

## **NIR/Photoacoustic Imaging of Multitype Gallbladder Cancer Using Carboxyl/Amino Functionalized Polymer Dots**

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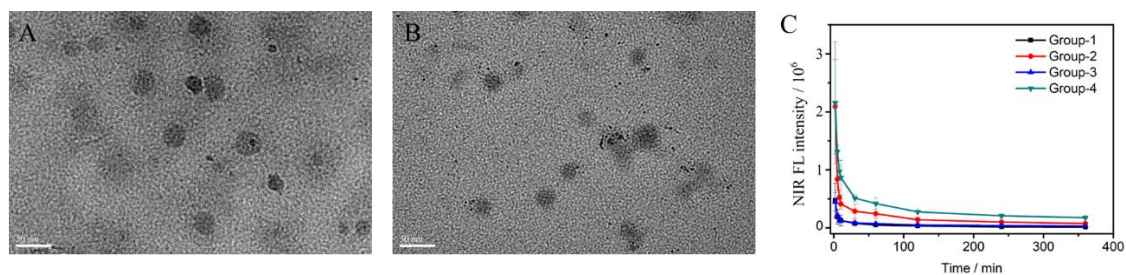


Figure S1. (A) The TEM of the Group-1 Pdots. Scale bar: 50 nm. (B) The TEM of the Group-2 Pdots. Scale bar: 50 nm. (C) The half of time in blood. Black represent Group-1: NIR/COOH/NH<sub>2</sub>-Pdots, Red represent Group-2: COOH/NH<sub>2</sub>-Pdots, Blue represent Group-3: NIR/COOH-Pdots, Green represent Group-4: COOH-Pdots. The circulation time of the Pdots in the blood was estimated to be 51 min for NIR/COOH/NH<sub>2</sub>-Pdots, 34 min for COOH/NH<sub>2</sub>-Pdots, 45 min for NIR/COOH-Pdots, and 35 min for COOH-Pdots at 590 nm, respectively.

Pdots	MEH-PPV emission	NIR775 emission
COOH/NH <sub>2</sub> -Pdots:	0.155	/
NIR/COOH/NH <sub>2</sub> -Pdots:	0.071	0.025
COOH-Pdots:	0.139	/
NIR/COOH-Pdots:	0.078	0.011
h-NIR/COOH/NH <sub>2</sub> -Pdots:	0.026	0.01

