Supplementary Information

Berberine Nanoparticles for Promising Sonodynamic Therapy on HeLa Xenograft Tumor

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Part 1. SEM morphology study of BBR and BBRNPs

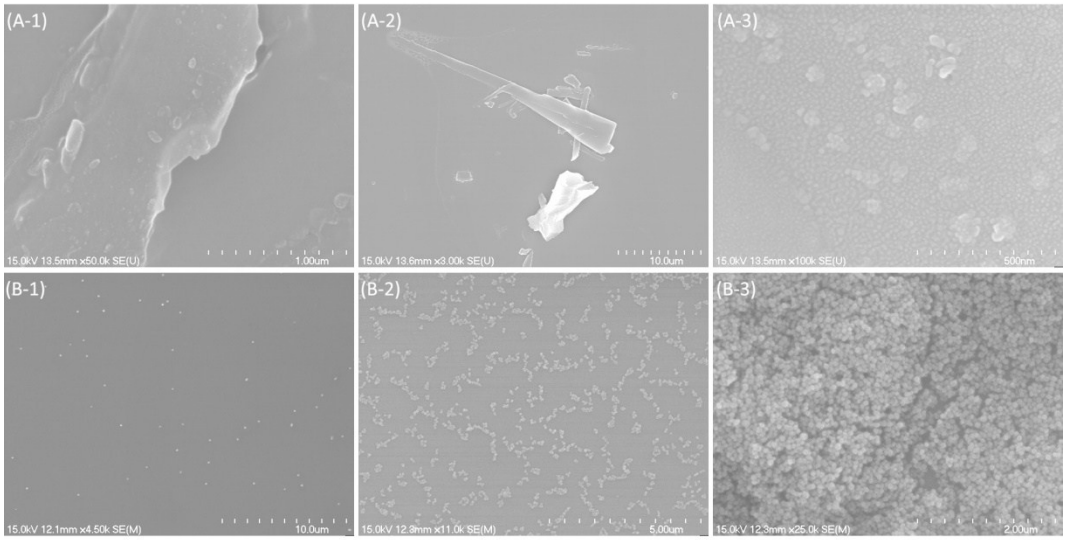

Figure S1. (A-1) to (A-3) present BBR crystals in netural buffer with irregular microstructure, (B-1) to (B-2) present BBRNPs monodispersed nanostructure .

Part 2. Viscera morphology after excess BBRNPs injection

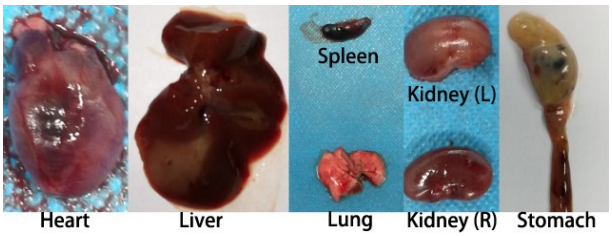

Figure S2. Images of viscera morphology after BBR excess dosage intravenous injection.

Part 3. Tumour ultrasound contrast imaging

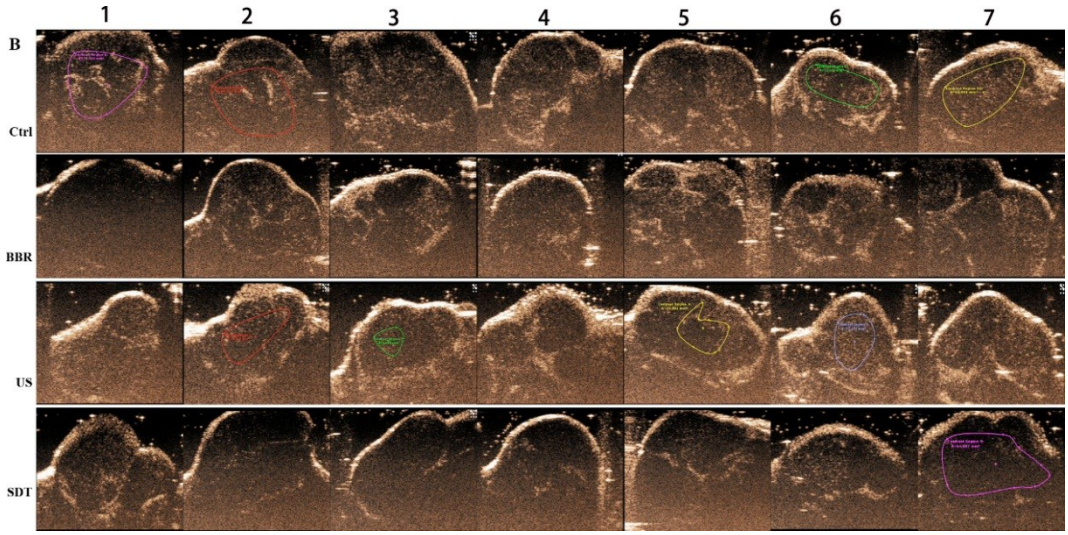

Figure S3. Ultrasound contrast imaging of tumor blood vessels. 1-7 indicate different mice No. at each group. (N = 7, means ± SD, * P < 0.05, vs control group. Ctrl: control group, BBR: BBR group, US: ultrasound group, SDT: BBR mediated SDT group.)

