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

Supporting information

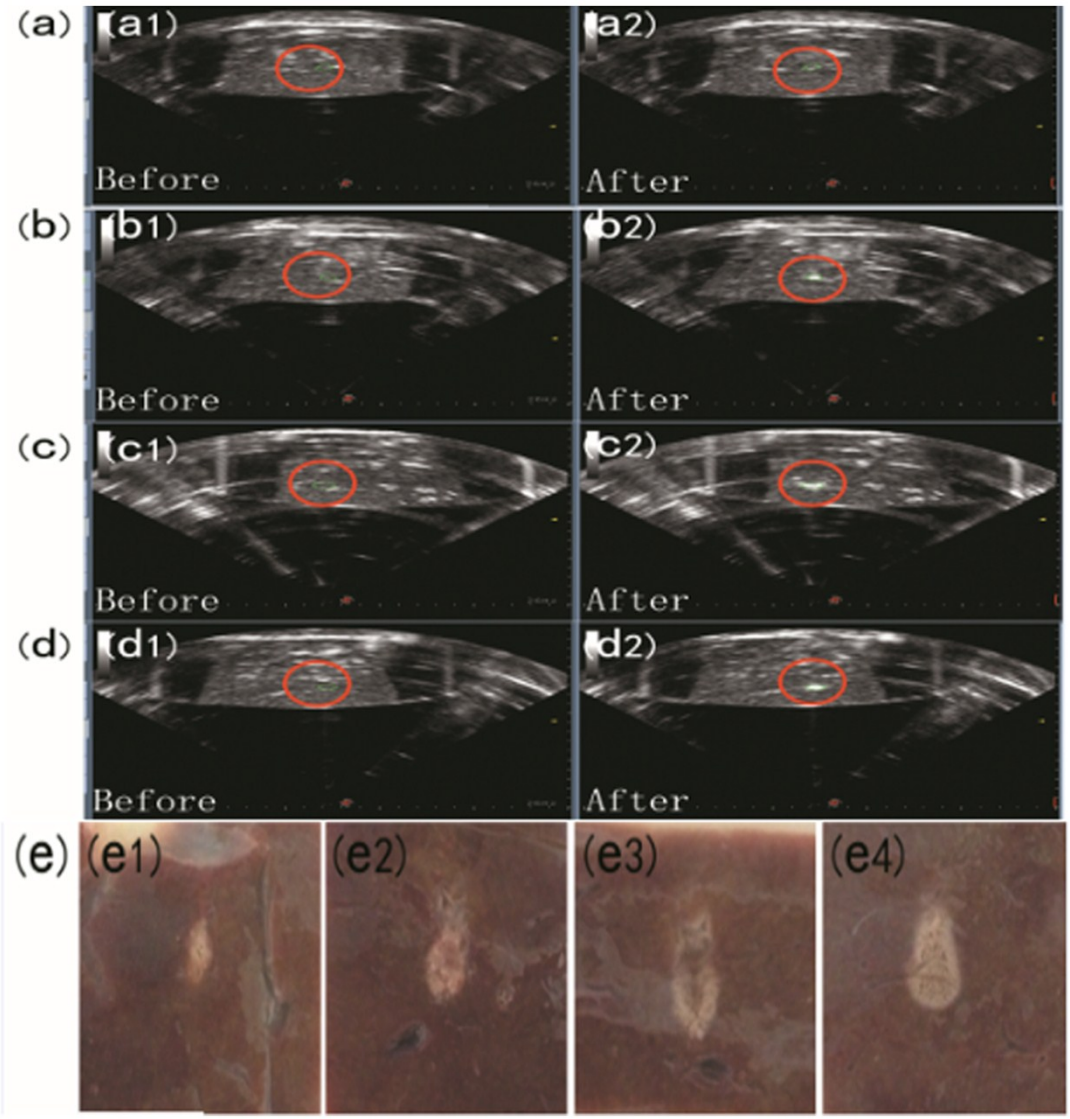

Figure S1. (a-d) Typical *in vitro* B-mode ultrasound images before (a_1-d_1) and after (a_2-d_2) HIFU exposure on degassed bovine livers at 150 W for 2 s after injecting different agents (a:saline; b:L-PFH-NPs; c:NLBS-PFH-NPs; d:FLBS-PFH-NPs). **(e)** Coagulative necrosis region of bovine liver tissue exposed to HIFU ablation at 150 W for 2 s by macroscopic inspections after injecting of different agents (e_1:saline solution e_2: L-PFH-NPs e_3 : NLBS-PFH-NPs e_4: FLBS-PFH-NPs). The necrotic tissue is represented in gray,

non-ablated tissue in red.

