Supporting Information

Microfluidic 3D printing Polyhydroxyalkanoates-based bionic skin for wound healing

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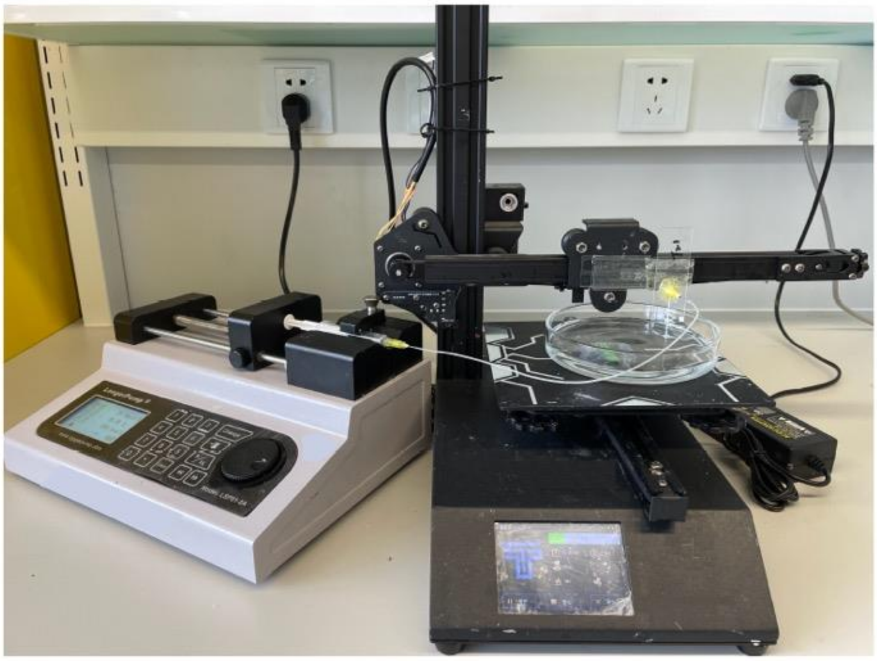


Fig. S1. Digital image of the microfluidic and 3D-printing device.

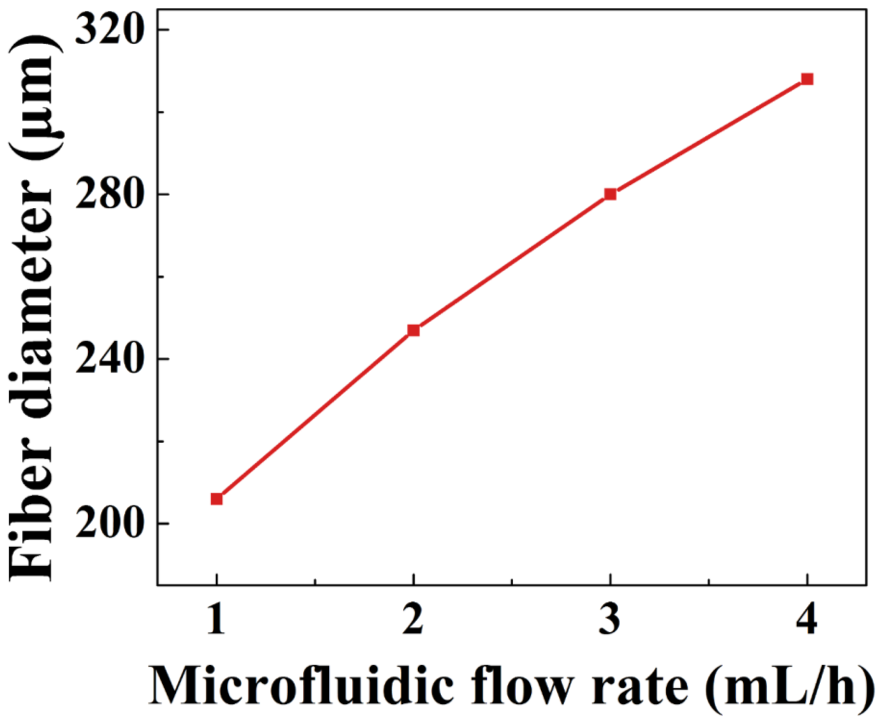


Fig. S2. Relationship between the P34HB/PCL microfiber diameter and the microfluidic flow rate.

