Electronic Supplementary Material (ESI) for Nanoscale.

Supplementary Information to

Increasing dielectric-loss of graphene oxide nanoparticle to enhance microwave thermoacoustic imaging contrast of breast tumor

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This document contains the following supplementary information:

Fig. S1

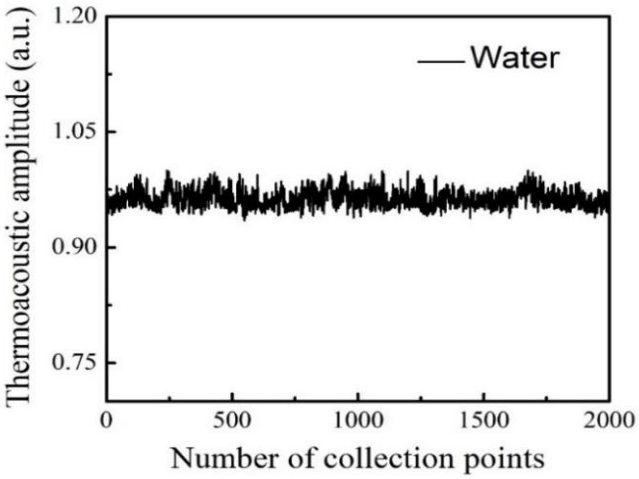

Fig. S1 Thermoacoustic amplitudes of water versus number of microwave pulses.

Fig.S2

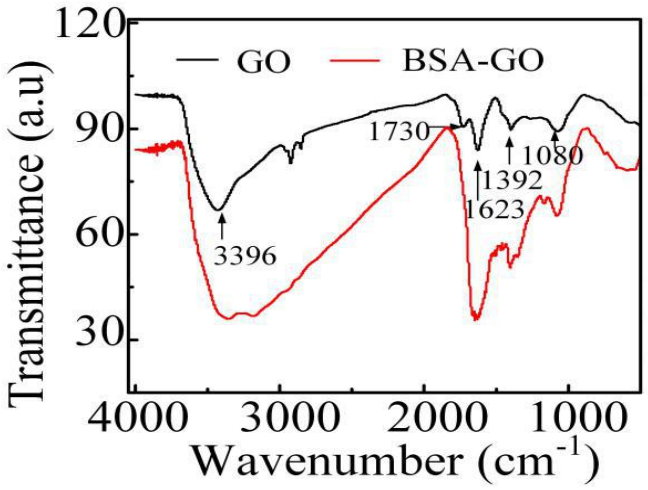

Fig. S2 The FTIR spectra of unmodified GO and BSA-GO.

Fig. S3

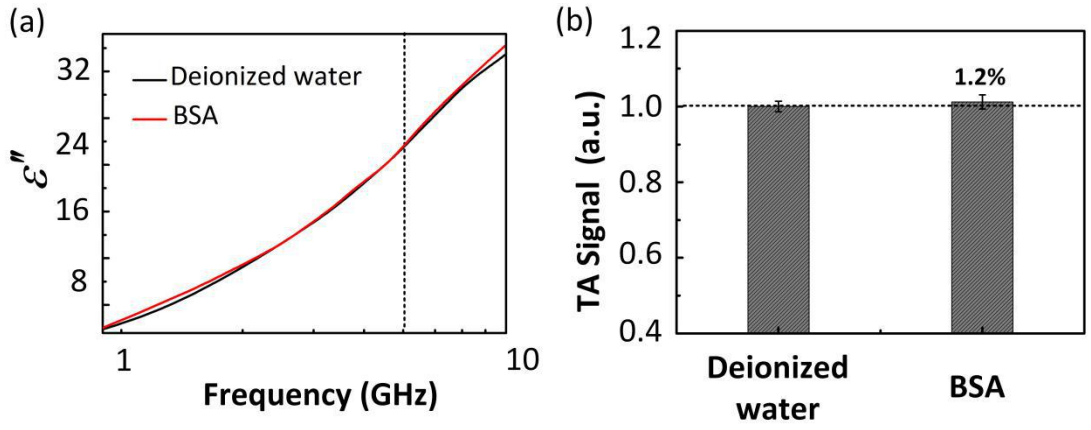

Fig.S3 (a) ε'' of deionized water (black line) and BSA (red line). (b) TA signal intensity of deionized water, and BSA.

