

## Gaseous Microenvironmental Remodeling of Tumors for Enhanced Photo-gas Therapy and Real-time Tracking

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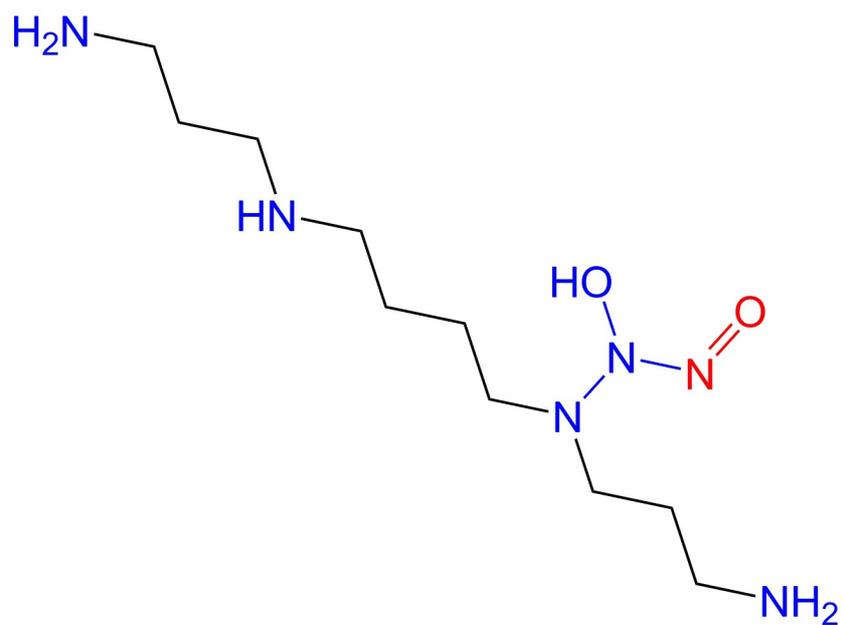
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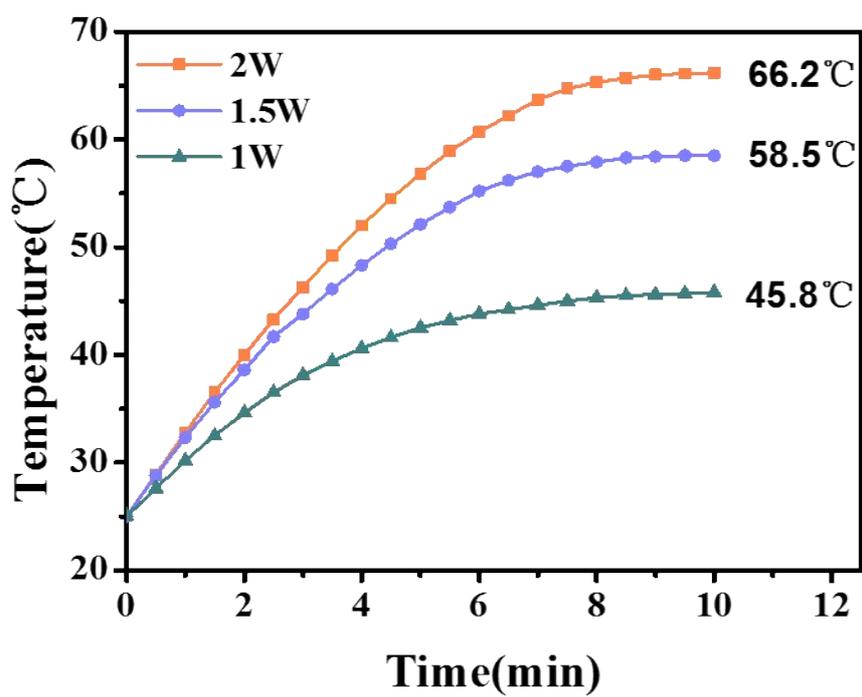
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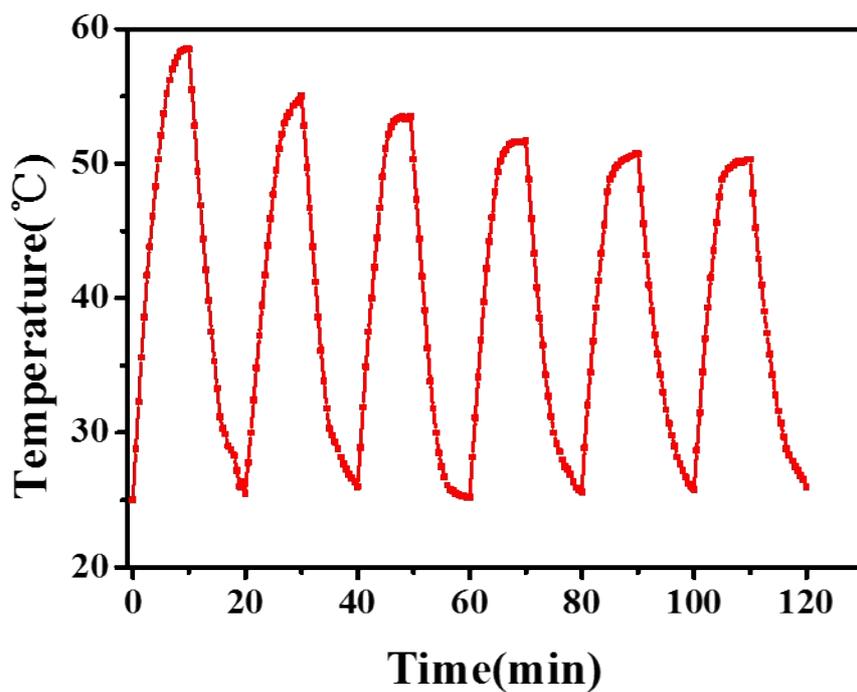
#: Yuchu He, Cong Cong and Shuxian Zhao have the same contribution to this work.