Fig. S3. Digital images of different shapes of the P34HB/PCL scaffolds were prepared by changing the array design. The scale bar is 10 mm.

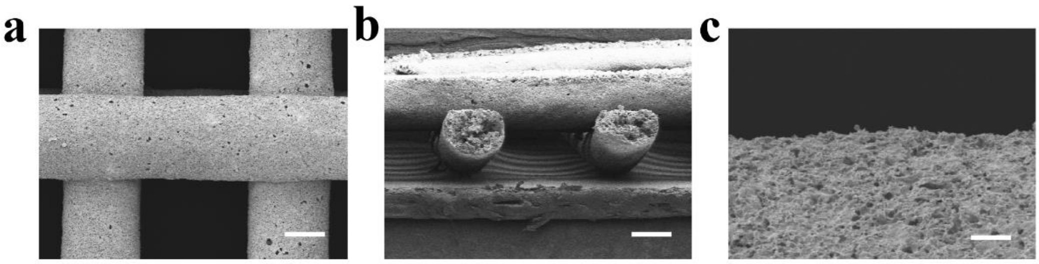


Fig. S4. SEM image of the P34HB/PCL scaffold. The scale bars are a) 150 μm, b) 250 μm, and c) 15 μm, respectively.

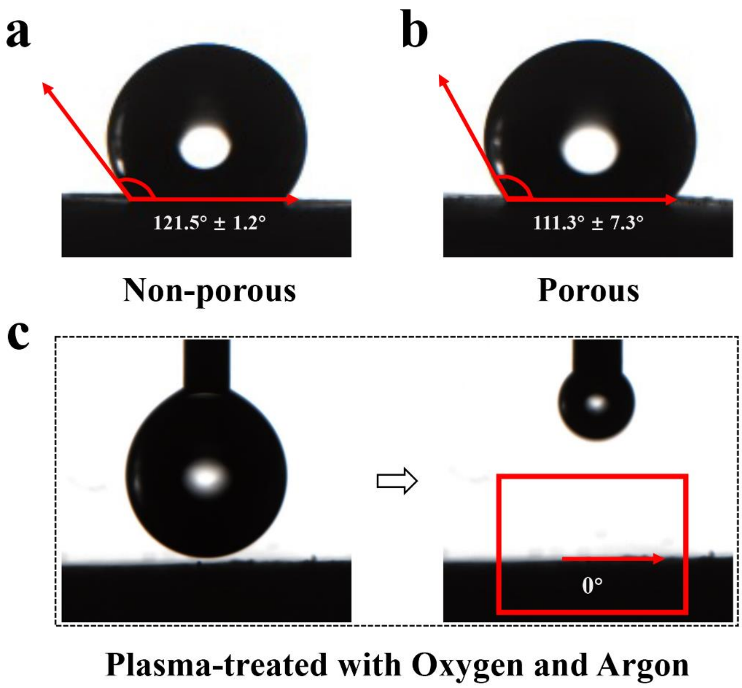


Fig. S5. The hydrophilicity of P34HB/PCL non-porous scaffolds (a), porous scaffolds (b) and plasma-treated scaffolds (c) evaluated by a water contact angle measuring instrument.

