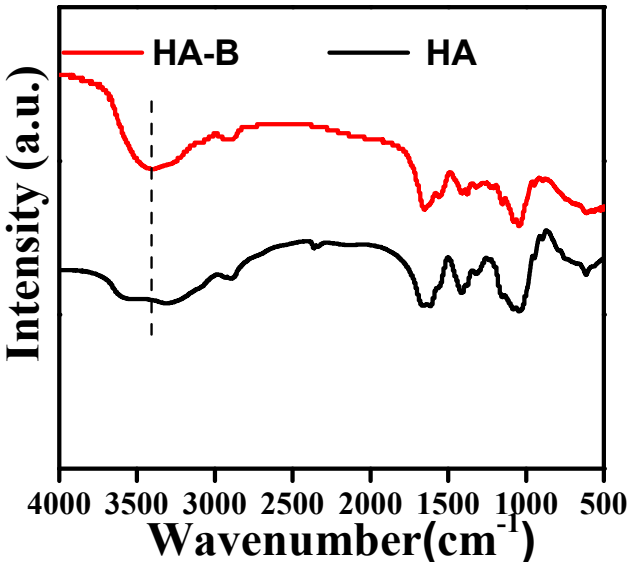
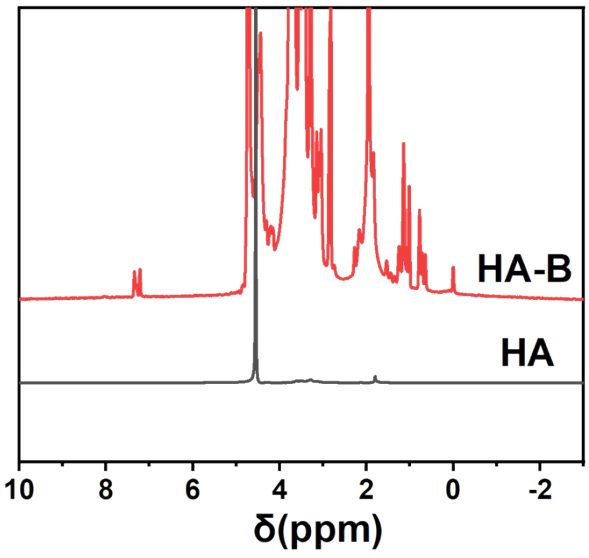
Supporting Data

Manuscript ID: RA-ART-04-2026-003137
Title: An Injectable Hyaluronic Acid Hydrogel Integrating Fe(III)-Coordination and Polymyxin B Grafts for Accelerated Healing of Infected Diabetic Wounds