**Table S1. Fluorescence Quantum Yield of the prepared Pdots.**

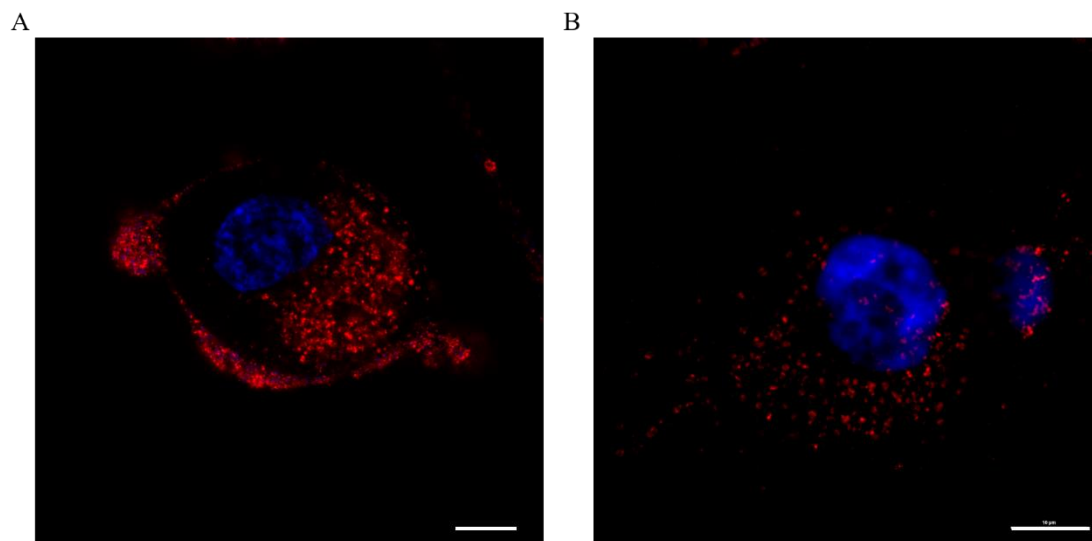


Figure S2. The polymer dots were applied at  $20 \mu\text{g mL}^{-1}$  under serum-containing medium in each glass dish for 24 h. (A) The STED high resolution microscopy images of NOZ cells. (B) The SIM Super-resolution microscopy images of NOZ cells. The Pdots (red) and the DAPI (blue). The merged channel includes the channel of Pdots and DAPI. scale bar:  $10 \mu\text{m}$ .

