Electronic Supplementary Material (ESI) for Biomaterials Science.

Supporting Information

Tissue-specific Gelatin Bioink as a Rheology Modifier for High Printability and Adjustable Tissue Properties

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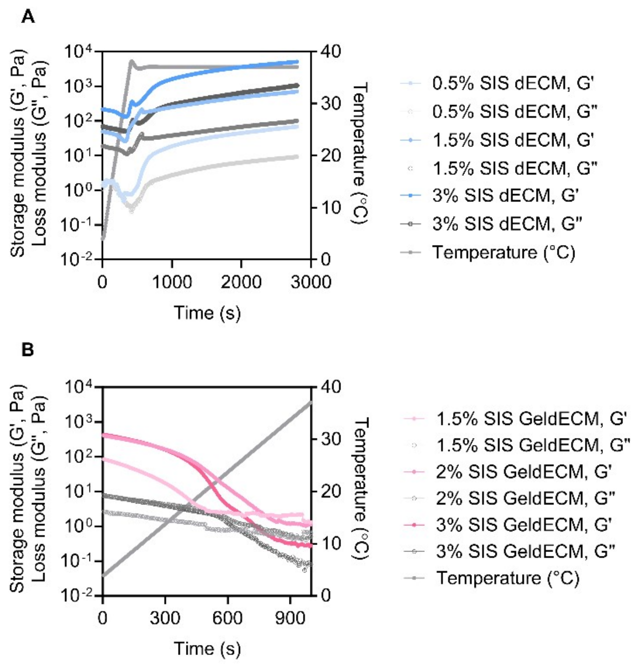

Figure S1. Storage modulus (G') and Loss modulus (G'') during temperature ramp for (a) 0.5%, 1.5%, and 3% SIS dECM, and (b) 1.5%, 2%, and 3% SIS GeldECM.

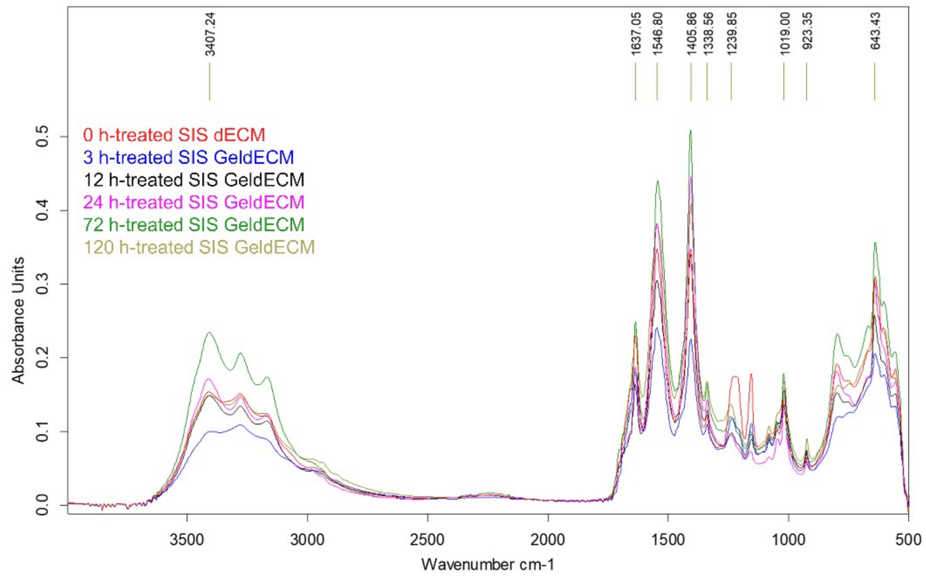

Figure S2. FTIR spectra of the SIS dECM and GeldECMs.