Fig. S4

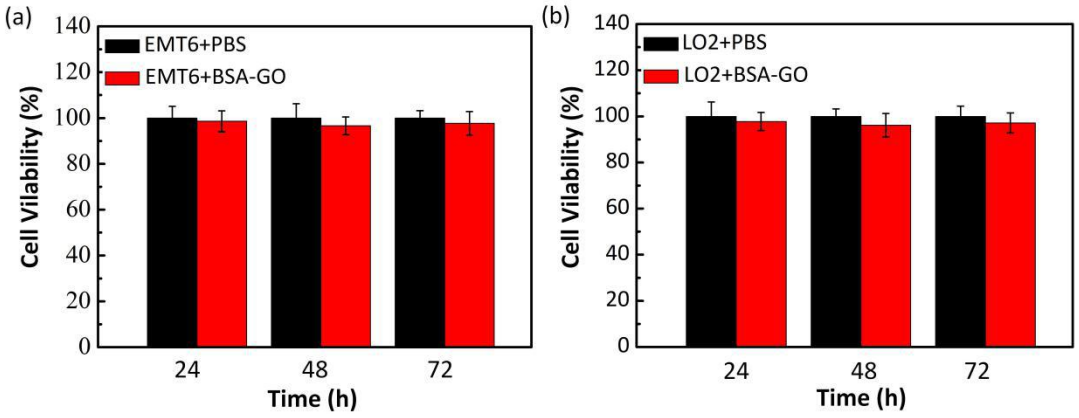

Fig. S4 Relative viability of EMT6 cells (a) and LO2 normal cells (hepatocyte cells). (b) treated with BSA-GO at the different time points of 24 h, 48 h, and 72 h (1 mg·mL^{-1}).

Fig. S5

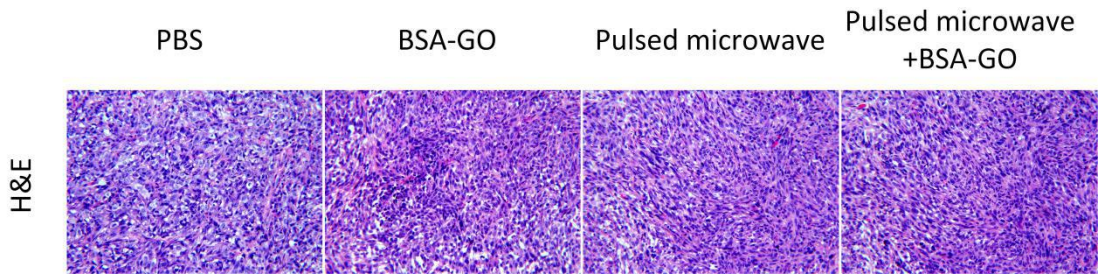

Fig. S5 Histological staining of the excised tumors 7 days after different treatments (PBS, Pulsed microwave, BSA-GO and BSA-GO+Pulsed microwave treatment groups). The images with H&E staining of representative specimens are at × 10 magnification.

Fig. S6

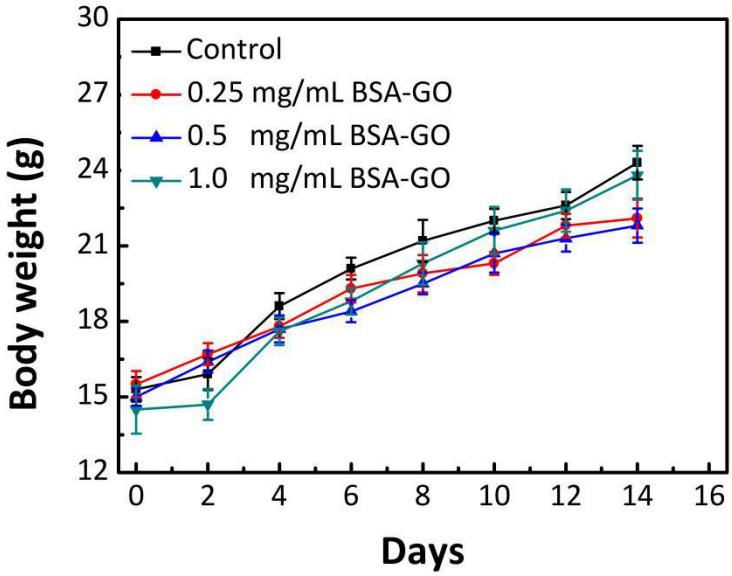

Fig. S6 Body weights of mice were measured during the 14 days evaluation period under different conditions. Data presented as mean ± SD (n=5).

