Electronic Supplementary Material (ESI) for Lab on a Chip.

Hybrid Fluorescent Nanofiber Membrane for Integration into Microfluidic Chips for Lung-on-a-Chip Applications

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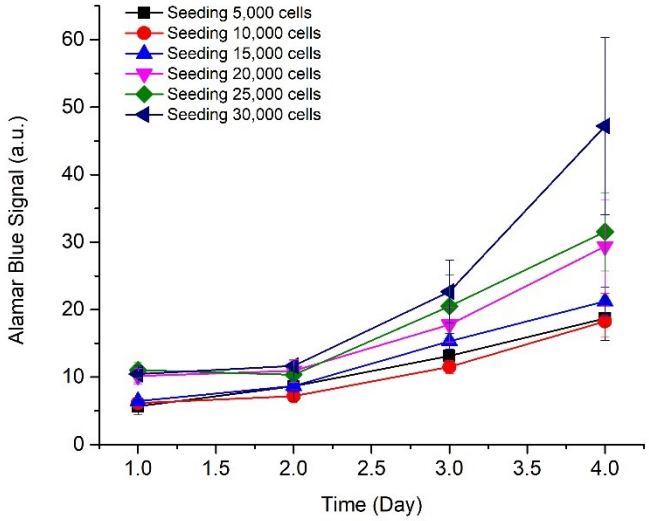

Fig. S1 Calibration curves derived from a variety of cell populations seeded in a 48-well plate.

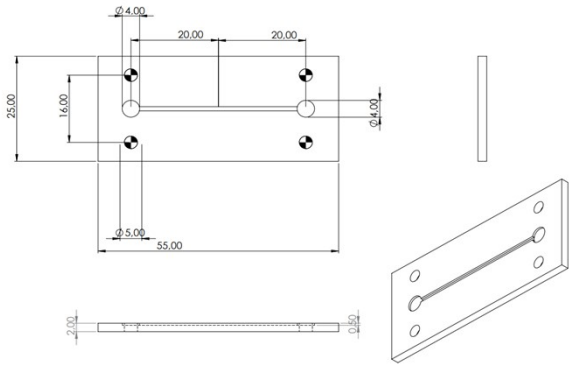

Fig. S2 True to scale drawing of the bottom part of the chip.

