

## Supporting Information

### **A highly stretchable, adhesive and absorbent hybrid hydrogel dressing for photothermal/chemodynamic antibacterial therapy**

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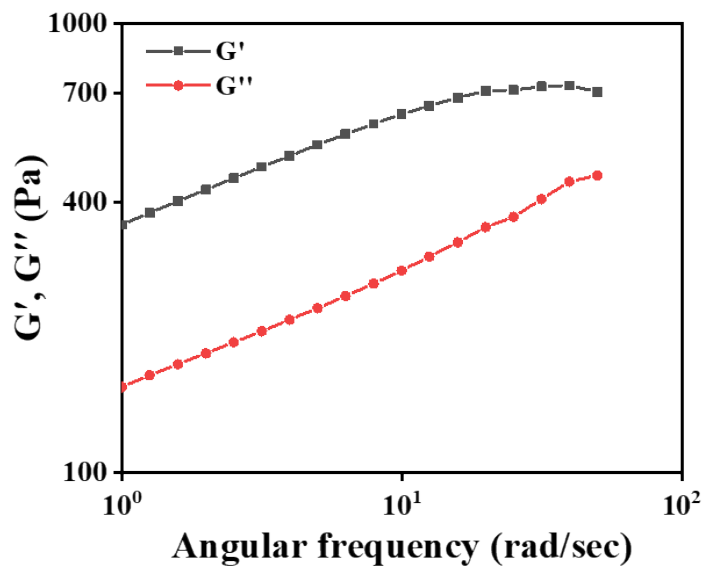


Fig. S1 Frequency spectra of  $G'$  and  $G''$  moduli of the PBP hydrogel.

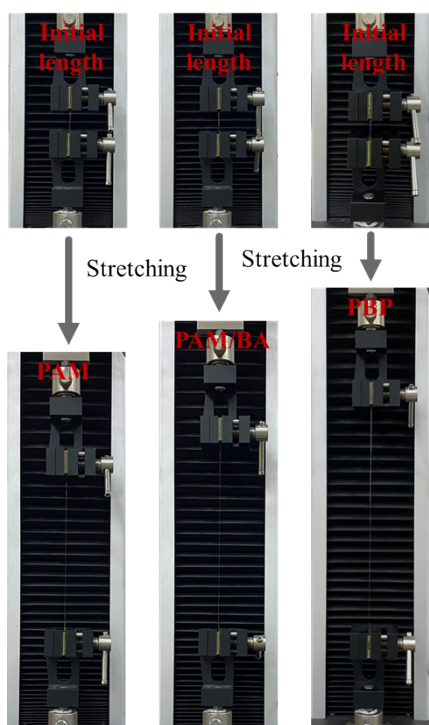
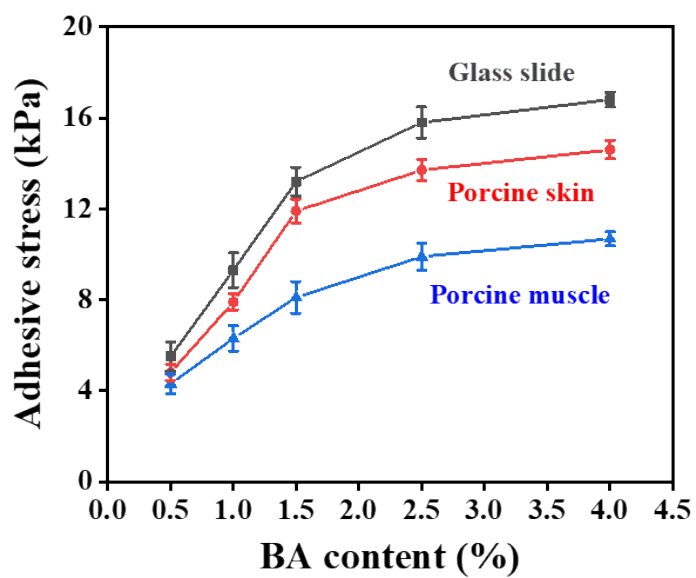
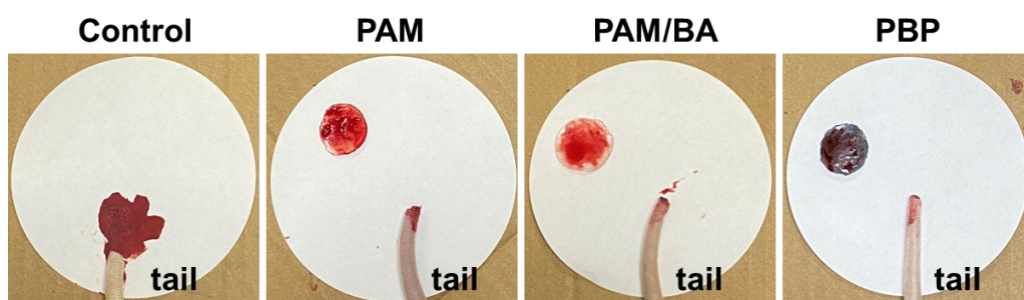


