Supporting information

A nanofiber hydrogel derived entirely from ocean biomass for wound healing

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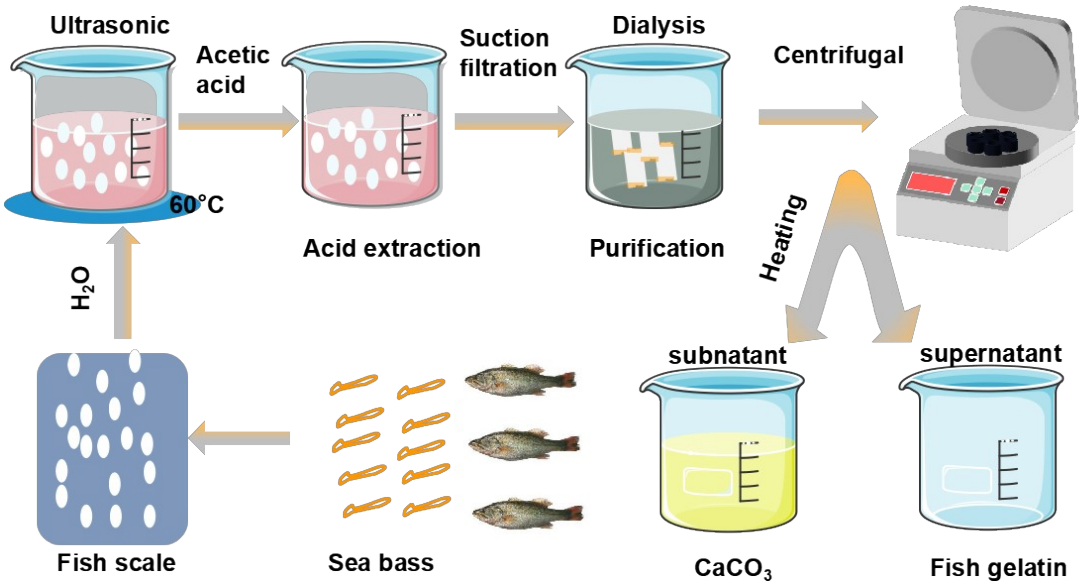

Fig.S1 Extraction and purification of collagen and $CaCO_3$ from fish scales of sea bass.

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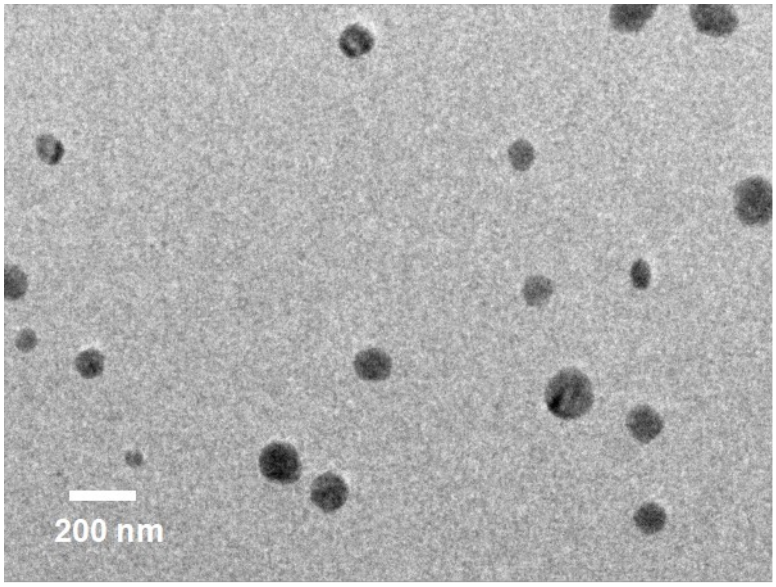

Fig.S2 SEM image of the synthesis of CuS at nanometer level.