Part 4. Data analysis of ultrasound contrast imaging

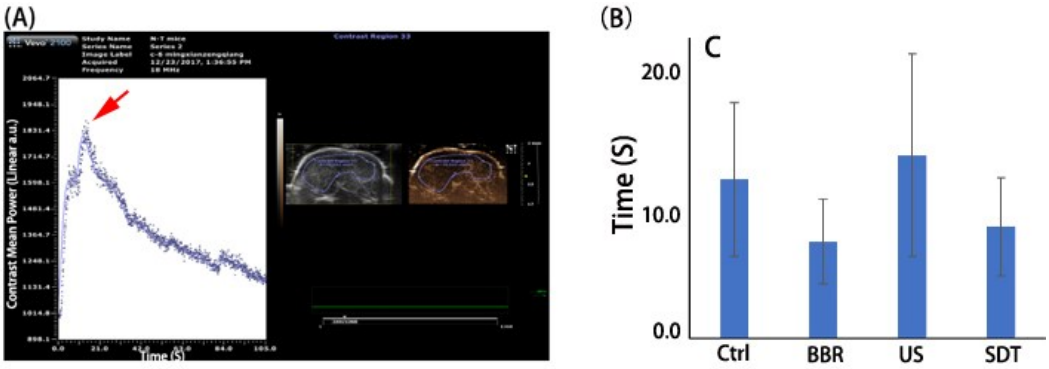

Figure S4. (A) Representative images of ultrasound examination and microbubble imaging. Left peak shows an example of contrast mean power vs time to peak after microbbbles intravenous injection. Right figures show ultrasonograpy and power Doppler images after microbubbles injection. Red arrow pointed to the maximum contrast mean power of M(B) Time of maximum microbuble accumulation according to the value of contrast mean power. (N = 7, means ± SD, * P < 0.05, vs control group. Ctrl: control group, BBR: BBR group, US: ultrasound group, SDT: BBR mediated SDT group.)

Part 5. Histological analysis of FUS damaged cancer tissue

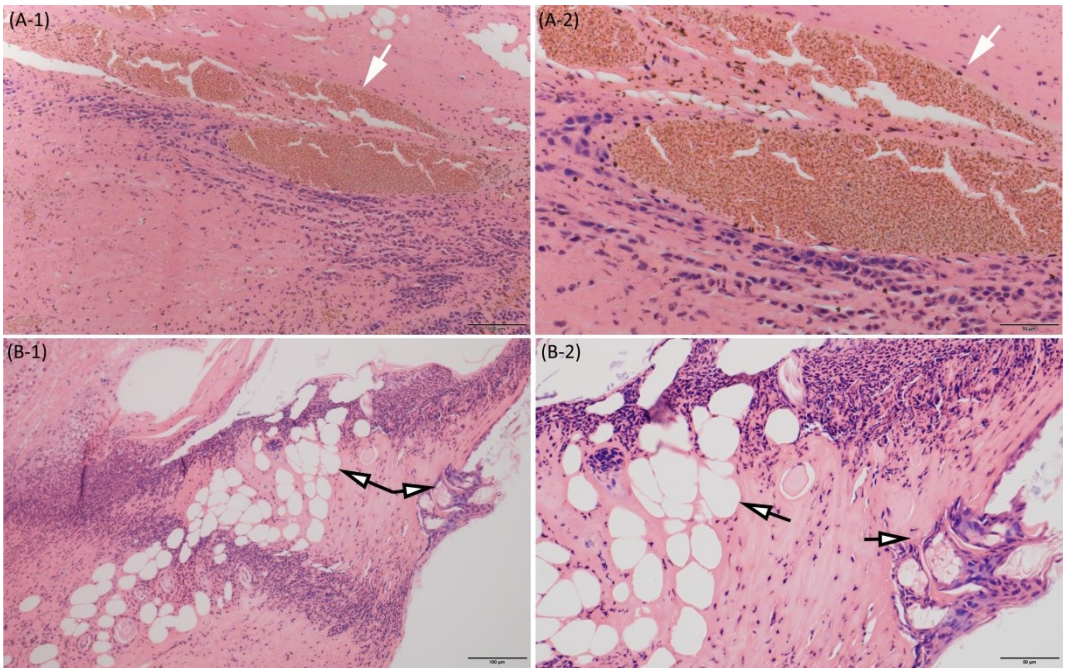

Figure S5. (A) H&E staining of pathological sections of burned area of focused ultrasound where is pointed by white arrow. (B) Pathological slides of damaged blood vessels in cancer tissue which is

caused by ultrasound mediats BBRNPs cavitation (black arrow). Left column shows objective images with 20 times magnification, while right column shows 40 times magnification images.

Part 6. HeLa xenograft mice photographs

Figure S6. HeLa xenograft mouse photoes taken before and after treatement of drug intraperitoneal injection.