

Supporting Information

Hypoxia-Overcoming Breast-Conserving Treatment by Magnetothermodynamic Implant for Localized Free Radicals Burst Combined with Hyperthermia

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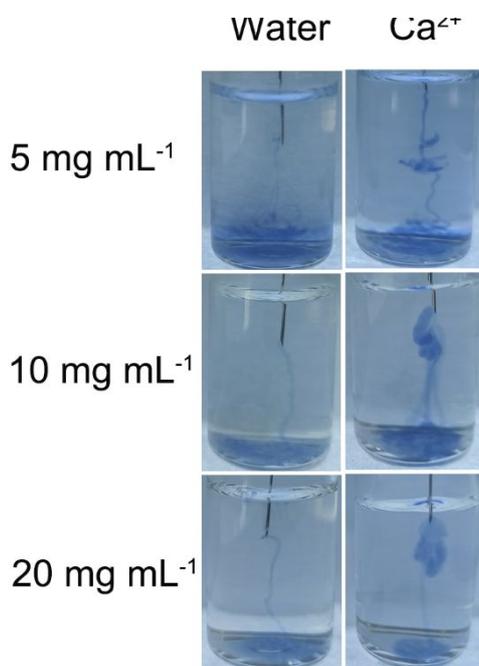


Fig. S1. Photographs showing the gelation behavior of AH at different concentrations (5, 10 and 20 mg ml⁻¹) after injection into Ca²⁺-containing water (1.8 mM). ALG was labelled with trypan blue for better visualization based on its blue color.

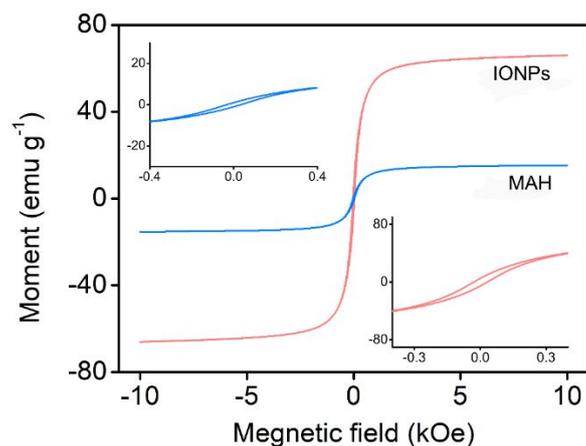


Fig. S2. Room-temperature magnetic hysteresis loops of IONPs and MAH.

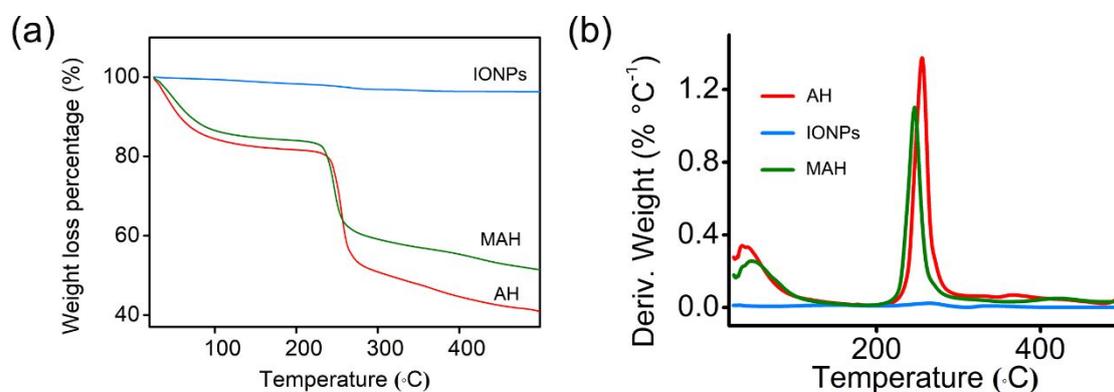


Fig. S3. TGA curves obtained from IONPs, AH and MAH.

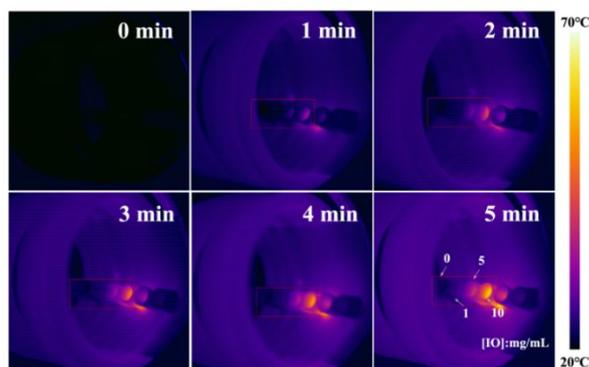


Fig. S4. Infrared thermal images of MAH containing different IONPs concentrations under AMF.

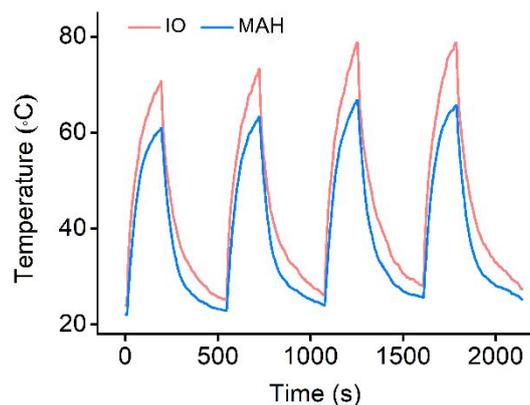


Fig. S5. Heating curves of IONPs and MAH aqueous solution for four on / off cycles under AMF (AMF parameters: $f = 375$ kHz; $H = 150$ Oe, $C_{\text{IONPs}} = 10$ mg mL⁻¹).