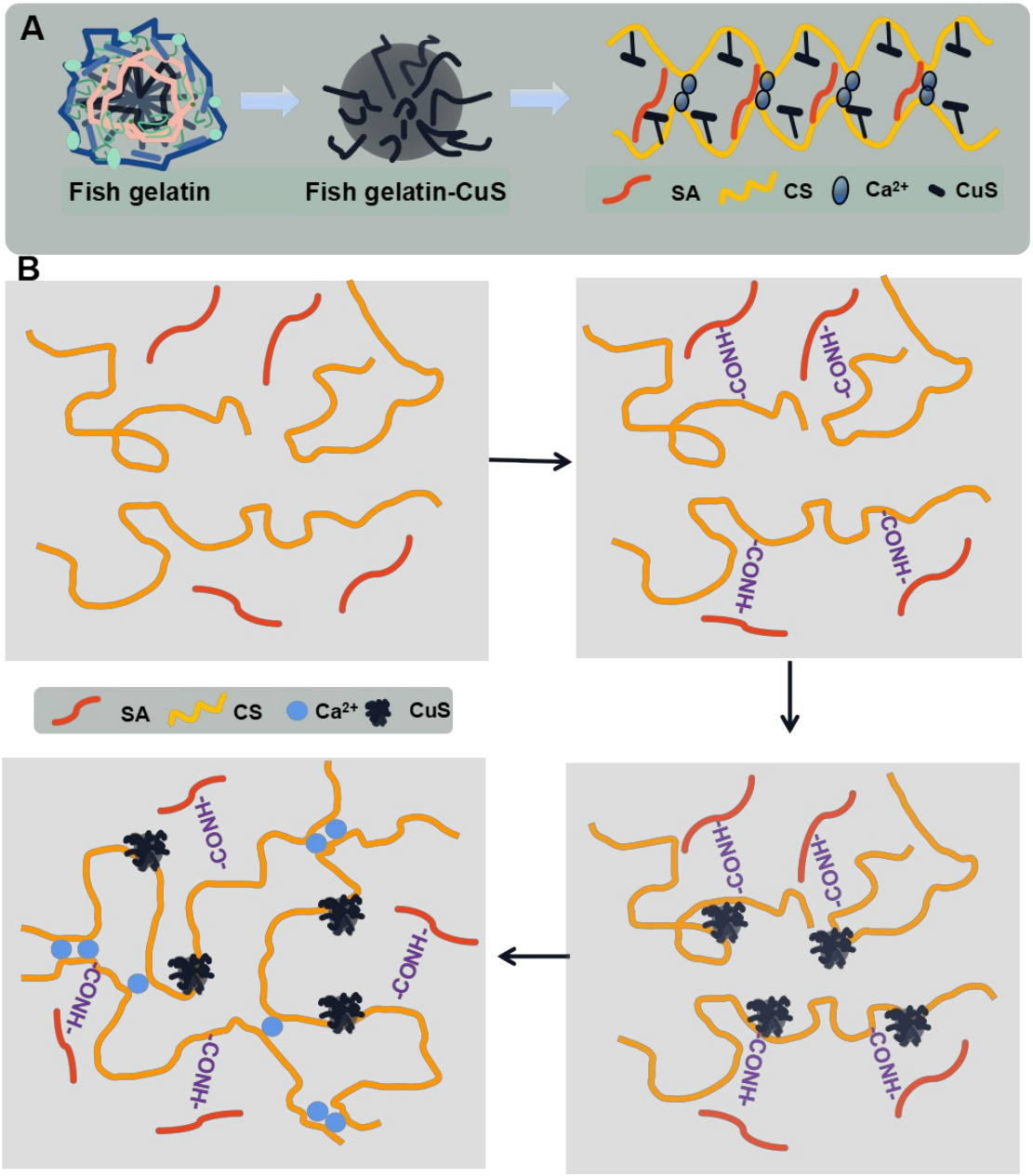

Fig.S3 A) The extracted CuS was used to promote the fiber hydrogel crosslinking schematic.B) Cross-linking mechanism of FS-P hydrogel.