Fig. S2 Tensile tests of PAM, PAM/BA and PBP hydrogels.



**Fig. S3** Adhesive strength of the PAM/BA hydrogels with different BA contents to porcine skin, muscle, and glass slide.



**Fig. S4** Representative pictures of blood loss in a mouse-tail amputation model.

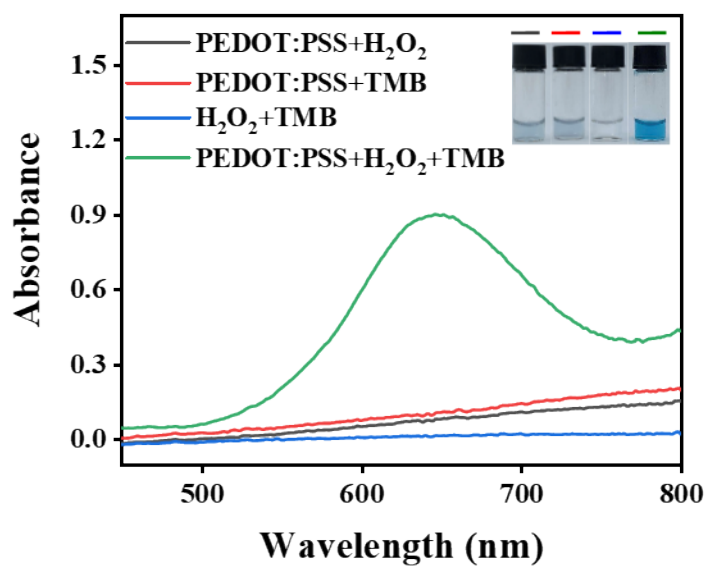


Fig. S5 UV-vis spectra of TMB after various treatments. Inset: The corresponding digital photos.

