

## Electronic Supplementary Information

### Enhancing the Antibacterial Efficacy of Low-Dose Gentamicin with 5 Minutes Assistance of Phototherapy at 50 °C

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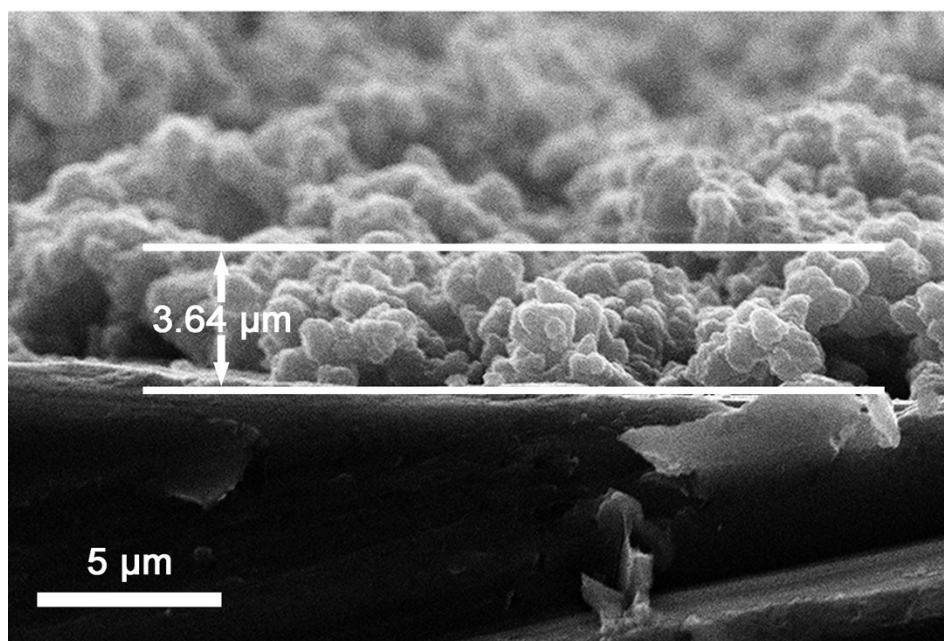
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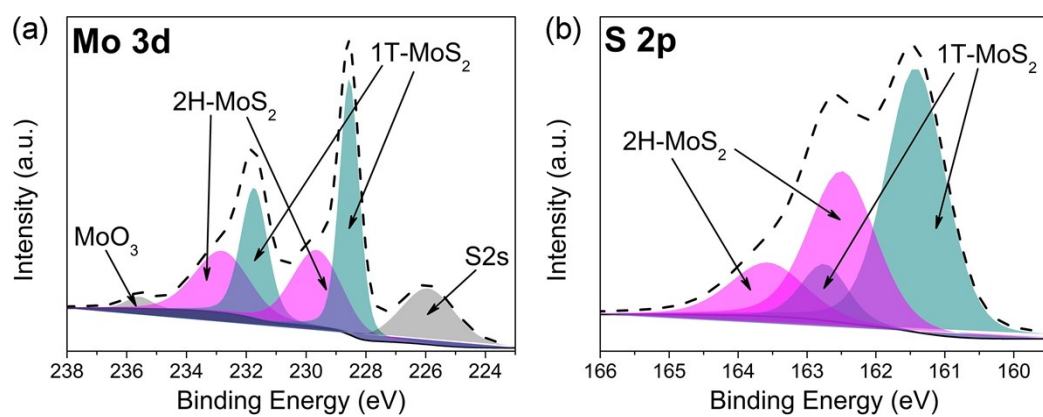
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**Table S1** Elemental composition detected by X-ray photoelectron spectrum on PEG/MoS<sub>2</sub>-Ti, Gent/PEG/MoS<sub>2</sub>-Ti, CS/PEG/MoS<sub>2</sub>-Ti, and CS/Gent/PEG/MoS<sub>2</sub>-Ti.