Fig. S7

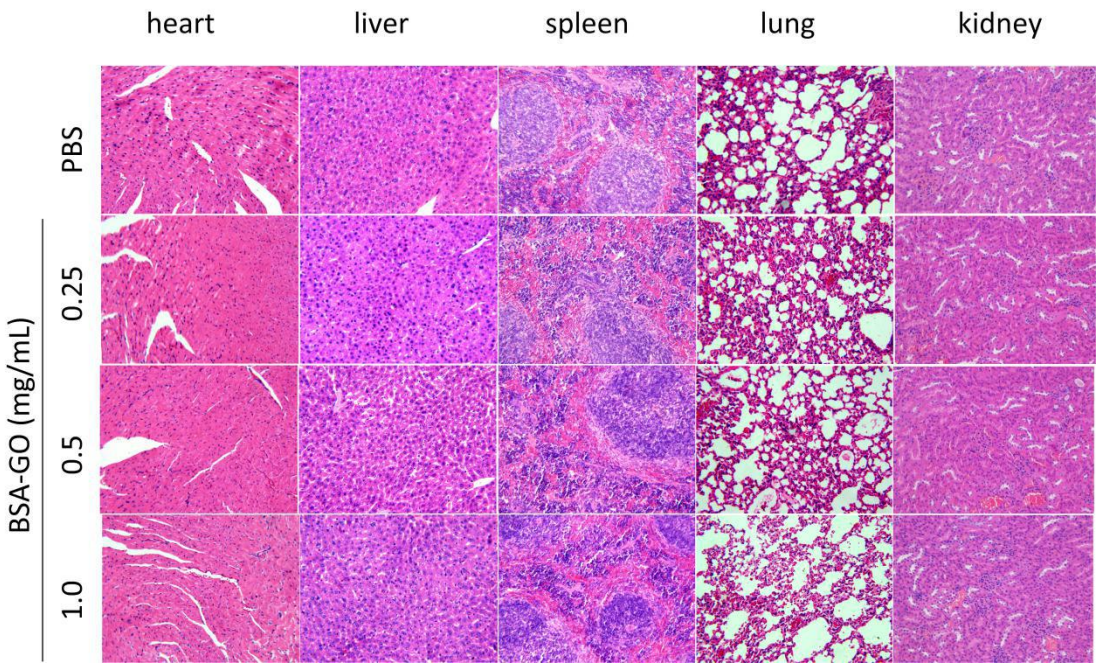

Fig. S7 H&E stains of major organ. The representative specimens were at × 10 magnification. No noticeable abnormality was found in the heart, liver, spleen, lung, or kidney of various group of mice.

Fig. S8

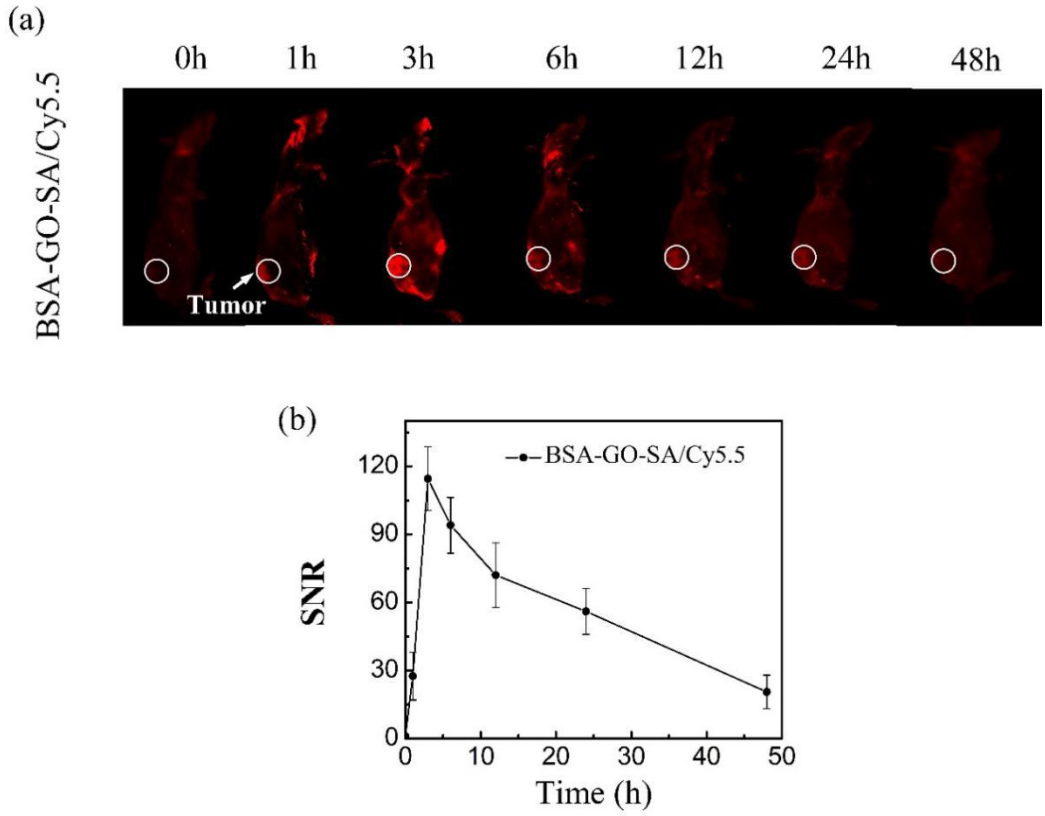

Fig. S8 (a) *In vivo* fluorescence imaging of EMT6 cancer nude mice upon injection with BSA-GO-SA/Cy5.5 at different time intervals. (b) The fluorescence signal to noise ratio (SNR) in tumor upon injection with BSA-GO-SA/Cy5.5 at different time intervals.