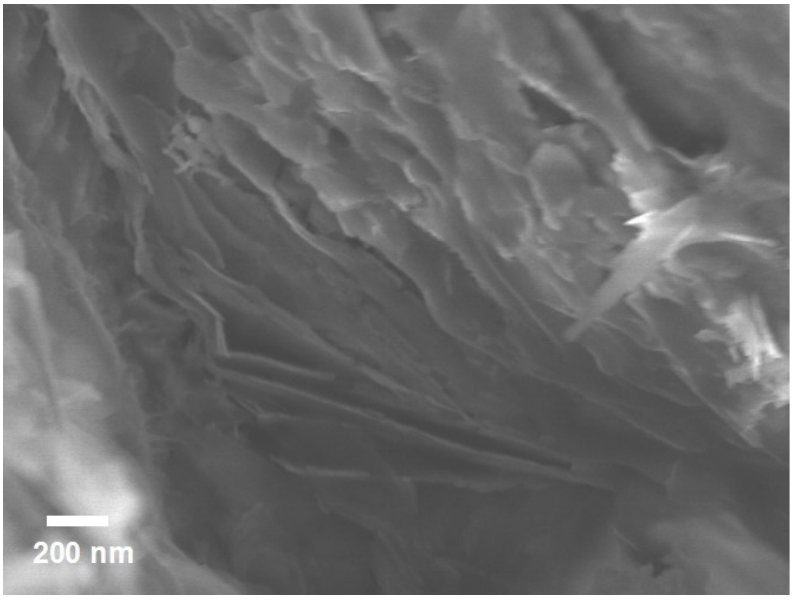

Fig.S4 The FS-P prepared without the process of spinning fibers.