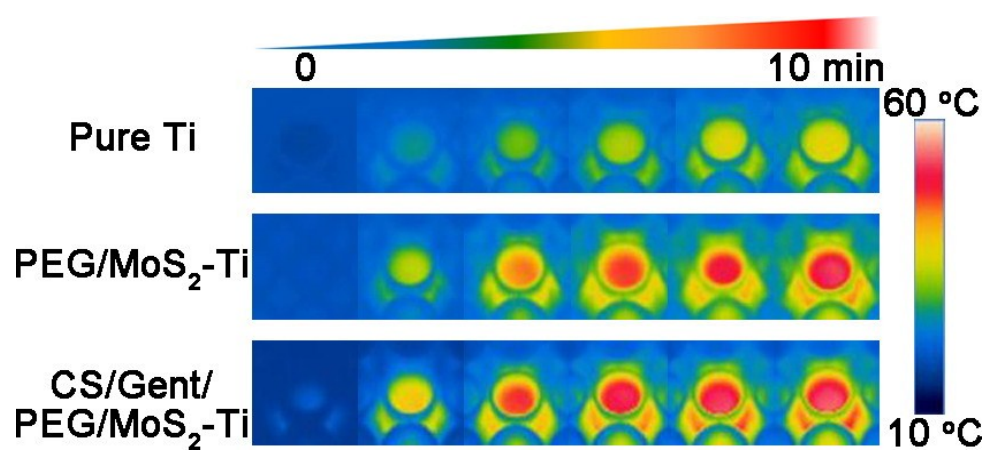
| Samples                          | S 2p (%) | Mo 3d (%) | C 1s (%) | O 1s (%) | N 1s (%) | Ti 2p (%) |
|----------------------------------|----------|-----------|----------|----------|----------|-----------|
| PEG/MoS <sub>2</sub> -Ti         | 23.7     | 10.28     | 41.18    | 24.25    | 0        | 0.59      |
| CS/PEG/MoS <sub>2</sub> -Ti      | 10.12    | 4.75      | 44.76    | 25.4     | 14.45    | 0.53      |
| Gent/PEG/MoS <sub>2</sub> -Ti    | 8.64     | 3.91      | 47.53    | 26.64    | 12.78    | 0.5       |
| CS/Gent/PEG/MoS <sub>2</sub> -Ti | 7.05     | 3.58      | 49.27    | 27.14    | 12.51    | 0.45      |



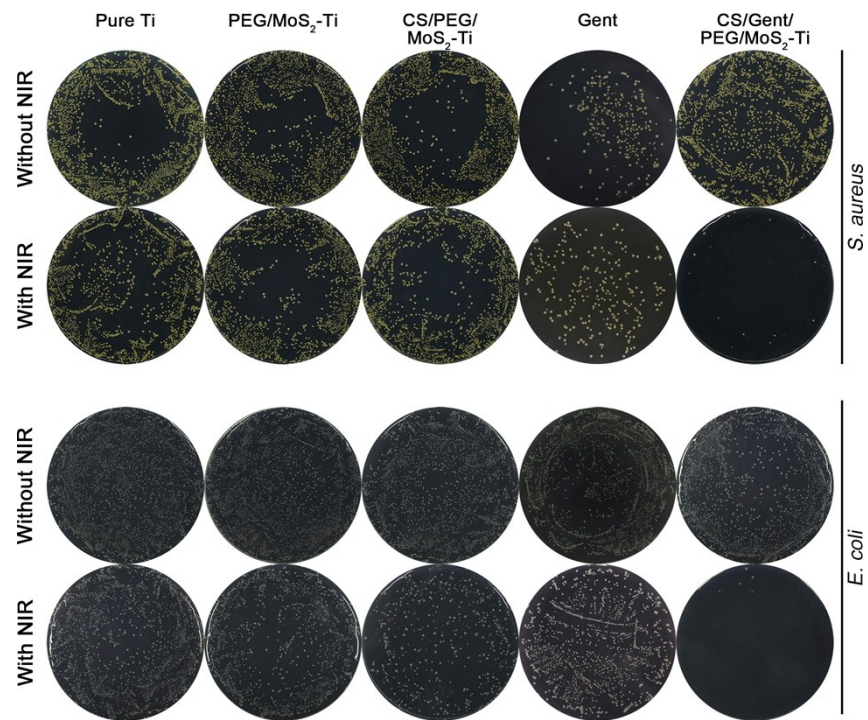
**Fig. S1** Cross-sectional SEM images of PEG/MoS<sub>2</sub>-Ti.



