ACCSCIENCE PUBLISHING

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RESEARCH ARTICLE

Enhancing cell proliferation in three-dimensional hydrogel scaffolds using digital light processing bioprinting technology

Supplementary File

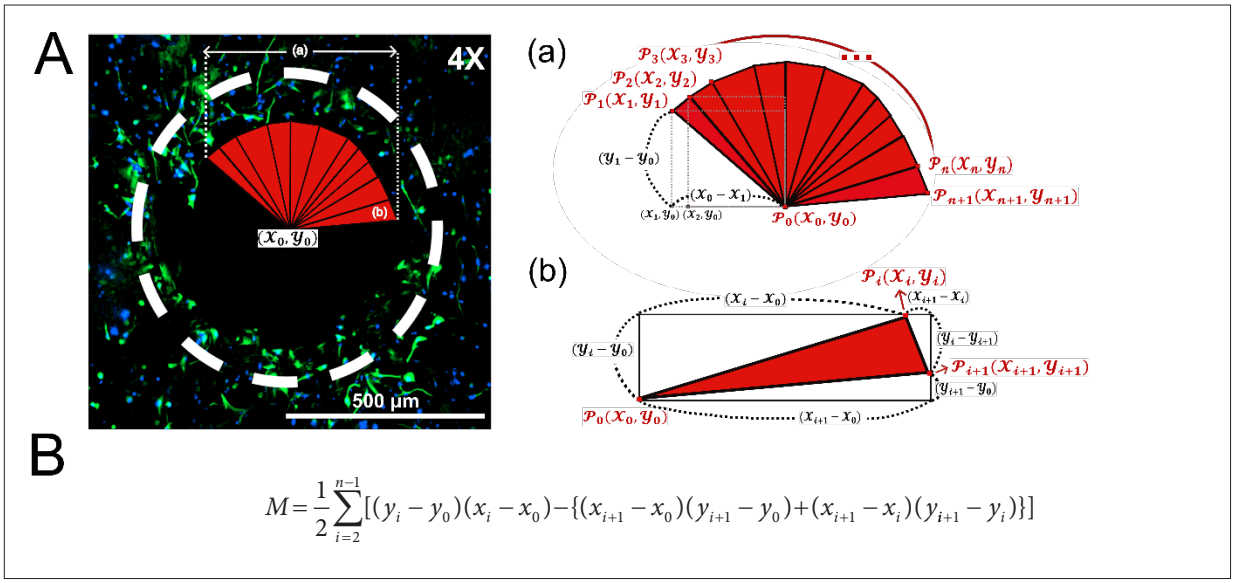

Figure S1. A conceptual methodology of microchannel space analysis in printed hydrogel scaffolds. (A) Representative image of a microchannel with encapsulated cells. Cells are stained with an α-tubulin (green), and nuclei are stained with DAPI (blue). Scale bar: 500 µm. (a) Schematic representation of integral space. (b) A unit of an integral concept. **(B)** Microchannel space analysis formalization.