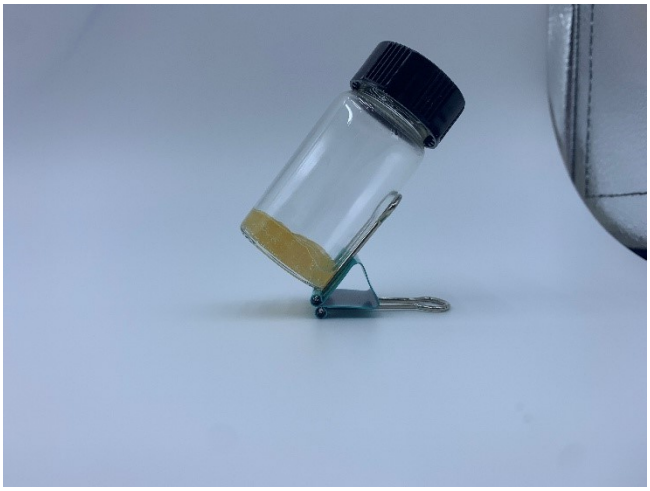


1. FTIR spectra of HA-B and native HA

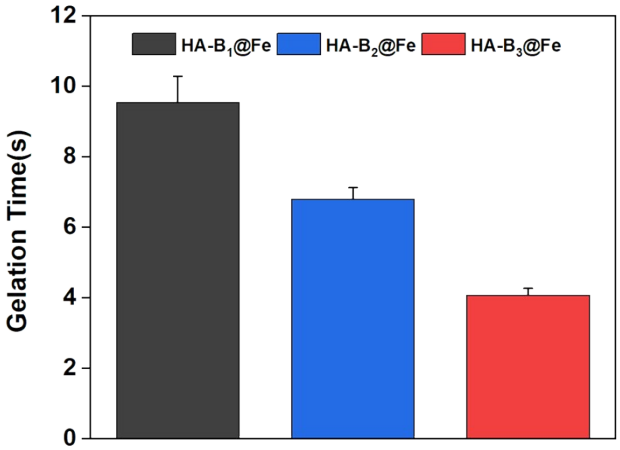


2. ^{1}H NMR spectra of HA-B and HA

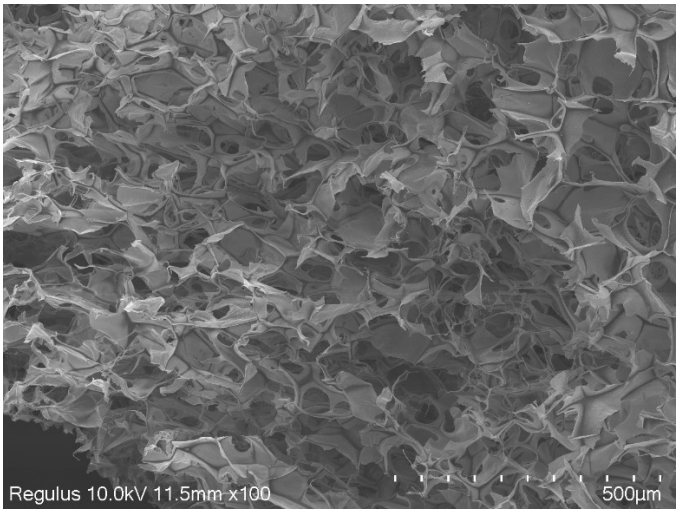
3. Photo of HA-B without EDTA-Fe^{3+}



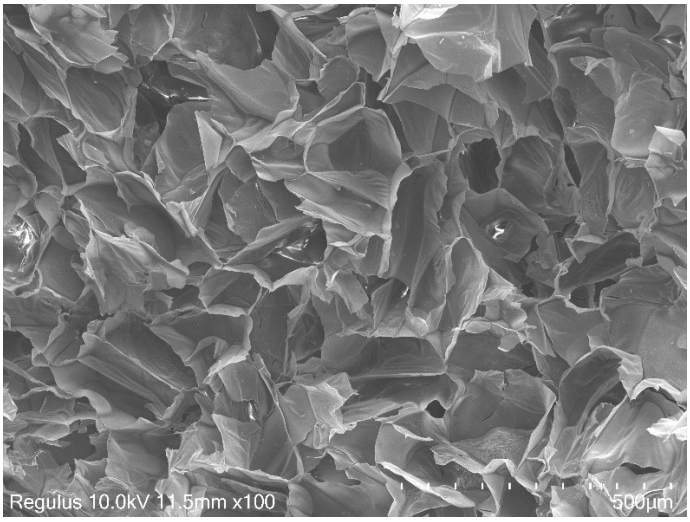
4. Photo of HA-B with EDTA-Fe^{3+}



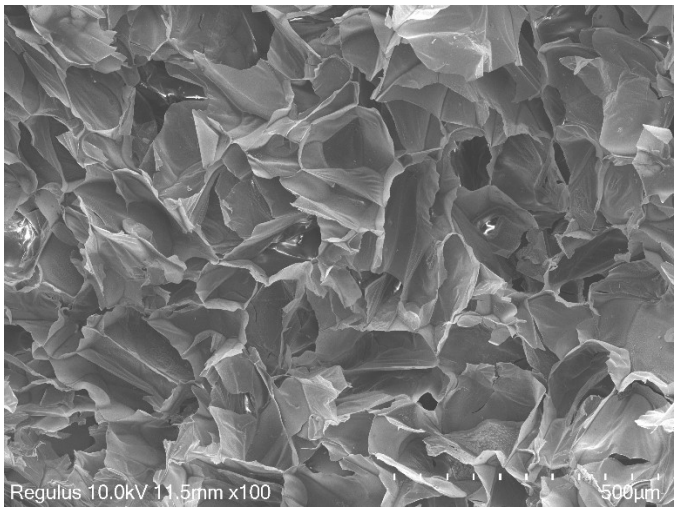
5. Gelling time of HA-B_1@Fe, HA-B_2@Fe and HA-B_3@Fe



