

Supplementary information

Oxygen-producing proenzyme hydrogels for photodynamic mediated metastasis-inhibited combinational therapy

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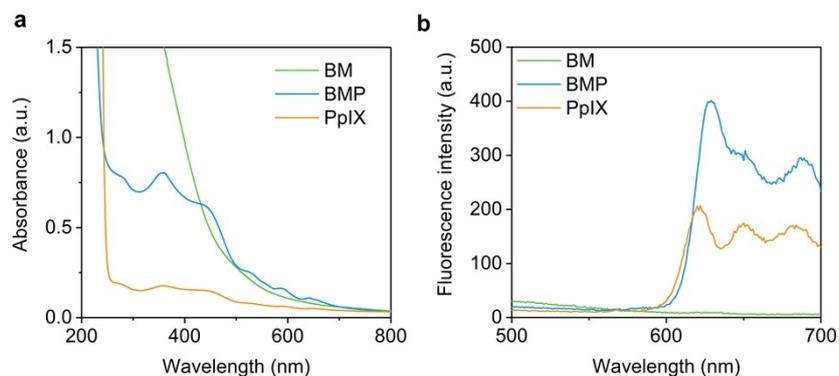


Figure S1. (a) UV-vis absorption spectra of BM, BMP and PpIX. (b) Fluorescence spectra of BM, BMP and PpIX (excitation = 407 nm).

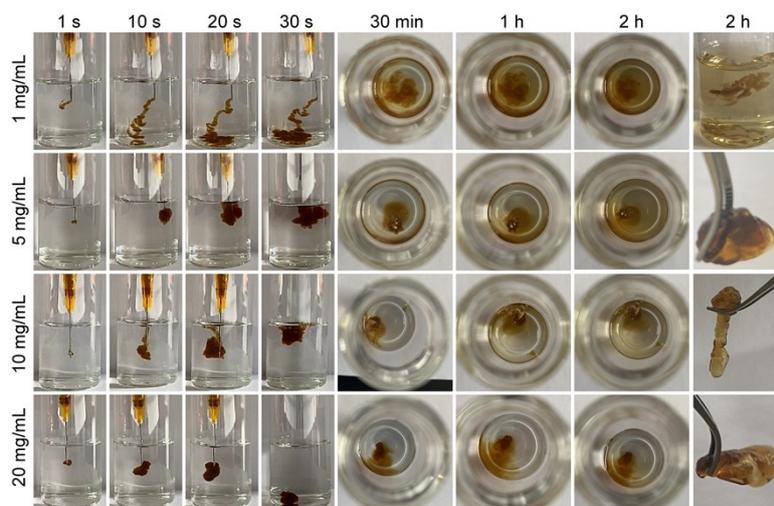


Figure S2. Photographs of OPeH formation after injection into Ca^{2+} solutions at different alginate concentrations (1, 5, 10 and 20 mg/mL). BMP and PeN concentration was set at 4 mg/mL and 2 mg/mL, respectively.

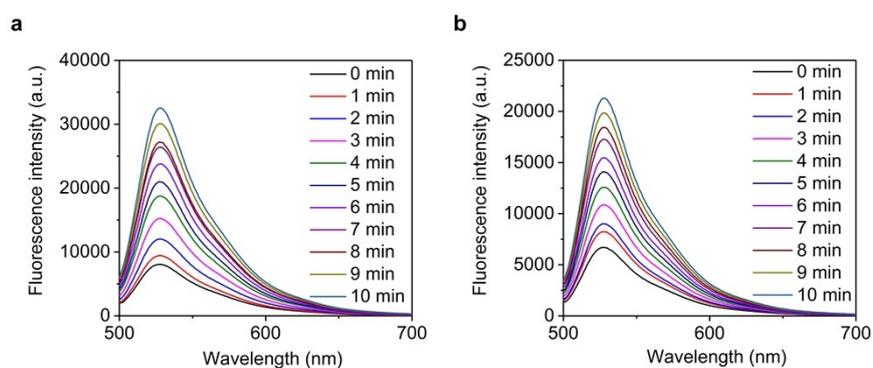


Figure S3. Fluorescence spectra of SOSG in Ca^{2+} solution containing (a) OH and (b) OPeH with laser irradiation at 660 nm (1.0 W/cm^2) for different times (excitation = 488 nm).