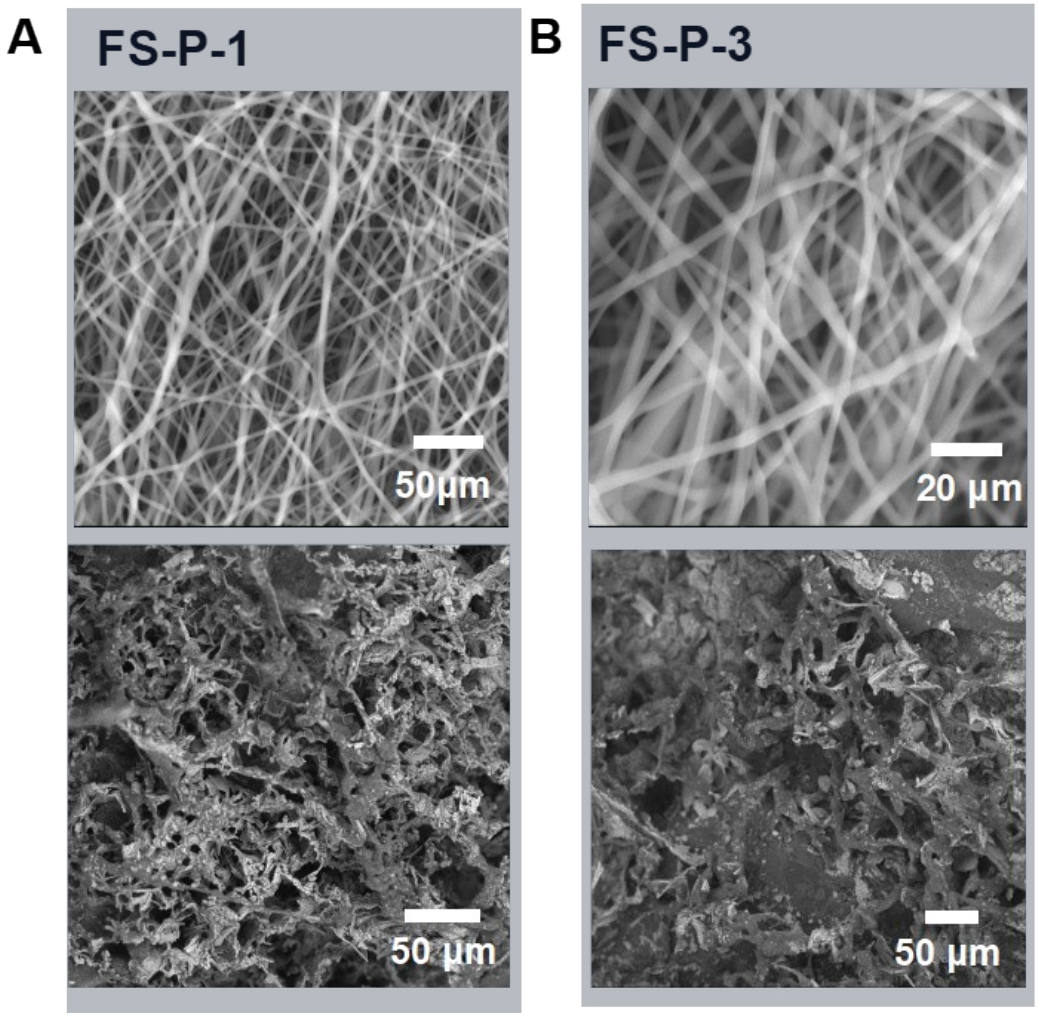

Fig.S5 SEM images of FS-P-1 A) and FS-P-3 B) in nanofiber form and hydrogel form.

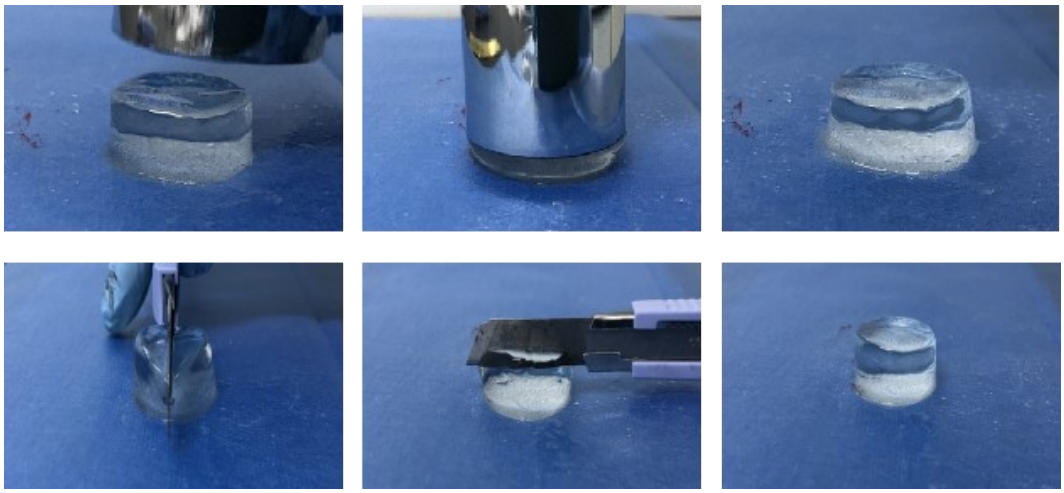

Fig.S6 Photo of FS-P hydrogel after heavy compression and knife cutting.

