

RESEARCH ARTICLE

Mesenchymal stem cell differentiation in constructs fabricated by three-dimensional bioprinting using a carboxyvinyl polymer-based support material

Supplementary File

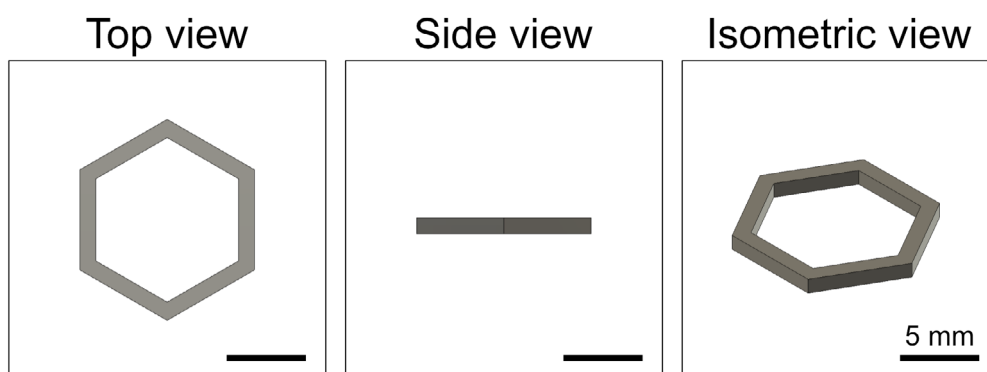


Figure S1. Blueprints of constructs

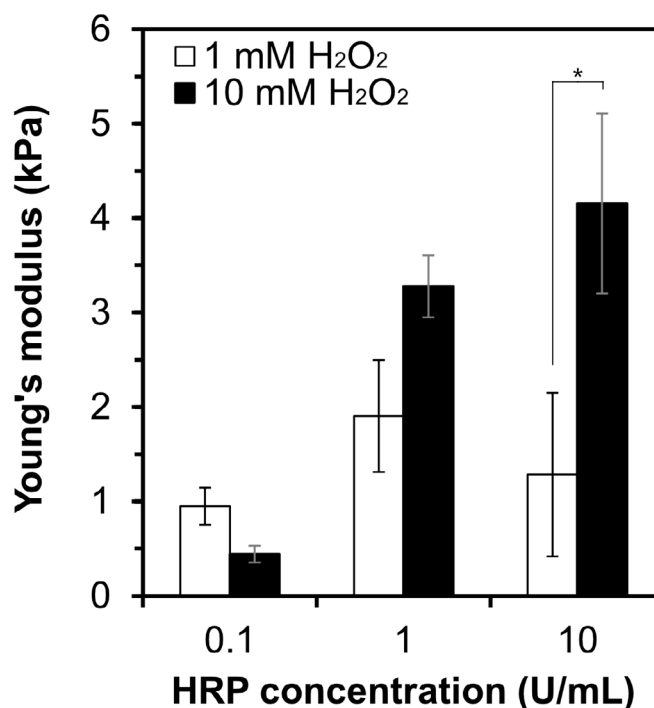


Figure S2. Young's modulus of cylindrical constructs printed using inks containing 0.5 w/v% HA-Ph, 0.1 w/v% gelatin-Ph, and 0.1–10 U/mL HRP, together with support materials containing 2.0 w/w% CVP and 1 or 10 mM H₂O₂. Young's modulus was calculated from the stress–strain curve in the strain range of 1–10%. Error bars indicate standard deviation (n = 3). *p < 0.05, Tukey's HSD.