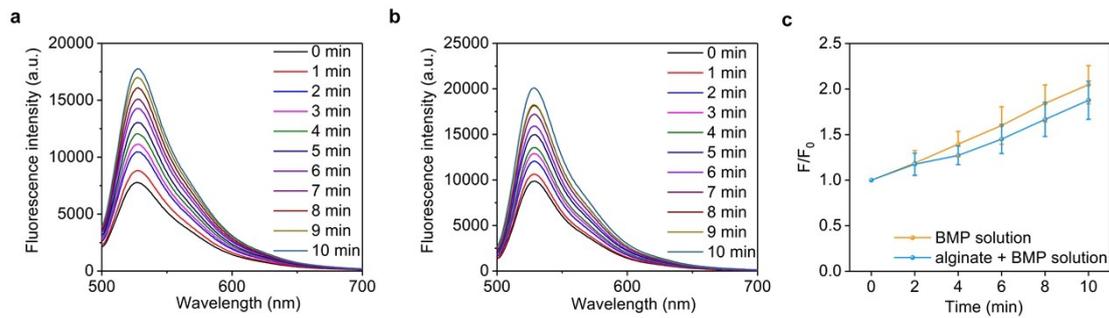


Figure S4. Fluorescence spectra of SOSP in solution containing (a) free BMP and (b) alginate + BMP with laser irradiation at 660 nm (1.0 W/cm²) for different times (excitation = 488 nm). (c) Generation of ¹O₂ in solutions containing free BMP and alginate + BMP as a function of laser irradiation time.

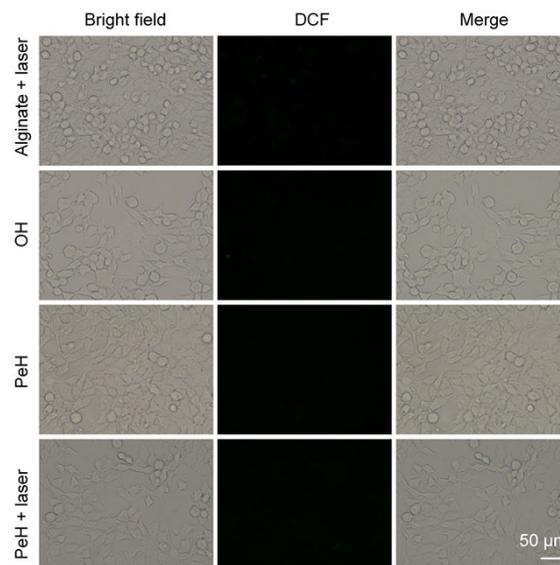


Figure S5. Intracellular ROS detection in 4T1 cancer cells by DCFH-DA. 4T1 cells were treated with alginate, OH, or PeH, with or without 660 nm laser irradiation (1.0 W/cm²) for 5 min.

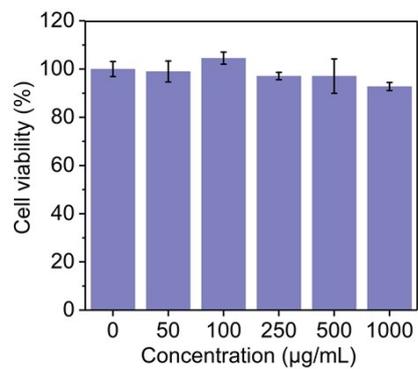


Figure S6. Cell viability of 4T1 cancer cells after treatment with PeN at different concentrations.

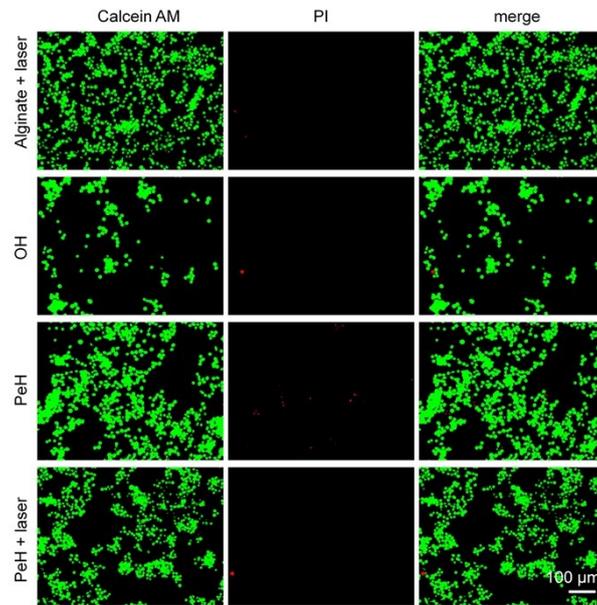


Figure S7. Fluorescence images of 4T1 cancer cells after different treatments, followed by staining with Calcein-AM/PI. 4T1 cells were treated with alginate, OH, or PeH with or without 660 nm laser irradiation (1.0 W/cm^2) for 5 min.