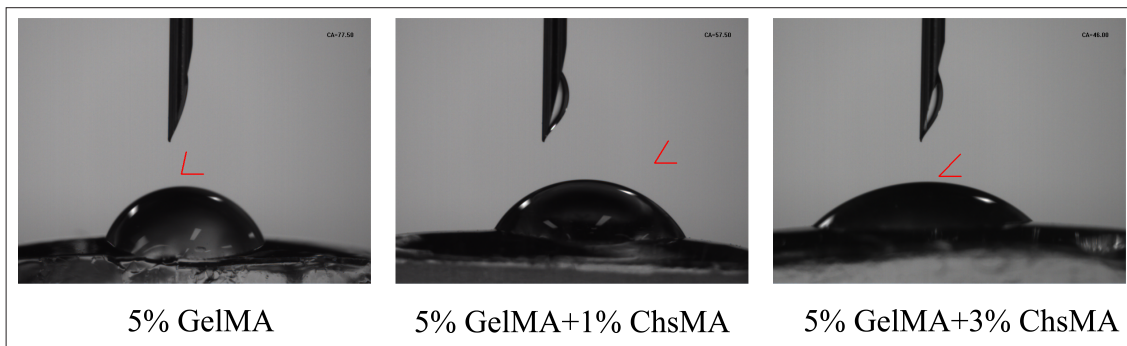


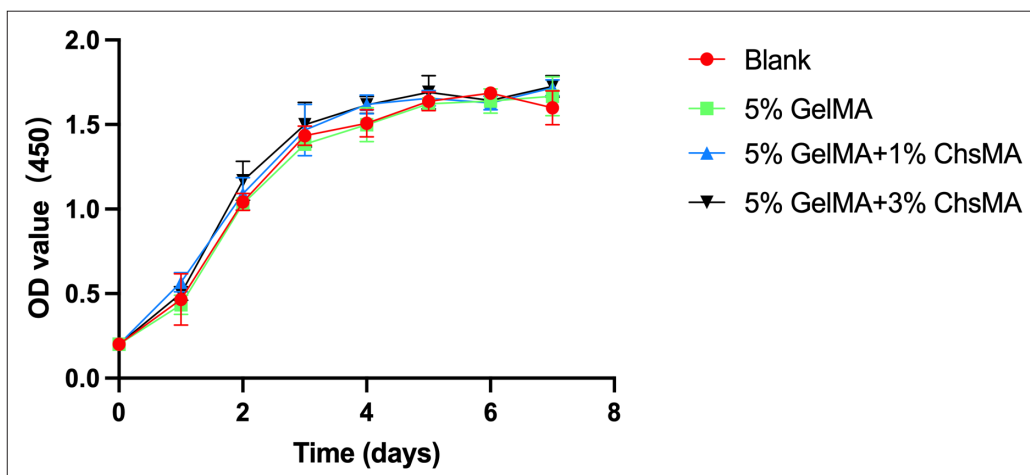
RESEARCH ARTICLE

3D-bioprinting active gingival hydrogel for periodontal soft tissue regeneration via TGF- $\beta$ /Smad and Wnt/ $\beta$ -catenin-mediated extracellular matrix remodeling

Supplementary file



**Figure S1.** Contact angle measurement of 5% GelMA, 5% GelMA + 1% ChsMA, and 5% GelMA + 3% ChsMA hydrogel. Abbreviations: ChsMA: Chondroitin sulfate methacrylate; GelMA: Gelatin methacrylate.



**Figure S2.** CCK-8 analysis the proliferation of GFs from 1 to 7 days after incubation with 5% GelMA, 5% GelMA + 1% ChsMA, and 5% GelMA + 3% ChsMA. Abbreviations: ChsMA: Chondroitin sulfate methacrylate; GelMA: Gelatin methacrylate; OD: Optical density.