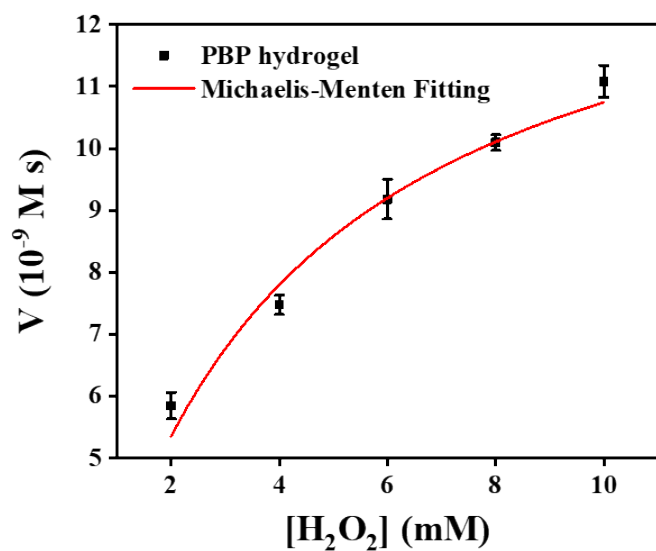
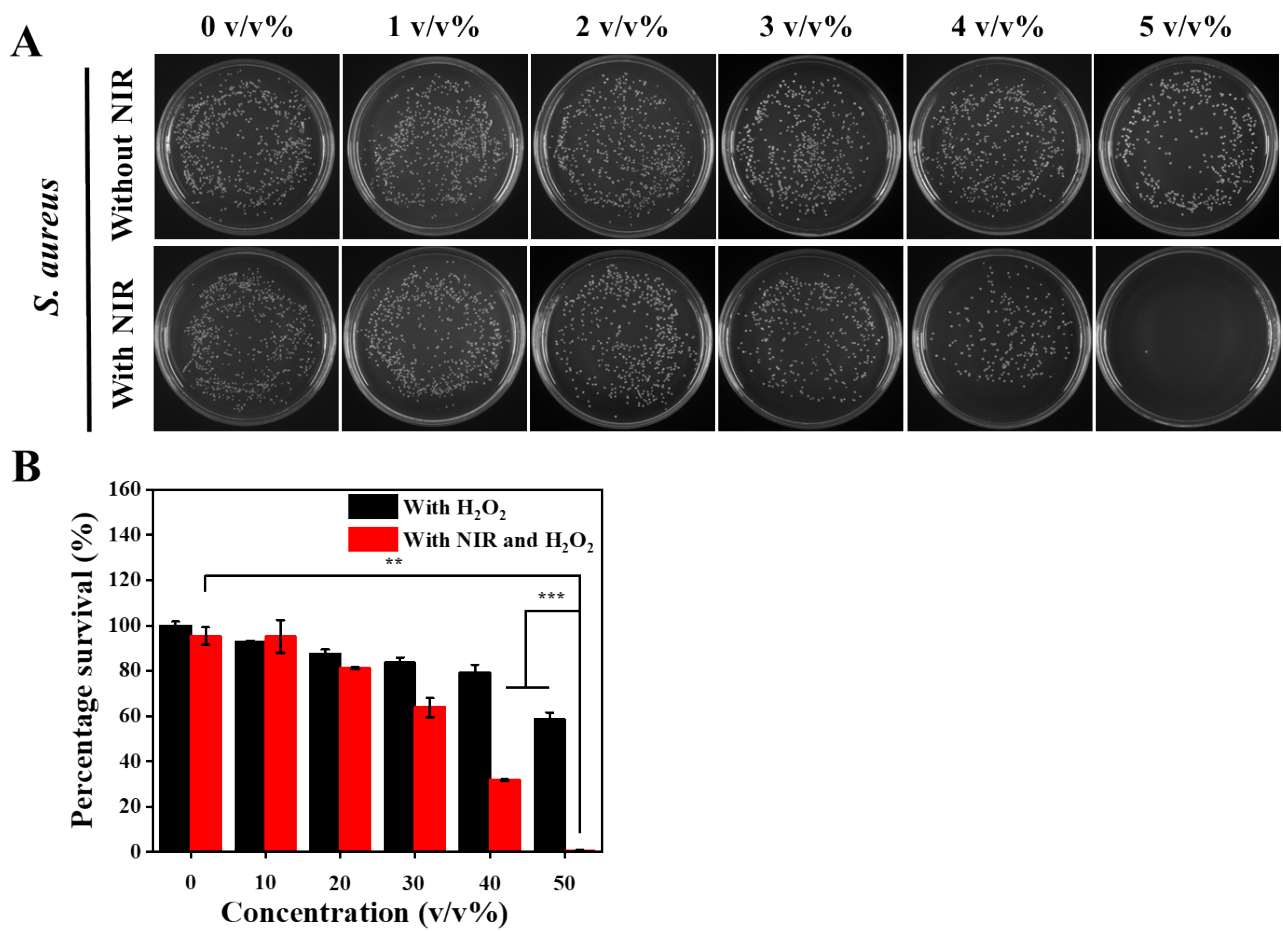
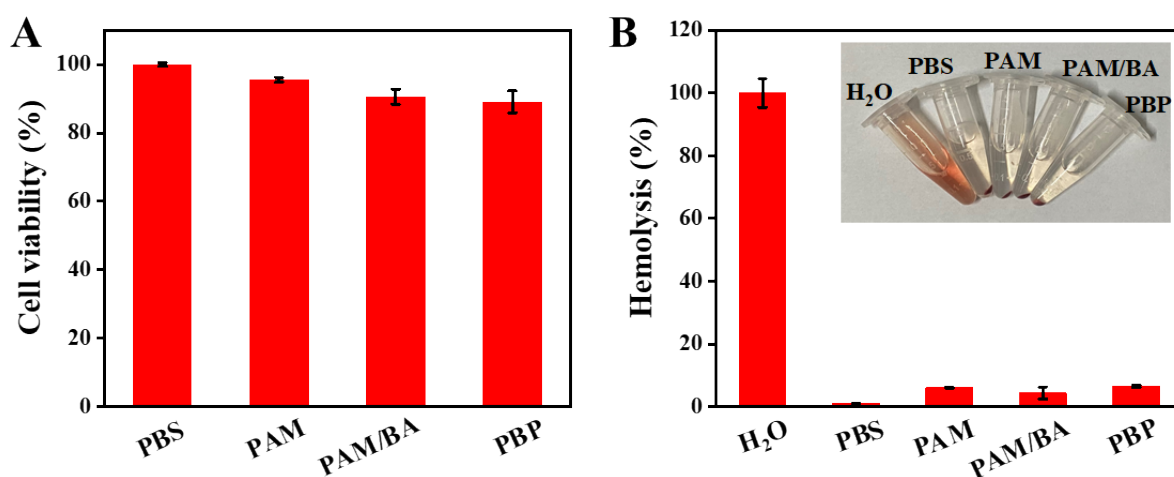


