

Microenvironment-Responsive Hydrogel with Photothermal, Antioxidant, and Neuroregenerative Functions for Diabetic Chronic Infectious Wound Healing

Zan Chen ^{a 1}, Ye Wu ^{a 1}, Heng Gong ^a, Yunfeng Tang ^a, Dong Wang ^a, Zhen Wang ^a, Ye Wang ^a, Guanglin Wang ^a, Wei Lin ^c, Renliang Zhao ^{a*}, Cheng Zheng ^{b*}, Xiangtian Deng^{a*}

^a Department of Orthopedics, Orthopedics Research Institute, West China Hospital, Sichuan University, China; Trauma medical center, Department of Orthopedics surgery, West China Hospital, Sichuan University, Chengdu 610041, China.

^b National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, Sichuan 610041, China.

^c Department of Gynecology, West China Second Hospital, Sichuan University, Chengdu, China.

*Corresponding authors.

¹These authors contributed equally to this work.

Email: zrlcd@163.com(Renliang Zhao);zhengcheng21@qq.com (Cheng Zheng);

wglfrank@wchscu.cn (Guanglin Wang)

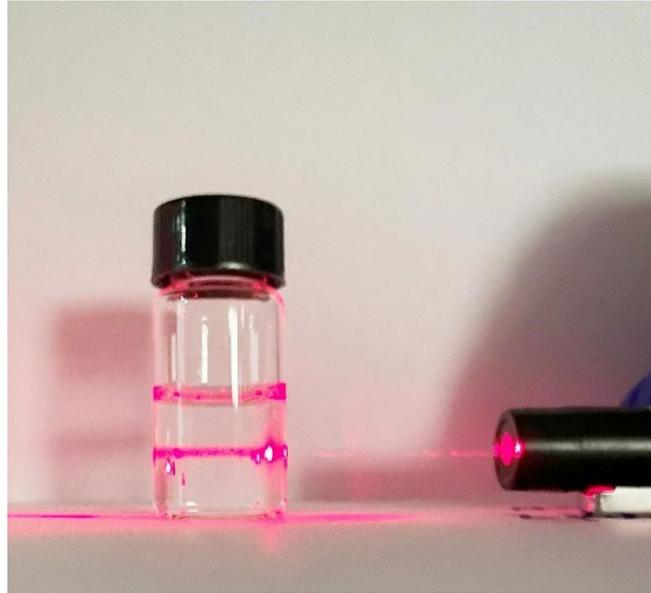


Figure S1. Tyndall effect observed in MIC@MF dispersion.



Figure S2. Injectable properties of the hydrogel.

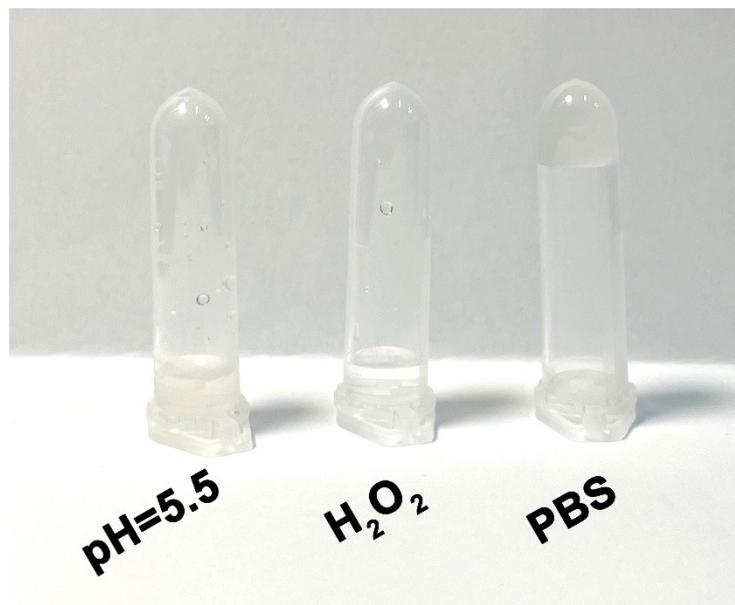


Figure S3. Stability of the hydrogel under different environmental conditions.



Figure S4. Self-healing properties of the hydrogel.

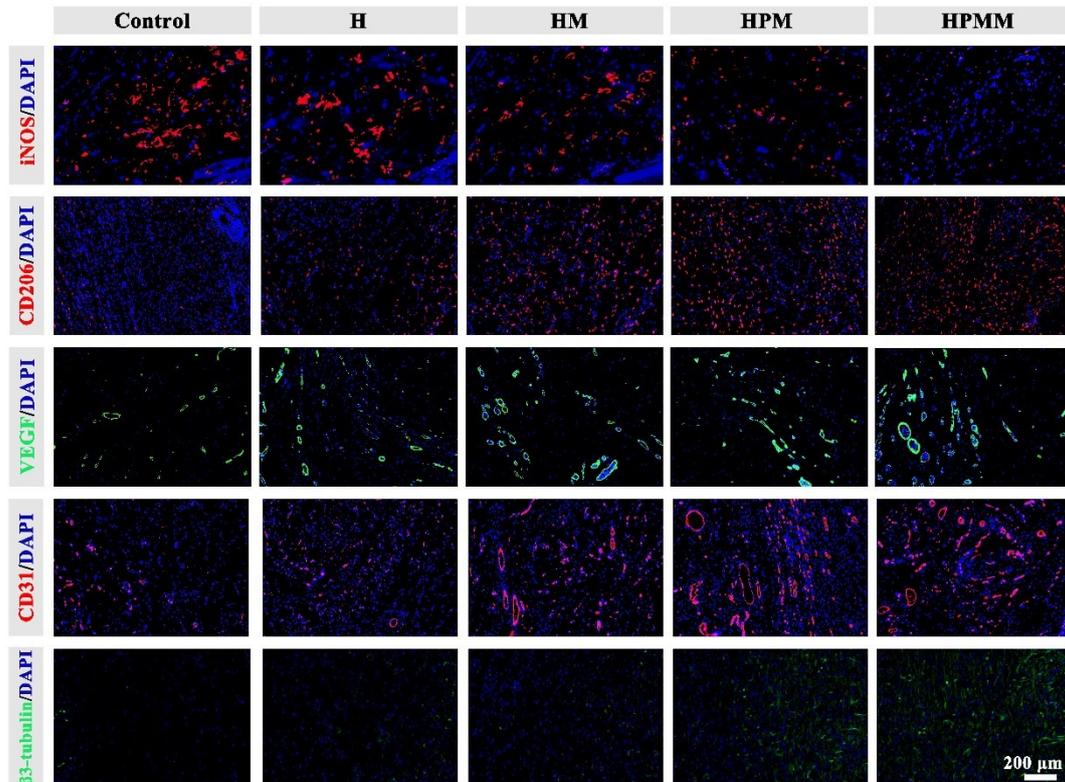


Figure S5. Effects of different treatment groups on angiogenesis, nerve regeneration, and inflammation modulation in wound tissues on day 7. (a) Immunofluorescence staining of wound tissues showing the regulatory effects of different treatments on angiogenesis, nerve regeneration, and macrophage polarization. Red: iNOS, CD206, CD31; green: VEGF, β 3-tubulin; blue: DAPI for nuclear staining. (Scale bar: 200 μ m).