

SUPPORTING INFORMATION

Chalcogenide nanoparticles and organic photosensitizers for synergetic antimicrobial photodynamic therapy

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Table S1. *S. aureus* CFU counts after incubation at 52°C during 5 and 20 min. The counting process was performed after 24h incubation of the thermally treated colonies

Incubation time (min)	Control at 37°C	Incubation at 52°C
5	$1.5 \cdot 10^6 \pm 1.2 \cdot 10^5$ CFU/mL	$1.1 \cdot 10^6 \pm 1.7 \cdot 10^5$ CFU/mL
20	$2.8 \cdot 10^6 \pm 3.4 \cdot 10^5$ CFU/mL	$1.1 \cdot 10^6 \pm 9.9 \cdot 10^4$ CFU/mL

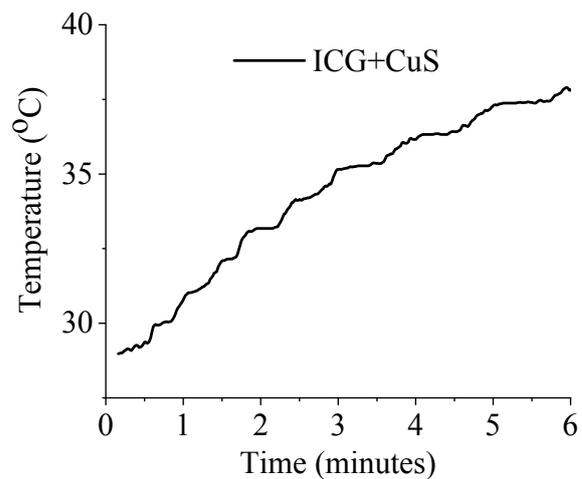


Figure S1. Heating curve of ICG+CuS 40+40 µg/mL during 6 minutes of irradiation at 808 nm, 1 W/cm².

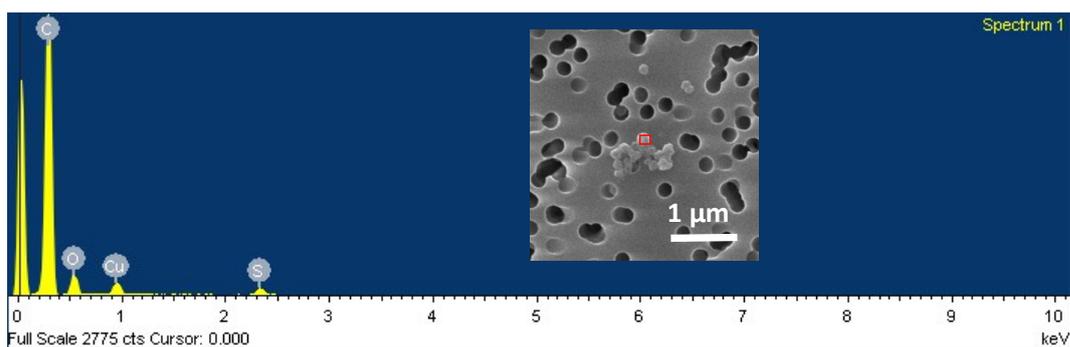


Figure S2. Energy-dispersive X-ray spectrum to determine the presence of CuS NPs in *S. aureus* samples treated with ICG+CuS 40+160 µg/mL and irradiated.

