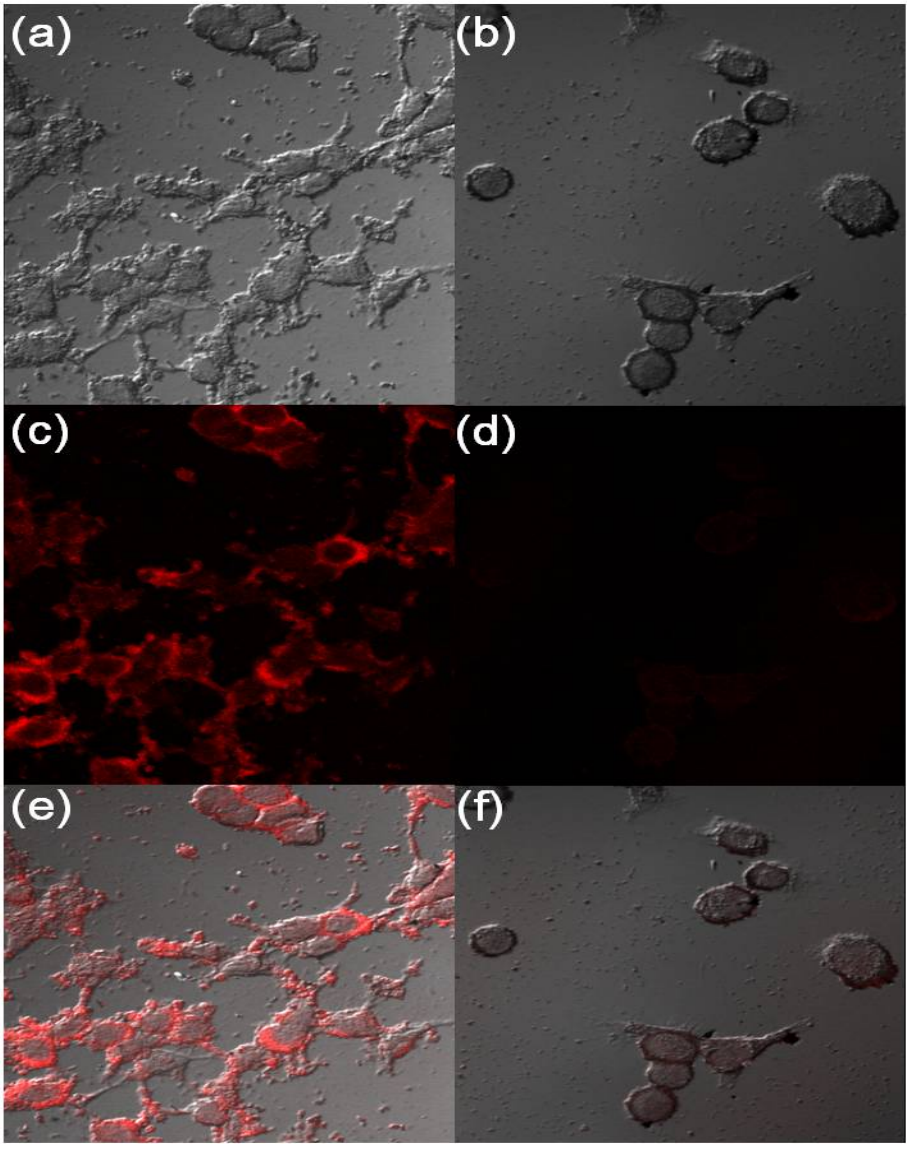

Figure S2. Confocal laser scanning microscopy images of fluorescence, DIC and merged images of LNCaP (a,c,e) and PC3 (b,d,f) cells after treatment with Dox loaded aptamer-GNP conjugates.

Flow cytometry: LNCaP and PC3 cells (10^5 cells/mL) were seeded onto 12-well plates for 24 h, followed by incubation with Dox loaded aptamer-conjugated GNPs (1.5 μM of Dox) for 2 h. The cells were washed with PBS twice, trypsinized, centrifuged at 1000 rpm for 3 minutes and resuspended in PBS for flow cytometry analysis.

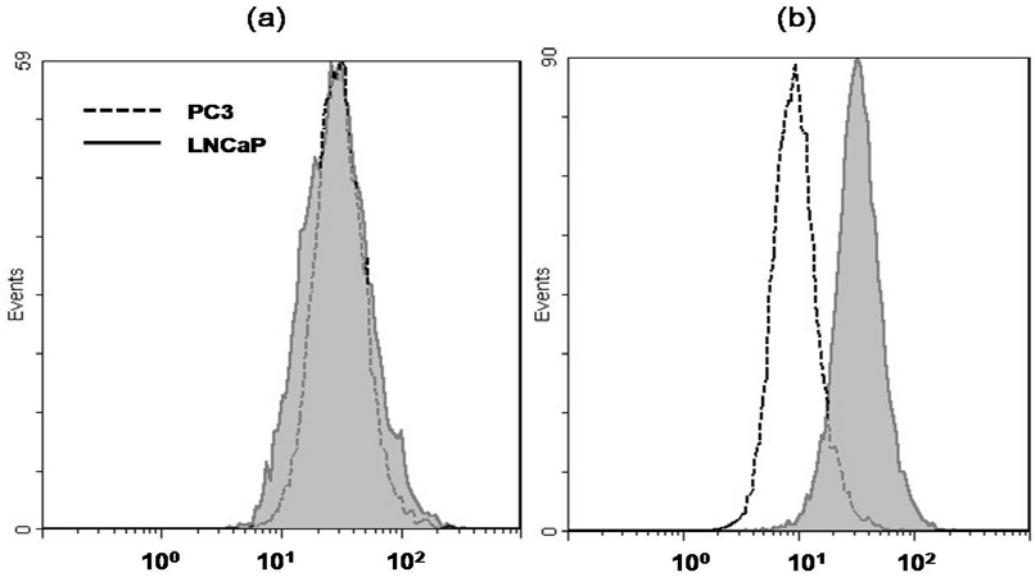

Figure S3. Flow cytometry histogram profiles of LNCaP (solid line) and PC3 (dotted line) cells obtained after treatments with (a) free Dox (1.5 μM) and (b) Dox loaded aptamer-conjugated GNPs (1.5 μM of Dox).