

## Supporting Information

# The Most Effective Size Gold Nanorod for Plasmonic Photothermal Therapy: Theory and Experiment

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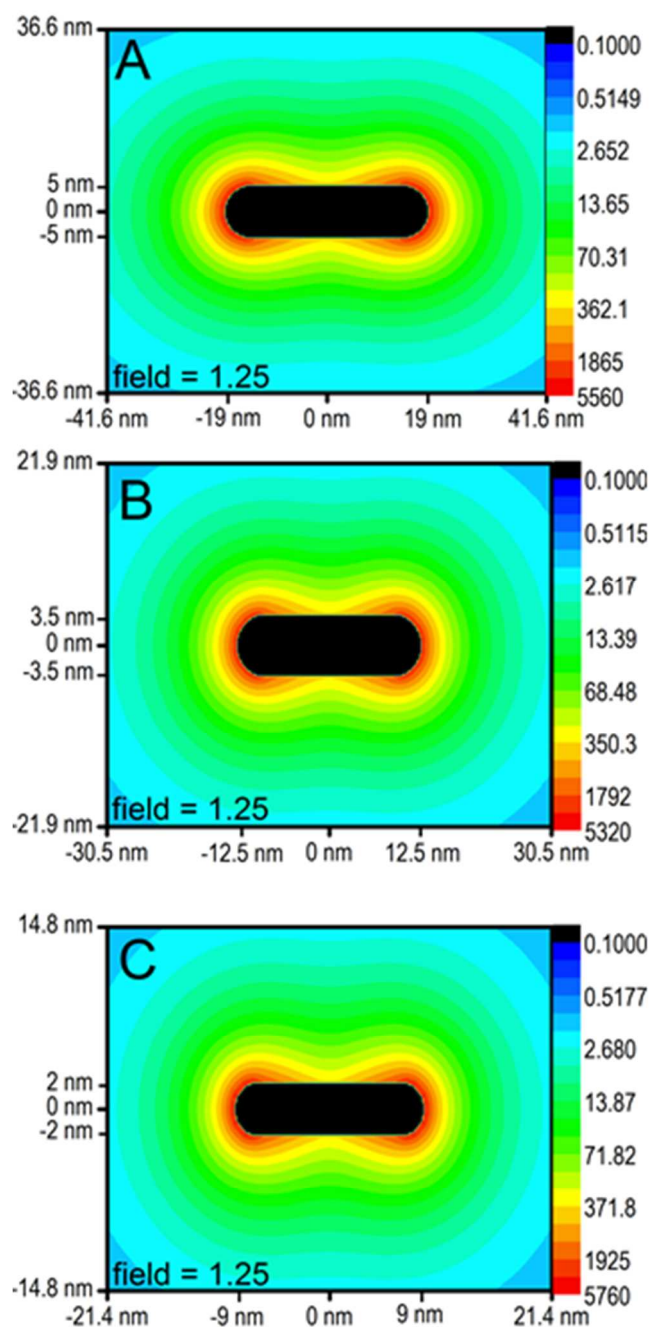
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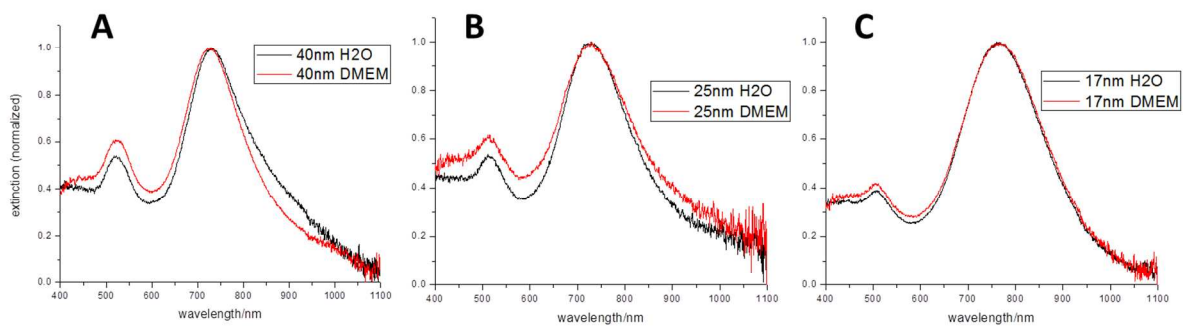
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**Table S1.** Additional temperature measurements taken for experimental photothermal heat conversion.

	$T_i$	$T_f$ 30 sec irradiation	$T_i$	$T_f$ 1 min irradiation	$T_i$	$T_f$ 2 min irradiation
38 nm 10 nM	$26 \pm 3$	$69 \pm 3$	$23 \pm 3$	$80 \pm 0$	$23 \pm 1$	$82 \pm 5$
28 nm 10 nM		$65 \pm 3$		$85 \pm 5$		$103 \pm 1$
17 nm 10 nM		$40 \pm 2$		$49 \pm 3$		$62 \pm 2$
17 nm 20 nM		$48 \pm 5$		$65 \pm 5$		$81 \pm 2$



**Figure S1.** Field contour plots at the resonance wavelength for the longitudinal mode of (A) a 38 x 10 nm AuNR at a wavelength of 786. The field maximum is 5560. (B) A 25 x 7 nm AuNR at a wavelength of 757 nm. The field maximum is 5320. (C) An 18 x 4 nm AuNR at a wavelength of 865 nm, The field maximum is 5760. For all cases, the particle dimensions are indicated on the axes and the field has decayed to a value of 1.25 at the extremities of the plot. At the resonance condition, there is less than 10% difference between the maximum field enhancement values for the different sized AuNR, not corresponding to the experimental results.



**Figure S2.** UV-Vis spectra of PEG-AuNRs in water (black) and in DMEM cell culture medium (red), showing no significant changes, indicative of PEG-AuNR stability in cell culture medium.