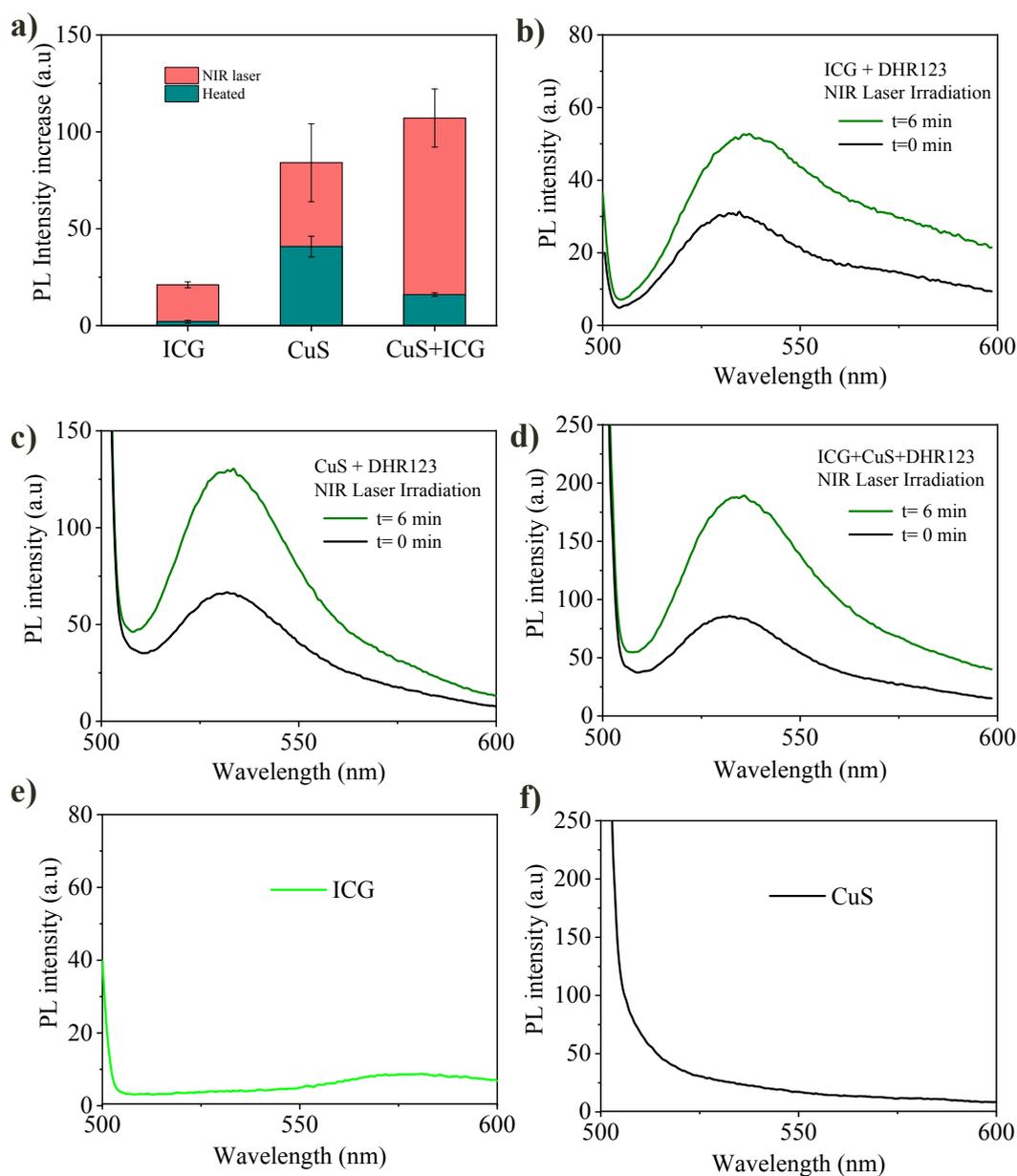


Figure S3. a) Evaluation of ROS production for ICG (40 $\mu\text{g}/\text{mL}$), CuS (40 $\mu\text{g}/\text{mL}$) and CuS+ICG (40+40 $\mu\text{g}/\text{mL}$). The samples were irradiated (808 nm, 1 W/cm^2) or heated to the equivalent temperature during 6 min. ROS were measured through fluorescence intensity with the tracking agent DHR123. The corresponding fluorescence spectra of b) ICG+DHR123 c) CuS+DHR123 d) ICG+CuS+DHR123 e) ICG and f) CuS under the assayed conditions.

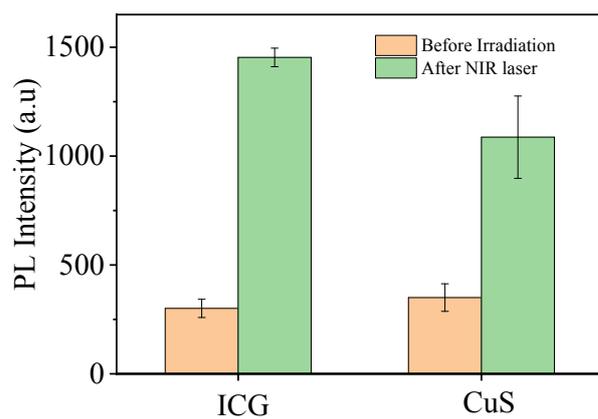


Figure S4. Measurements for singlet oxygen generation using SOSG as the reporter probe. Fluorescence intensity of SOSG at 530 nm before and after irradiation (808 nm, 1 W/cm², during 6 minutes) in the presence of ICG (40 μg/mL) or CuS (40 μg/mL).