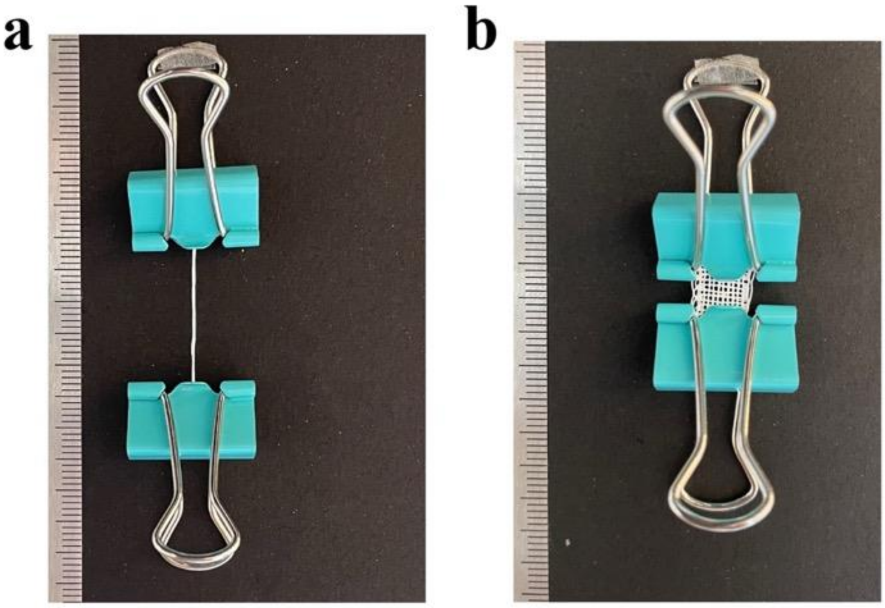


Fig. S6. Digital photographs showing the stretchability of the P34HB/PCL microfluidic fiber (a) and scaffold (b).

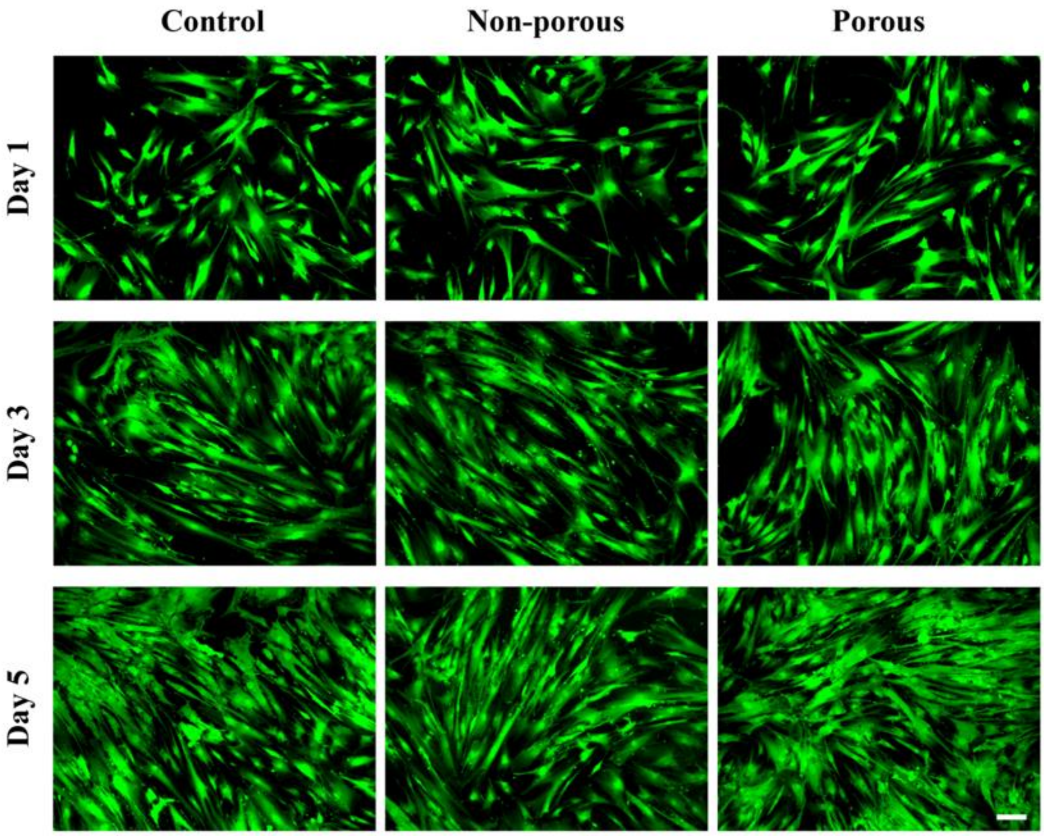


Fig. S7. Live/dead cell staining images of the P34HB/PCL scaffolds co-cultured with BMSCs for 5 days. The scale bar is 100 μm.

