

Supporting Information

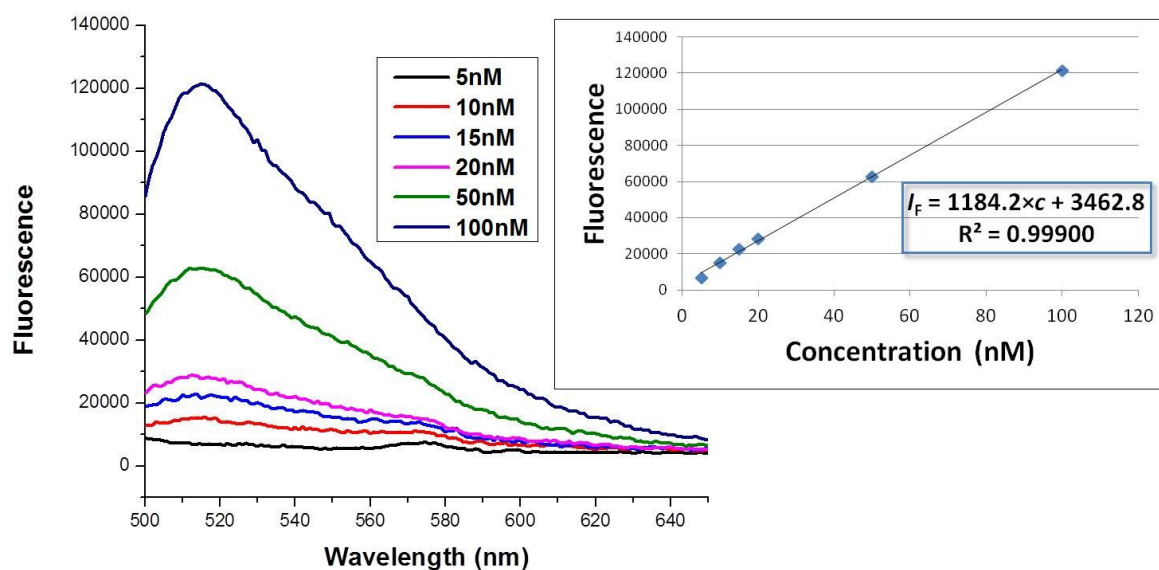
BSA Modification to Reduce CTAB Induced Nonspecificity and Cytotoxicity of the Aptamer-Conjugated Gold Nanorods

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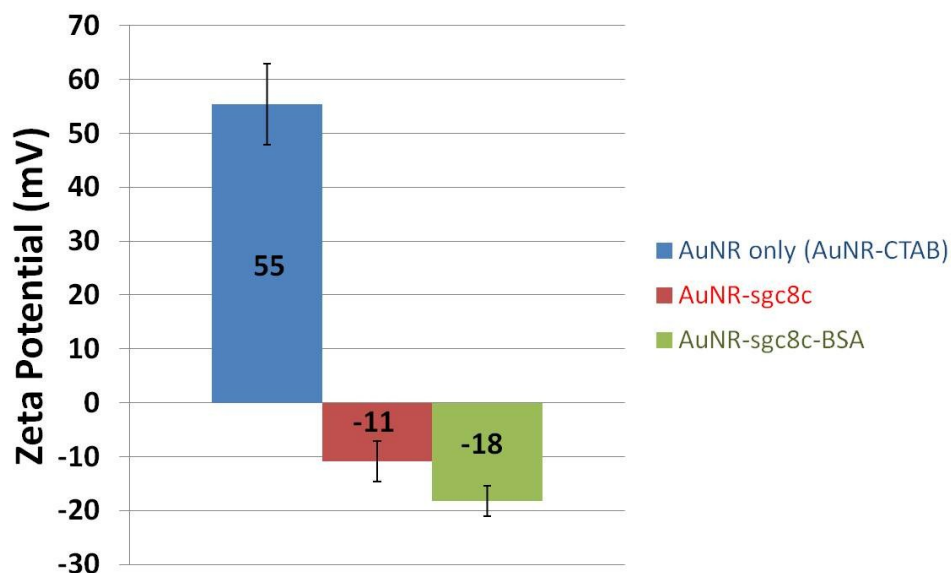
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A



B

Figure S-1. Detection of aptamer immobilization and BSA modification on the gold nanorod surface. (A) Fluorescence standard calibration curve for the sgc8c aptamer modified with FITC dye. (B) Zeta potential of gold nanorods before and after surface modifications.