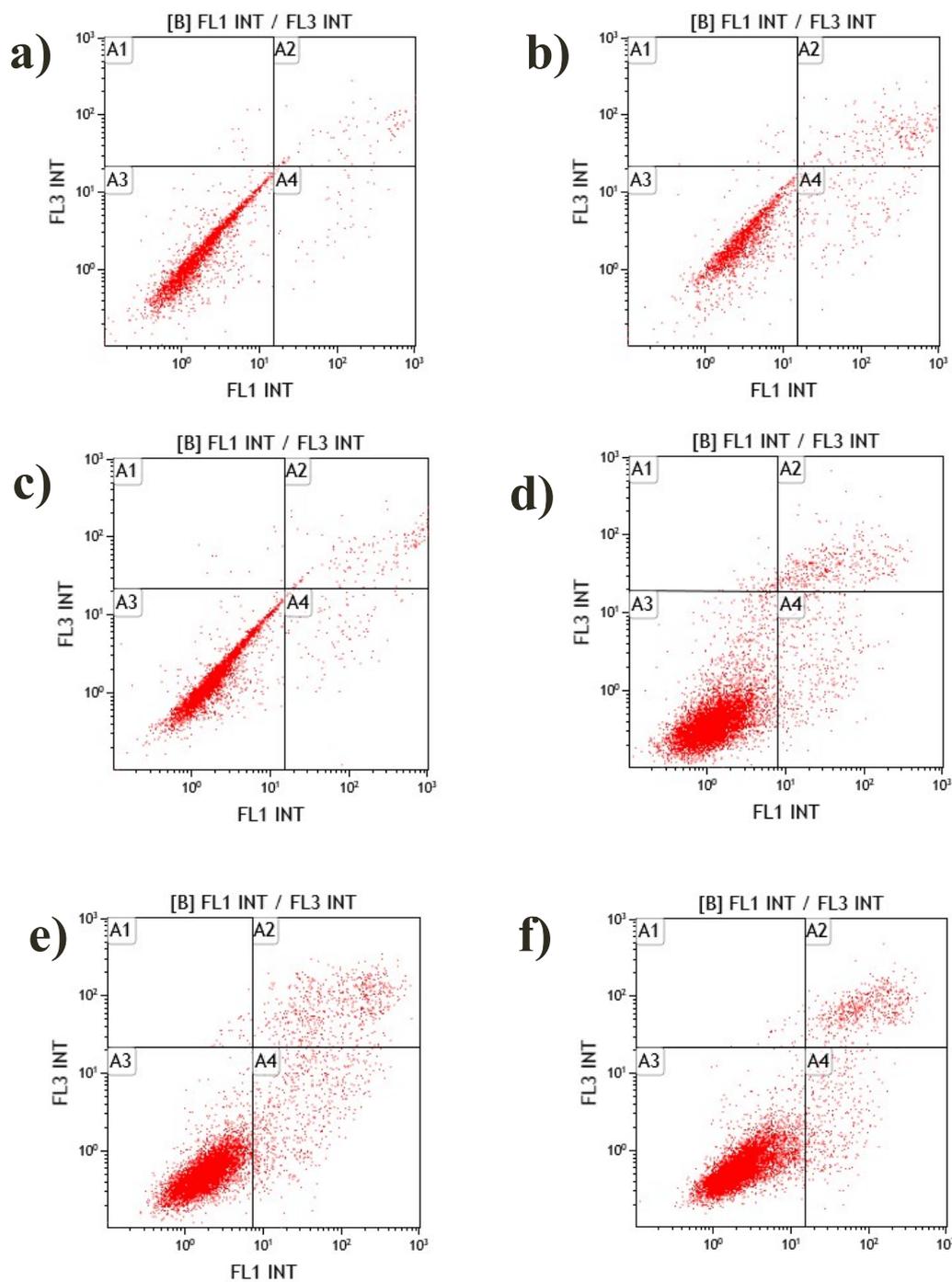


Figure S5. Apoptosis histograms obtained from flow cytometry assays after treatment of cells with CuS nanoparticles (160 $\mu\text{g}/\text{mL}$) or ICG (40 $\mu\text{g}/\text{mL}$) for 24h: (a) Fibroblasts control sample; (b) Fibroblasts treated with CuS nanoparticles; (c) Fibroblasts treated with ICG; (d) Keratinocytes control sample; (e) Keratinocytes treated with CuS nanoparticles; (f) Keratinocytes treated with ICG.

