

## Supporting Information

# TiO<sub>2</sub> Capped Gold Nanorods for Plasmon-Enhanced Production of Reactive Oxygen Species and Photothermal Delivery of Chemotherapeutic Agents

*Liangcan He,<sup>†</sup> Chenchen Mao,<sup>‡</sup> Michael Brasino,<sup>†</sup> Albert Harguindey,<sup>†</sup> Wounghang Park,<sup>‡§</sup>  
Andrew P. Goodwin,<sup>†§</sup> Jennifer N. Cha<sup>\*†§</sup>*

<sup>†</sup>Department of Chemical and Biological Engineering, <sup>‡</sup>Department of Electrical, Computer and Energy Engineering, <sup>§</sup>Materials Science and Engineering Program, University of Colorado, Boulder, CO, 80303 USA. E-mail: Jennifer.Cha@colorado.edu

Keywords: TiO<sub>2</sub> capped gold nanorods, plasmon-enhanced, singlet oxygen, photodynamic therapy, photothermal delivery

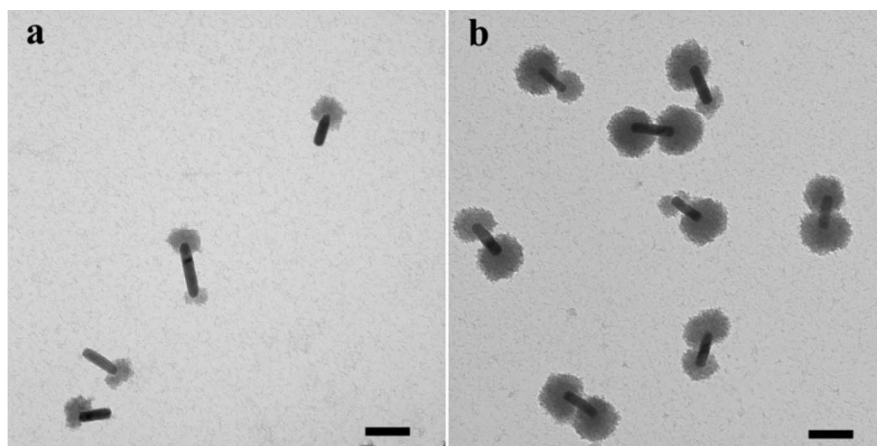


Figure S1. TEM images of (a) AuNR@TiO<sub>2</sub> synthesized at lower pH (2.3), (b) AuNR@TiO<sub>2</sub> synthesized at higher pH (2.8). Scale bar: 100 nm. The CTAB concentration was kept at around 13 mM.

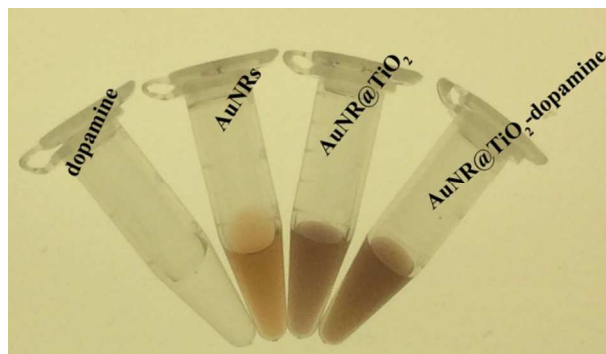


Figure S2. Optical photo of the water solution AuNRs, AuNR@TiO<sub>2</sub> and dopamine modified AuNR@TiO<sub>2</sub>.