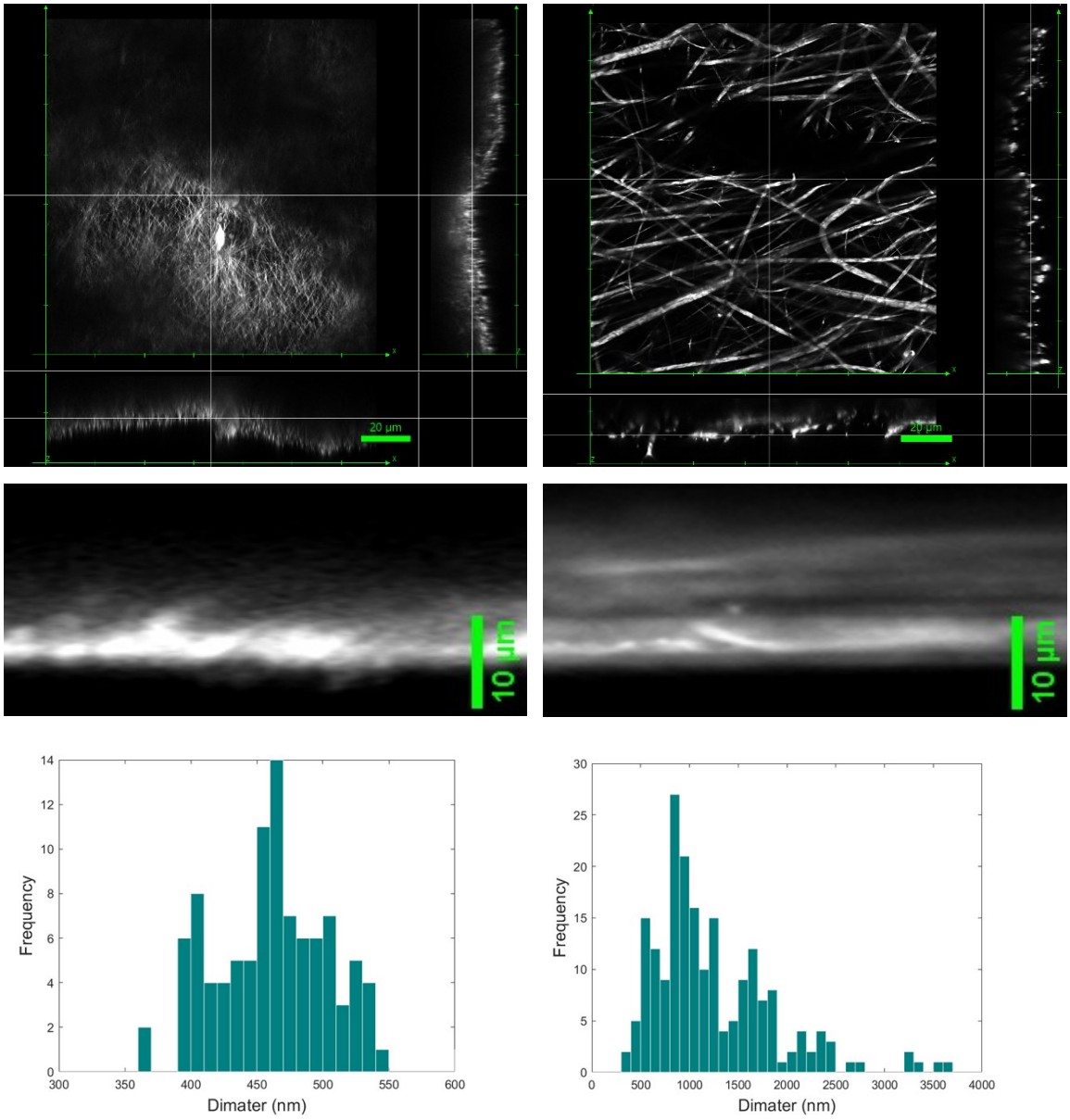

Fig. S3 Representative images for PCL and PCL-Collagen membranes obtained from high resolution confocal microscopy. Sectional images of PCL (top left) and PCL-Collagen membranes (top right). The average intensity projection of the side view for PCL (middle left) and PCL-Collagen membranes (middle right). The bottom left and bottom right plots show histograms of the distribution of fiber diameter for PCL and PCL-Collagen membranes, respectively.

