iScience, Volume *26*

Supplemental information

Multifunctional sponge scaffold loaded with concentrated growth factors for promoting wound healing

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Supporting information:

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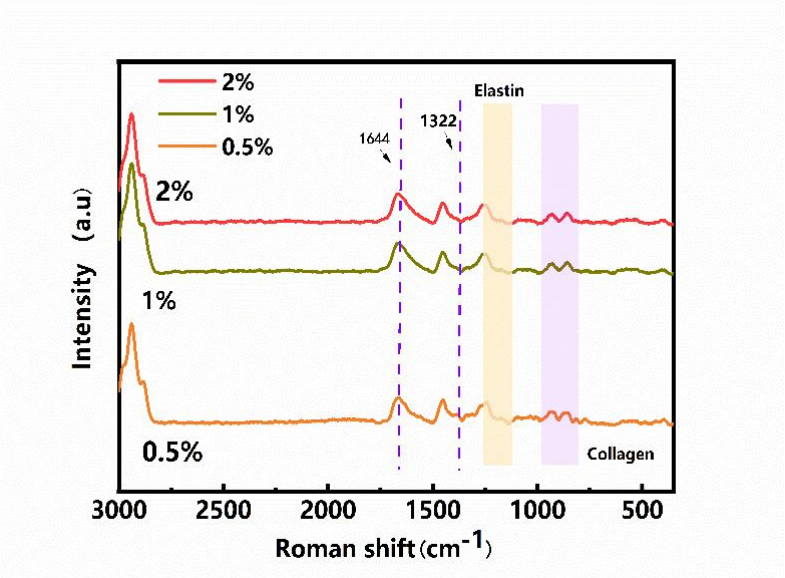

Figure S1. Raman spectrochemical structure analysis of PADM gel prepared under different concentrations of acetic acid, Related to Figure 2.

the material’ s Raman spectrum, where the peak intensities of proline (near 856 cm^{-1}) and shows the peak intensities of proline (near 856 cm-1) and elastin (near 1126 cm-1)m^{-1}, respectively.