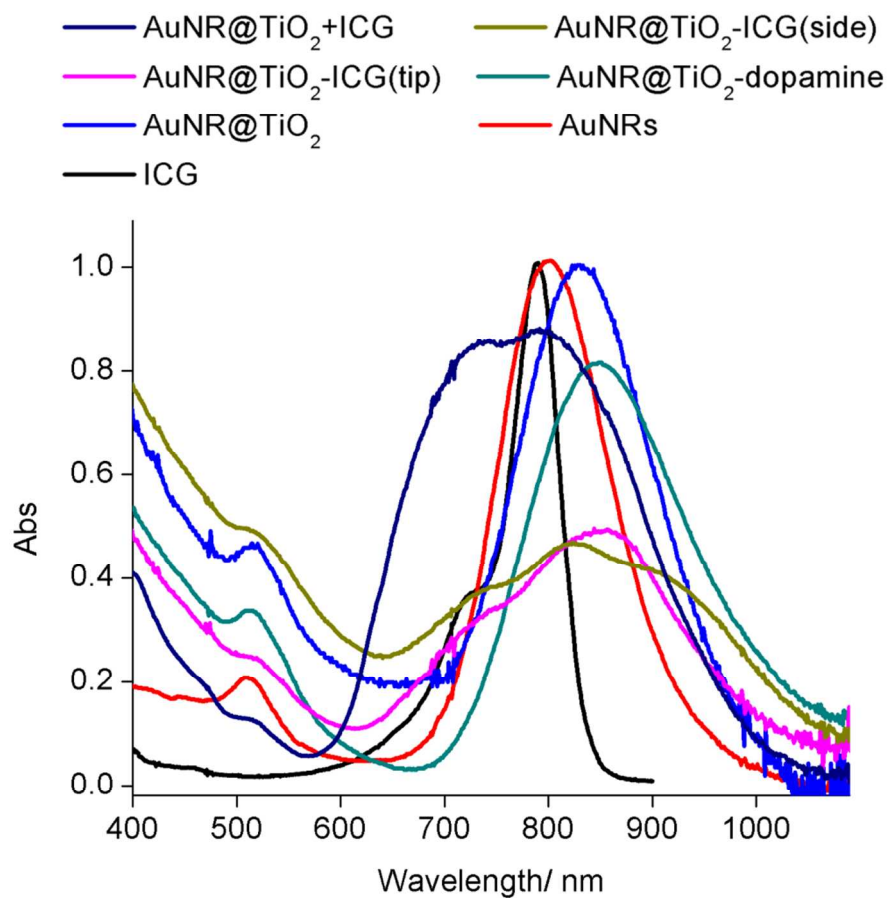


Figure S3. UV-Vis absorbance spectra of free ICG, AuNRs, AuNR@TiO<sub>2</sub> before and after dopamine modification, AuNR@TiO<sub>2</sub>-ICG (tip, side) and mixture of AuNR@TiO<sub>2</sub>.

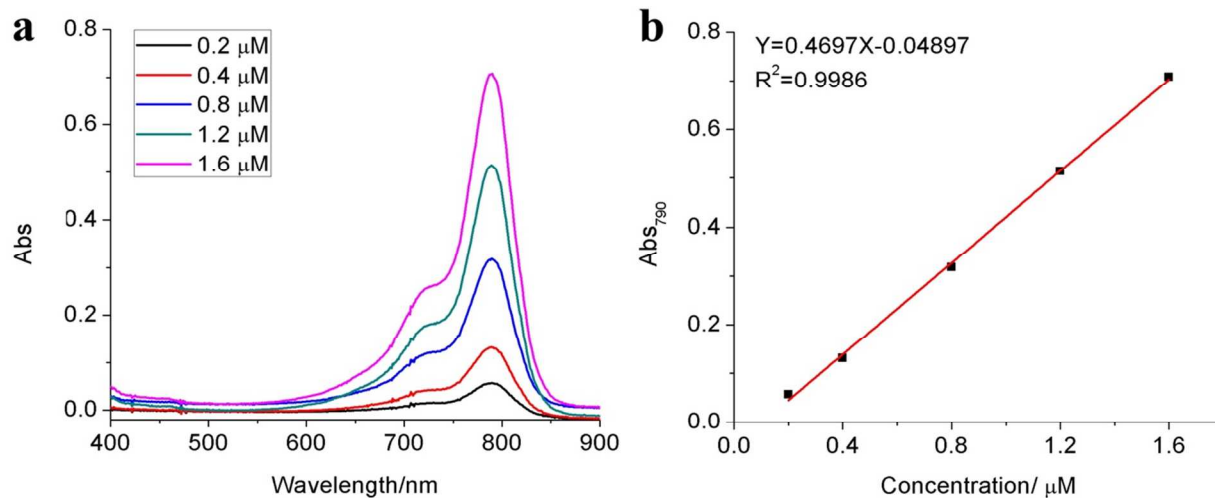


Figure S4. (a) The UV-vis spectra of the azide-ICG water-DMSO (1:1) solution at different concentration; (b) ICG standard concentration-absorption curve (1:1 water-DMSO).