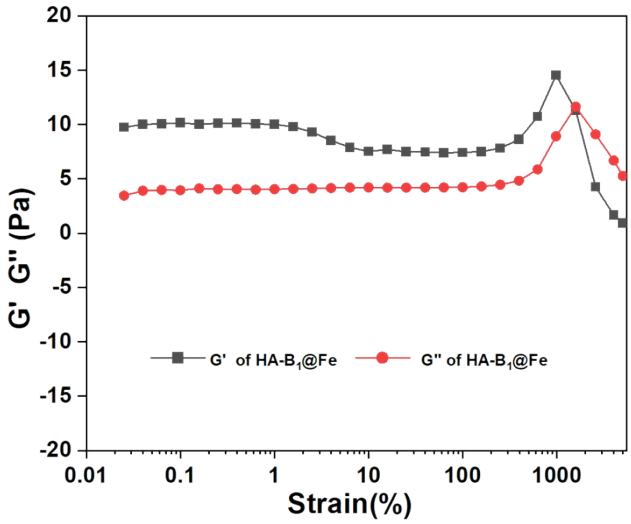
6. SEM image of HA-B_1@Fe



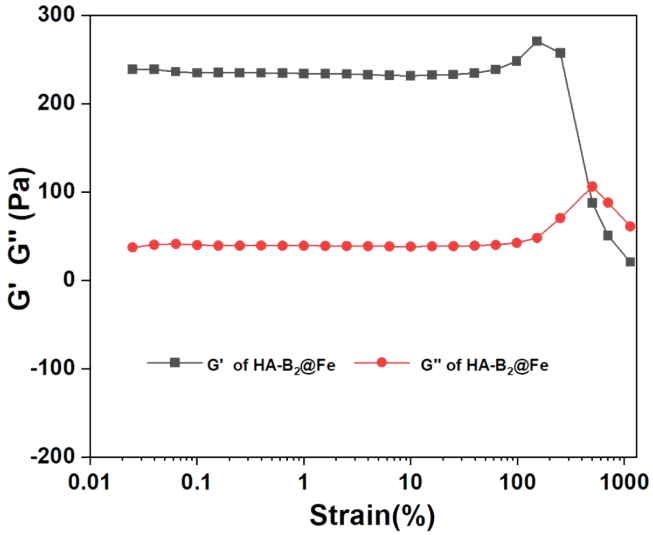
7. SEM image of HA-B_2@Fe



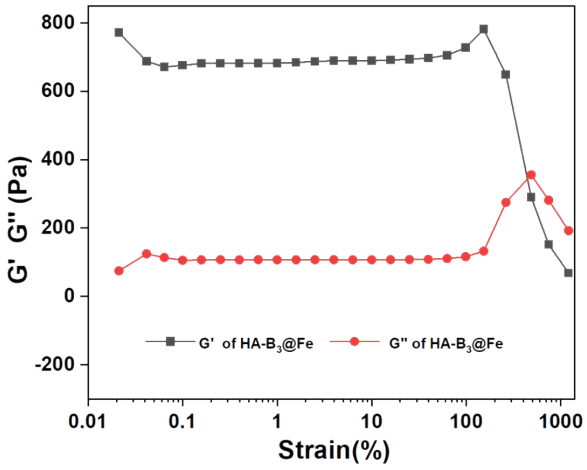
8. SEM image of HA-B_3@Fe



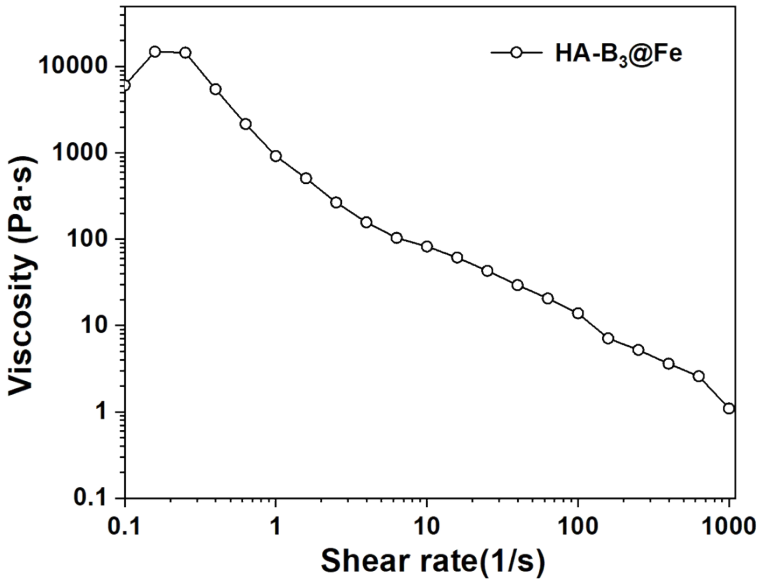
9. Storage modulus (G') and loss modulus (G') for HA-B_1@Fe