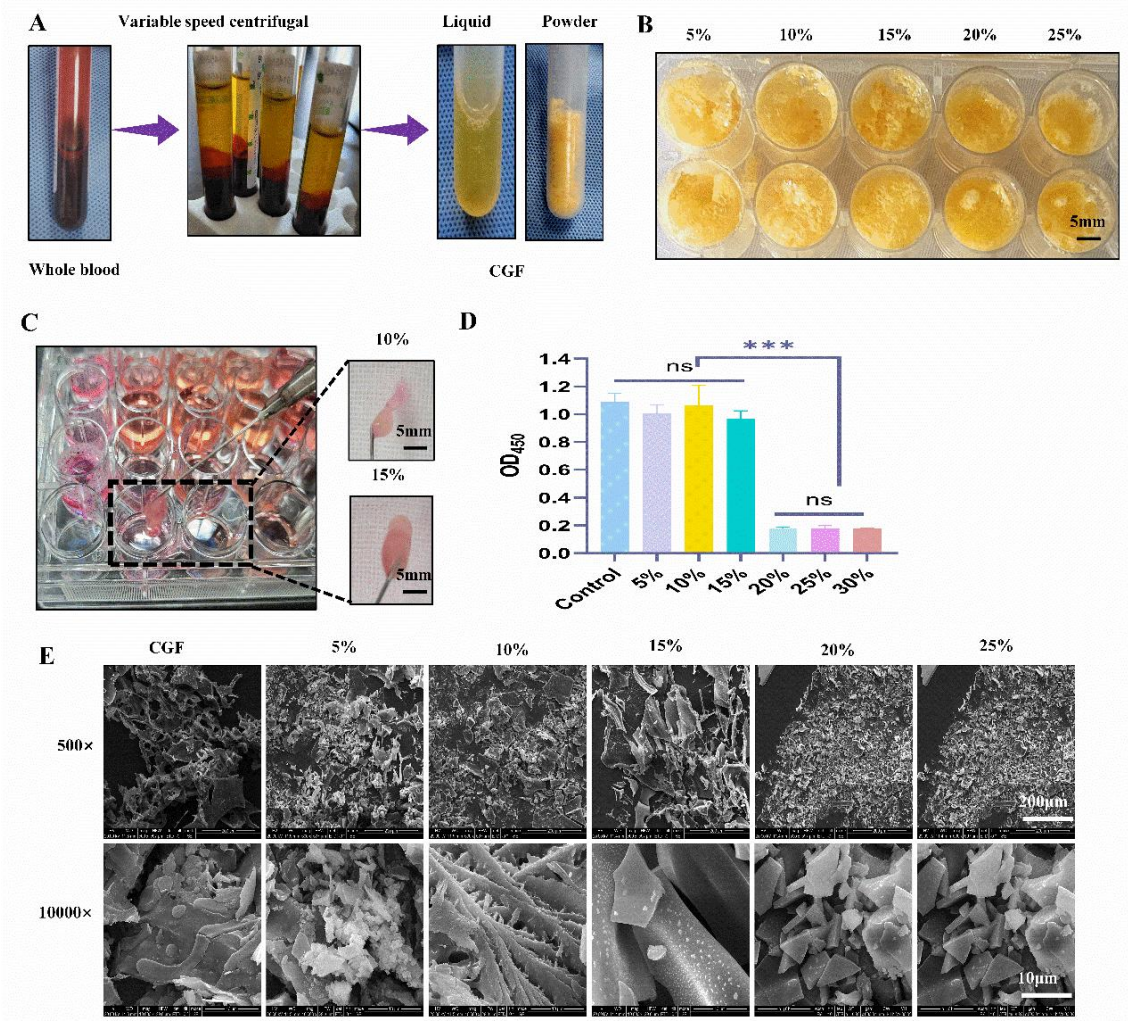

Figure S2. Preparation and characterization of potent growth factor (CGF), Related to STAR Methods.

(A) Variable speed centrifugation to extract liquid concentration of growth factors from venous blood. the CGF fibrin solution prepared by variable speed centrifuge is also a light yellow liquid, which does not change significantly when standing at room temperature; (B) Physical images after freeze-drying with different concentrations of CGF. CGF with varying concentrations exhibited a loose, porous and spongy structure with a brittle texture; (C) Morphology of CGF with different concentrations at 37℃.When CGF with varying concentrations was incubated at 37 °C for 24 h, the 10% and 15% CGF formed gel; (D) Determination of cytotoxicity of CGF at different concentrations by CCK-8.CGF concentrations below 15% had no significant effect on cell proliferation, while CGF concentrations above 15% inhibited cell activity; (E) Microstructure images of CGF scanning at different concentrations.CGF with varying concentrations had a particular three-dimensional fiber network structure and fragile texture.