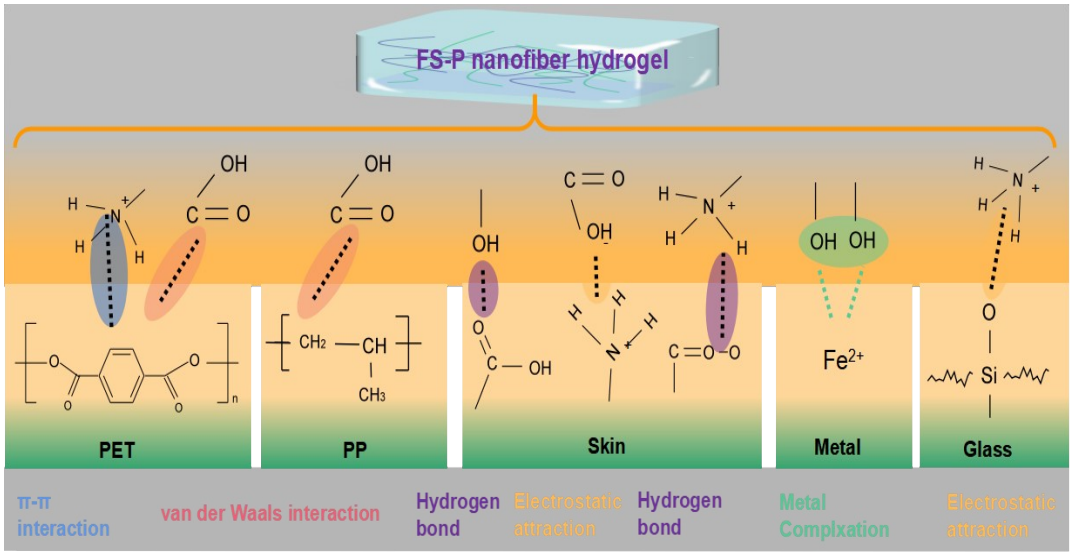

Fig.S7 Mechanism diagram of FS-P hydrogel adhesion to various materials.

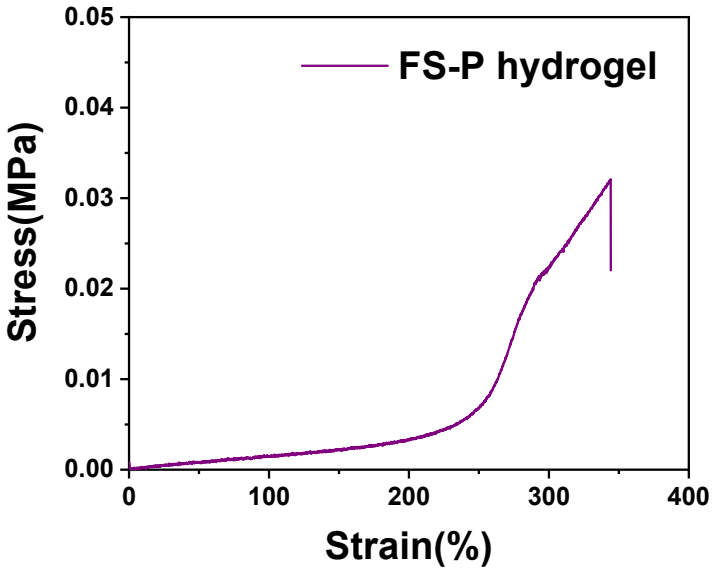

Fig.S8 Shear-tension curve of FS-P hydrogel with pig skin.

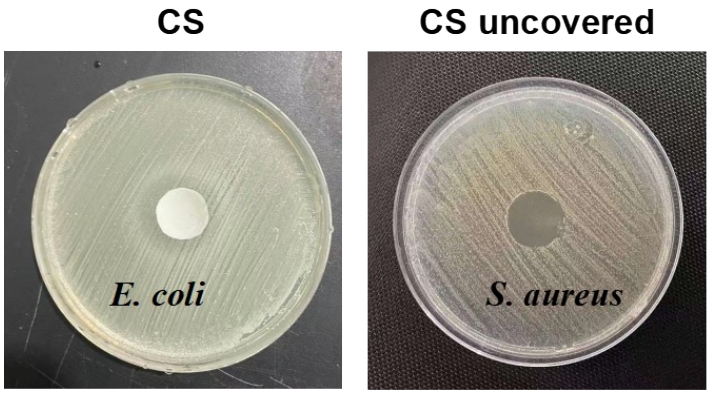

Fig.S9 After treatment with a pure CS film for 24 hours, the film was uncovered, the bacteria situation of on the agar plate were observed.