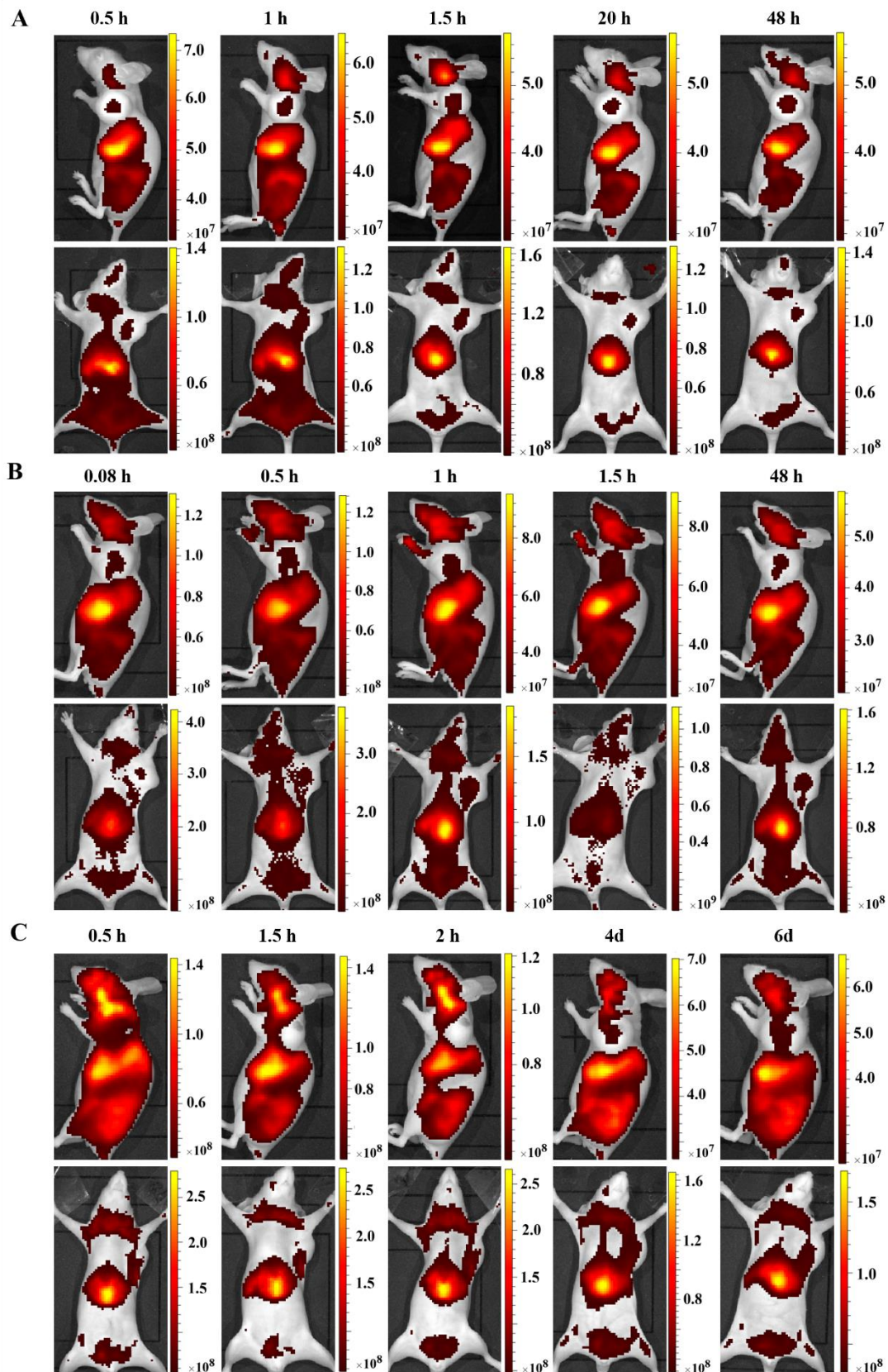


Figure S3. In vivo fluorescence imaging of tumor-bearing mice (n=3) treated with Pdots. (A) QBC-939 tumor-bearing mice, (B) FRH-0201 tumor-bearing mice, (C) NOZ tumor-bearing mice. The excitation filter, 520 nm; emission filter, 790 nm.

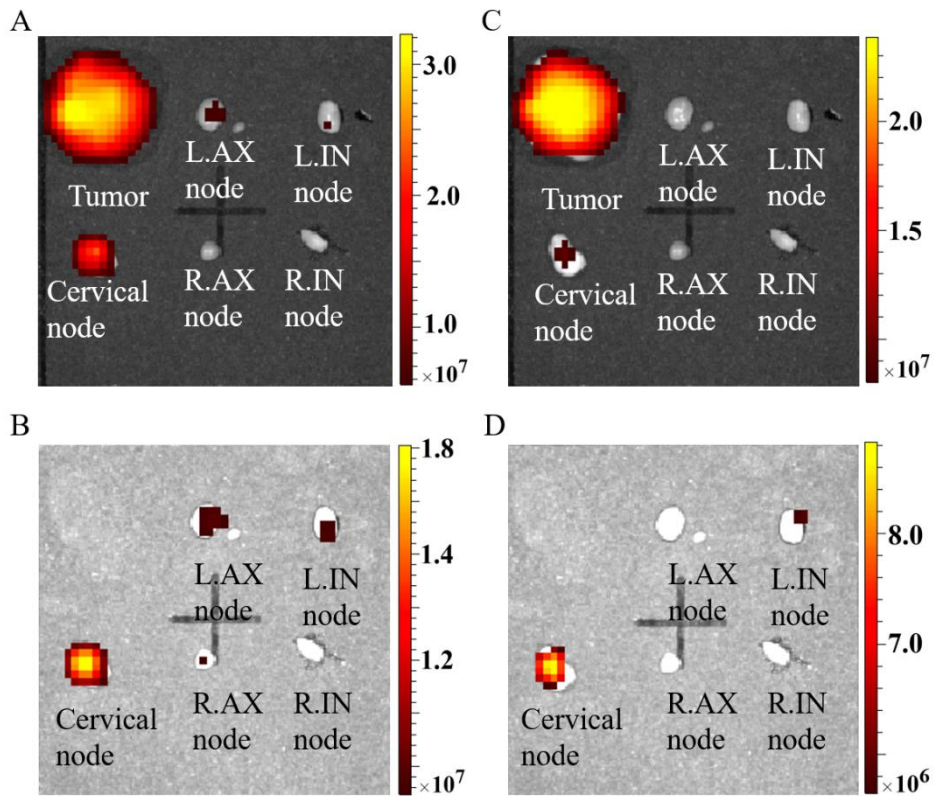


Figure S4. Fluorescence imaging of tumor and lymph nodes of nude mice treated with Pdots. Tissues were taken out at 48 hours post injection. (A) (B) The excitation filter, 520nm; emission filter, 790nm. (C) (D) The excitation filter, 700nm; emission filter, 790nm.