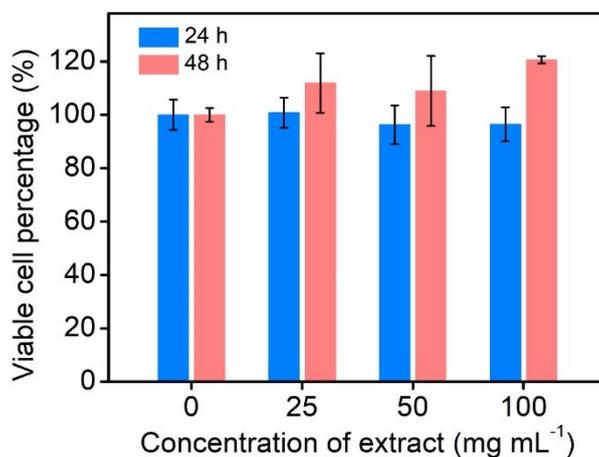


Fig. S6. Relative cell activity after dealing with raised concentration of MAH extract.

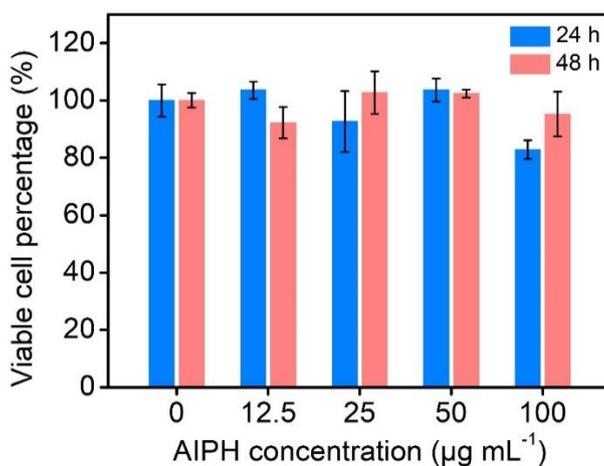


Fig. S7. Cell viability treated with varying concentrations of AIPH.

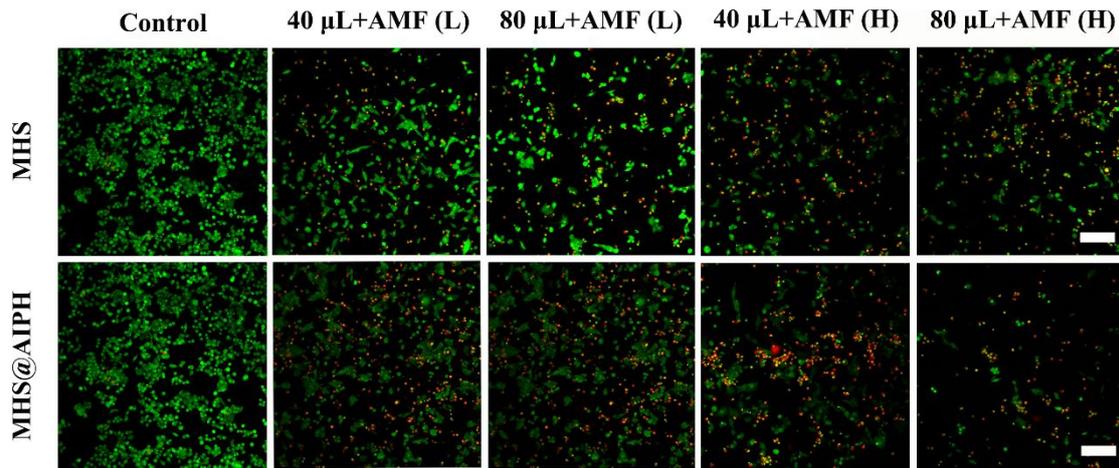


Fig. S8. Confocal photos of Calcein-AM / PI stained 4T1 cells after the treatments with different concentrations of MAH or AIPH@MAH under AMF ($\text{AMF}_{(L)} = 110 \text{ Oe}$ and $\text{AMF}_{(H)} = 200 \text{ Oe}$). The scale bar is $100 \mu\text{m}$.



Fig. S9. Photos of the degradation of MAH 3, 7, 14 and 90 days after subcutaneous injection.

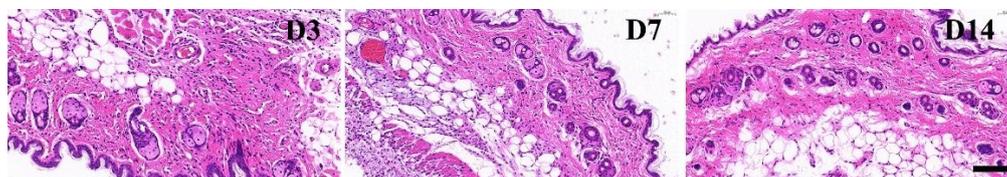


Fig. S10. H&E staining skin site after subcutaneous injection of MAH at day 3, 7 and 14. The scale bar is $200 \mu\text{m}$.