Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Hybrid Theranostic Microbubbles for Ultrasound/Photoacoustic Imaging Guided Starvation/Low-Temperature Photothermal/Hypoxia-Activated Synergistic Cancer Therapy

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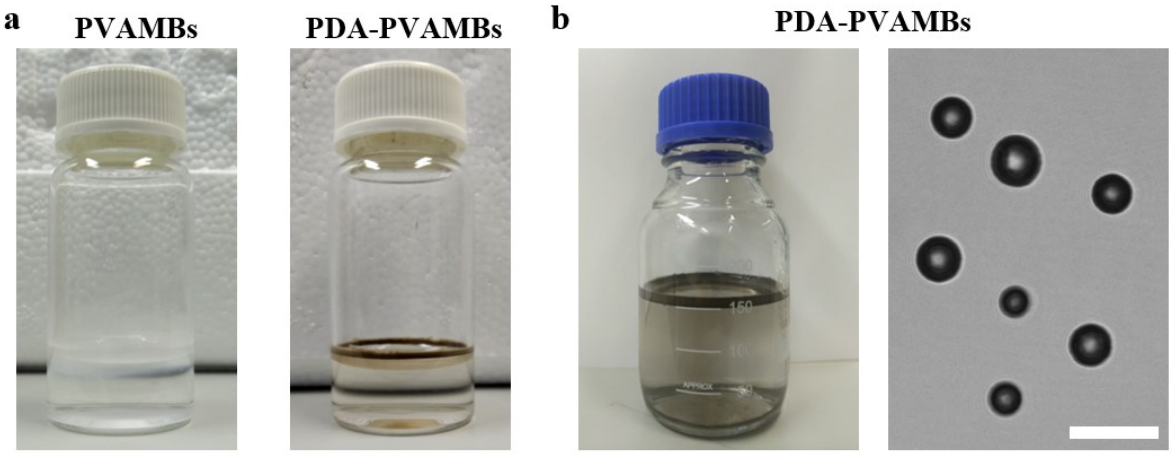

Fig. S1. (a) Photographs of PVAMBs and PDA-PVAMBs in solution. (b) Photographs and microscopy image of PDA-PVAMBs after stored for 1 month at room temperature. Scale bar: 10 μm.

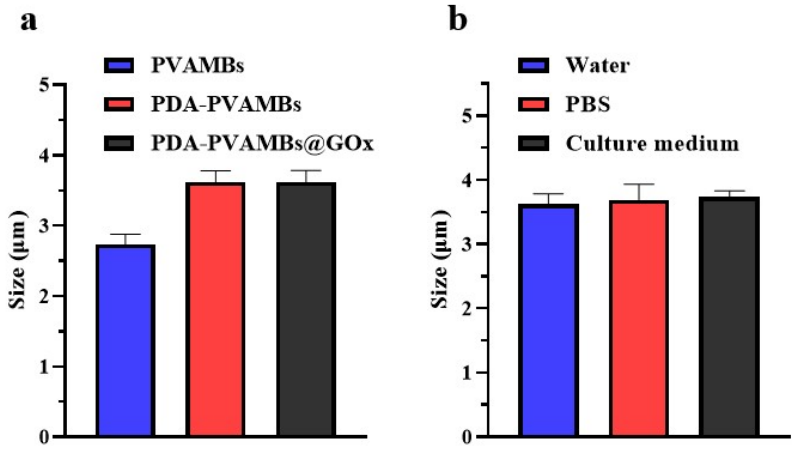

Fig. S2. (a) DLS-based size distribution of PVAMBs, PDA–PVAMBs, and PDA–PVAMBs@GOx. (b) PVA-PDAMBs@GOx stability after dispersed in water, PBS, and culture medium for 1 day.