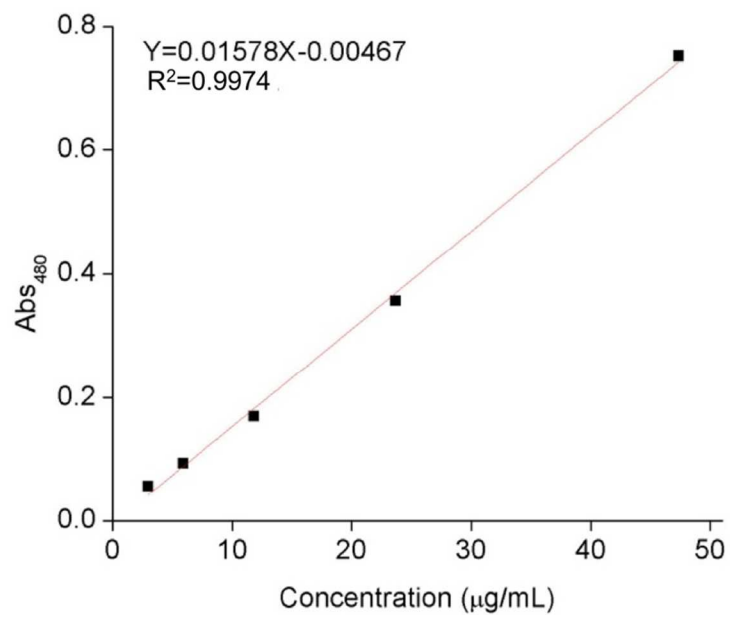


Figure S5. DOX standard concentration-absorption curve (in 1:1 water-DMSO).

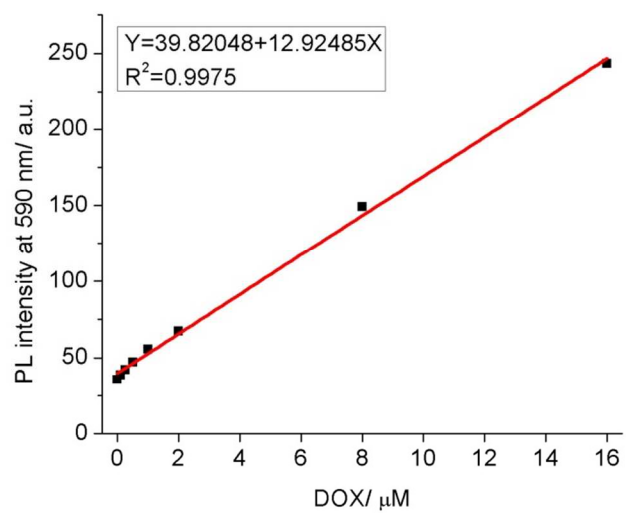


Figure S6. DOX standard concentration-fluorescence curve determined by plate reader (in PBS solution, excitation at 480 nm, emission at 590 nm).

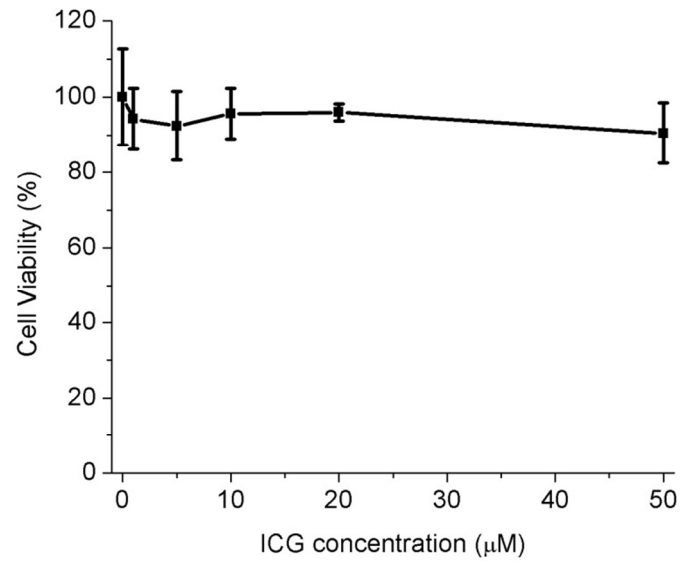


Figure S7. *In vitro* cell viability of MDA-MB-468 cells incubated with ICG at different concentrations for 5 hours.