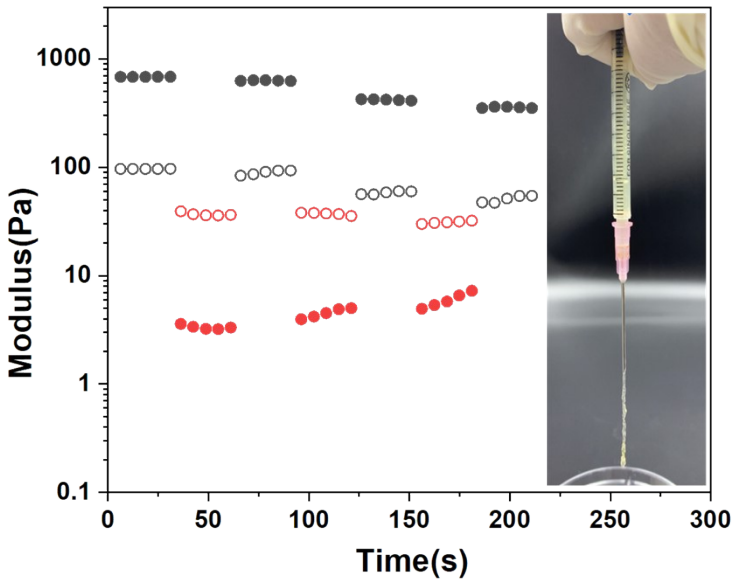
10. Storage modulus (G') and loss modulus (G') for HA-B_2@Fe



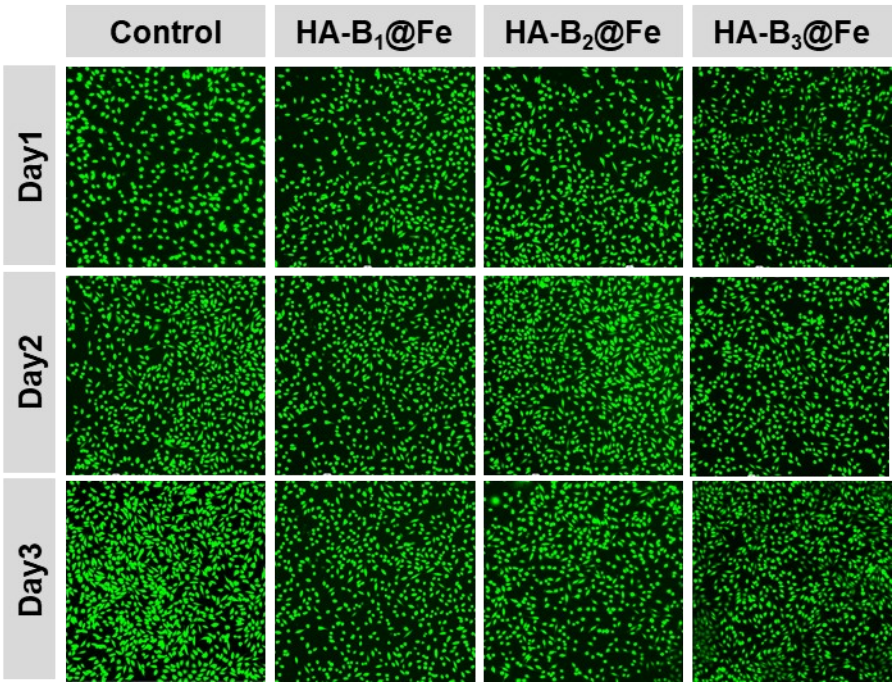
11. Storage modulus (G') and loss modulus (G') for HA-B_3@Fe



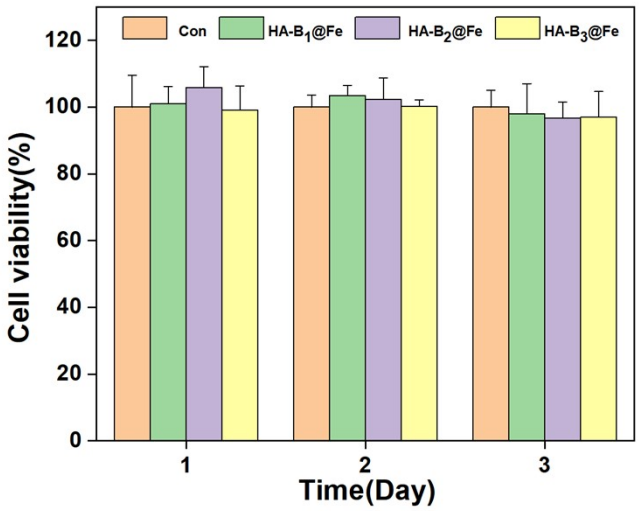
12. Shear rate-viscosity curve of HA-B_3@Fe hydrogel