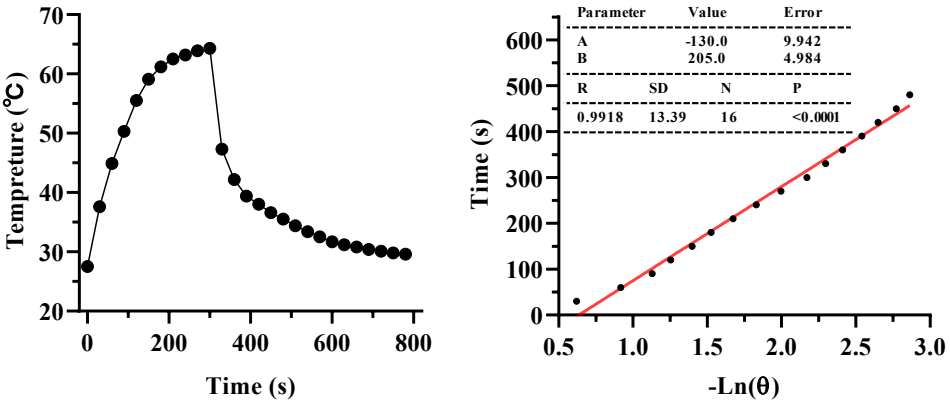

Fig. S3. (a) The photothermal cycle of the PDA-PVAMBs aqueous solution (0.5×10^8 counts/mL) for 300 s laser irradiation (808 nm, 1 W/cm^2) and 480 s cooling down. (b) Photothermal conversion efficiency calculation based on linear time versus −lnθ from the photothermal cycle of Figure S2a.

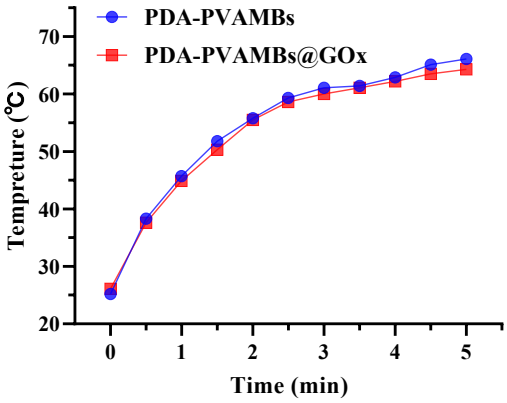

Fig. S4. Temperature change of 0.5×10^8 counts/mL PDA-PVAMBs and PDA-PVAMBs@GOx under 808 nm laser irradiation (1 W/cm^2) for 5 min.

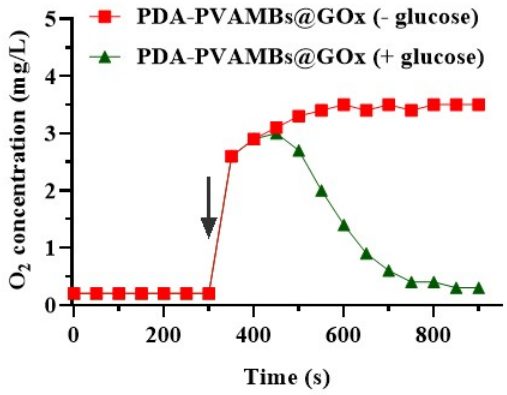

Fig. S5. O_2 concentration after adding PDA-PVAMBs@GOx solution to hypoxia-treated solution (with/without 1 mg/mL glucose).

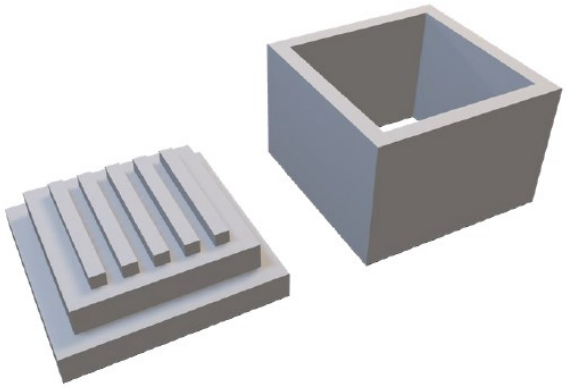

Fig. S6. 3D-printed pattern for agarose phantom fabrication for in vitro US and PA imaging.

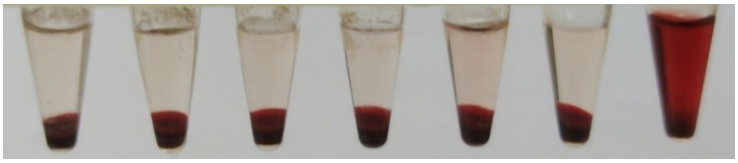

Fig. S7. Photograph of samples for haemocompatibility testing. Samples from left to right were: 1, 0.8, 0.6, 0.4, 0.2×10^7 counts/mL of PDA-PVAMBs@GOx, PBS, water.