**Fig. S2** X-ray photoelectron spectrum of the (a) Mo 3d region and (b) S 2p region.



**Fig. S3** Infrared thermography of pure Ti, PEG/MoS<sub>2</sub>-Ti, and CS/Gent/PEG/MoS<sub>2</sub>-Ti under 808 nm irradiation (0.5 W cm<sup>-2</sup>).



**Fig. S4** Photographs of *S. aureus* and *E. coli* colonies growing on LB medium on pure Ti, PEG/MoS<sub>2</sub>-Ti, CS/PEG/MoS<sub>2</sub>-Ti, Gent, and CS/Gent/PEG/MoS<sub>2</sub>-Ti without NIR irradiation or keeping 50 °C under NIR irradiation for 5 min;

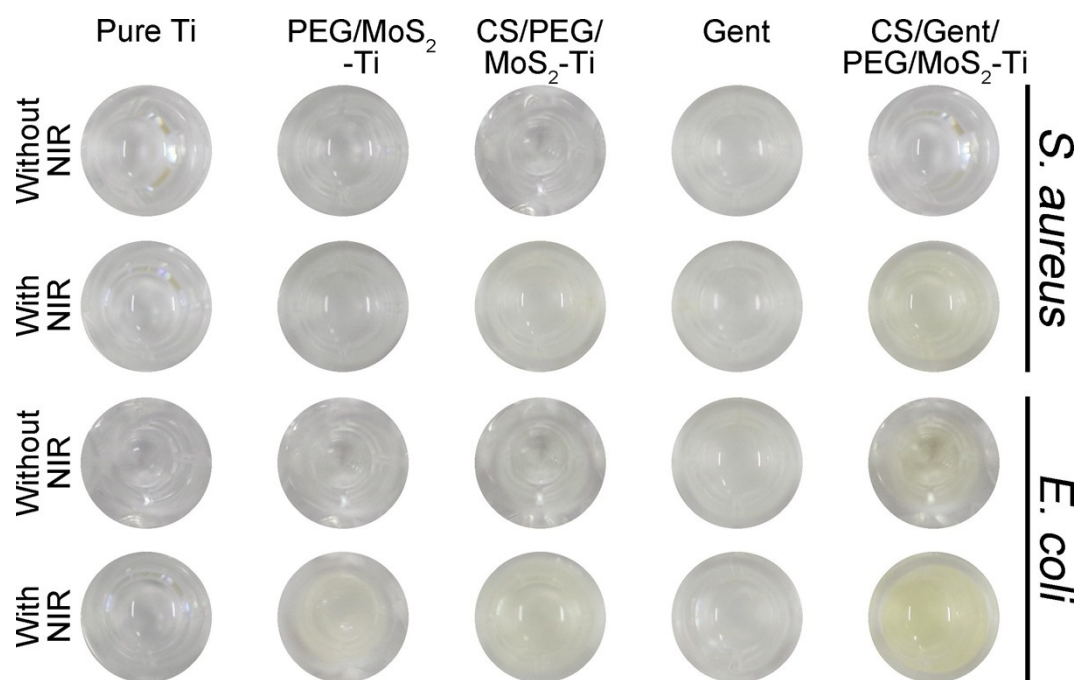
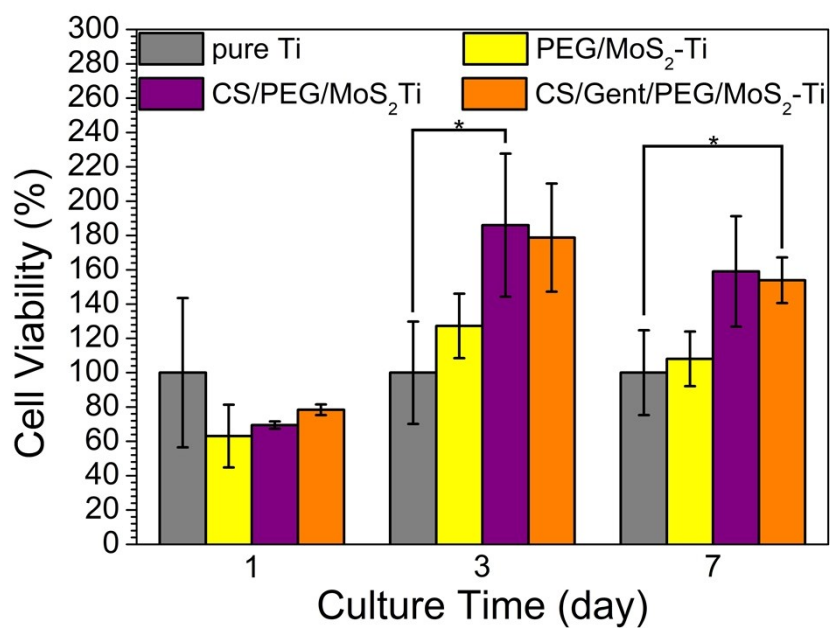
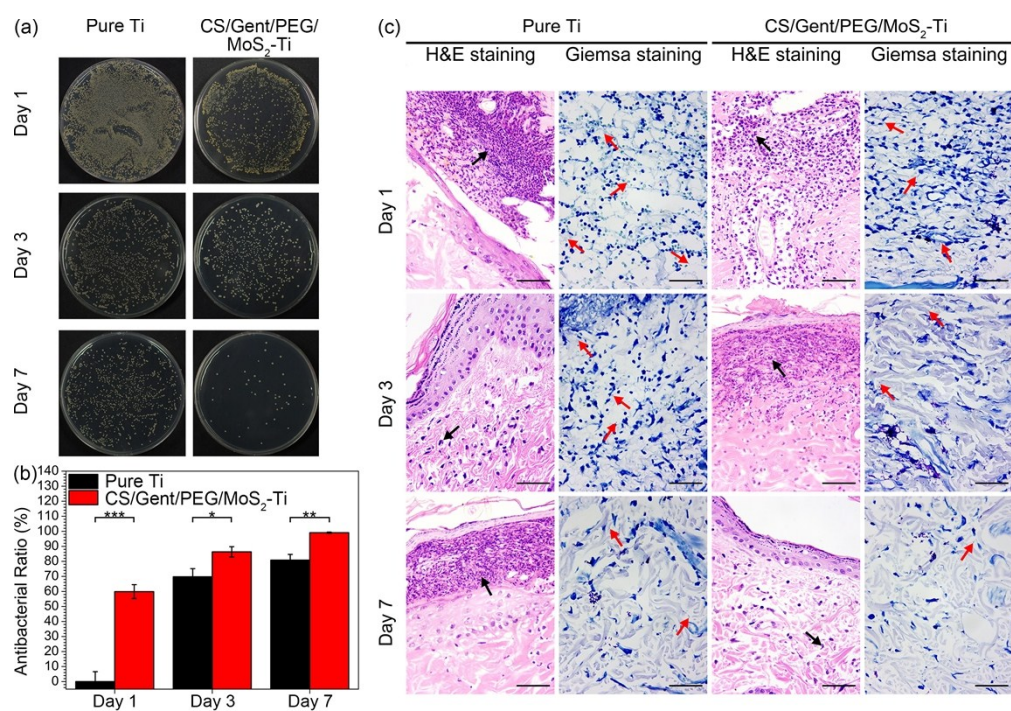


Fig. S5 Photographs of the colors of ONPG after hydrolysis.