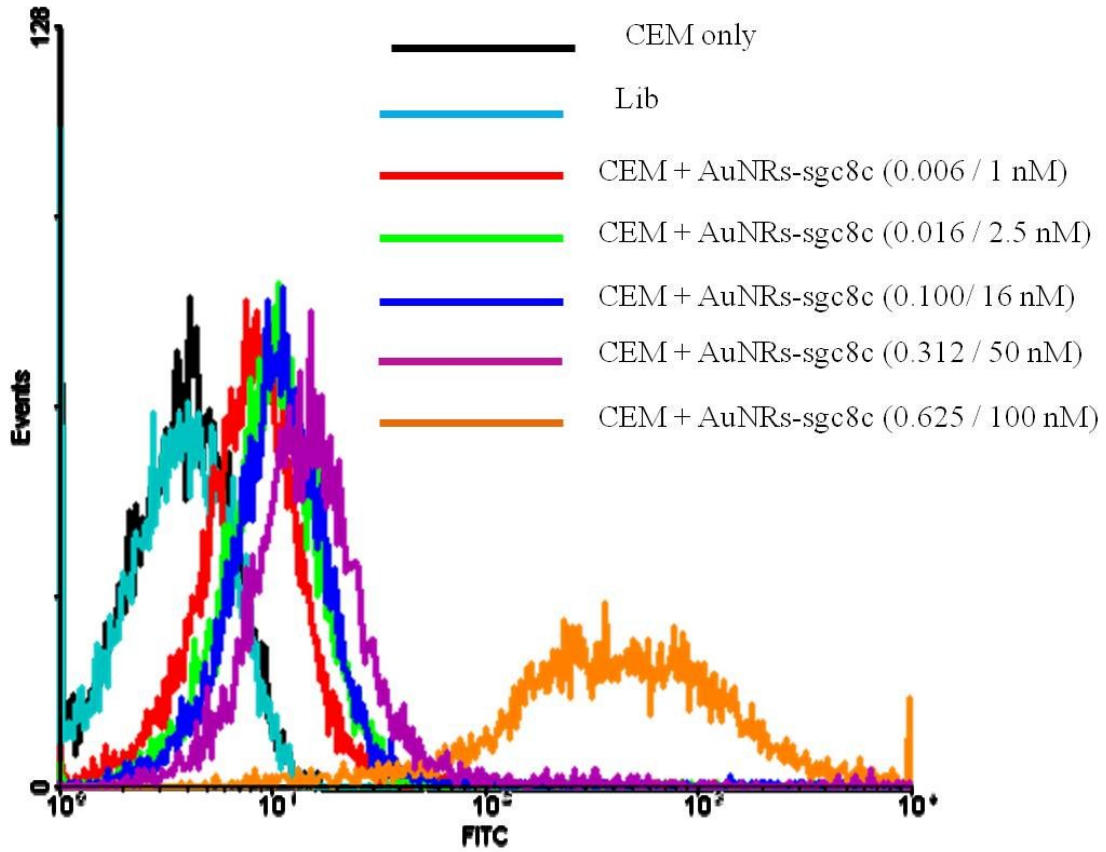


Figure S-2. Flow cytometric assay to monitor the binding of AuNR-sgc8c with CEM cells (target cells) under different concentrations. Cells were incubated with AuNR-sgc8c at 37°C for 2 h. The first concentration is for AuNRs, and the second concentration is for aptamers.

