

Supporting information

Phenylboronic acid modified Ag₂S NPs for bacterial targeting photothermal antibacterial therapy and promotion of wound healing

Yixiang HePeng ^{a,1}, Zhi Xu ^{bc,1}, Ping Gou ^{d,1}, Bosong Zhou ^a, Quan Zheng ^a, Ke Zhu ^{bc}, Xiangfeng Liu^{bc}, Ruiyuan Liu ^{e,*}, Xu Wu ^{ab,*}, Chao Zhang ^{fg,*}

^a Department of Thoracic Surgery, Nanfang Hospital, Southern Medical University, Guangzhou, 510515, China

^b Huiqiao Medical Center, Nanfang Hospital, Southern Medical University, Guangzhou, 510515, China

^c Department of General Practice, Nanfang Hospital, Southern Medical University, Guangzhou, 510515, China

^d Department of Medicine Ultrasonics, Nanfang Hospital, Southern Medical University, Guangzhou, 510515, China

^e Biomaterials Research Center, School of Biomedical Engineering, Southern Medical University, Guangzhou, 510515, China

^f Experimental Education/Administration Center, National Demonstration Center for Experimental Basic Medical Education, School of Basic Medical Science, Southern Medical University, Guangzhou, 510515, China

^g Department of Biochemistry and Molecular Biology, School of Basic Medical Science, Southern Medical University, Guangzhou, 510515, China

*Corresponding authors.

E-mail addresses: super1998@smu.edu.cn (C. Zhang), wuxu_southhospital@163.com (X. Wu), ruiyliu@smu.edu.cn (R. Liu)

¹These three authors contributed equally to this work.

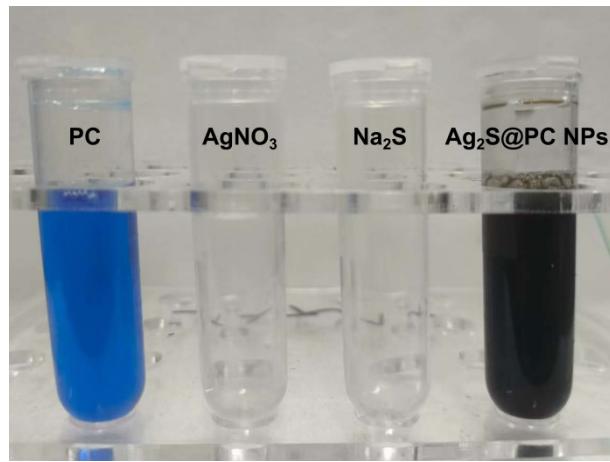


Figure S1. Photographs of phycocyanin, AgNO_3 , Na_2S and $\text{Ag}_2\text{S}@\text{PC NPs}$ solution.

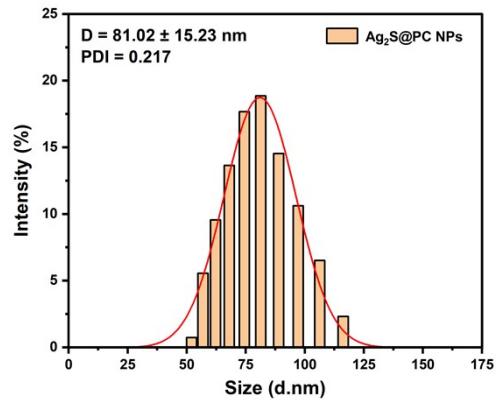


Figure S2. DLS results of $\text{Ag}_2\text{S}@\text{PC NPs}$.

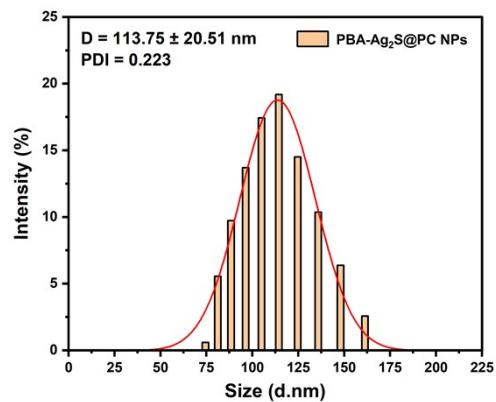


Figure S3. DLS results of PBA- $\text{Ag}_2\text{S}@\text{PC NPs}$.

