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Electronic Supplementary Information

Ultrasound-Light up AIEgens for Potential Surgical Navigation

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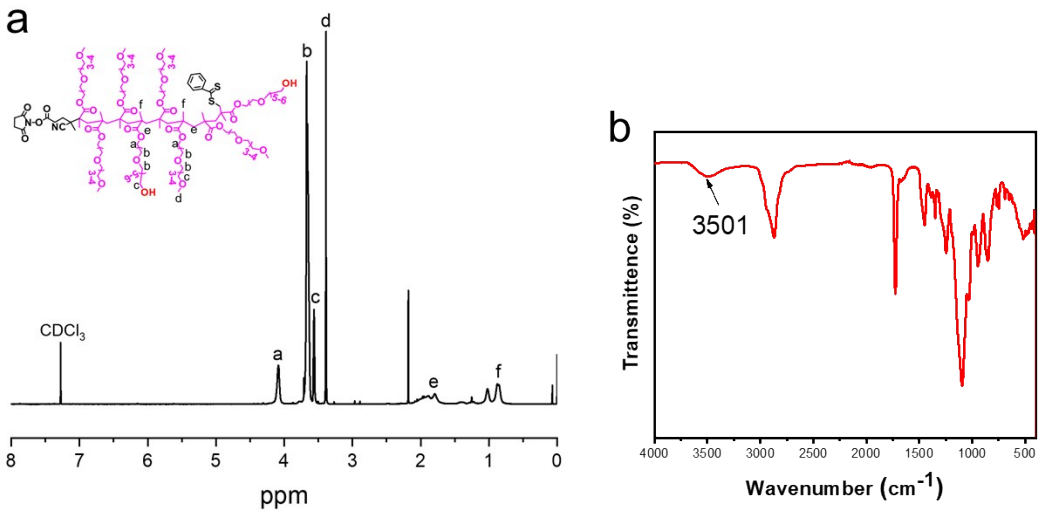

Fig. S1 ^{1}H-NMR spectrum (a) and FTIR spectrum (b) of P((OEGMA-CH_3)$_6$-*co*-(OEGMA-OH)$_2$).

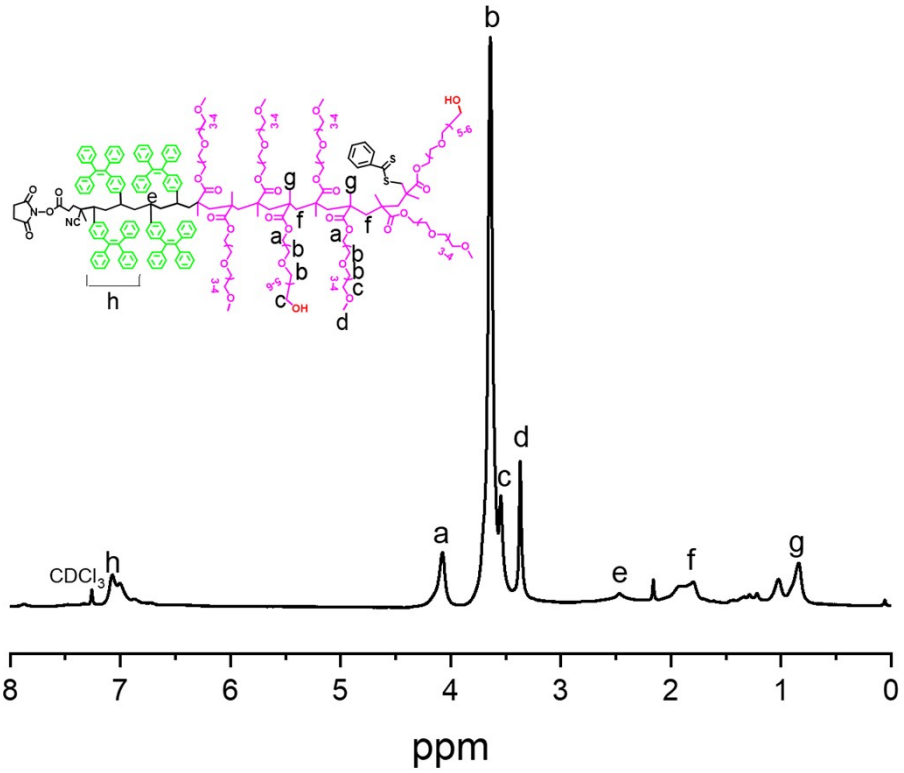

Fig. S2 ^{1}H-NMR spectrum of P((OEGMA-CH_3)$_6$-*co*-(OEGMA-OH)$_2$)-*b*-TPE_4.