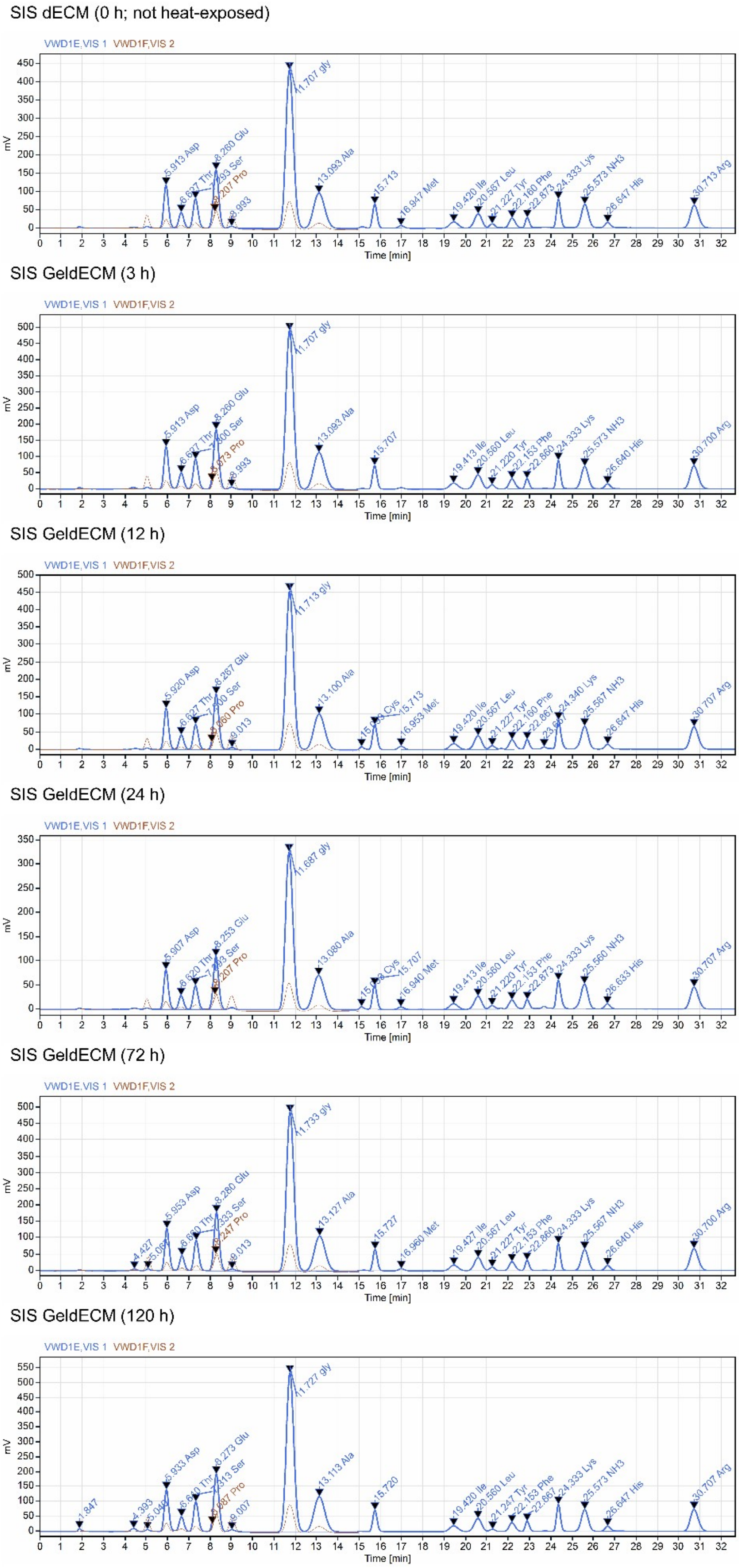

Figure S3. Amino acid composition profiles of (a) SIS dECM, (b) SIS 3 hr GeldECM, (c) SIS 12 hr GeldECM, (d) SIS 24 hr GeldECM, (e) SIS 72 hr GeldECM, (f) SIS 120 hr GeldECM.

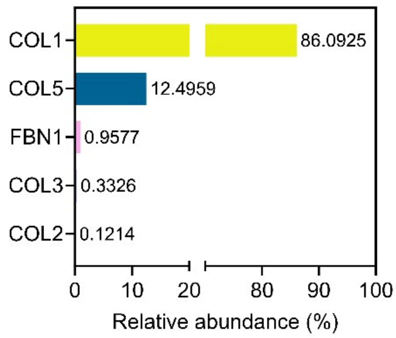

Figure S4. Relative abundance of top 5 proteins in SIS GeldECM.

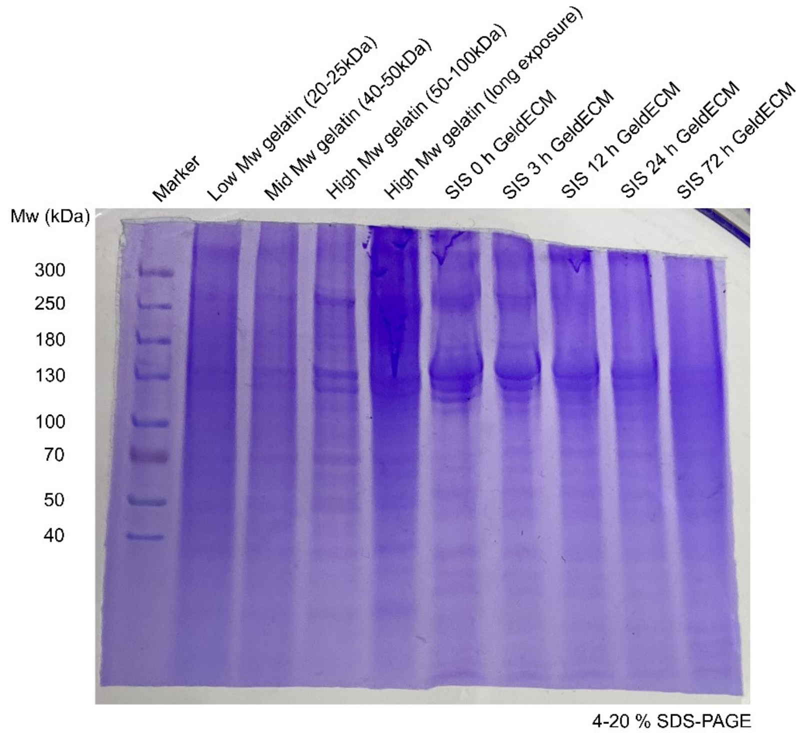

Figure S5. SDS-PAGE analysis of SIS dECM, GeldECMs, and commercially available gelatins (Sigma-Aldrich).