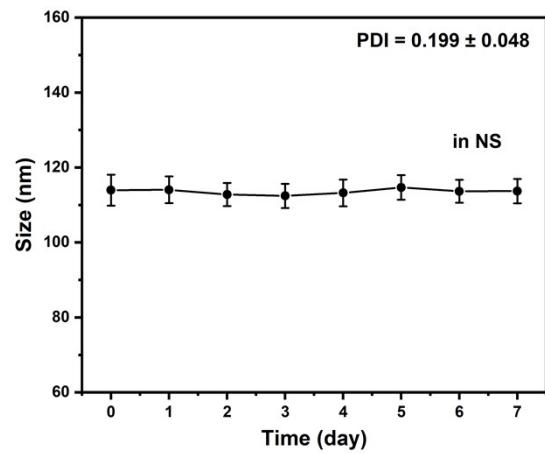


Figure S4. The size of PBA-Ag₂S@PC NPs after being stored for 7 days in NS (n=3).

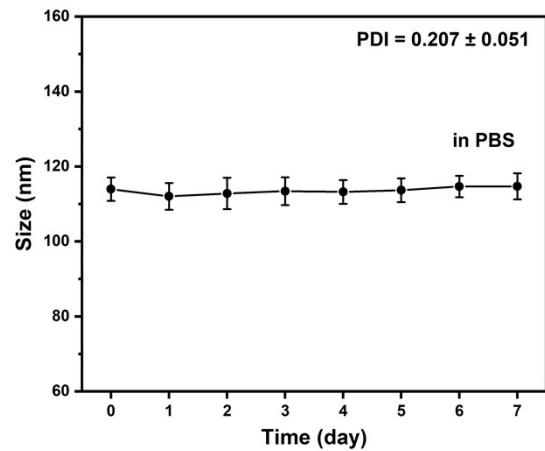


Figure S5. The size of PBA-Ag₂S@PC NPs after being stored for 7 days in PBS (n=3).

Samples	Ag (%)	S (%)	C (%)	N (%)	O (%)	B (%)
Ag ₂ S@PC	1.06	0.94	61.94	9.63	26.43	0
PBA-Ag ₂ S@PC	1.01	0.91	61.46	9.36	25.19	2.07

Table 1. Elemental compositions in samples assessed by XPS.

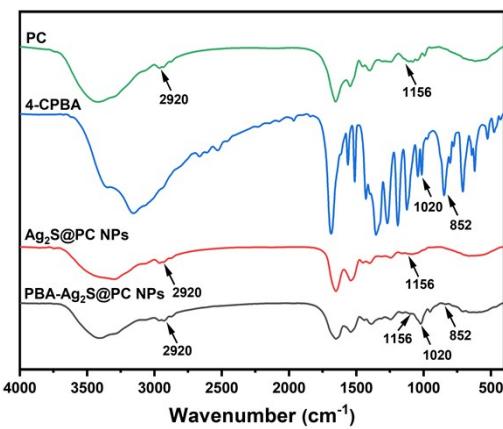


Figure S6. The FT-IR spectra of PC, 4-CPBA, Ag_2S @PC NPs and PBA- Ag_2S @PC NPs.

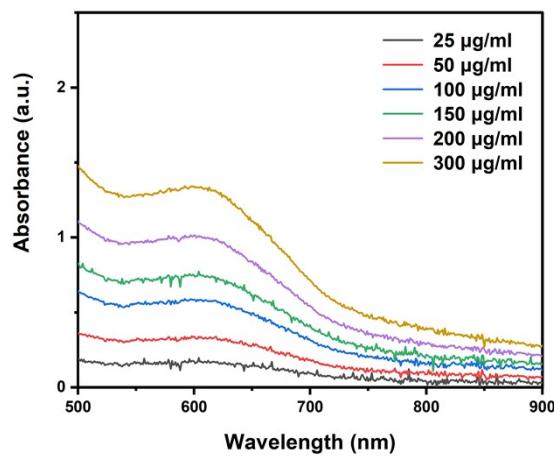


Figure S7. UV-vis spectra of PBA- Ag_2S @PC NPs with different concentrations.