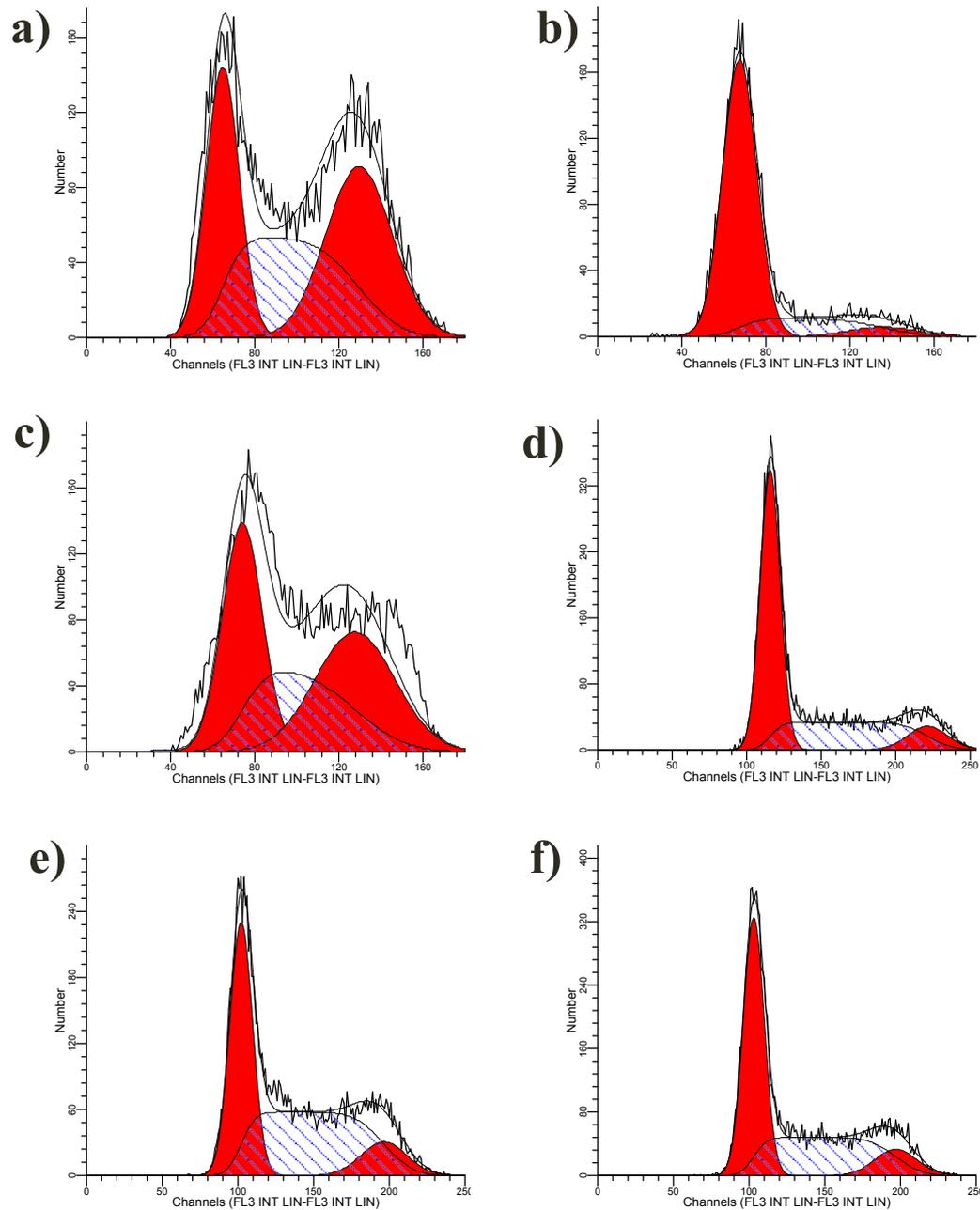


Figure S6. Cell cycle histograms obtained from flow cytometry assays after treatment of cells with CuS nanoparticles (160 $\mu\text{g}/\text{mL}$) or ICG (40 $\mu\text{g}/\text{mL}$) for 24h: (a) Fibroblasts control sample; (b) Fibroblasts treated with CuS nanoparticles; (c) Fibroblasts treated with ICG; (d) Keratinocytes control sample; (e) Keratinocytes treated with CuS nanoparticles; (f) Keratinocytes treated with ICG.