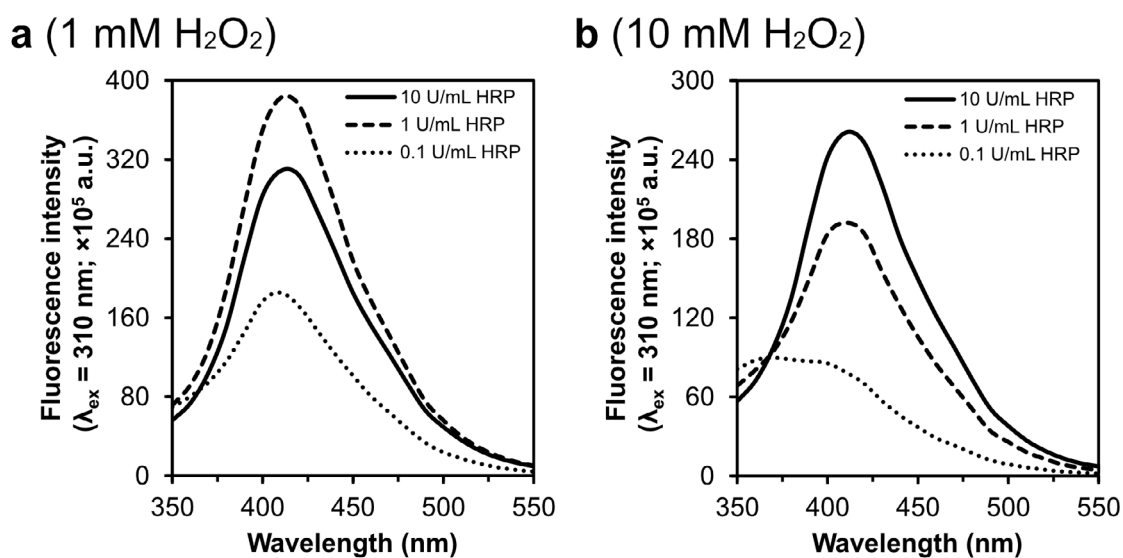


Figure S3. Fluorescence intensity at approximately 420 nm of hydrogels prepared using 0.5 w/v% HA-Ph, 0.1 w/v% gelatin-Ph, 0.1–10 U/mL HRP, and 1–10 mM H_2O_2 . Fluorescence emission spectra were measured from 350 to 600 nm at an excitation wavelength of 310 nm 15 min after initiating the reaction by adding H_2O_2 . The fluorescence intensity at approximately 420 nm was used as an indicator of diphenol formation.

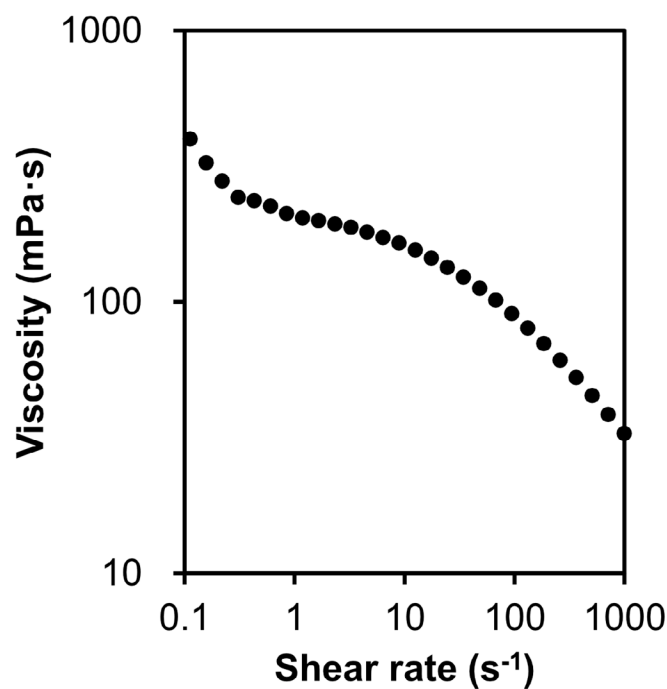


Figure S4. Shear rate-viscosity profile of the solution containing 0.5 w/v% HA-Ph and 0.1 w/v% gelatin-Ph at 25 °C