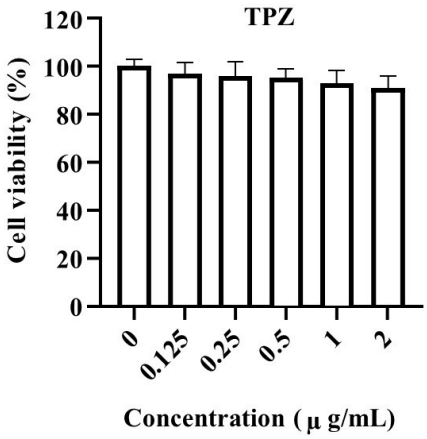

Fig. S8. Cell viability tests of CT26 cells treated with various concentration of TPZ.

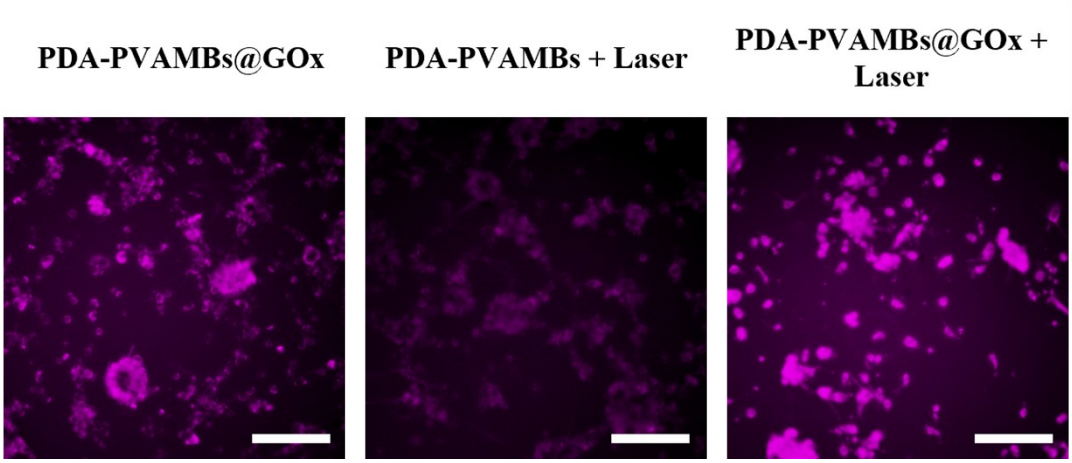

Fig. S9. ROS staining of CT26 cells treated with PDA-PVAMBs@GOx, PDA-PVAMBs + Laser, and PDA-PVAMBs@GOx + Laser.

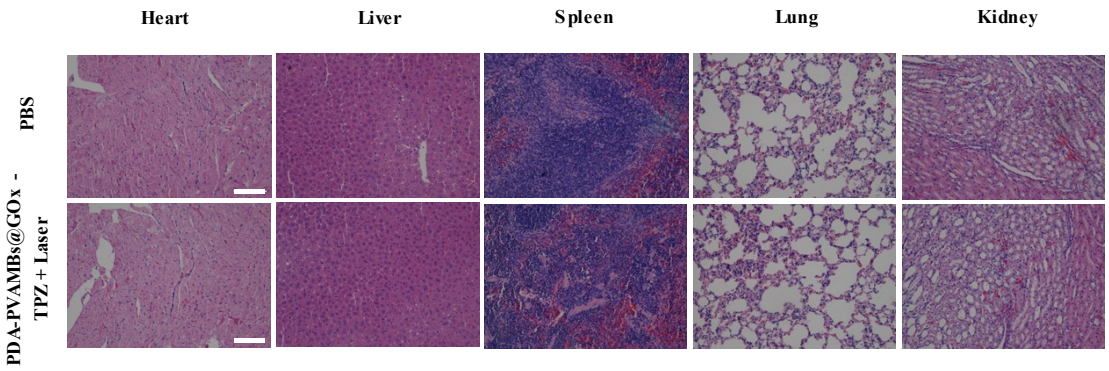

Fig. S10 Representative H&E staining images of heart, liver, spleen, kidney, and lung after PBS and PDA-PVAMBs@GOx-TPZ + Laser treatment at day 14. Scale bars: 100 μm.