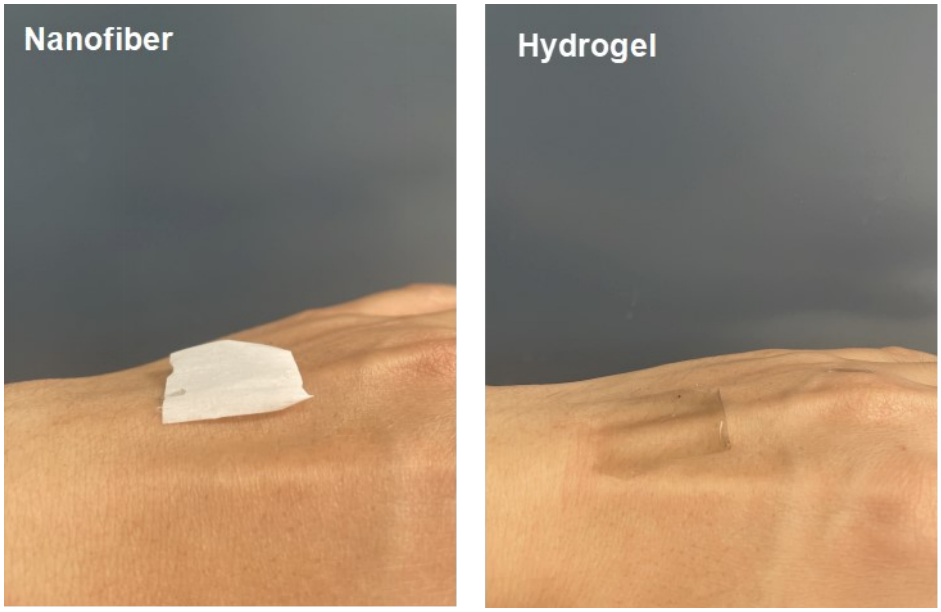

Fig.S10 Photo of the bonding effect of nano-fiber and hydrogel.

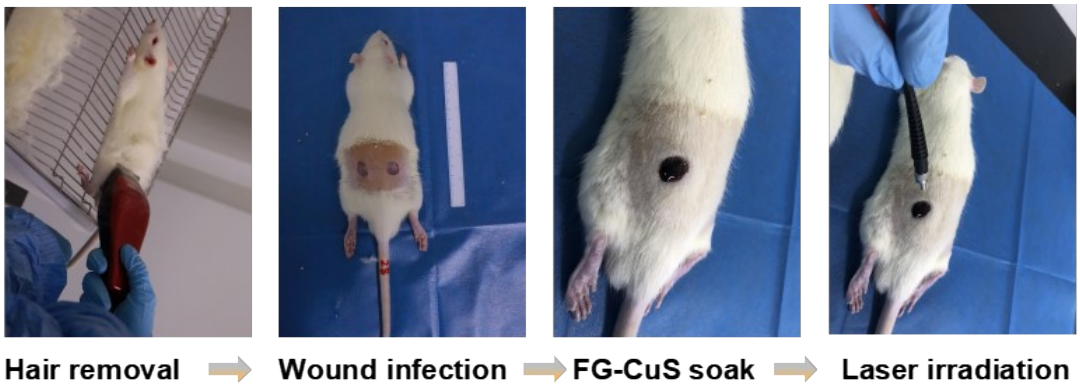

Fig.S11 Animal experiment processing steps.