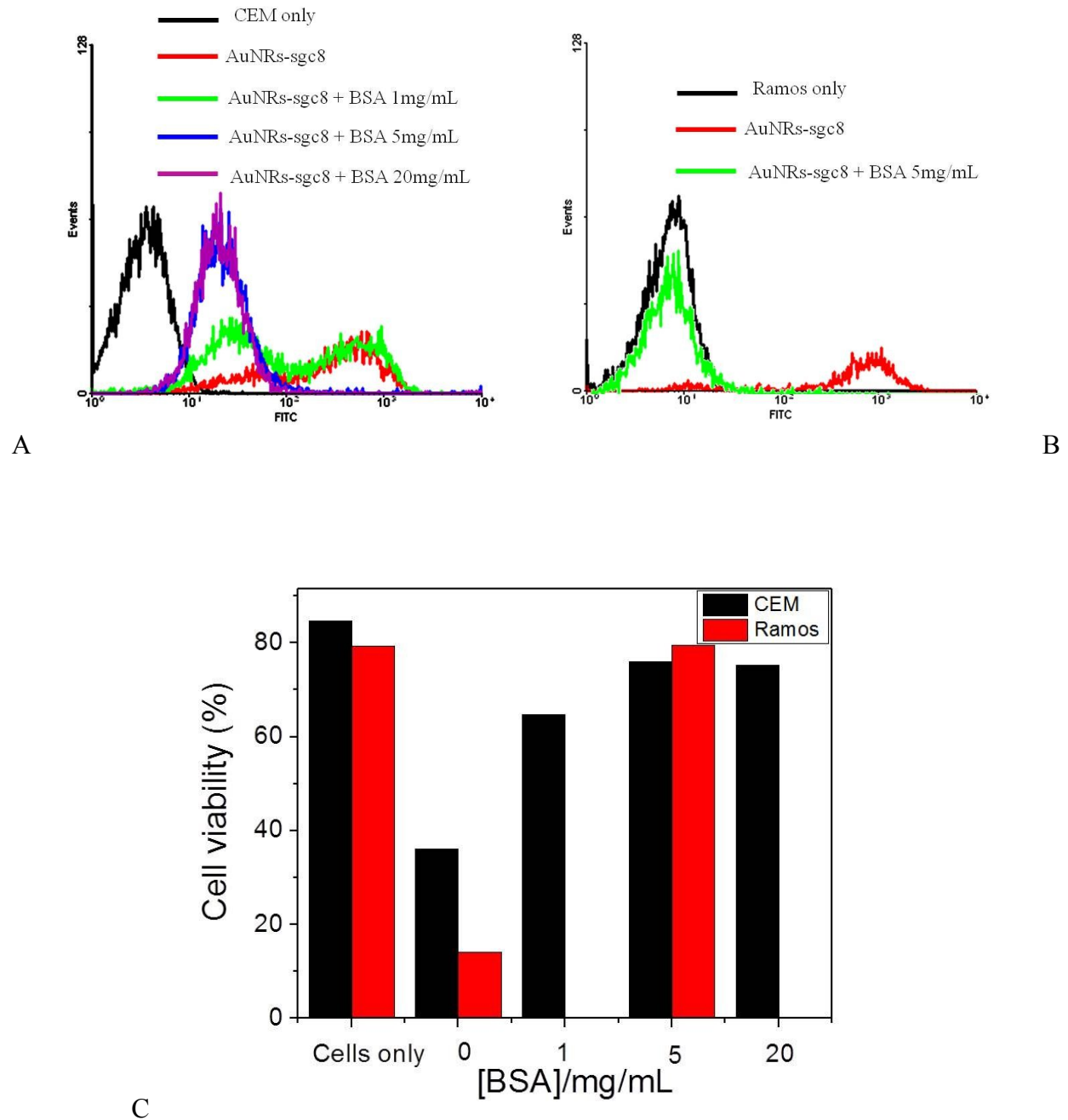


Figure S-3. Specificity and cytotoxicity test of AuNR-sgc8c (0.47 nM) to CEM and Ramos cells. Flow cytometric assay to monitor the binding of AuNR-sgc8c with (A) CEM after BSA treatment at different concentrations and (B) Ramos after 5mg/mL BSA treatment. Incubation with cells were performed at 37°C for 2 h. (C) Cell viability of CEM and Ramos cells analyzed with PI staining.