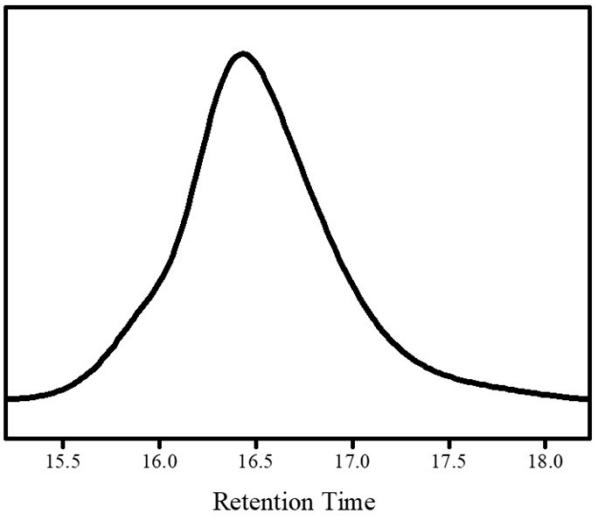

Fig. S3 GPC curve of P((OEGMA-CH_3)$_6$-*co*-(OEGMA-OH)$_2$)-*b*-TPE_4 (M_w: 4.4k, PDI: 1.28).

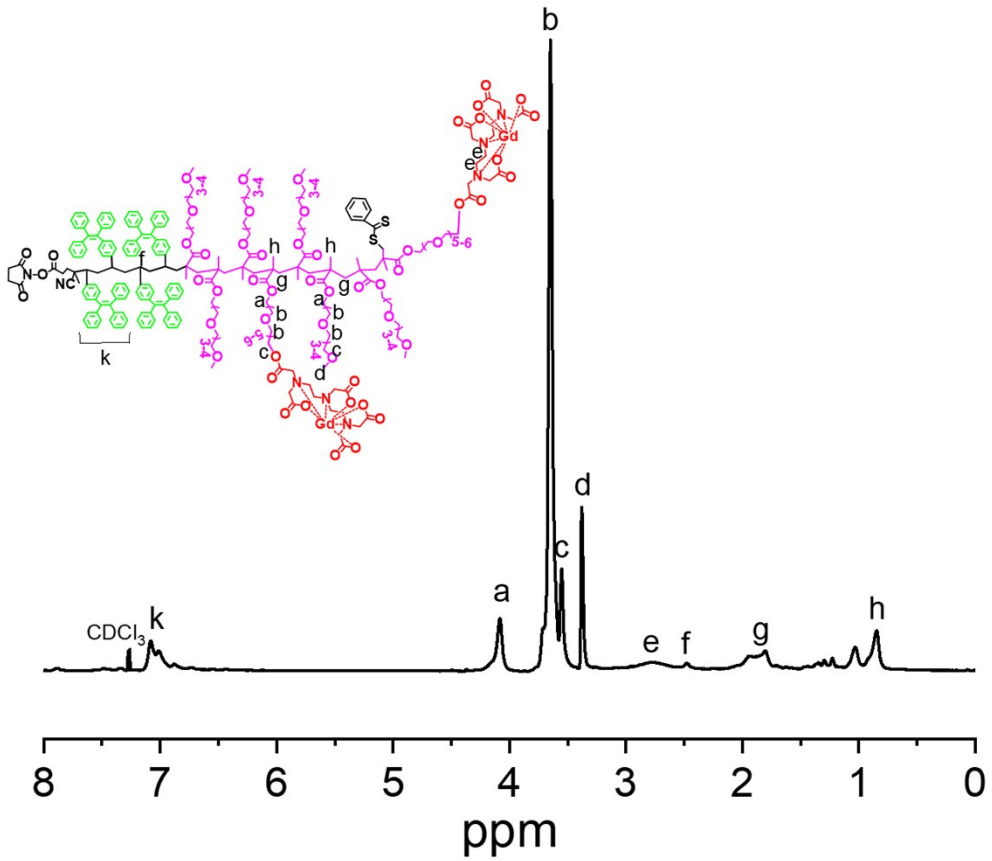

Fig. S4 ^{1}H-NMR spectrum of P((OEGMA-CH_3)$_6$-*co*-(OEGMA-Gd)$_2$)-*b*-TPE_4 (AIE-Gd).