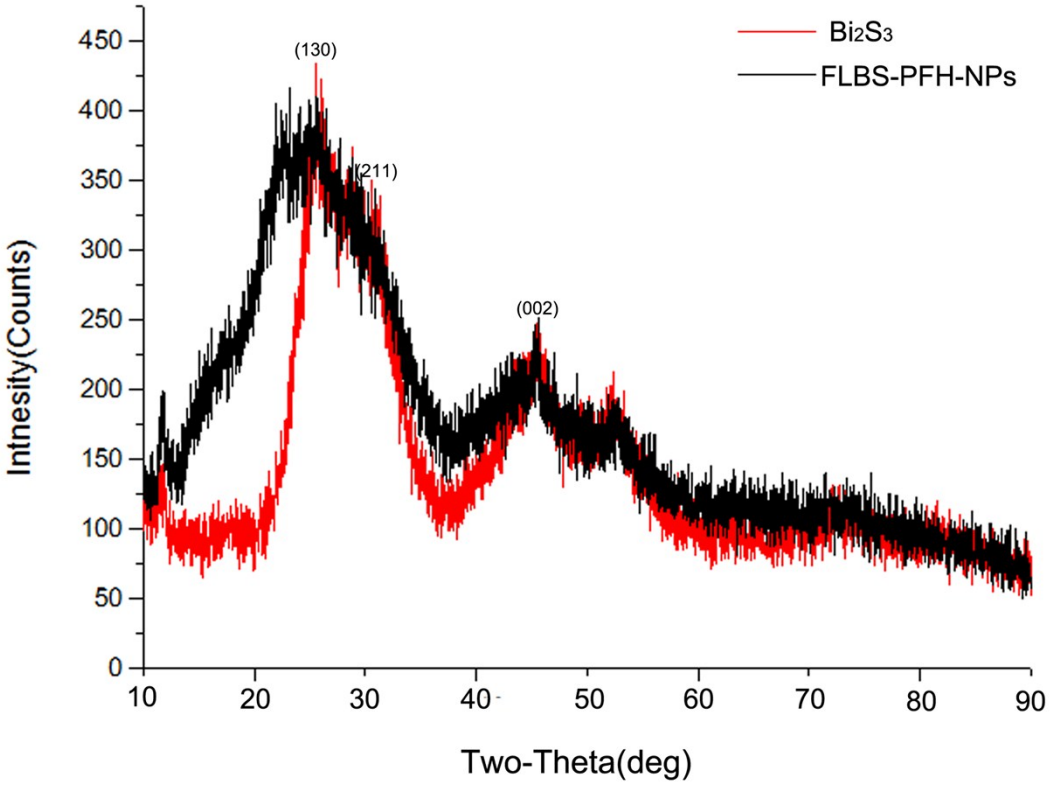

Figure S2. XRD pattern of Bi_2S_3 and FLBS-PFH-NPs nanoparticles. The reflection peaks of FLBS-PFH-NPs were well consistent to the Bi_2S_3 nanoparticles indicating that the Bi_2S_3 were embedded within the lipid droplets.

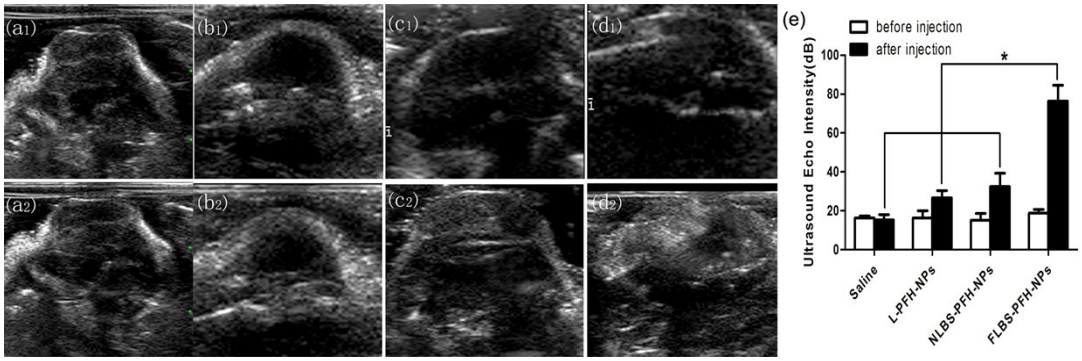

Figure S3.*In vivo* ultrasound imaging of tumor-bearing mice before (a_1-d_1) and after (a_2-d_2) administration different agents (a:saline; b:L-PFH-NPs; c:NLBS-PFH-NPs; d:FLBS-PFH-NPs).The ultrasound echo intensity in tumor tissue of folate-targeted group (FLBS-PFH-NPs) was higher than that in the other three groups(*$p<0.05$).

