

Figure S1. The SEM of lignin-Ag

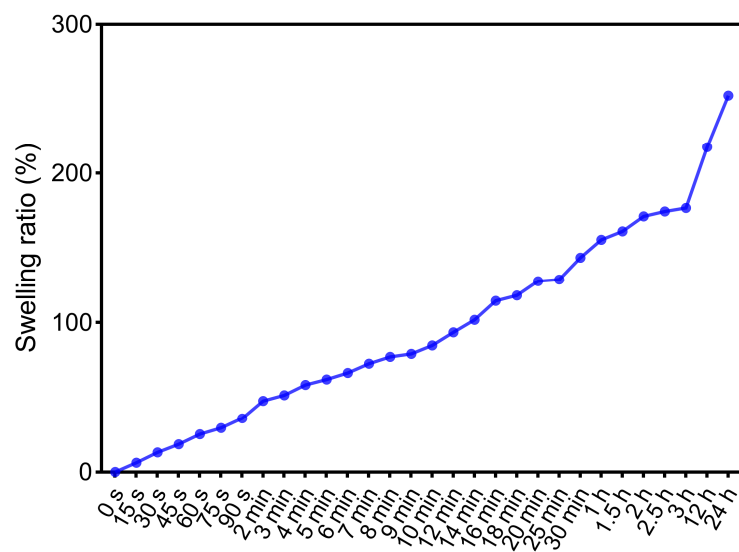


Figure S2. Swelling behavior of the hydrogel.

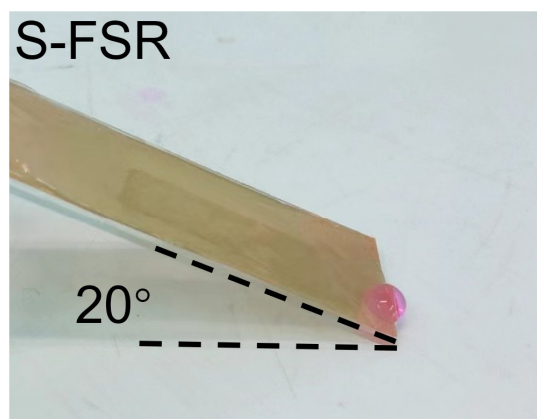
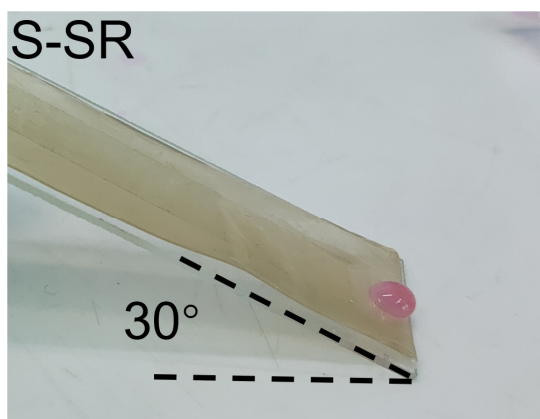


Figure S3. The rolling angle of S-SR and S-FSR

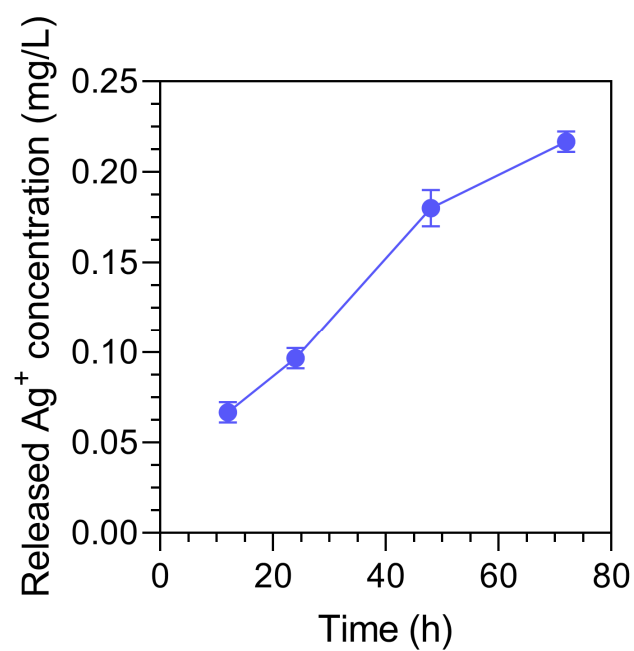


Figure S4. Cumulative Ag⁺ release curves of S-FSR@AGL patch at 37 °C in saline solution for long-term release (72 h).