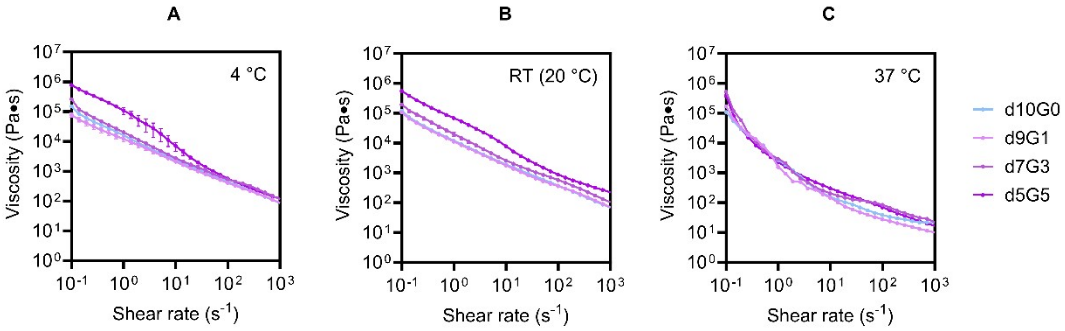

Figure S6. Viscosities of hybrid bioinks with various blending ratios measured at (a) 4 °C, (b) room temperature (20 °C), and (c) 37 °C.

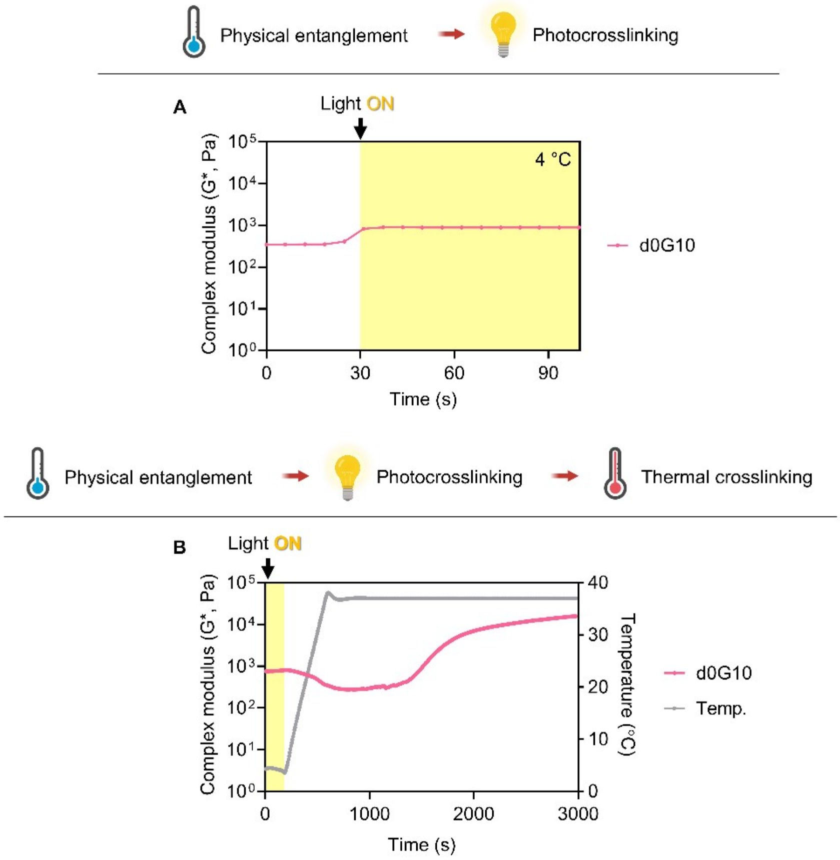

Figure S7. Rheological analysis of the multiple crosslinking strategies using GeldECM (d0G10) bioink. (A) The effect of sequential double crosslinking consists of physical entanglement and photocrosslinking—time sweep of the hybrid bioinks. Visible light irradiation starts at 30 s. (B) Effect of sequential triple crosslinking. Temperature ramp of the hybrid bioinks. The visible light was irradiated for 3 min. All experiments were performed in triplicate.

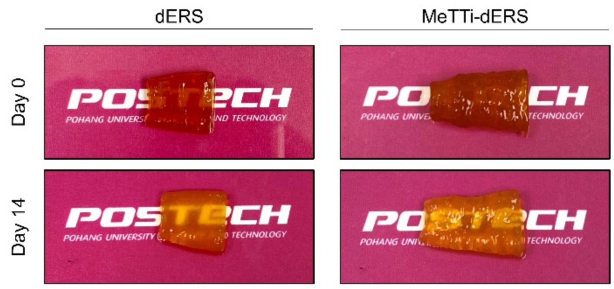

Figure S8. Dissolve of unreacted Ru/SPS photoinitiator in printed intestinal tissues over time.