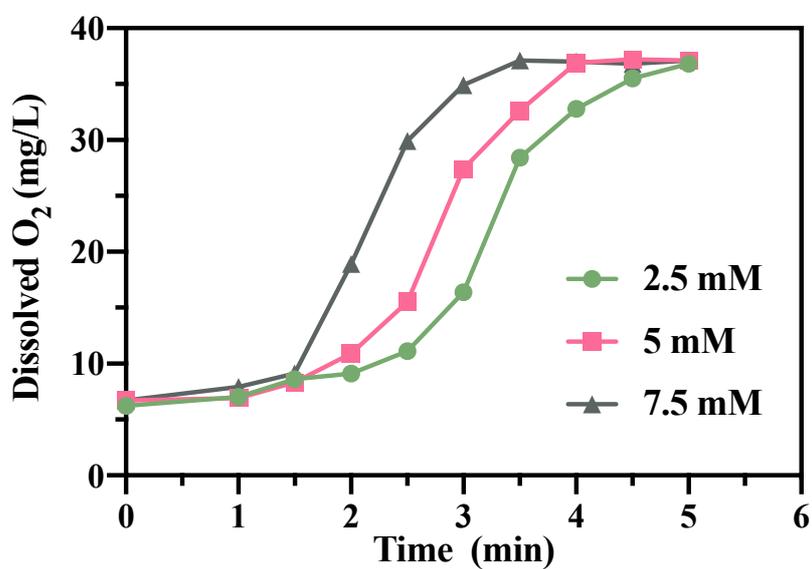
**Figure S1.** Molecular formula of NONOate.



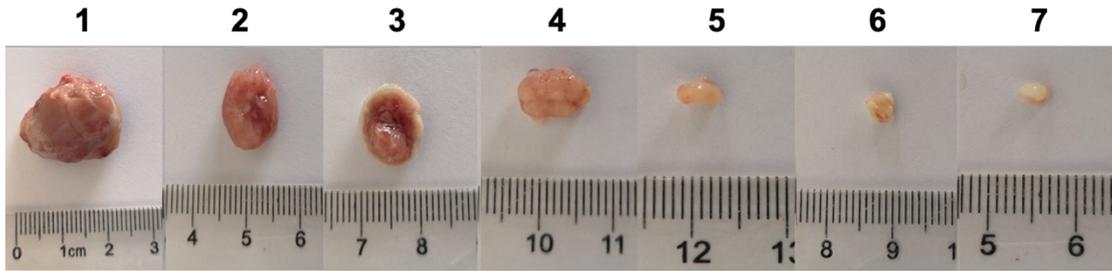
**Figure S2.** Photothermal effect of PINMH with 10-min laser irradiation (1 W/cm<sup>2</sup>, 1.5 W/cm<sup>2</sup> and 2 W/cm<sup>2</sup>)



