

Supporting information

Video 1. Carotid ultrasound of rat using the PAM-BC-2.5.

Video 2. Carotid ultrasound of miniature pig using the PAM-BC-2.5.

Video 3. Carotid ultrasound of volunteer using the PAM-BC-2.5.

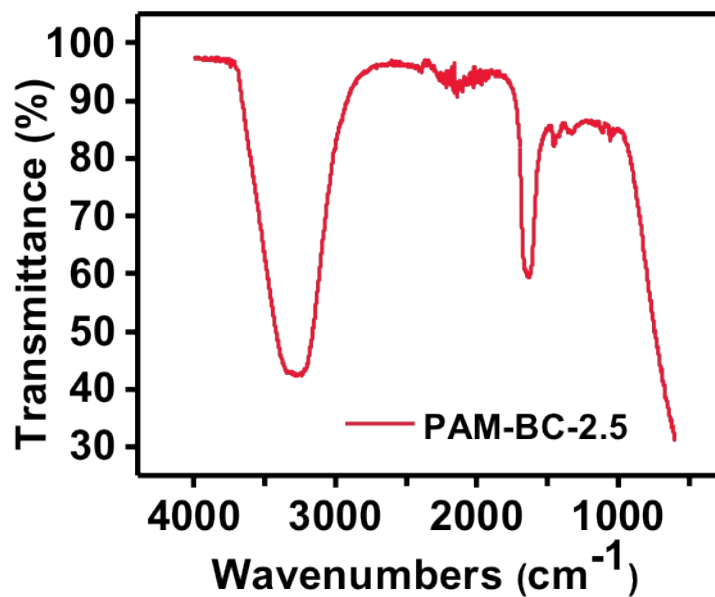


Figure S1. ATR-FTIR spectra of PAM-BCs. The amide group has characteristic peaks at 1672 cm^{-1} , representing the $-\text{C}=\text{O}$ stretching vibration of the group. Polyacrylamide and bacterial nanocellulose show a specific absorption peak at 3400 cm^{-1} , which is attributed to the aldehyde group, and a peak at 3400 cm^{-1} , attributed to the $-\text{NH}-\text{C}-\text{O}$ -structure.

