Electronic supplementary information (ESI)

Fabrication of a self-assembled and vascularized tumor array via bioprinting on a microfluidic chip

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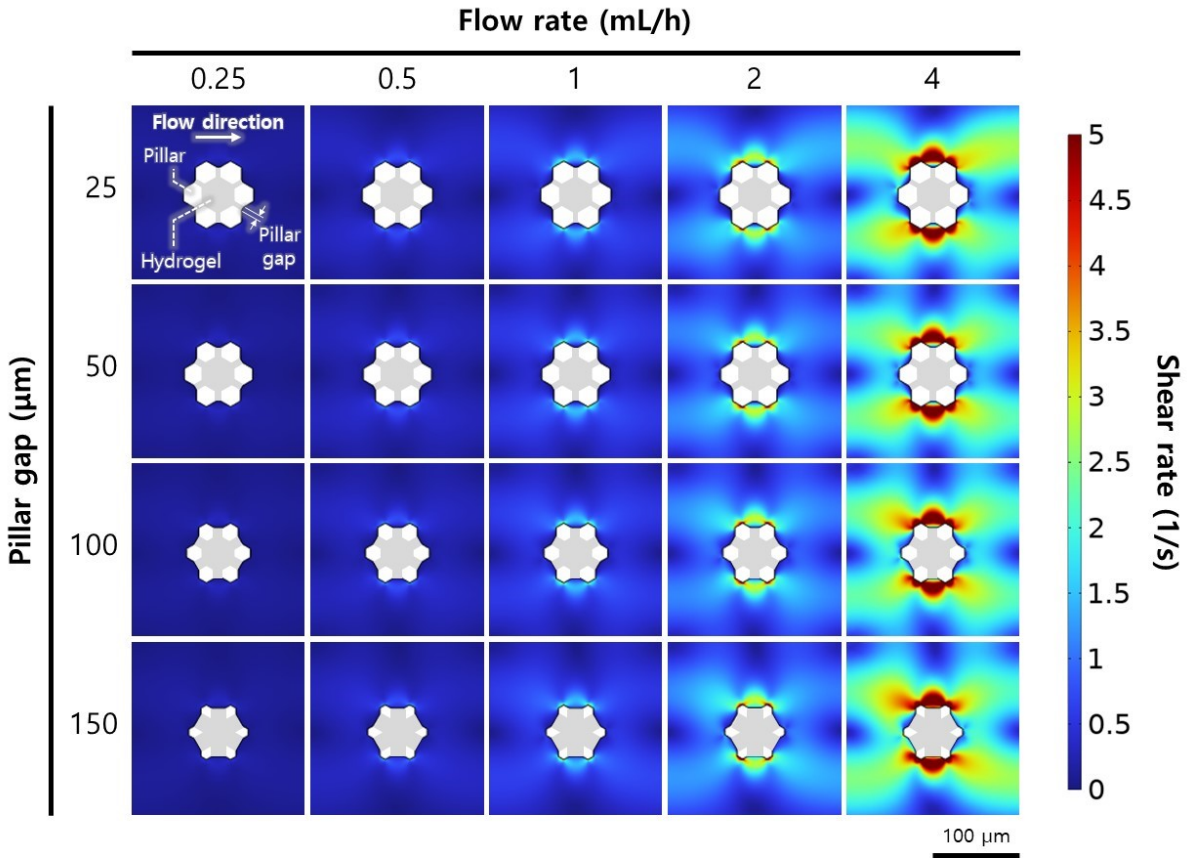

Fig. S1 Shear rate around the hydrogel unit with different pillar gaps (25, 50, 100, and 150 μm) under the flow rates (0.25, 0.5, 1, 2, and 4 mL/h).