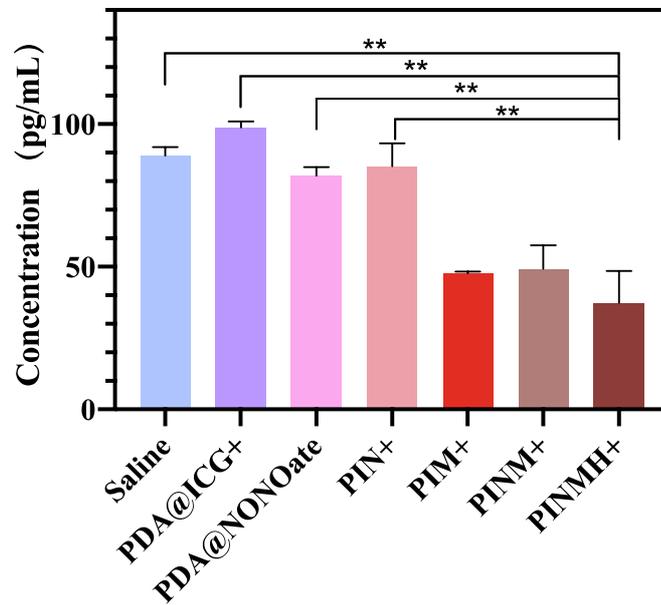
**Figure S3.** Photothermal stability of PINMH with laser irradiation (10-min On and 10-min Off, six cycles)



**Figure S4.** O<sub>2</sub> content produced by H<sub>2</sub>O<sub>2</sub> (2.5 mM, 5 mM and 7.5 mM) catalyzed by PINMH.



**Figure S5.** Photographs of tumor treated with all tested groups (1: Saline, 2: PDA@ICG+, 3: PDA@NONOate, 4: PIN+, 5: PIM+, 6: PINM+, and 7: PINMH+).



**Figure S6.** The expression of HIF- $\alpha$  in tumors of mice with different treatment.

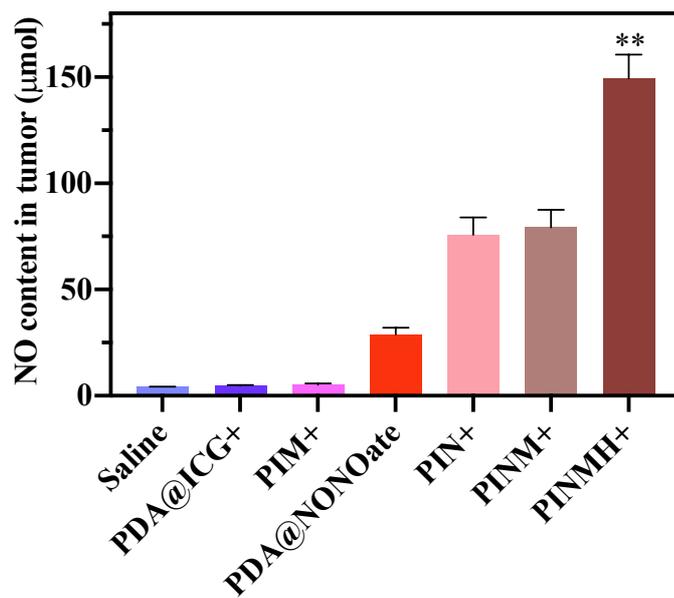


Figure S7. NO content in tumors of mice with different treatment.

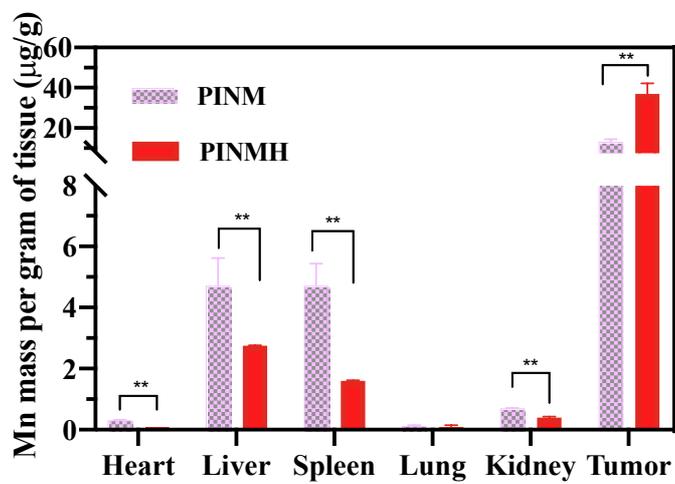


Figure S8. Biodistribution of PINM and PINMH in mice at different treatment after 12 h of injection.