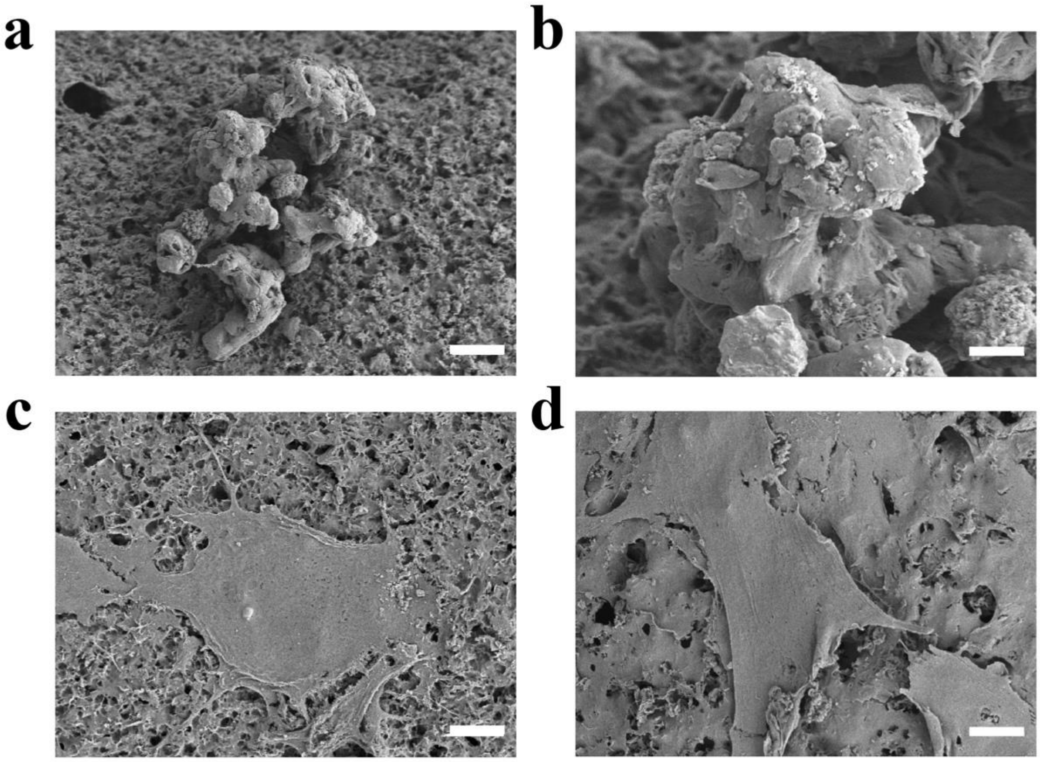


Fig. S8. SEM images of HUVECs (a, b) and BMSCs (c, d) on the surface of P34HB/PCL scaffolds. The scale bars are a) 50 µm, b) 10 µm, c) 50 µm, and d) 10µm, respectively.