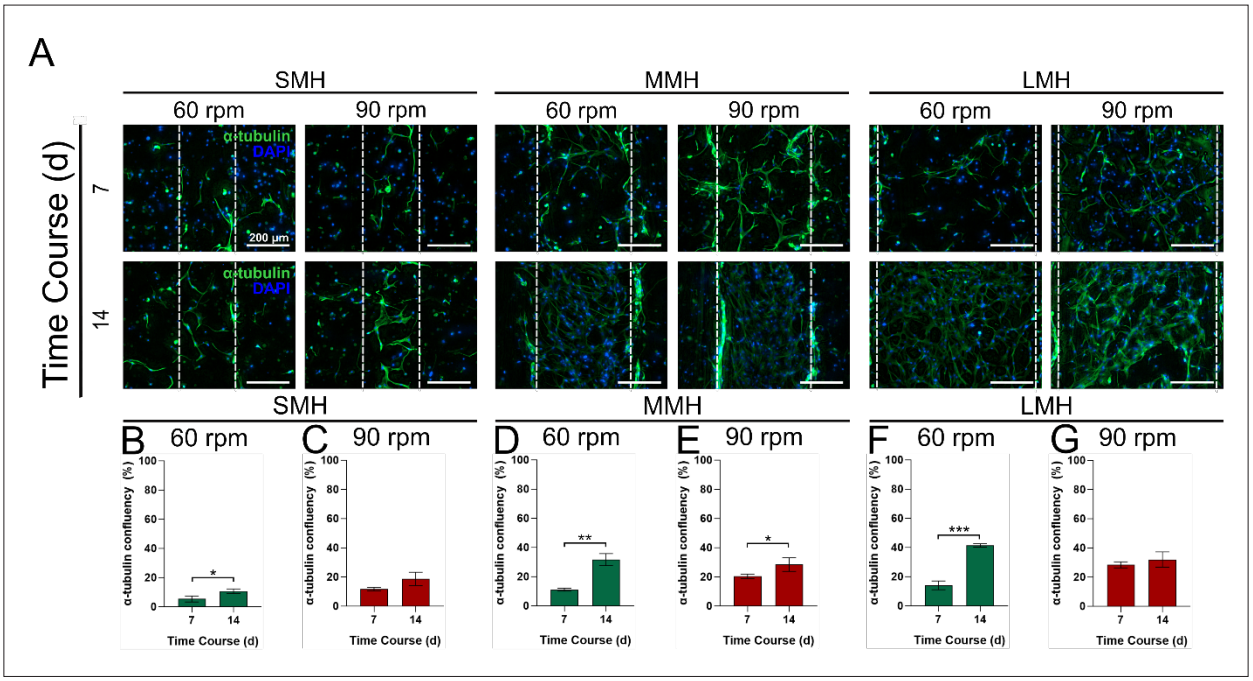

Figure S2. Immunostaining analysis of three different sizes of microchannel in digital light processing (DLP)-printed 3D hydrogel scaffold in 60 and 90 rpm media flow environments. **(A)** Immunofluorescence images of three different sizes of microchannel hydrogel scaffold in media flow environments for 7 and 14 days. Cells are stained with an α-tubulin (green), and nuclei are stained with DAPI (blue). Scale bars: 200 μm. **(B–G)** α-tubulin confluency analysis of SMH, MMH, and LMH in 60 and 90 rpm media flow environments. Data are shown as means ± SD ($n = 3$). $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$ by unpaired *t*-tests.

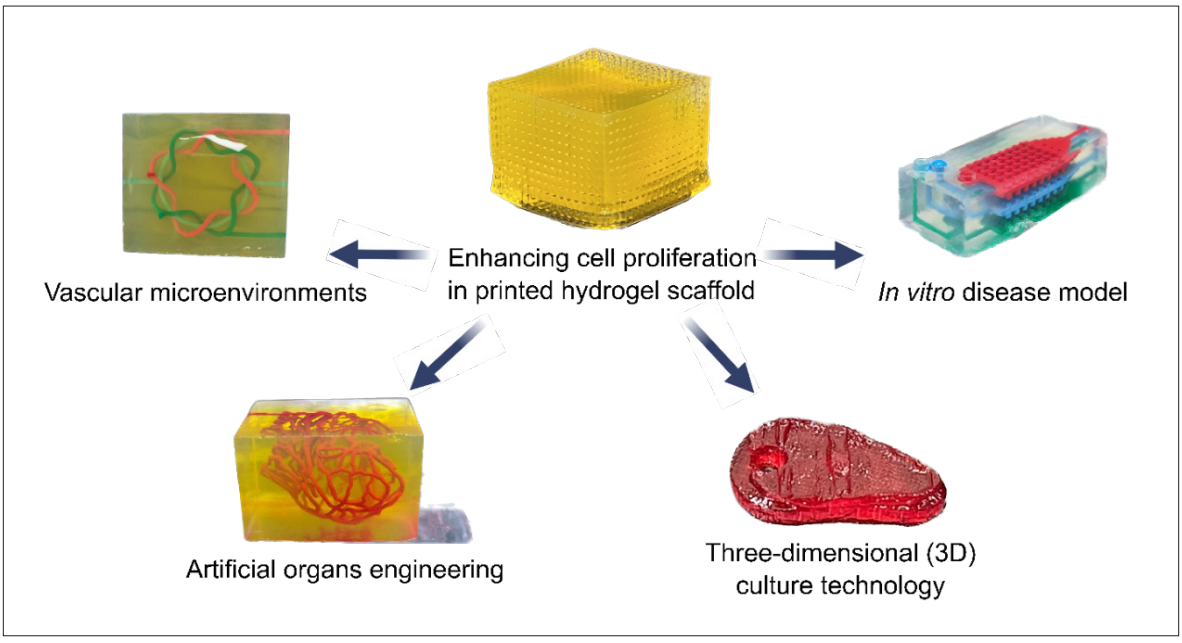

Figure S3. Application perspective of enhancement of cell proliferation in printed hydrogel scaffold. The current approach can be applied to vascular microenvironments, *in vitro* disease models, artificial organ engineering, and three-dimensional (3D) culture technology.

Supplementary videos:

Video S1. Inside of the microchannel of DLP-printed 3D scaffold at day 7.
Video S2. Inside of the microchannel of DLP-printed 3D scaffold at day 21.
Video S3. Inside of the microchannel of DLP-printed 3D scaffold at day 35.