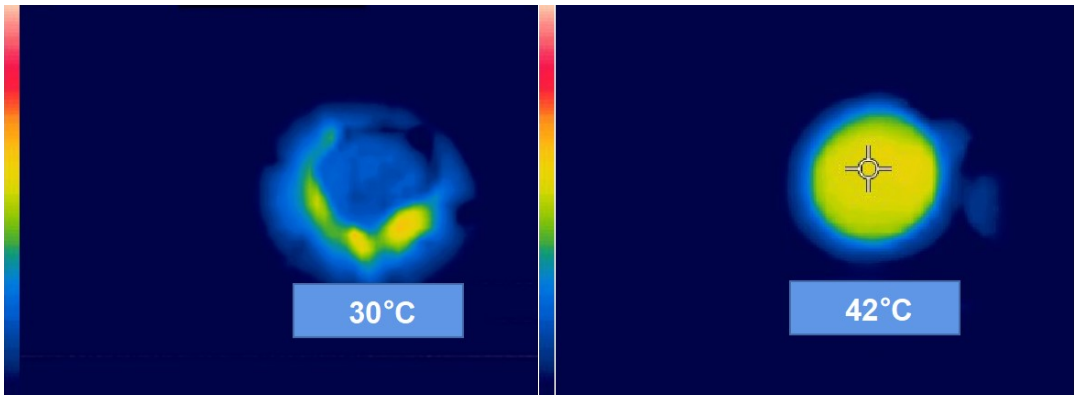

Fig.S12 The thermal imager recorded the temperature change of a laser irradiation.

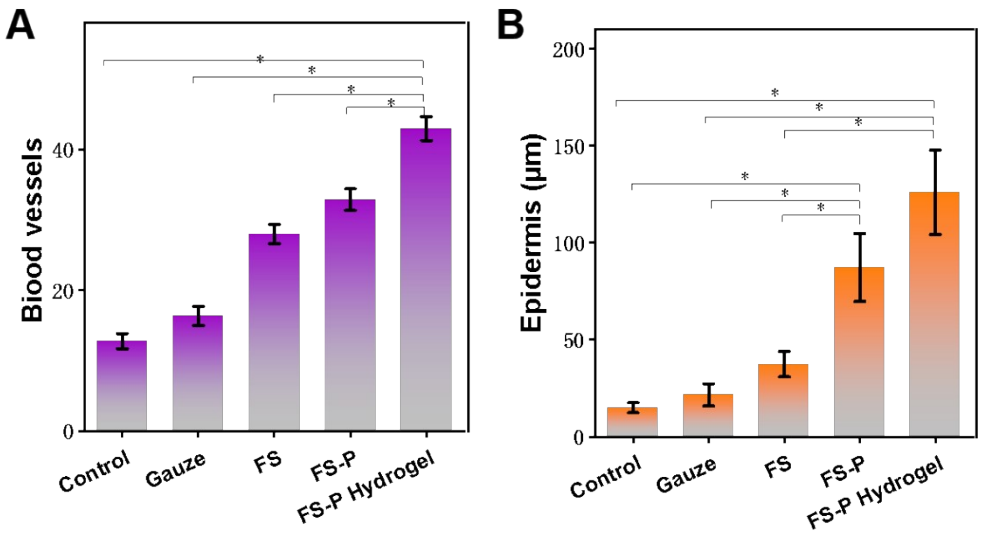

Fig.S13 Tissue blood vessels A) and Epidermal B) statistics were treated in different ways on day 7 (n=3,* P <0.05,* * P <0.01).

Table S1 Abbreviation, composition and Proportion of SA:CS in FS-P hydrogel.

Abbreviation	**Chemical composition**	**Proportion SA:CS**
FS-P-1	Sodium alginate/Chitosan/Fish gelatin/CuS	10:1
FS-P-2	Sodium alginate/Chitosan/Fish gelatin/CuS	10:2
FS-P-3	Sodium alginate/Chitosan/Fish gelatin/CuS	10:3