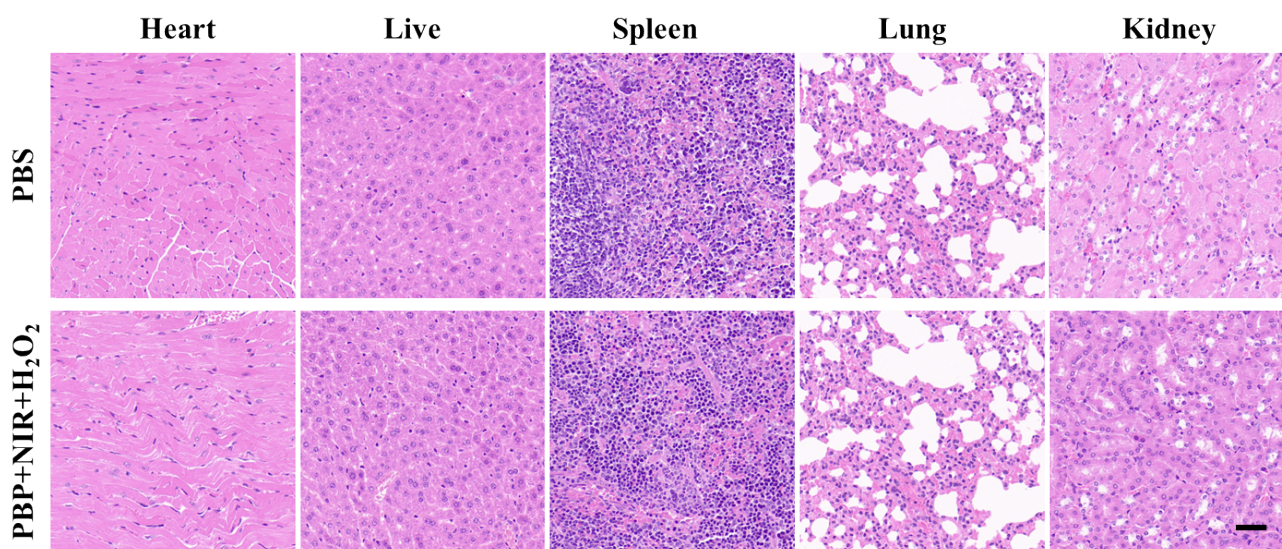
Fig. S6 Michaelis-Menten kinetic curve of the PBP hydrogel.



**Fig. S7** (A) Representative digital images of *S. aureus* colonies on the agar plate after being treated with PBP hydrogels containing various PEDOT:PSS concentrations. (B) The corresponding viabilities from the data in (A).



**Fig. S8** Cytotoxicity of the PBP hydrogel. (A) Viabilities of HEK293 cells treated with PBS, PAM, PAM/BA, and PBP hydrogels. (B) Hemolysis ratios of H<sub>2</sub>O, PBS, PAM, PAM/BA, and PBP hydrogels.



**Fig. S9** H&E staining images of major organs (heart, liver, spleen, lung, and kidney) of mice after various treatments for 6 days. Scale bar: 50  $\mu$ m.

**Table S1.** Synthesis of PAM, PAM/BA and PBP hydrogels.

Hydrogels	PEDOT:PSS ( $\mu\text{L}$ )	BA (mg)	AM (g)	APS (mg)	MDA (mg)	TEMED ( $\mu\text{L}$ )	Water (mL)
PAM	0	0	2	15	2	20	10
PAM/BA	0	50	2	15	2	20	10
PBP	100	50	2	15	2	20	10
	200	50	2	15	2	20	10
	300	50	2	15	2	20	10
	400	50	2	15	2	20	10
	500	50	2	15	2	20	10