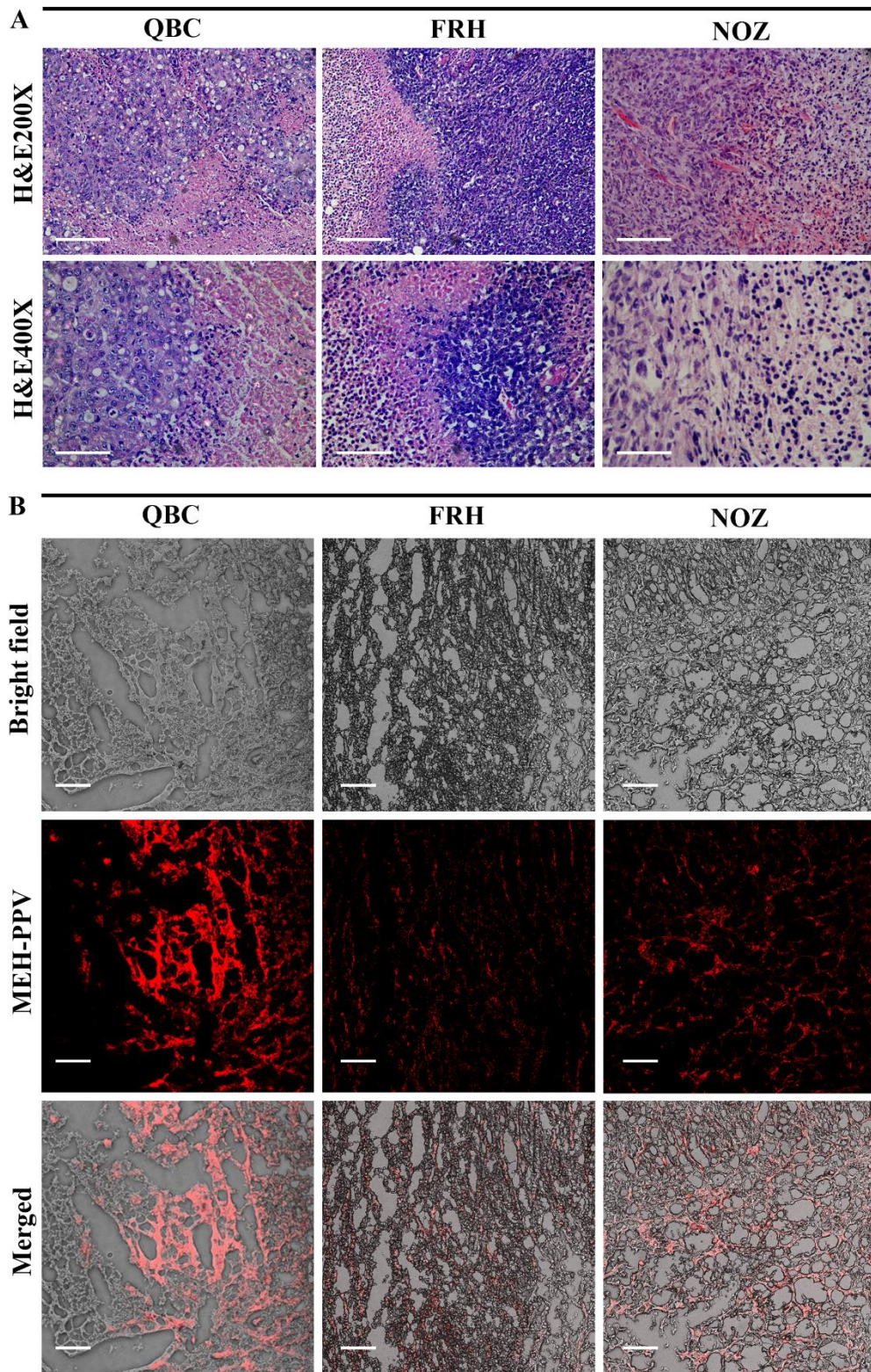


Figure S5. (A) The H&E of tumor. The 200 X of the H&E's scale bar is 200  $\mu\text{m}$ . The 400 X of the H&E's scale bar is 100  $\mu\text{m}$ . (B) Z-stack confocal fluorescence analysis of tumor tissue sections, the channel color for Pdots uses red, the scale bar is 100  $\mu\text{m}$ .