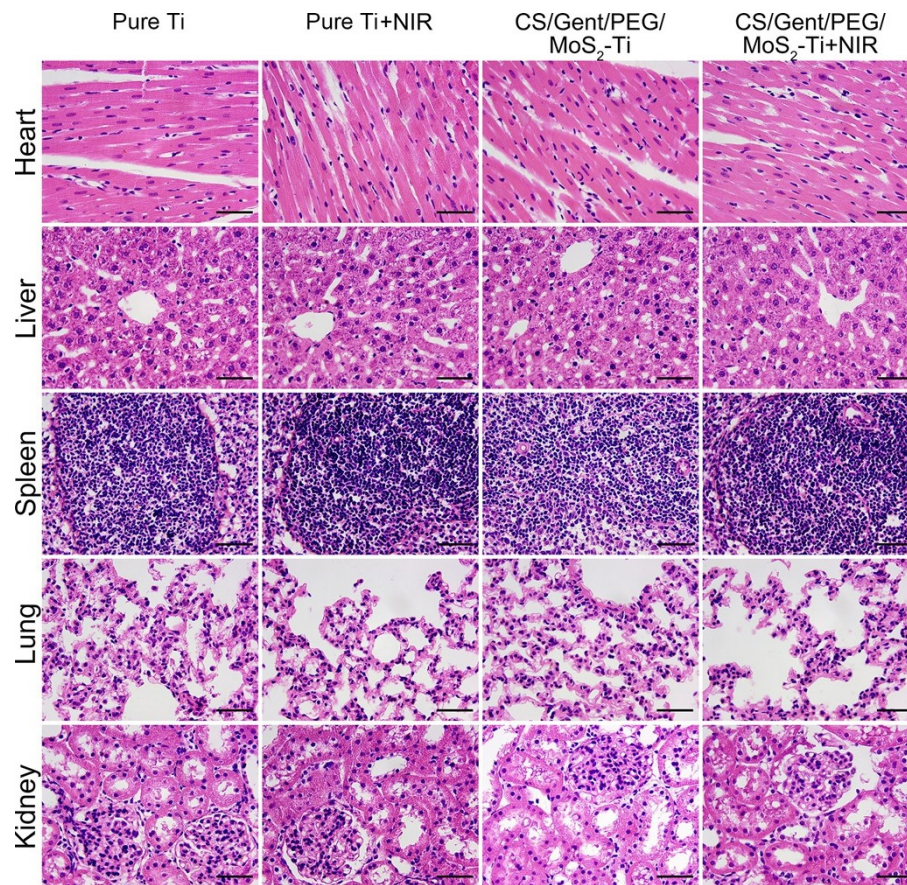


**Fig. S6** MTT assay of cell viabilities cultured in the medium with different samples after 1, 3, and 7 days under NIR irradiation (0.5 W cm<sup>-2</sup>); The error bar indicates means ± standard deviations (n=3); \**p* < 0.05.





**Fig. S7** (a) Photographs of spread plate and (b) corresponding antibacterial rate of pure Ti and CS/Gent/PEG/MoS<sub>2</sub>-Ti at day 1, 3, 7. The error bar indicate means  $\pm$  standard deviations ( $n=3$ ): \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . (c) H&E staining (scale bar = 50  $\mu$ m) and Giemsa staining (scale bar = 50  $\mu$ m) images of tissues at day 1, 3, 7.



**Fig. S8** Histological sections (scale bar = 50  $\mu$ m) of heart, liver, spleen, lung and kidney obtained from the mice implanted with pure Ti, pure Ti+NIR, CS/Gent/PEG/MoS<sub>2</sub>-Ti, and CS/Gent/PEG/MoS<sub>2</sub>-Ti+NIR at day 7.