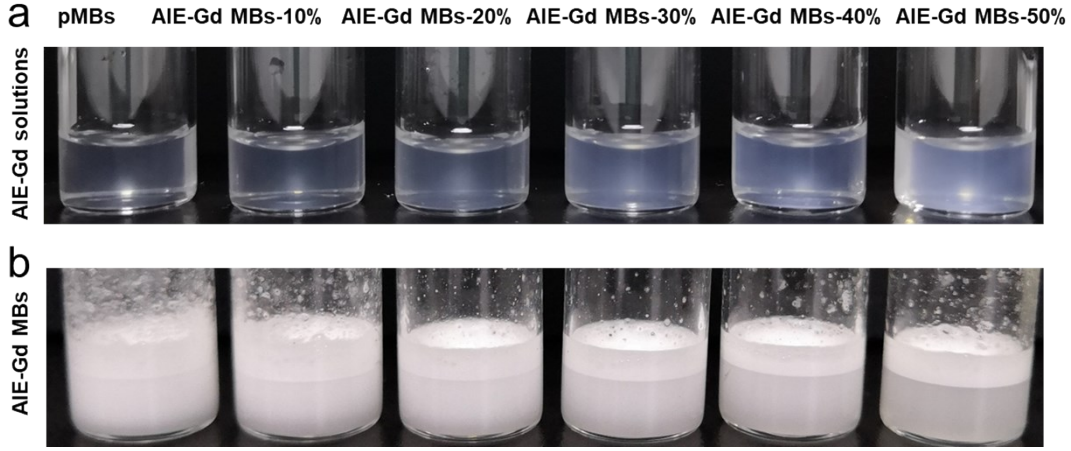

Fig. S5 Photos of the aqueous dispersions of AIE-Gd solution (a) and AIE-Gd MBs (b) with different compositions: pMBs, AIE-Gd MBs-10%, AIE-Gd MBs-20%, AIE-Gd MBs-30%, AIE-Gd MBs-40% and AIE-Gd MBs-50%.

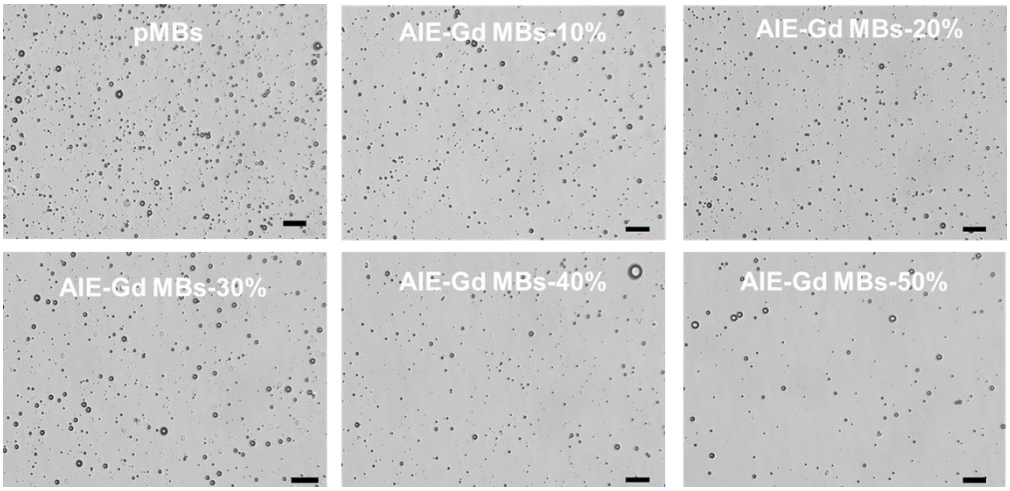

Fig. S6 Microscopic images of pMBs, AIE-Gd MBs-10%, AIE-Gd MBs-20%, AIE-Gd MBs-30%, AIE-Gd MBs-40% and AIE-Gd MBs-50% (scale bar = 20 μm).