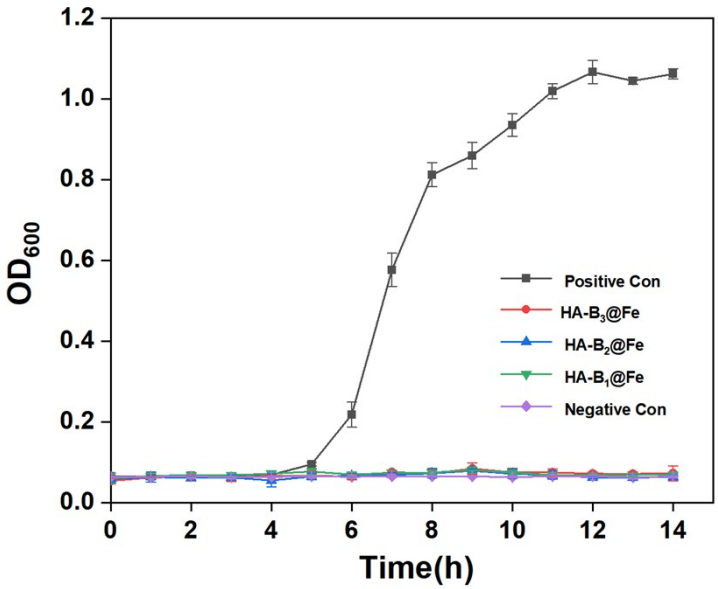
13. Self-healing behavior of HA-B_3@Fe hydrogel under strains of 1% and 3000%. Inset: photograph illustrating injectability through a syringe



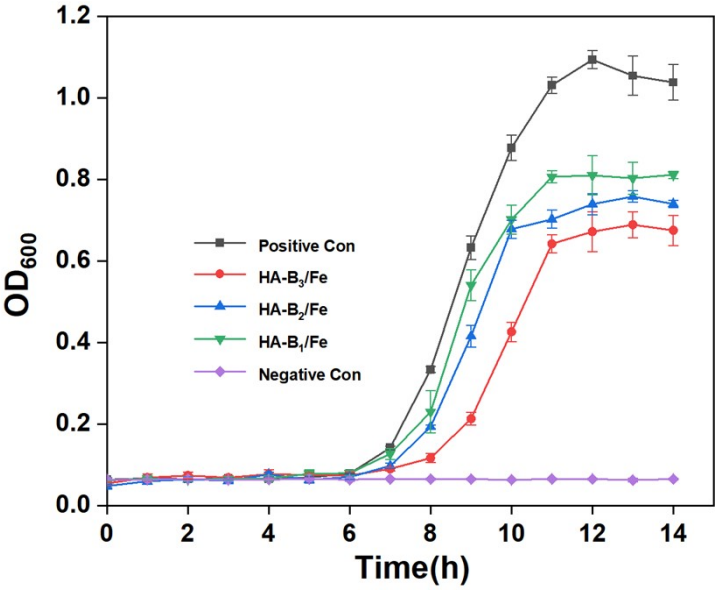
14. Live fluorescent images of L929 cells cultured in the hydrogel extract after 24, 48 and 72 h, stained with Calcein-AM to assess cell viability