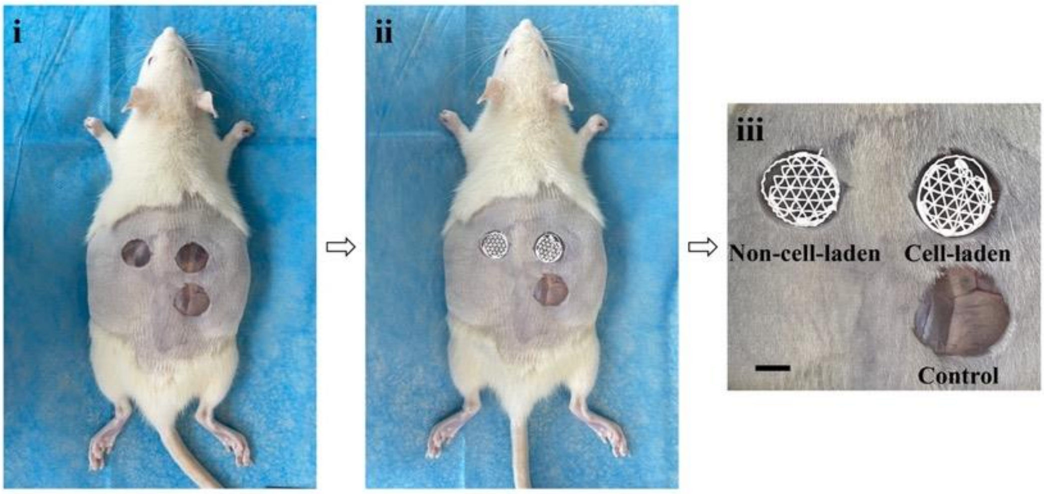
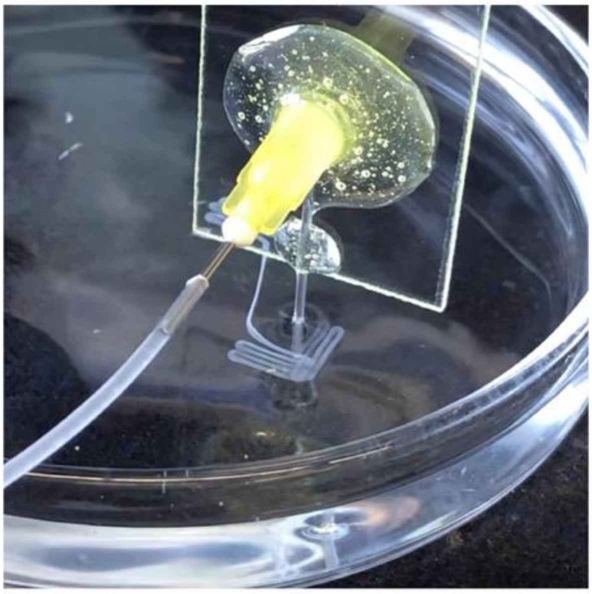
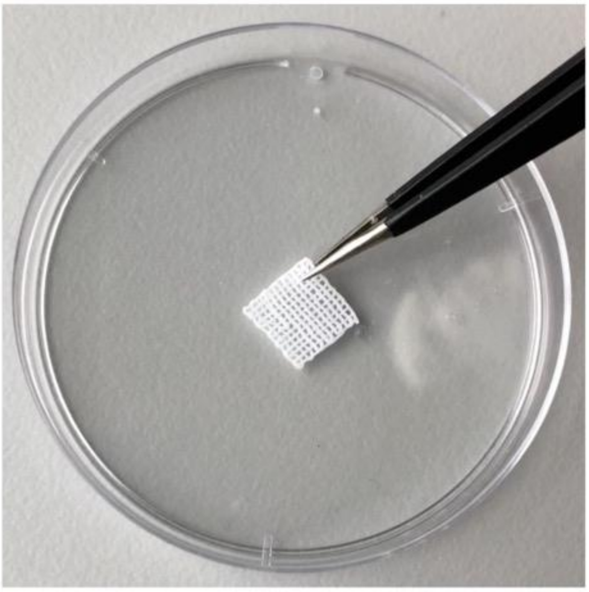


Fig. S9. Surgical procedures of the cell-laden P34HB/PCL scaffold serving as biomimetic skin on the rat skin wound model.



Mov. S1. The 3D printing dynamic process of the P34HB/PCL scaffold.



Mov. S2. The flexibility of the P34HB/PCL scaffold, which can be easily stretched, twisted, and rapidly returned to its original shape after removal of the external force.