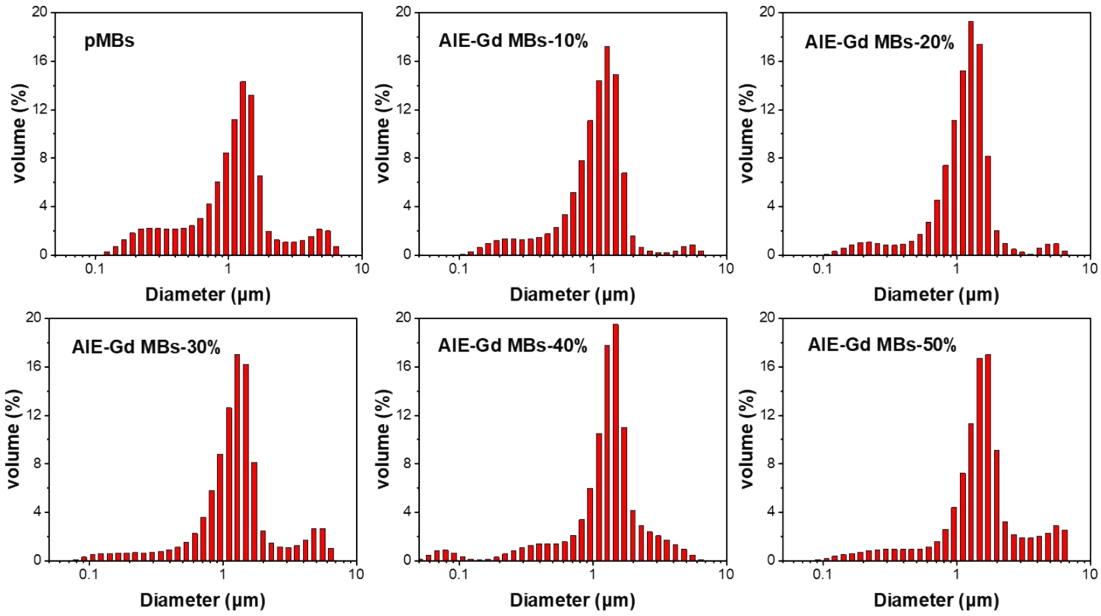

Fig. S7 Size distribution of pMBs, AIE-Gd MBs-10%, AIE-Gd MBs-20%, AIE-Gd MBs-30%, AIE-Gd MBs-40% and AIE-Gd MBs-50%.

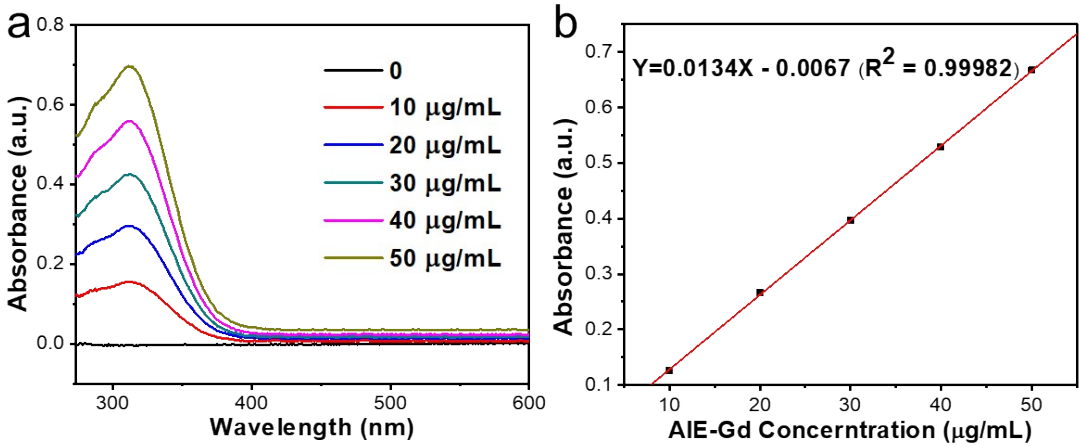

Fig. S8 Absorption spectra of AIE-Gd in DMSO with different concentrations (a) and corresponding UV-vis standard curve (b) (AIE-Gd absorbance peak at 310 nm).