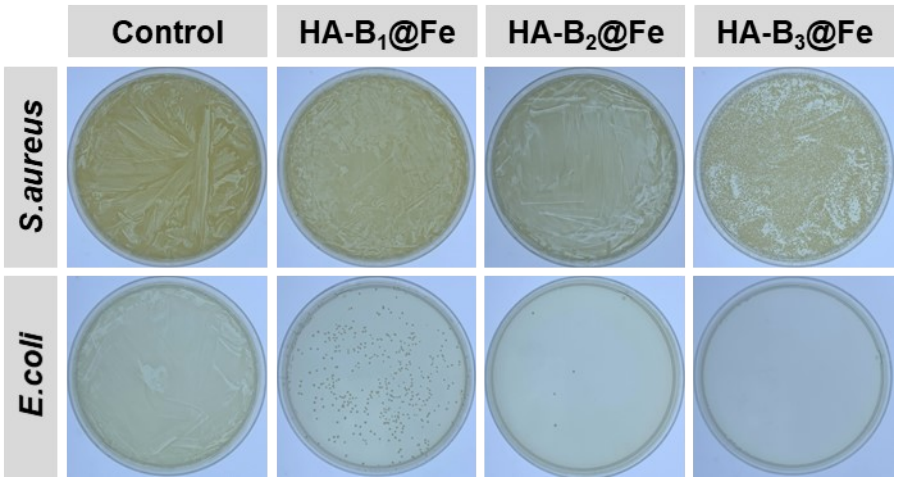
15. Quantitative analysis of L929 cell proliferation after treatment with hydrogels for 1, 2, and 3 days



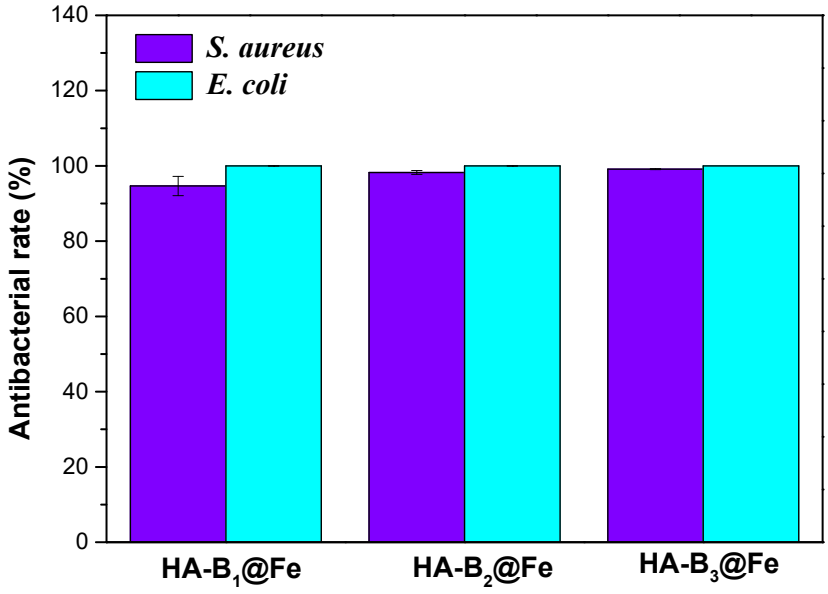
16. Bacterial growth curves in the presence of hydrogels against *E. coli*



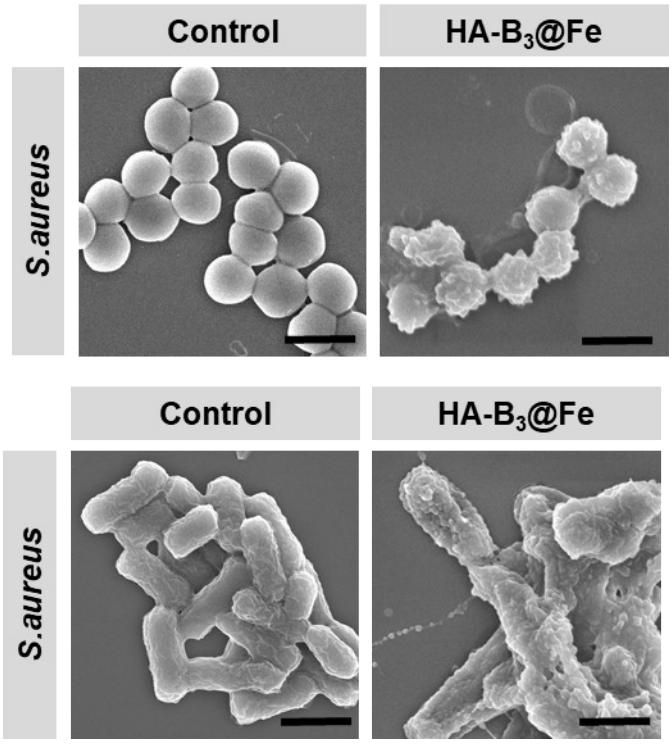
17. Bacterial growth curves in the presence of hydrogels against *S. aureus*