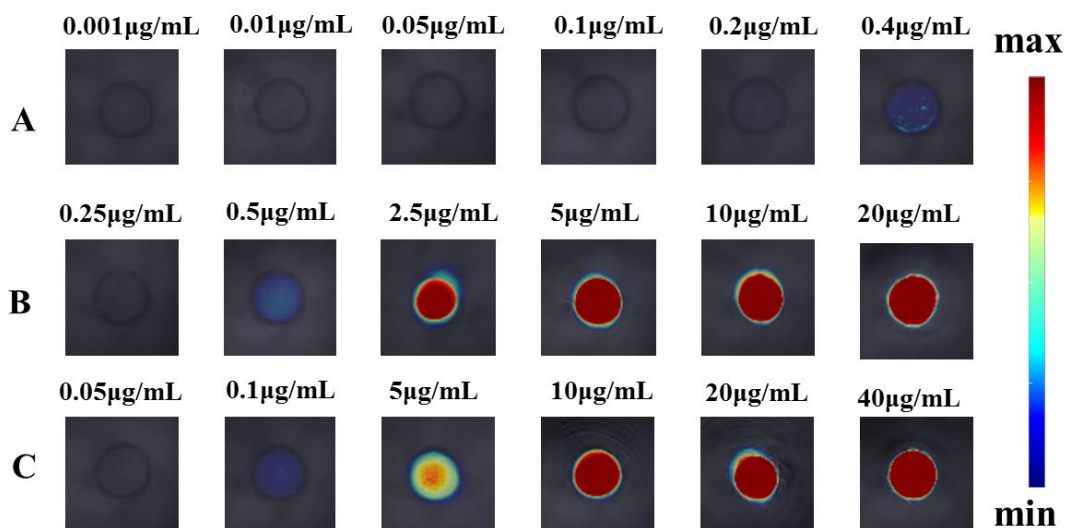


Figure S6. Photoacoustic images of Pdots with various NIR775 doping. (A) 0.5 wt%. (B) 20 wt%. (C) 33 wt%.