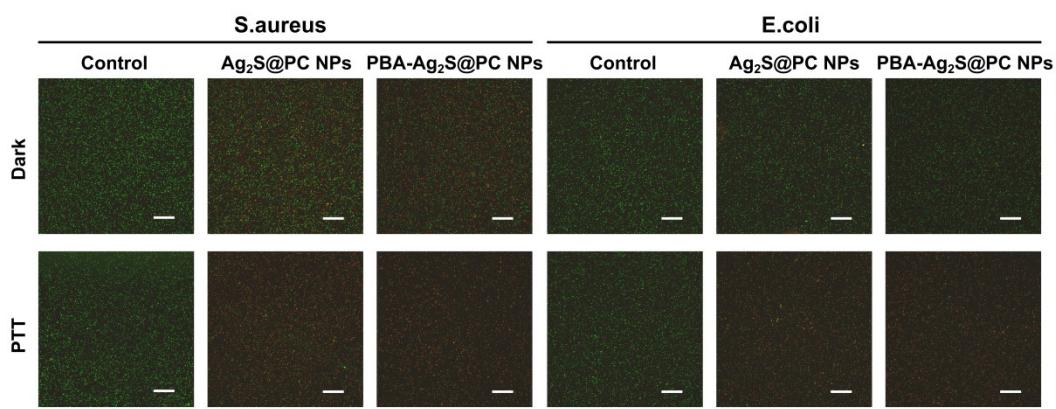


Figure S8. Live/Dead fluorescence co-staining images of *S. aureus* and *E. coli* after various treatments, Scale =100 μm .

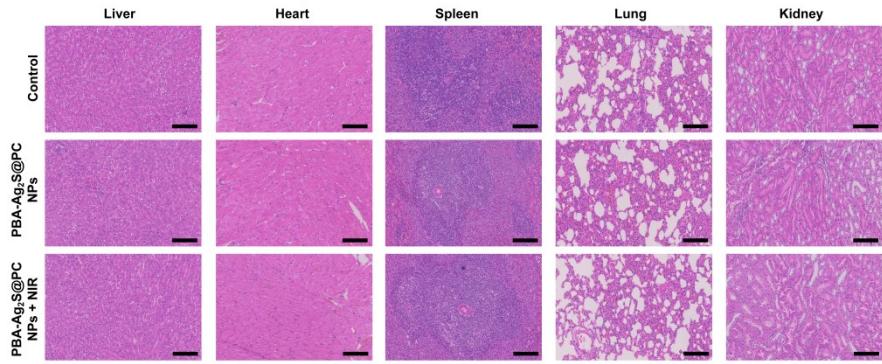


Figure S9. Major organs (liver, heart, spleen, lung, and kidney) after various treatments. Scale = 100 μ m.

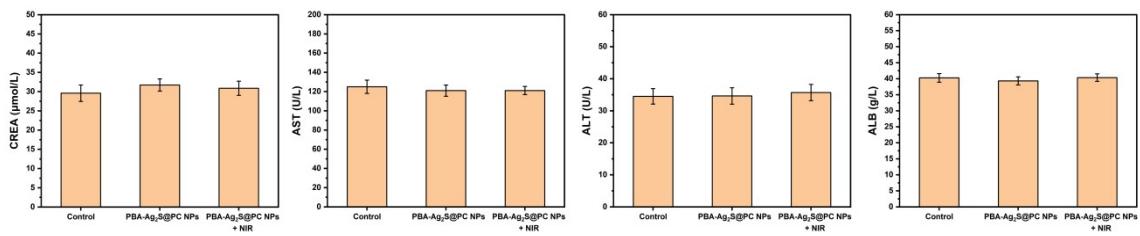


Figure S10. Blood panel analysis of rats after various treatments (n=3).