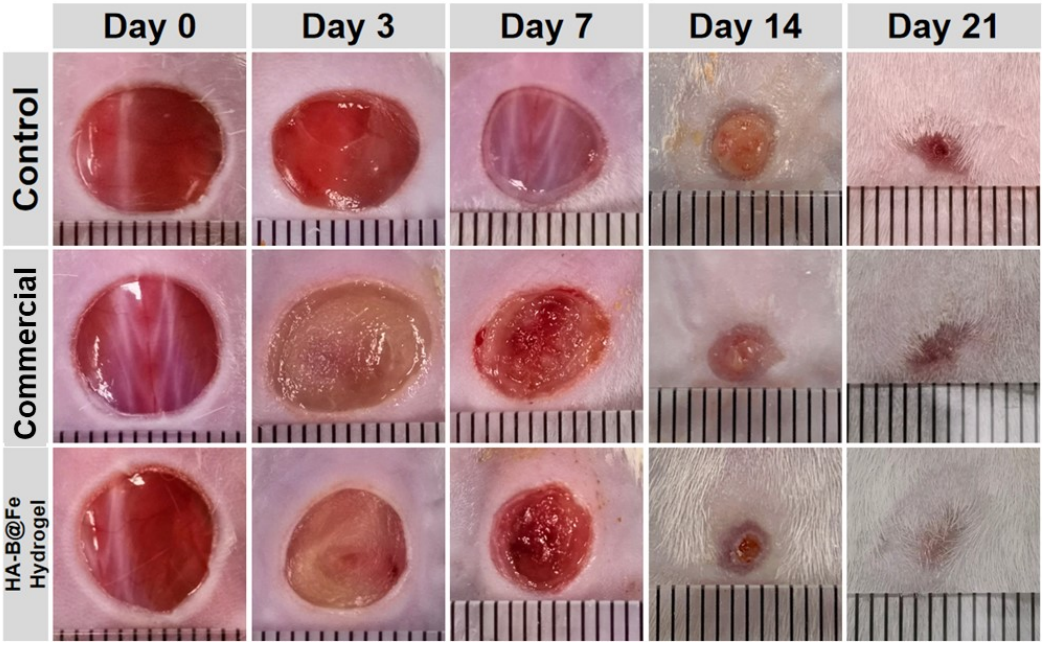
18. Representative images of surviving bacterial colonies on TSA plates after exposure to HA-B_1@Fe, HA-B_2@Fe and HA-B_3@Fe.



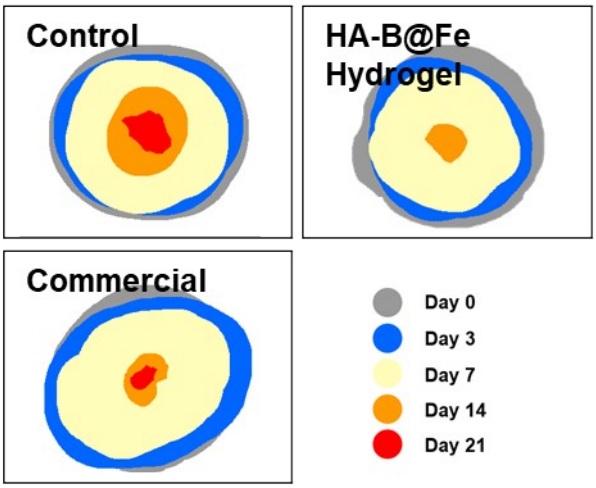
19. Inhibition rates of HA-B@Fe hydrogel against *E. coli* and *S. aureus*



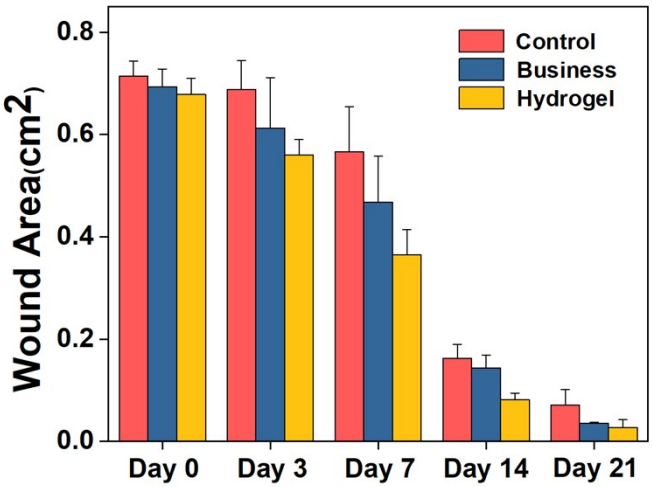
20. SEM images of *S. aureus* and *E. coli* treated with the HA-B_3@Fe hydrogel