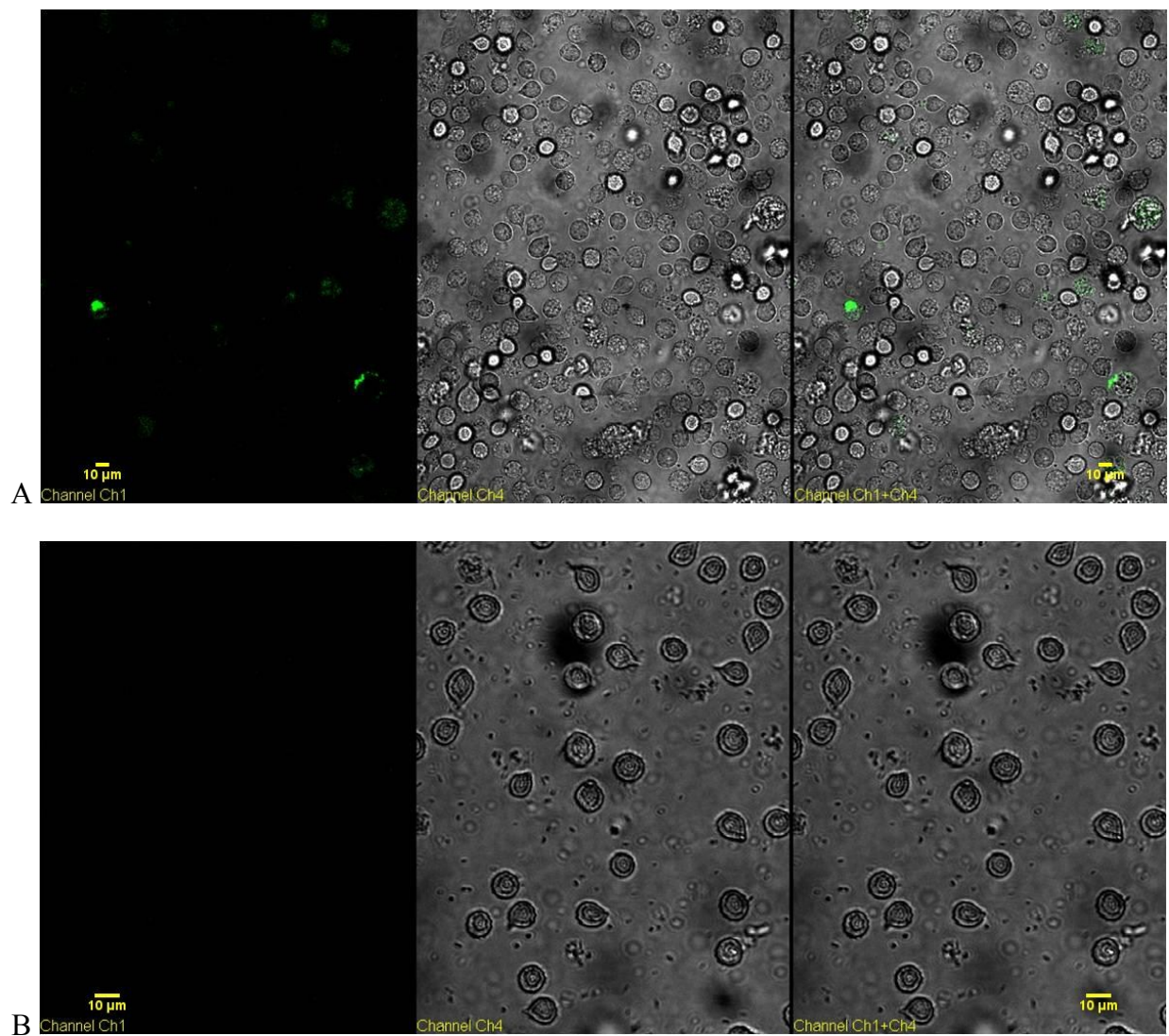


Figure S-4. Confocal images of Ramos cells (control cells) incubated with AuNR-sgc8c (0.5 nM) (A) not treated with BSA and (B) treated with 5mg/mL BSA. Cells were incubated with AuNR-sgc8c at 37°C for 2 h.