Table S1. Composition, concentration, mean diameter and loading content of AIE-Gd MBs

Formulation	AIE-Gd:DSPC:DSPE-PEG$_{2000}$ (mol:mol:mol)	MB concentration (x10^8 MBs/mL)	Mean diameter (μm)	Loading content (%)
pMBs	0/9/1	2.38 ± 0.34	1.32 ± 0.03	0
AIE-Gd MBs-10%	1/8/1	2.29 ± 0.33	1.30 ± 0.06	11.4 ± 0.7
AIE-Gd MBs-20%	2/7/1	1.57 ± 0.22	1.32 ± 0.06	21.7 ± 0.3
AIE-Gd MBs-30%	3/6/1	1.15 ± 0.19	1.34 ± 0.07	35.8 ± 0.9
AIE-Gd MBs-40%	4/5/1	1.01 ± 0.10	1.42 ± 0.007	45.1 ± 2.5
AIE-Gd MBs-50%	5/4/1	0.64 ± 0.24	1.60 ± 0.12	55.6 ± 2.9

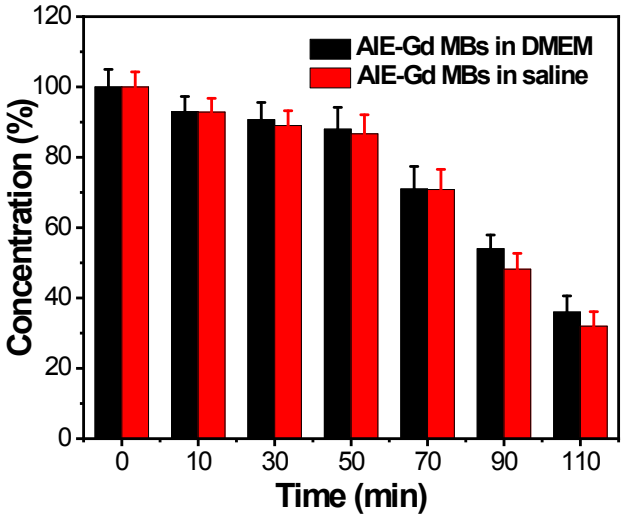

Fig. S9 AIE-Gd MBs concentration change after incubation in DMEM or saline for different time.

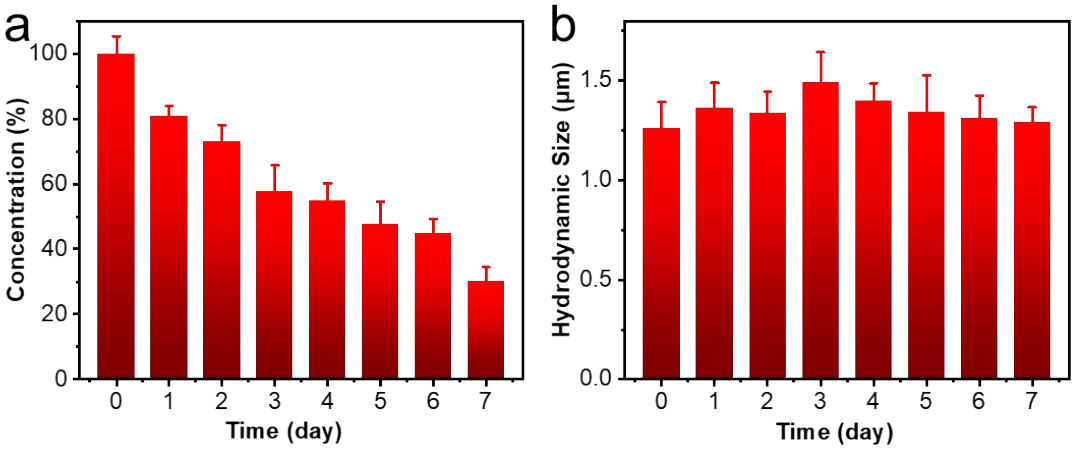

Fig. S10 Stability of the concentration (a) and hydrodynamic size (b) of AIE-Gd MBs stored at room temperature.