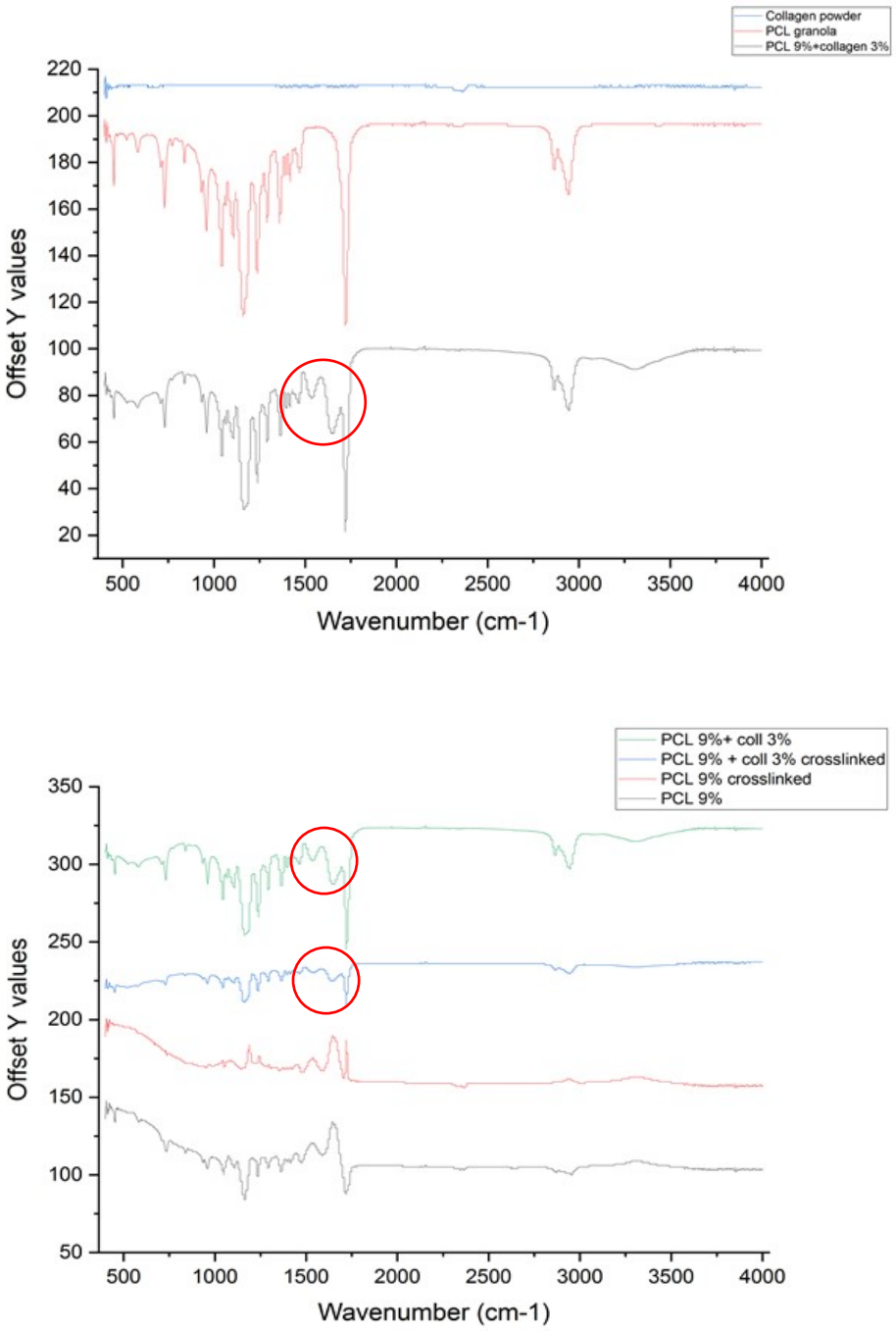

Fig. S4 FTIR absorbance bands for collagen powder, PCL beads, and PCL-collagen membrane. The top figure shows the amide I collagen absorbance component (at 1690 cm^{-1}) and amide II band corresponding to collagen from HFIP (at 1526 cm^{-1}) [1]. As shown in the bottom figure, merged bands have also been observed for the PCL-collagen membrane at these wavelengths.

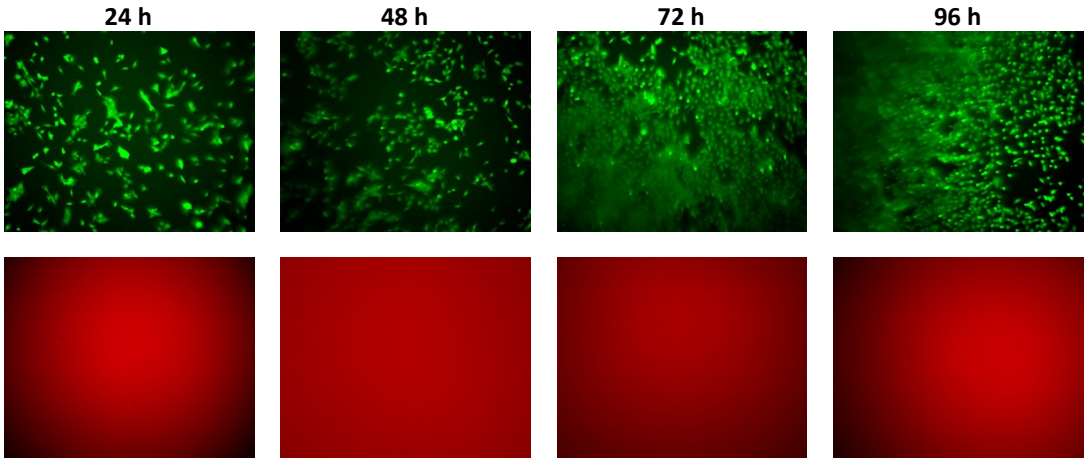

Fig. S5 Representative images of MRC5 cells from control samples sown in 48-well plates with 20,000 cells per well. A live/dead cell imaging kit was used to track cell viability over a 96-hour period. Bright green signal (top row) represents living cells, whereas red (bottom row) represents dead cells. The reflected light from the excitation wavelengths is represented by dimmer green and red background signals.

	Weight (mg)	**Fiber Diameter (µm)**
PCL	1.648 ± 0.245	0.459 ± 0.047
PCL + collagen	4.524 ± 0.734	1.230 ± 0.622

Table. S1 Results of the weight and fiber diameter for PCL and PCL-collagen membranes obtained from at least three independent measurements.

References:

1. J. Dulnik, D. Kołbuk, P. Denis and P. Sajkiewicz, *European Polymer Journal*, 2018, **104**, 147-156.