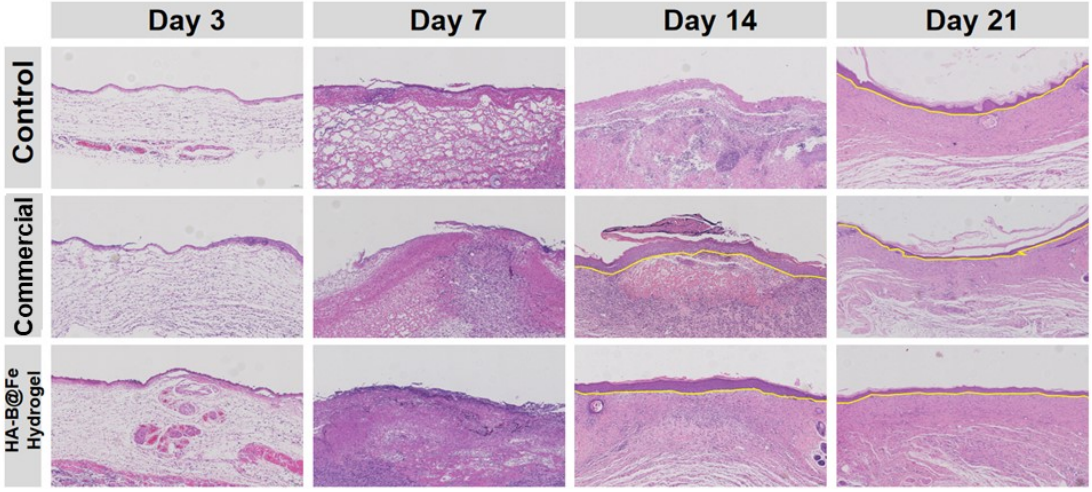
21. Representative photographs of wound sites on days 0, 3, 7, 14, and 21 post-treatment across different groups



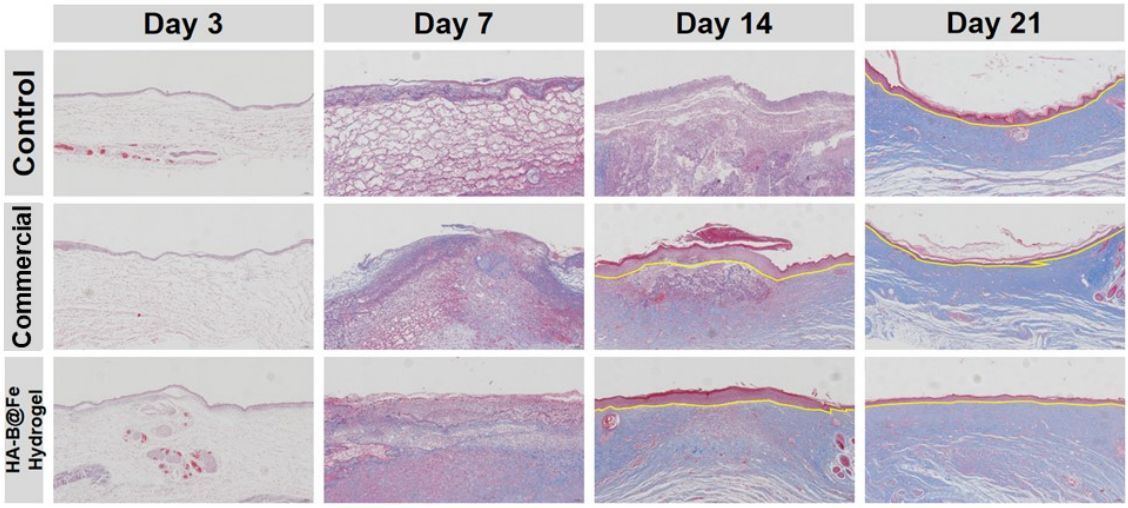
22. Overlapping outlines of the wound closure at each time point to visually compare healing progression among groups.



23. Quantitative analysis of wound area at different times (n = 3 per group), showing accelerated wound contraction in the HA-B_3@Fe group



24. H&E staining of wound tissues on days 3, 7, 14, and 21 post-treatment



25. Masson staining of corresponding wound tissues, showing collagen deposition and organization over time