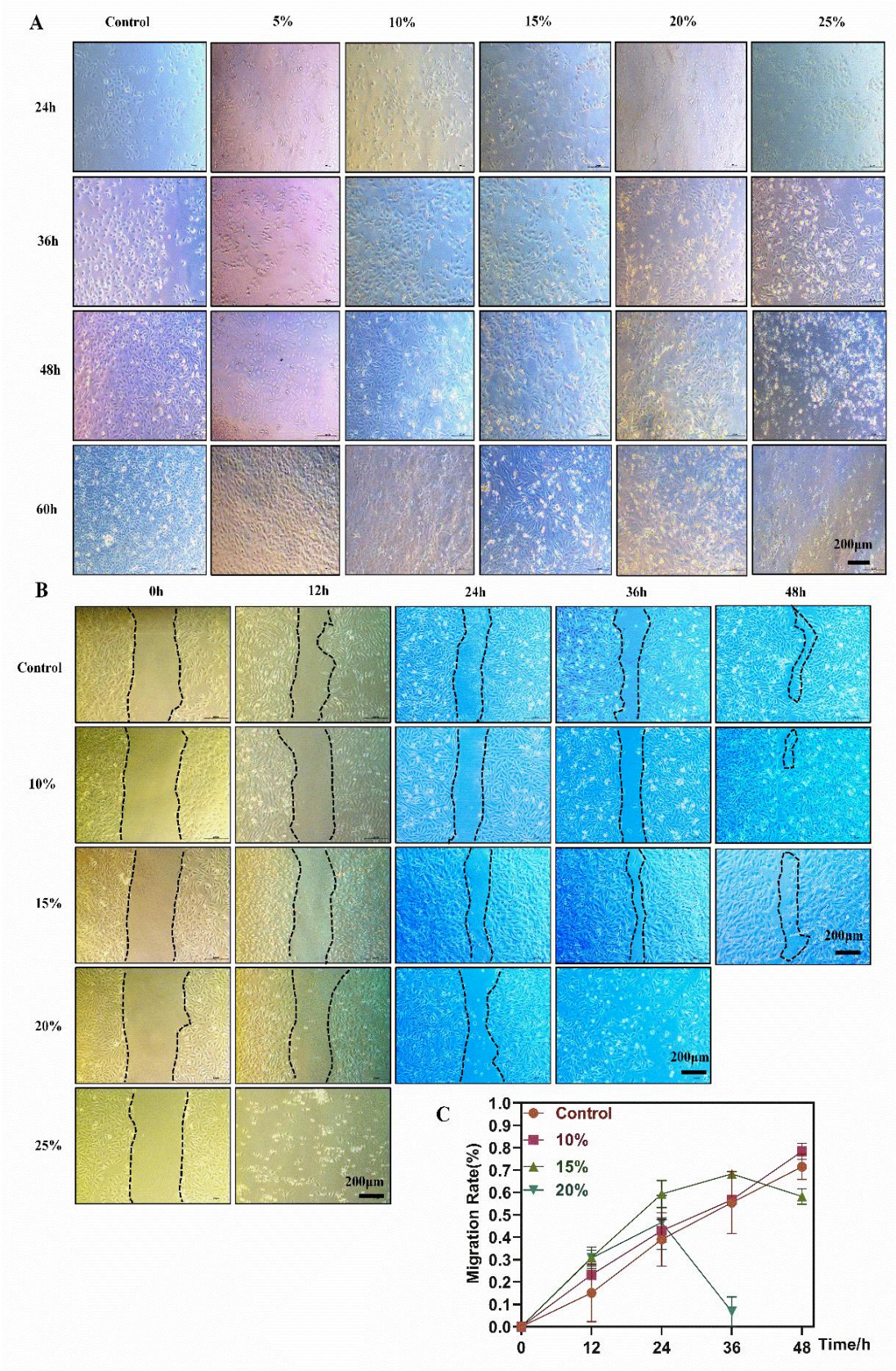

Figure S3. Evaluation of CGF at the cellular level in vitro, Related to STAR Methods.

(A) Morphology of L929 cells cultured with different concentrations of CGF. the CGF

solution with a concentration below 20% could function as a 10% complete medium to maintain cell growth. However, CGF at concentrations above 20% could not support cell growth from 48 h; (B) Cell migration assay to evaluate the effect of different concentrations of CGF on L929 cell migration. The cell migration experiment further optimized the concentration of CGF and found that 15% CGF achieved the best performance in promoting cell migration at 36 h. The 10% CGF continued to encourage cell migration for 48 h until the cells were in contact; (C) Statistical quantification of cell mobility. 10% CGF achieved the best mobility at 48h, followed by the control and then the 15% CGF (*P<0.05, **P<0.01).

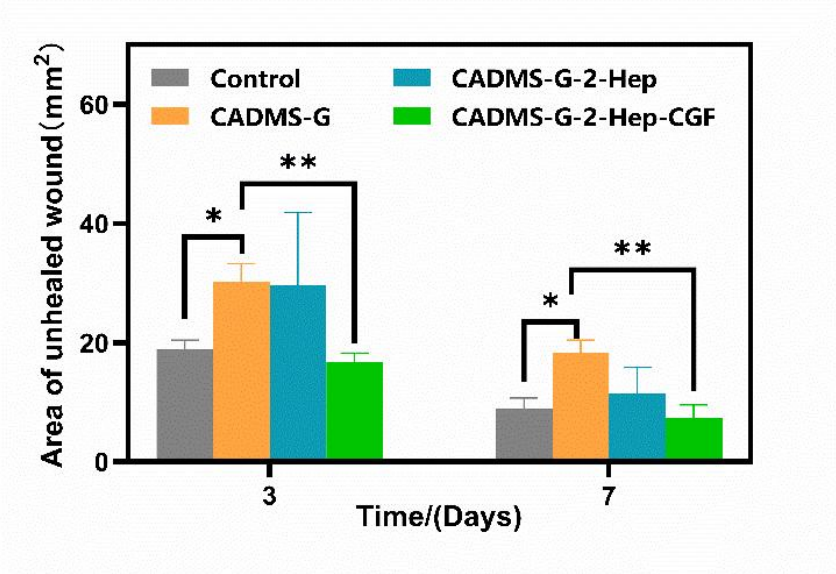

Figure S4. Statistical quantitative analysis of unhealed skin grafts, Related to Figure 9.

On the 7th day, the residual unhealed skin graft areas of control, CADMS-G, CADMs-G-2-Hep, and CADMS-G-2-Hep-CGF were 9.64 ± 2.8 mm^2, 18.28 ± 2.16 mm^2, 11.57 ± 4.29 mm^2, and 6.05 ± 3.14 mm^2, respectively. (*P<0.05, **P<0.01).