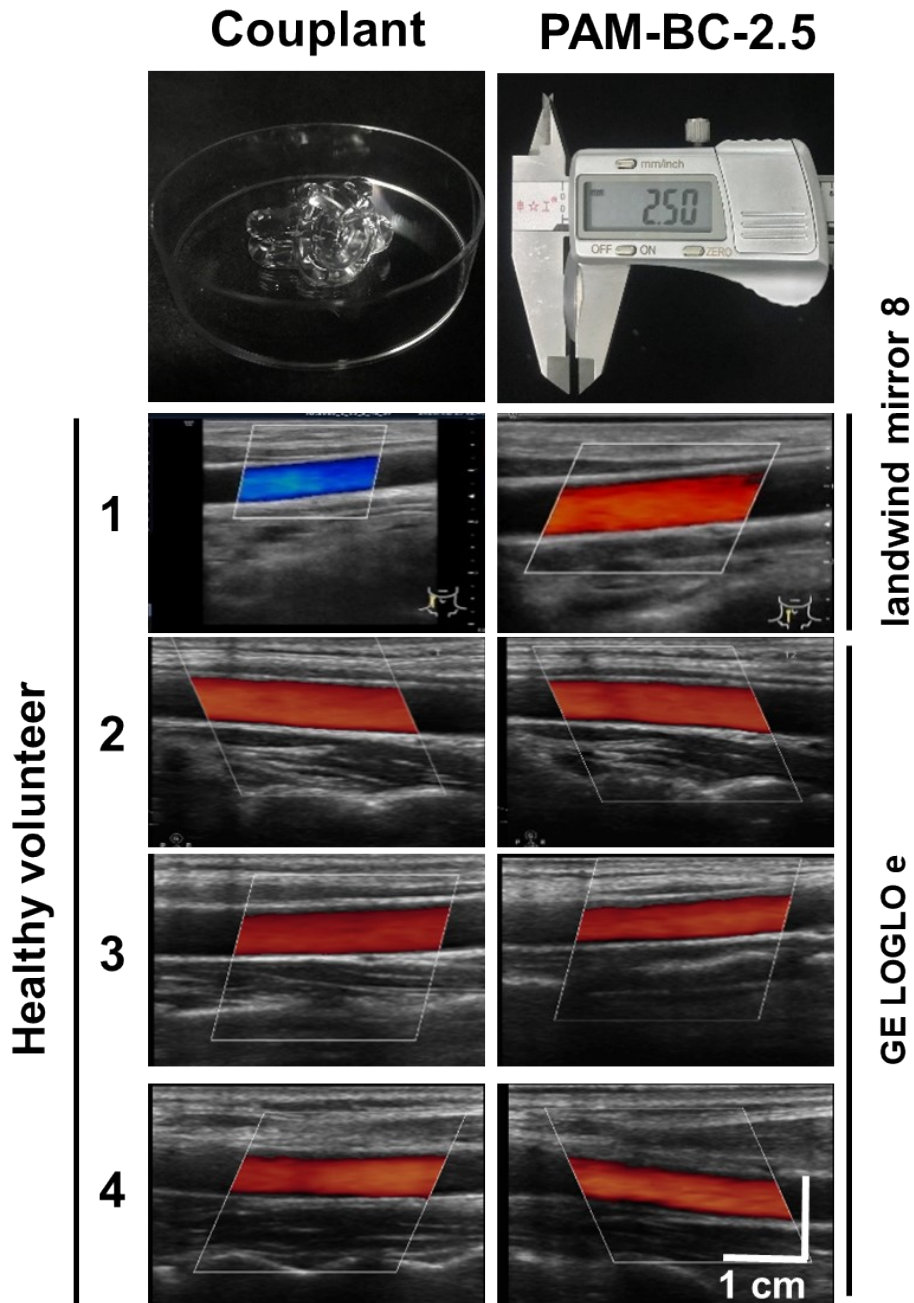


Figure S2. Superficial vessel ultrasound imaging with ultrasonic couplant and the PAM-BC-2.5 in various brands of ultrasound instruments. A. Volunteer 1 imaged with a Landwind Mirror 8. B-D. Volunteer 2-4 imaged with a GE LOGIQ e.

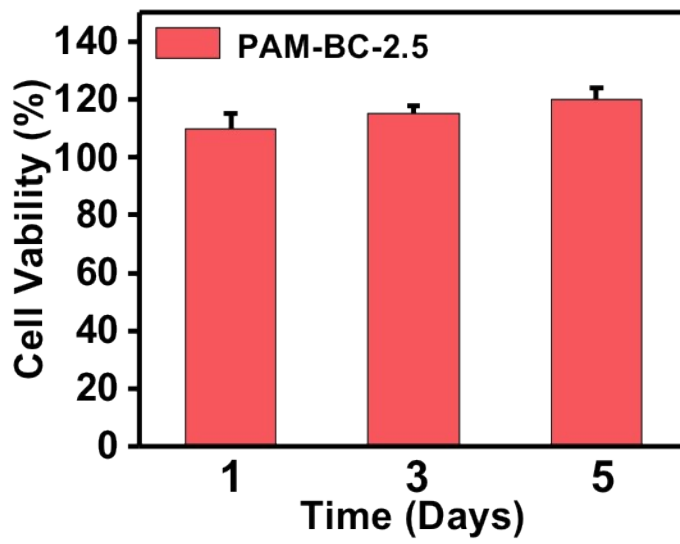


Figure S3. Viability of HaCaT cells after incubation with PAM-BC-2.5. Data are presented as the mean \pm SD (n = 5).