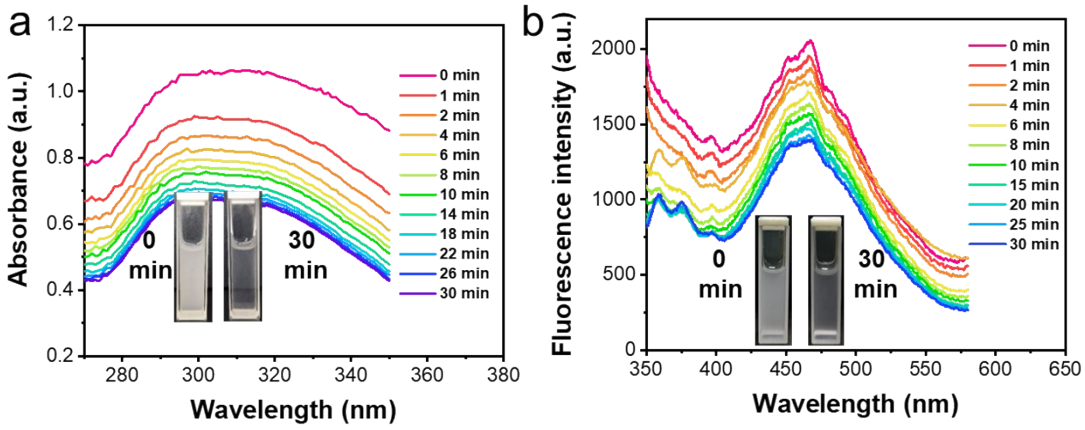

Fig. S11 Dynamic absorption spectra (a) and fluorescence spectra (b) of AIE-Gd MBs suspension (inset: photographs of AIE-Gd MBs dispersed in PBS were kept static in 0 min and 30 min).

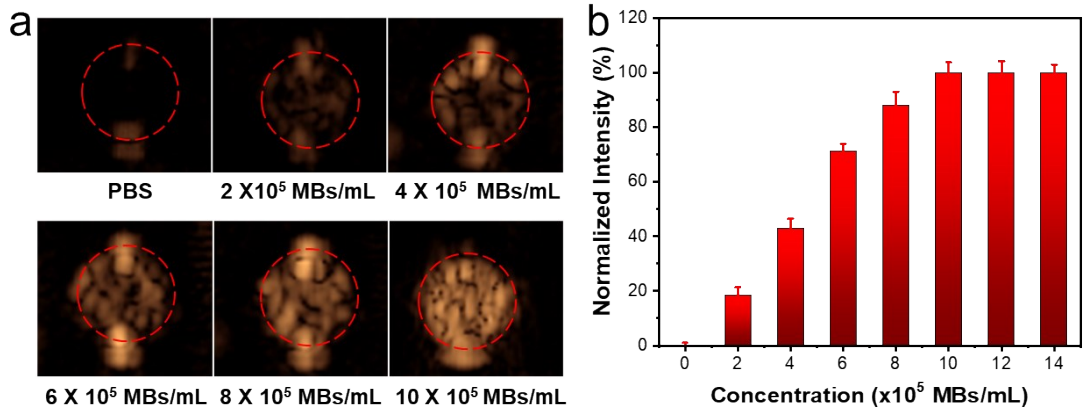

Fig. S12 *In vitro* US imaging. (a) US imaging of AIE-Gd MBs with increasing concentration in a latex tube and (b) US signal intensities versus concentration of the MBs.