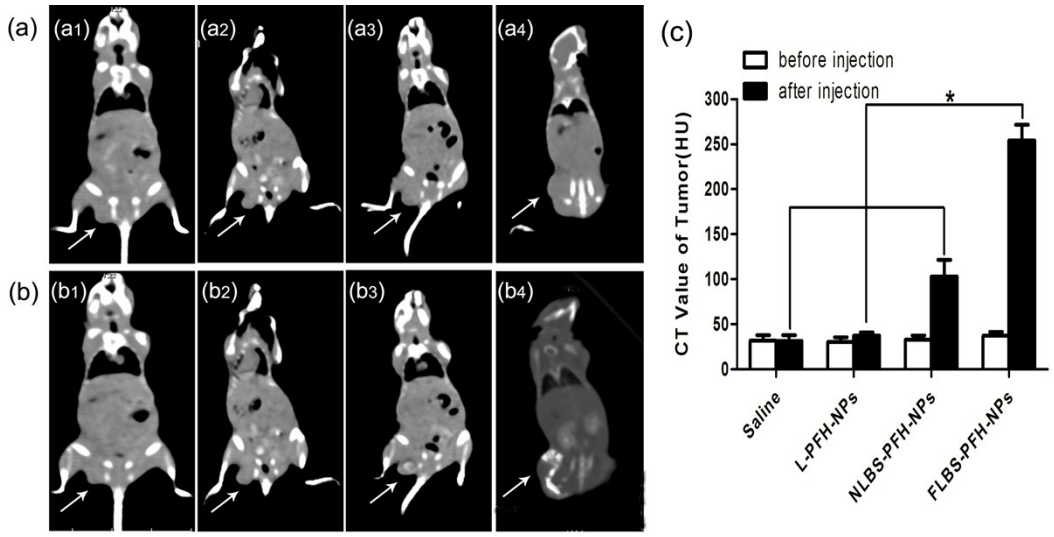

Figure S4.*In vivo* CT imaging of tumor-bearing mice before (a_1-a_4) and after (b_1-b_4) administration different agents (a_1-b_1:saline; a_2-b_2:L-PFH-NPs; a_3-b_3:NLBS-PFH-NPs; a_4-b_4:FLBS-PFH-NPs).The CT contrast intensity in tumor tissue of folate-targeted group (FLBS-PFH-NPs) was higher than that in the other three groups(*$p<0.05$).

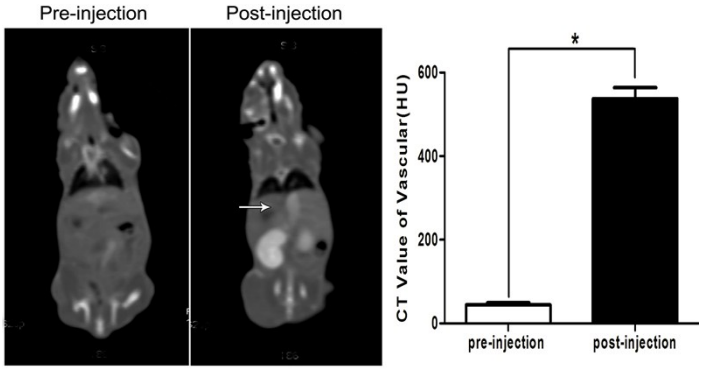

Figure S5. *In vivo* CT images of mice showing vascular CT contrast before and after injecting FLBS-PFH-NPs agent(*p<0.05).

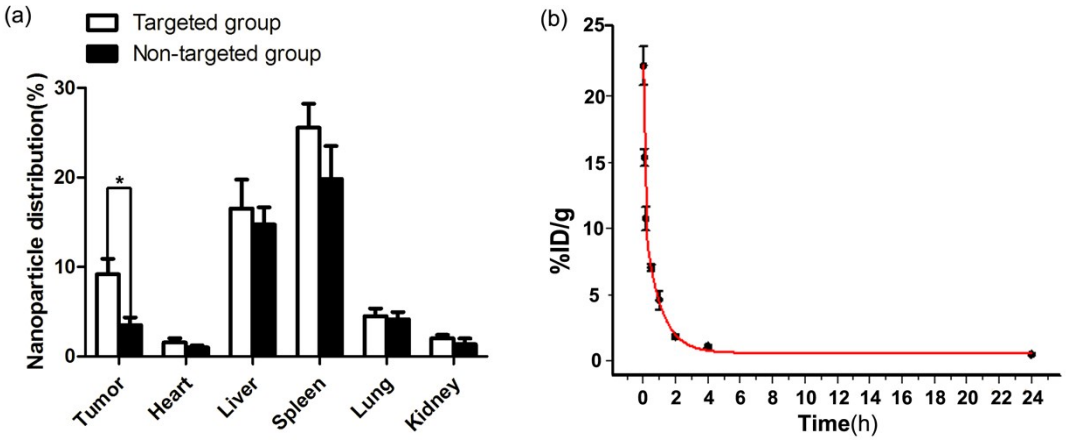

Figure S6.(a)*In vivo* tissue distributions of FLBS-PFH-NPs in tumor-bearing nude mice at 3h after intravenous injection of FLBS-PFH-NPs (targeted group) or NLBS-PFH-NPs (non-targeted group). The percentages were calculated by the formula (Bi weight in each tissue/the total Si weigh of injected particles. It was found that Bi concentration of tumor in FLBS-PFH-NPs group was higher than that in NLBS-PFH-NPs group (*P <0.05).(b) In vivo blood terminal half-life (t1/2) of FLBS-PFH-NPs.