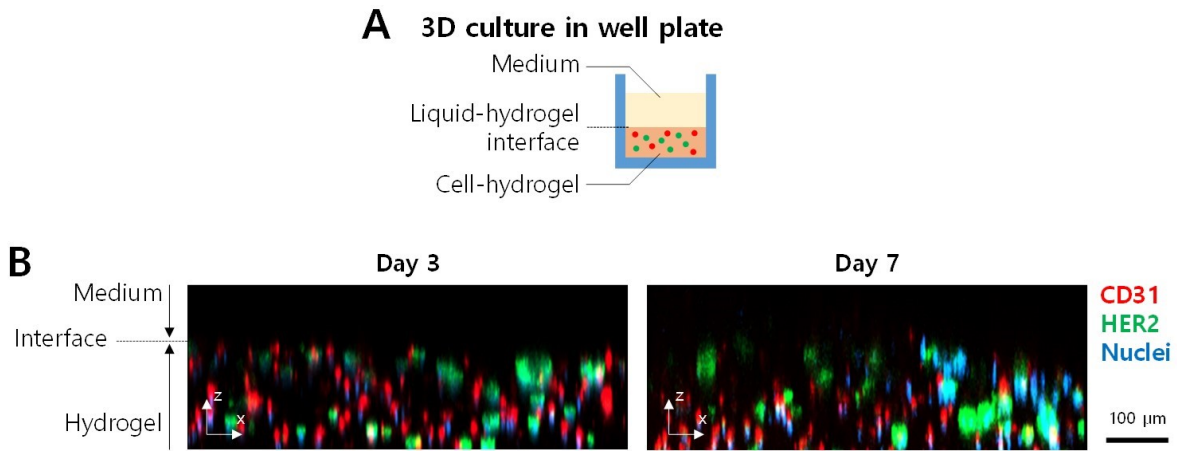

Fig. S2 Three-dimensional (3D) culture of BT474 cells and HUVECs in a 96-well plate system. (A) The schematic illustration of the standard 3D cell culture in the 96-well plate. (B) The side view images of the TME model cultured in the well plate system to observe the morphology change of the BT474 cells and HUVECs at days 3 and 7. Red, green, and blue indicate the CD31, HER2, and nuclei, respectively.

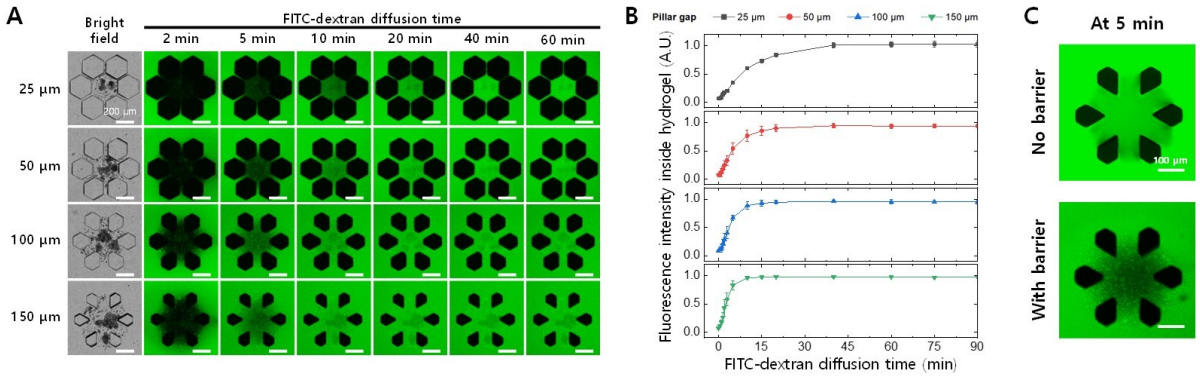

Fig. S3 FITC–dextran diffusion in the TME models at seven days of culture. **(A)** The time-lapse fluorescence images for observing the diffusion phenomena in the vascularized and self-assembled TME units after introducing 1 μM FITC–dextran (10 kDa) solution. (B) The fluorescence intensity measured in the hydrogel core region to compare the saturation point of the diffusion phenomena between the pillar gap groups. (C) The molecular diffusion showing the functionality of the HUVEC barrier in the TME model.