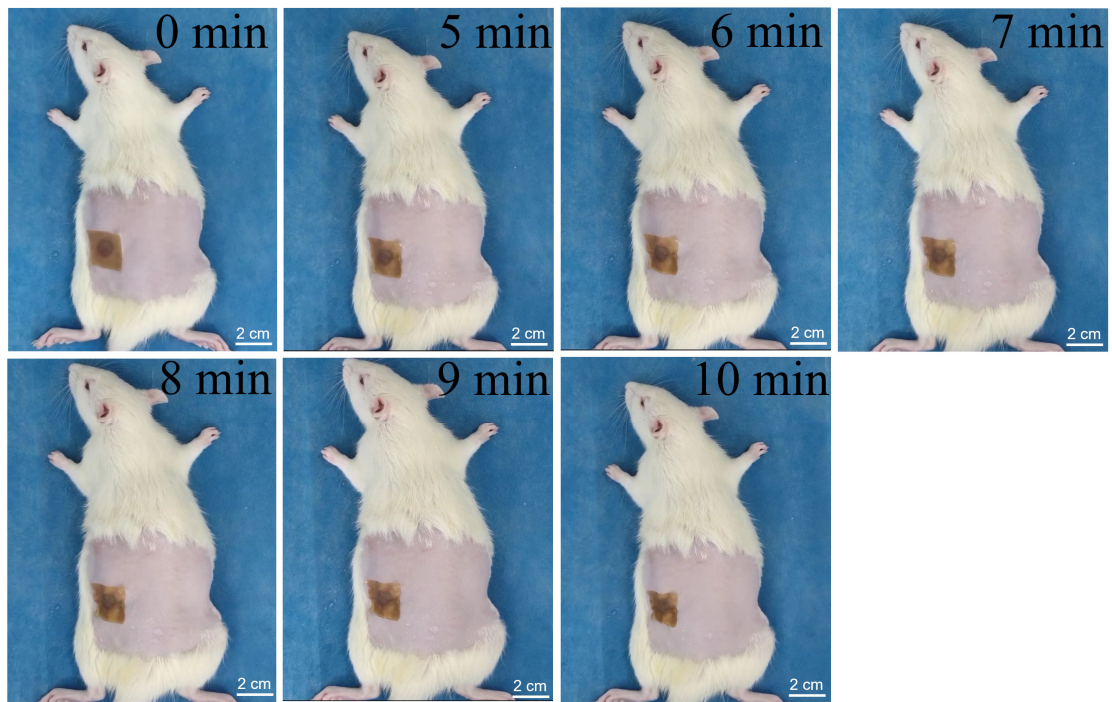


Figure S5. Representative images of SD rat dorsal wounds and after the application of S-FSR@AGL patch at different time points.



Figure S6. The actual photo of the patch after two days of application on the rectal wound.

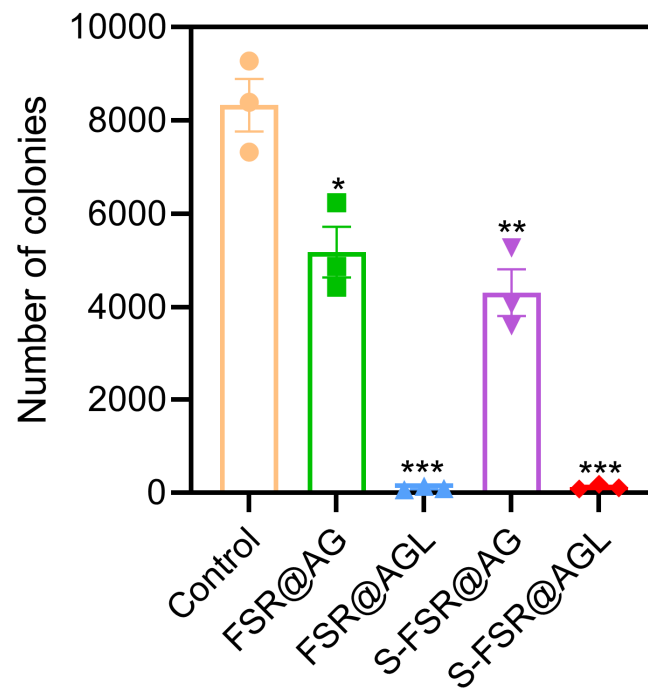


Figure S7. A statistical analysis of bacterial content in the rectal wound tissue of rats on the seventh day after treatment with different patches.

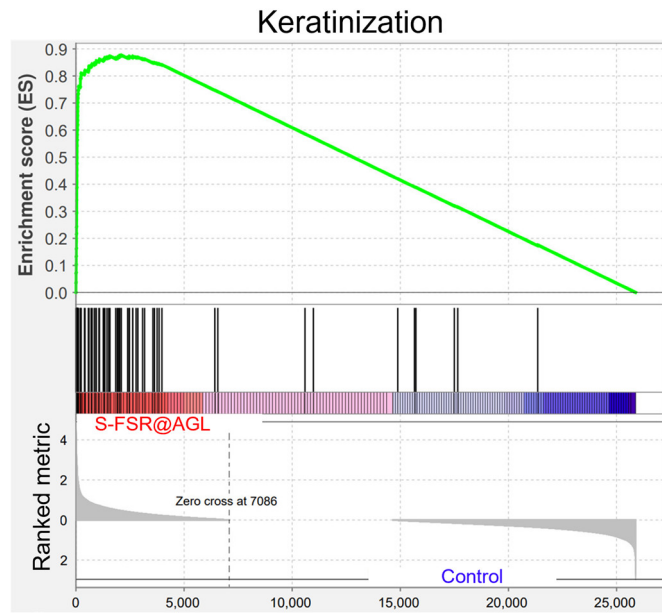


Figure S8. Gene Set Enrichment Analysis (GSEA) image.