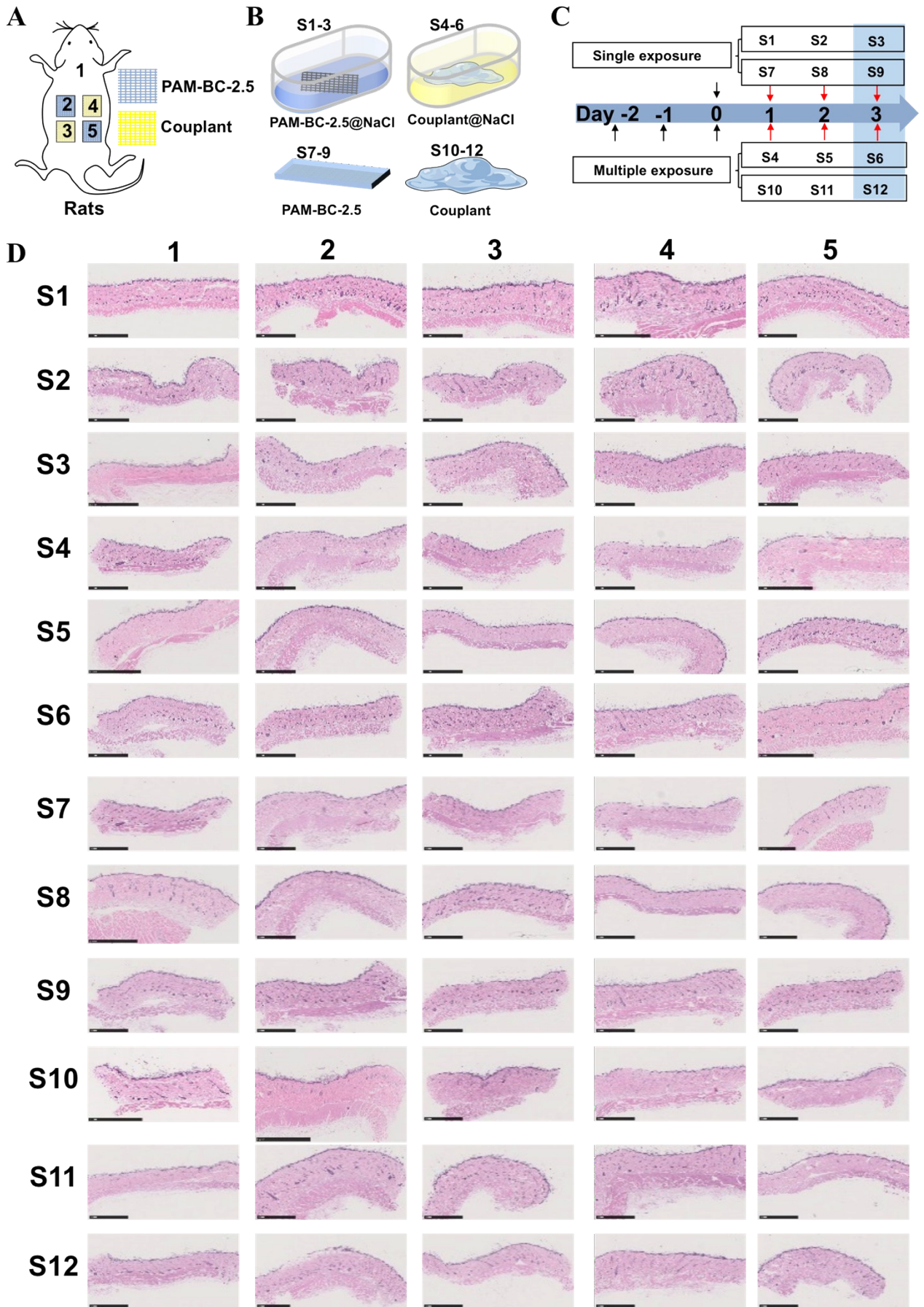


Figure S4. Histological examination of the skin after 1, 2, and 3 days of exposure to PAM-BC.

A-C. Schematic representation of the skin irritation test. A. The back of each rat is divided into five regions: 1, normal skin; 2 & 5, PAM; 3 & 4 ultrasound couplant. B. PAM-BC or couplant extract (0.5 mL) was dripped onto a 2.5 cm × 2.5 cm gauze block (S1-S6) or the actual materials (PAM-BC or couplant; S7-S12) were used. The gauze soaked with extract or the actual materials were applied to the skin, and the dressing was fixed with a semi-closed bandage for 24 hours. The dressing was then removed and the skin was examined for any reaction in the treated area or the surrounding skin tissue. C. For the single contact experiment (S1-S3 and S7-S9) and the multiple contact experiment (S4-S6 and S10-S12), 3 replicates were scored and the histology of the skin was assessed after HE staining on day 1 (S1, S4, S7, S10), day 2 (S2, S5, S8, S11), and day 3 (S3, S6, S9, S12).