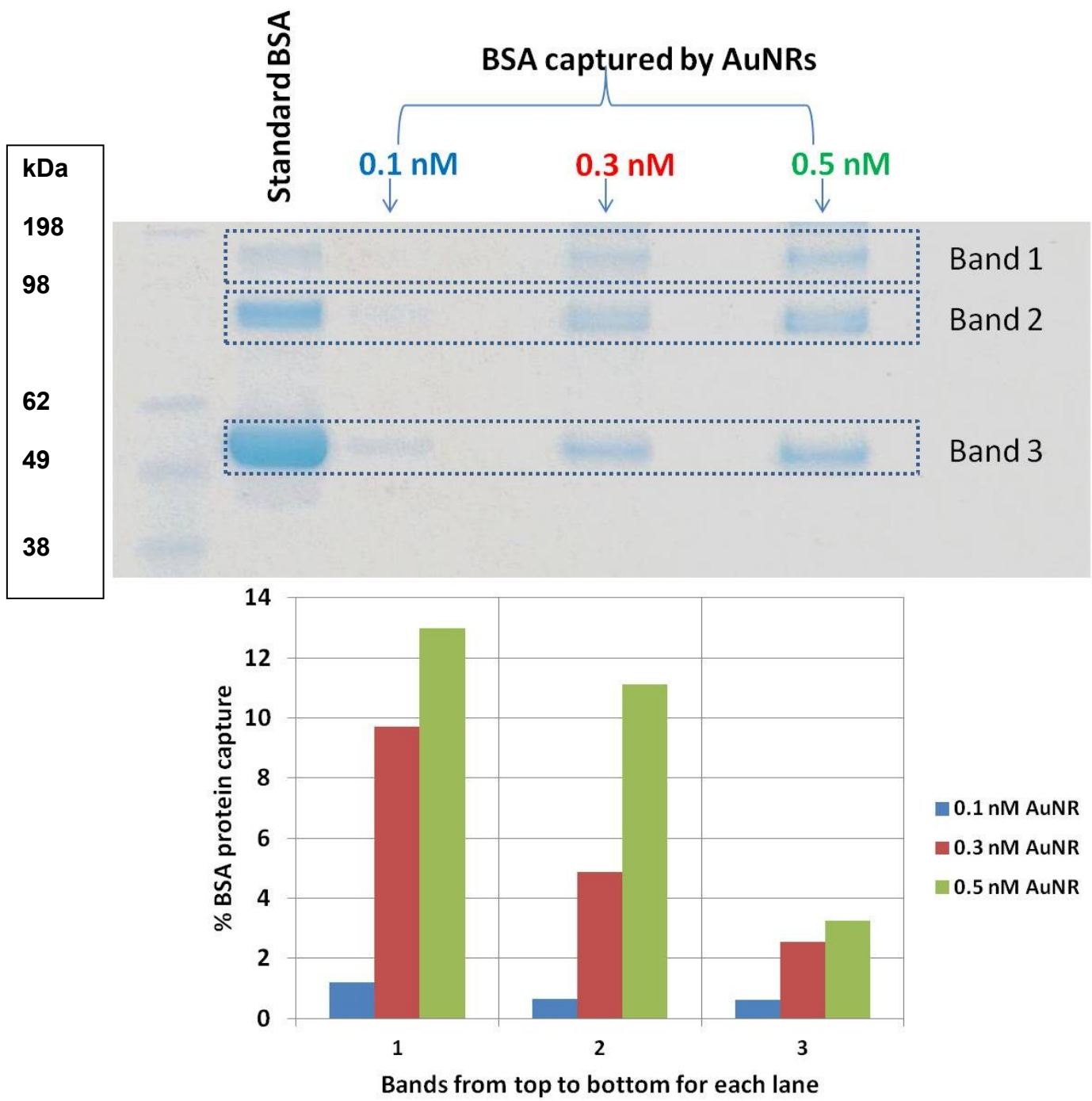


Figure S-5. Band intensity comparison of the captured BSA via 0.1, 0.3 and 0.5 nM AuNRs (further analysis of Fig. 5B)

