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## Mesenchymal stem cell differentiation in constructs fabricated by 3D bioprinting using a carboxyvinyl polymer-based support material

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**Article ID:** IJB026200190

**Citation:** Kotani T, Sakai S. Mesenchymal stem cell differentiation in constructs fabricated by 3D bioprinting using a carboxyvinyl polymer-based support material. *Int J Bioprint*. 2026. doi: 10.36922/IJB026200190

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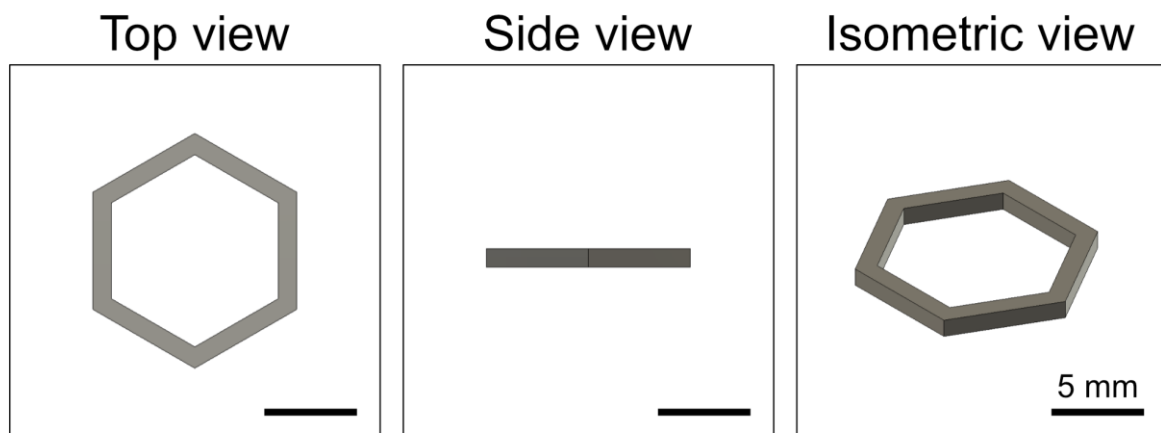
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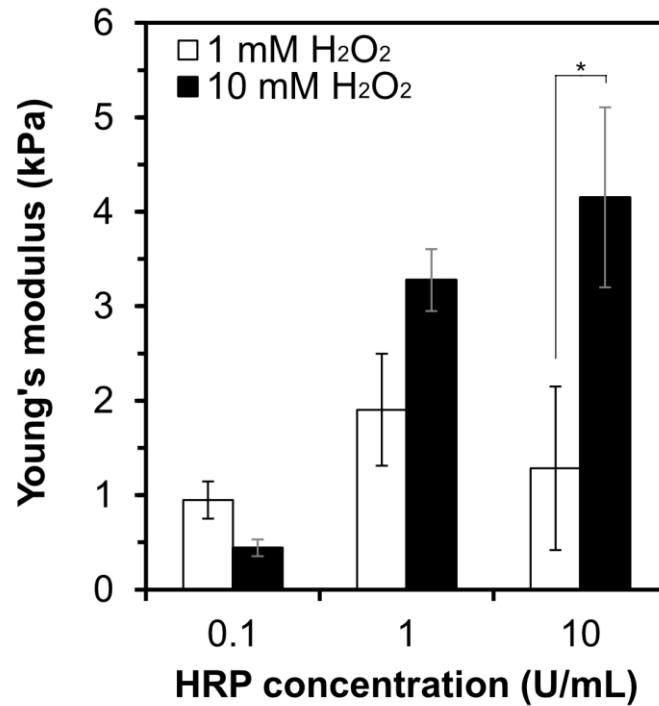
*Running title:* Behavioral evaluation of bioprinted MSCs

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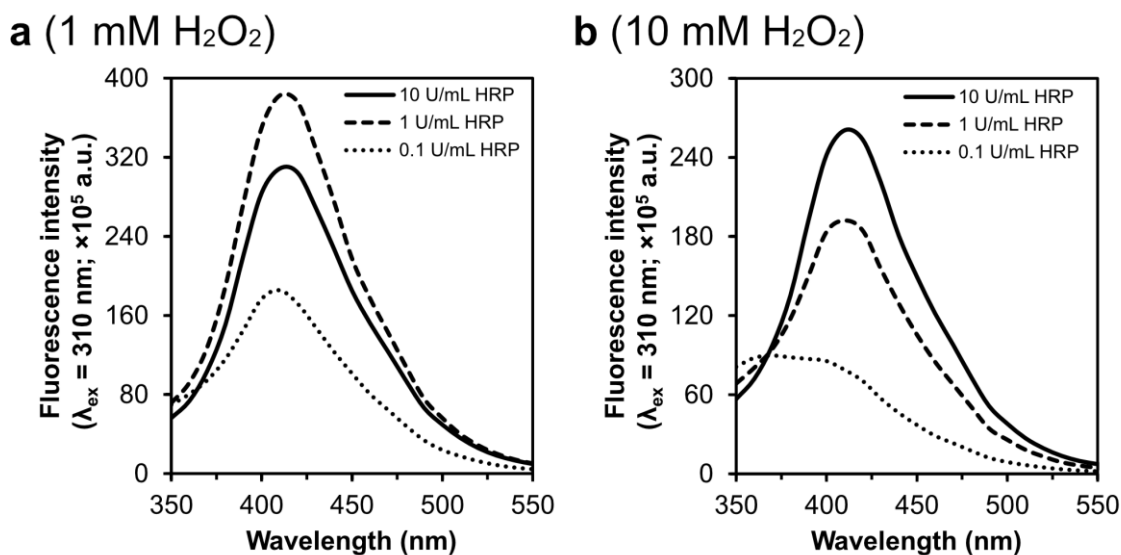
**Supplementary File**



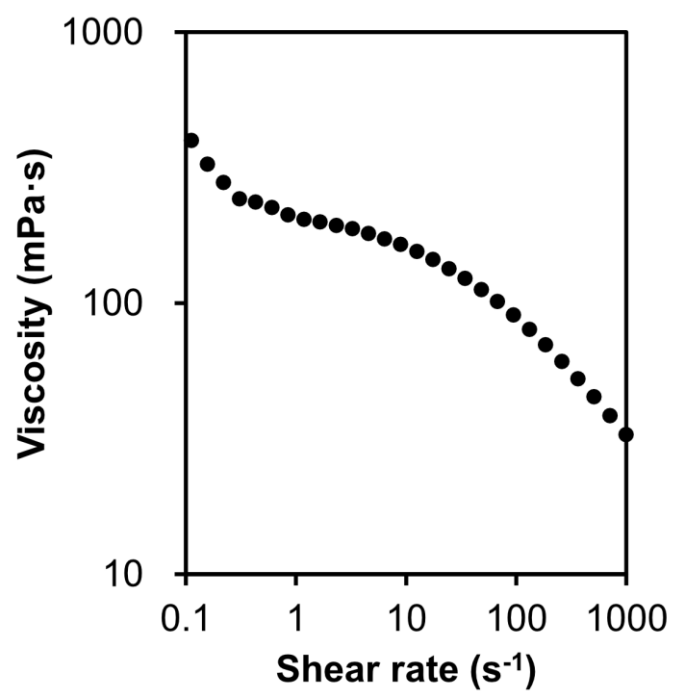
**Figure S1.** Blueprints of constructs.



**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 H<sub>2</sub>O<sub>2</sub>. 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  $\text{H}_2\text{O}_2$ . 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  $\text{H}_2\text{O}_2$ . 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.