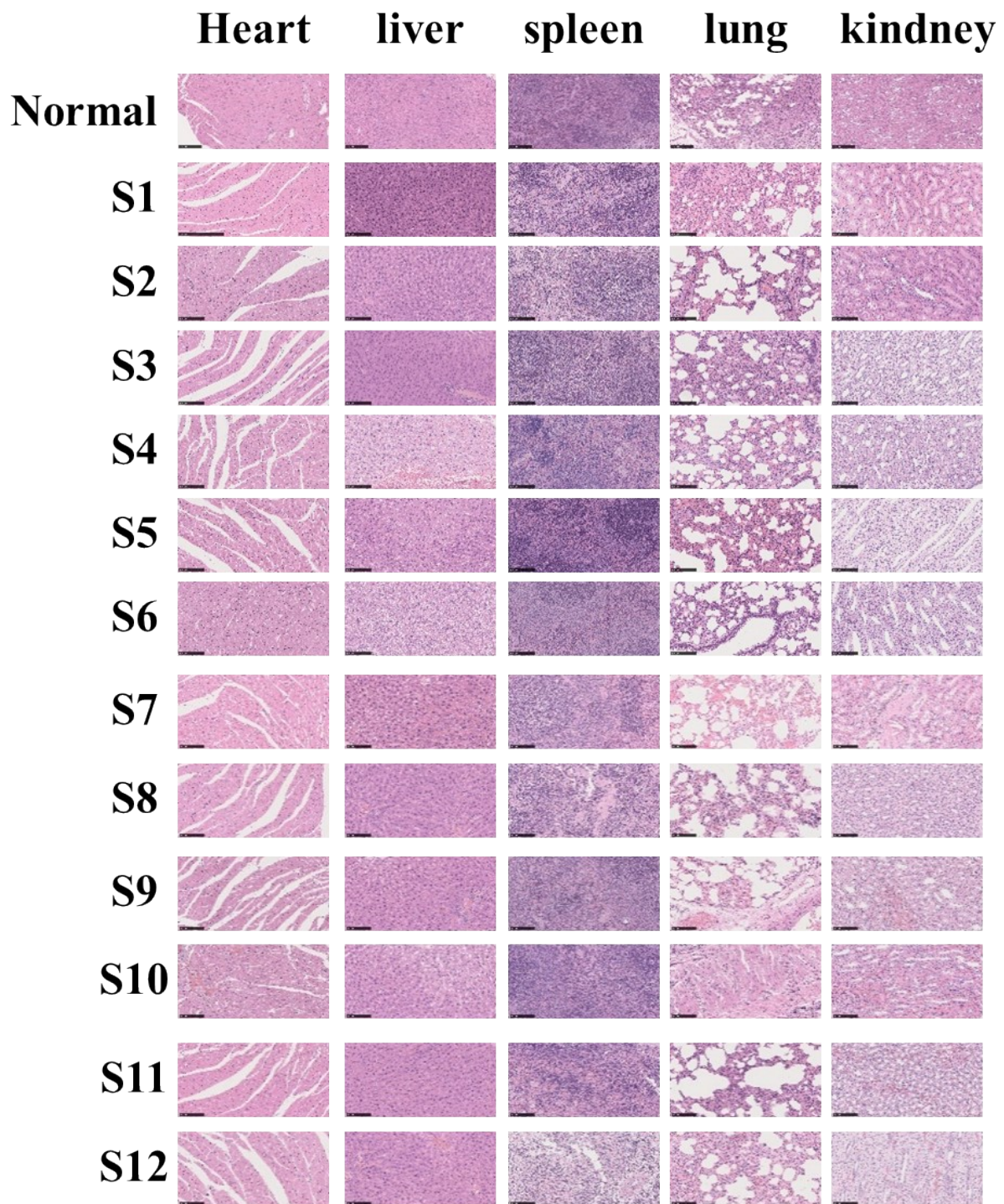


Figure S5. Histological examination of the major organs after 1, 2, and 3 days of treatment. The experimental groups are as described in Figure S4.