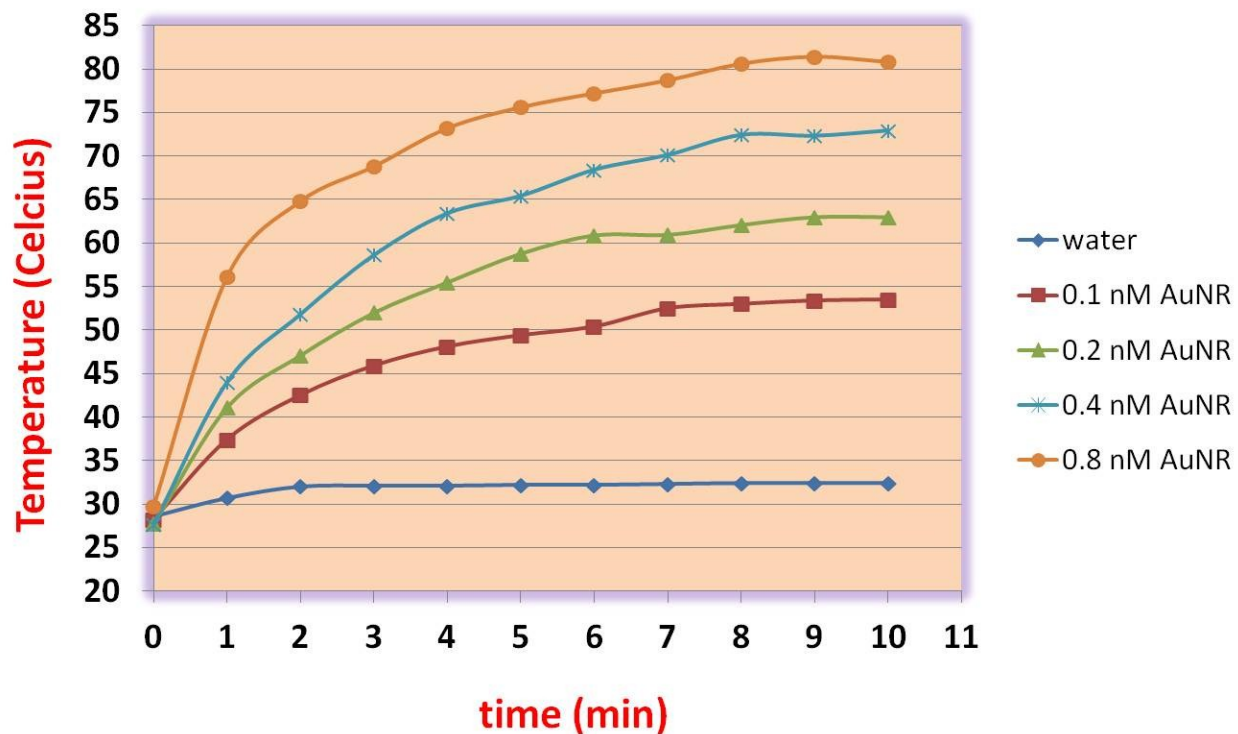


Figure S-6. Temperature increase for different concentrations of AuNRs treated with a 810 nm laser (10 Amp).

Temperatures above 42°C can be fatal for cells. In Figure S-5, even 0.1 nM of AuNRs could increase the temperature of the medium up to 43°C in a very short time (2 min) upon NIR laser treatment. This shows the efficacy of AuNRs for photothermal therapy of cancer cells.