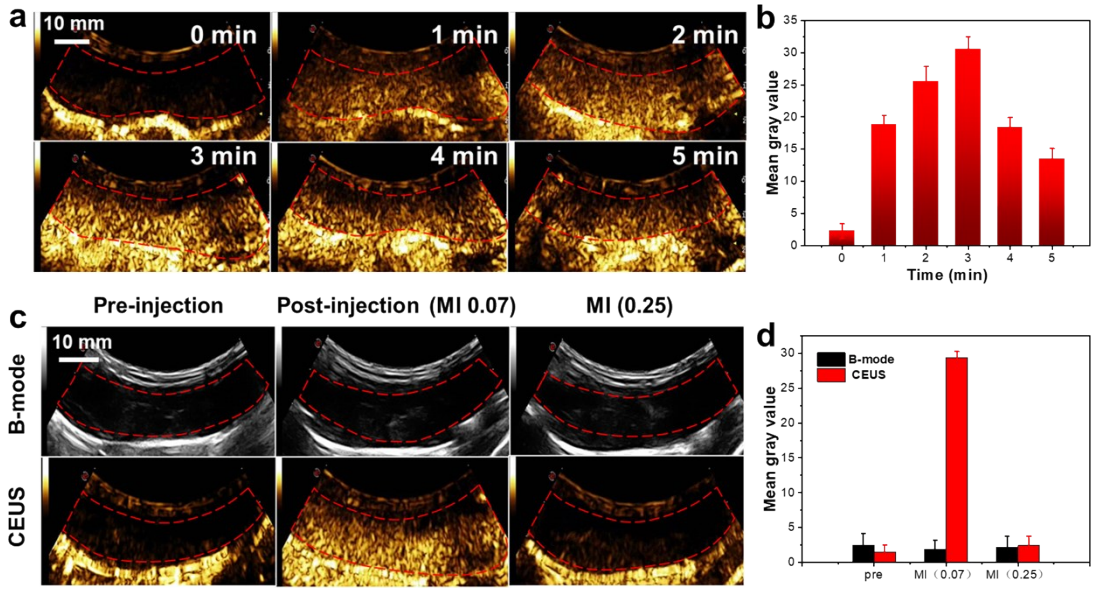

Fig. S13 *In vivo* US imaging. US imaging (a) and US signal intensities (b) of the rabbit liver in 5 min with MI = 0.07. US imaging (c) and US signal intensities (d) after intravenous injection AIE-Gd MBs and treated with US MI=0.07, UTMD was carried out by suddenly increasing the MI to 0.25.

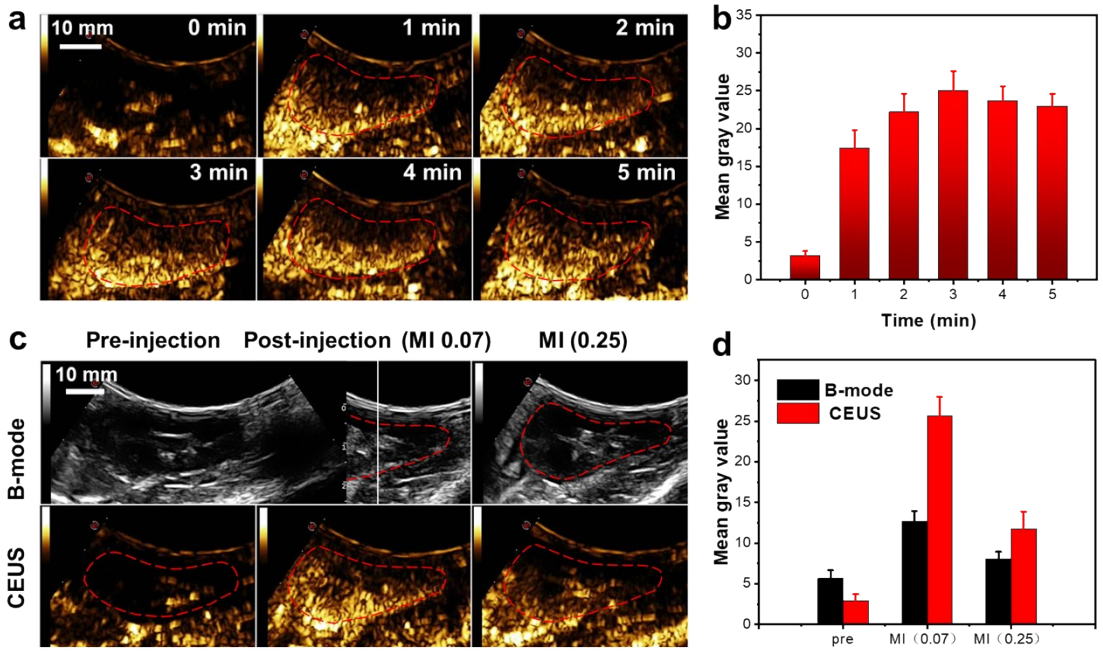

Fig. S14 *In vivo* US imaging. US imaging (a) and US signal intensities (b) of the rabbit kidney in 5 min with MI = 0.07. US imaging (c) and US signal intensities (d) after intravenous injection AIE-Gd MBs and treated with US MI=0.07, UTMD was carried out by suddenly increasing the MI to 0.25.