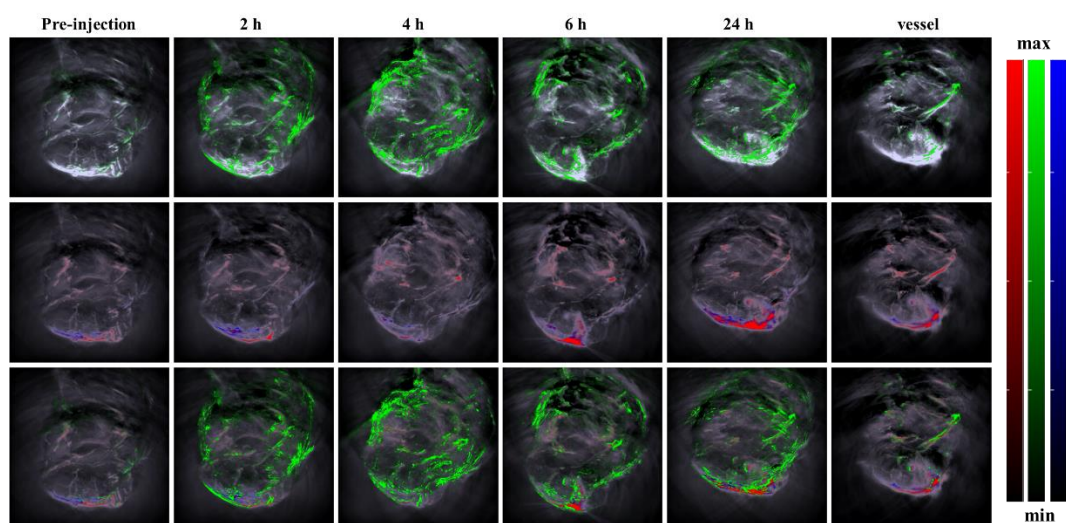


Figure S7. The 3D imaging of the other QBC-939 tumor-bearing mice and vessel, post i.v. injection of 120  $\mu\text{g}$  Pdots. The red bar represents the signal of  $\text{HbO}_2$ . The blue bar represents the signal of Hb. The green bar represents the signal of Pdots.

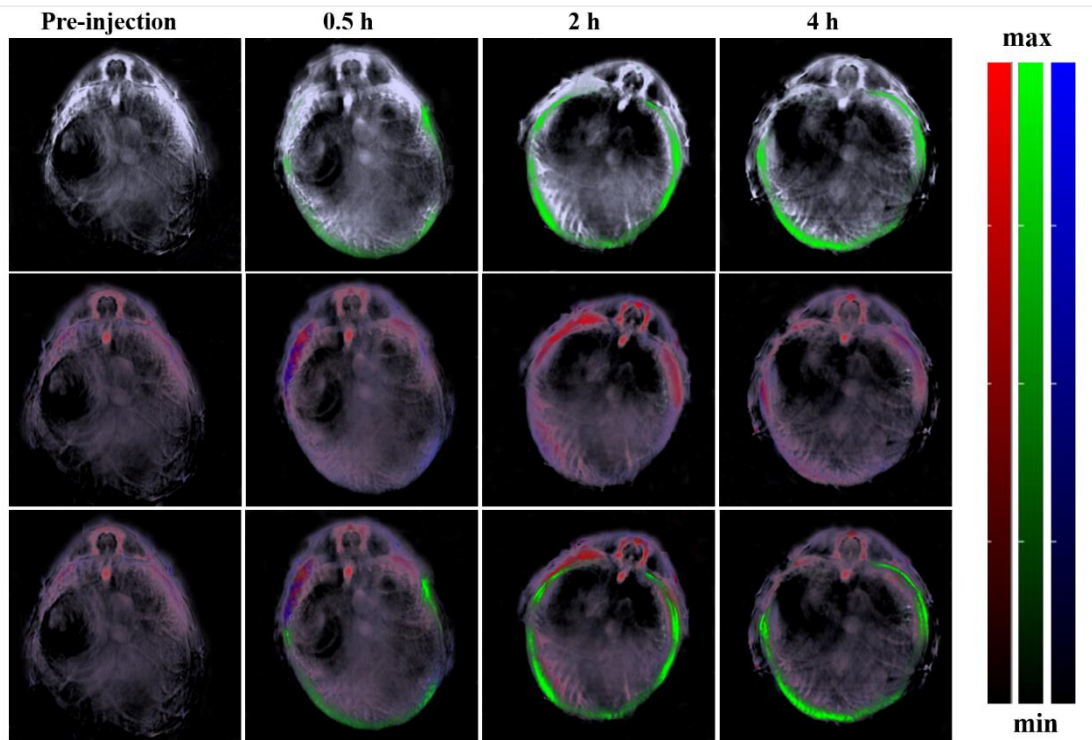


Figure S8. The Photoacoustic imaging of the liver of QBC-939 tumor-bearing mice, post i.v. injection of 120  $\mu\text{g}$  Pdots. The red bar represents the signal of  $\text{HbO}_2$ . The blue bar represents the signal of Hb. The green bar represents the signal of Pdots.

Video S1: Pdots for imaging the cells and vessels around the tumor using pCLE with a ProFlex<sup>TM</sup> S1500 scanning probe (diameter=1.5 mm, spatial resolution=3.3  $\mu\text{m}$ ).