

Supporting Information

for

Interface-engineered Caco-2 cell culture on a collagen-coated
liquid-liquid interface in a microfluidic device

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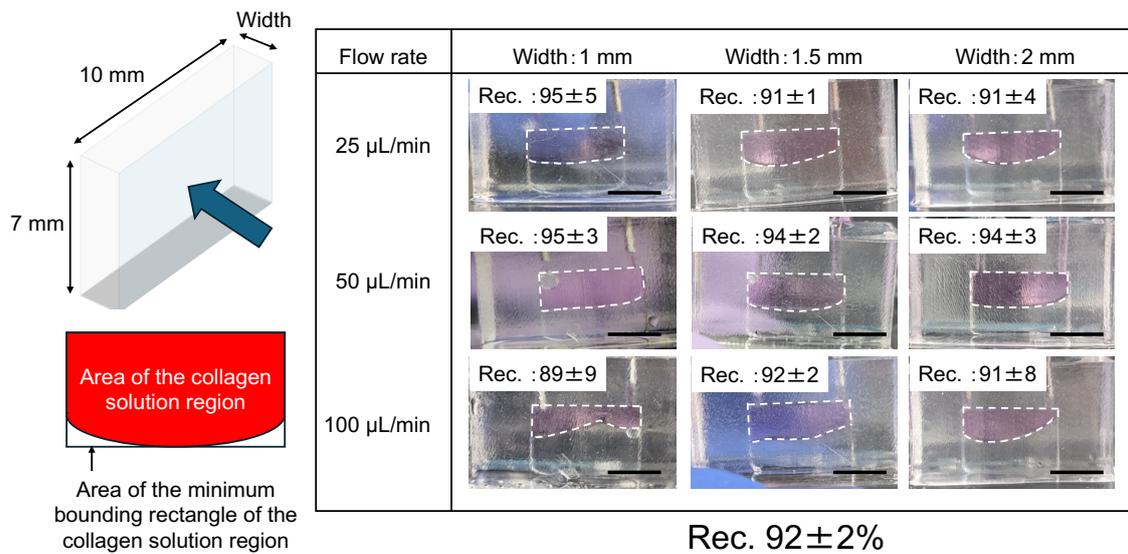


Figure S1: Rectangularity of the collagen solution region with respect to channel dimension ($7 \times 10 \times \text{width}$) and collagen solution introduction flow rate. Collagen region was imaged by smartphone followed by the direction indicated by arrow. Rectangularity is abbreviated as “Rec”.

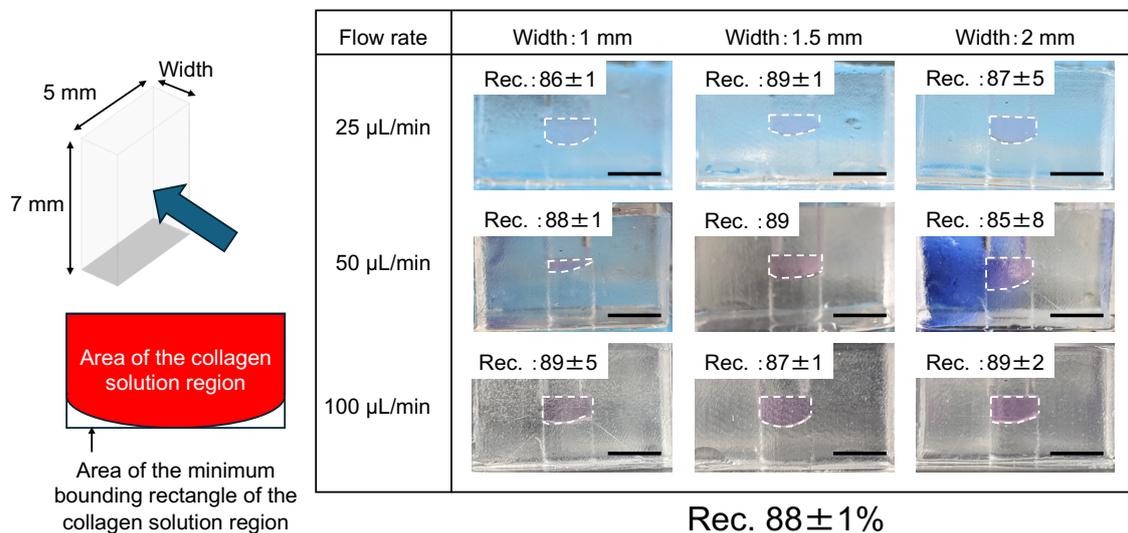


Figure S2: Rectangularity of the collagen solution region with respect to channel dimension ($7 \times 5 \times \text{width}$) and collagen solution introduction flow rate. Collagen region was imaged by smartphone followed by the direction indicated by arrow. Rectangularity is abbreviated as “Rec”.

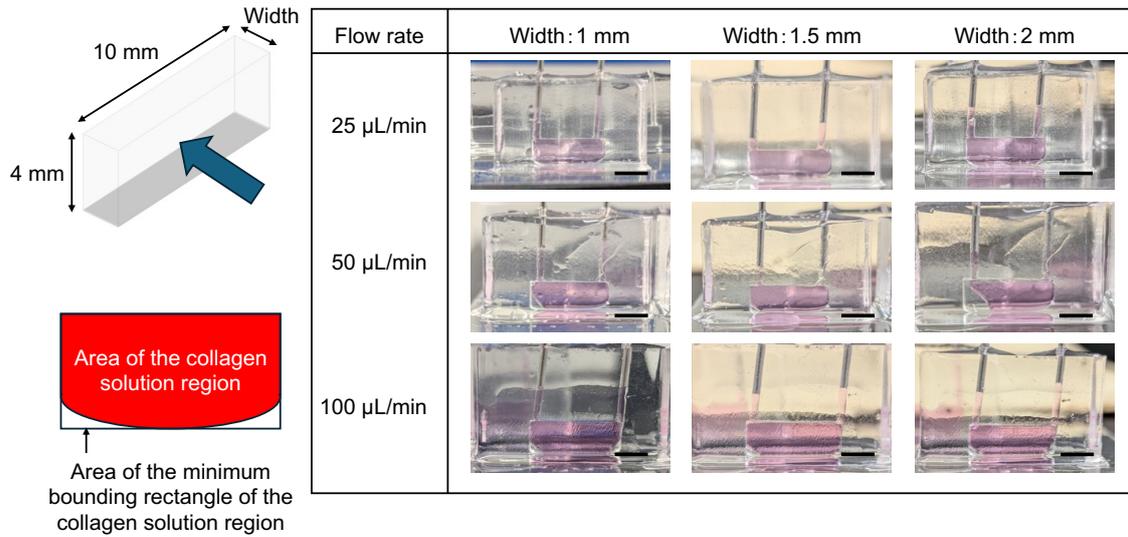


Figure S3: The collagen solution region with respect to channel dimension ($4 \times 10 \times \text{width}$) and collagen solution introduction flowrate. Collagen region was imaged by smartphone followed by the direction indicated by arrow. For a channel height of 4 mm, almost all of the FC-43 was replaced by the collagen solution.

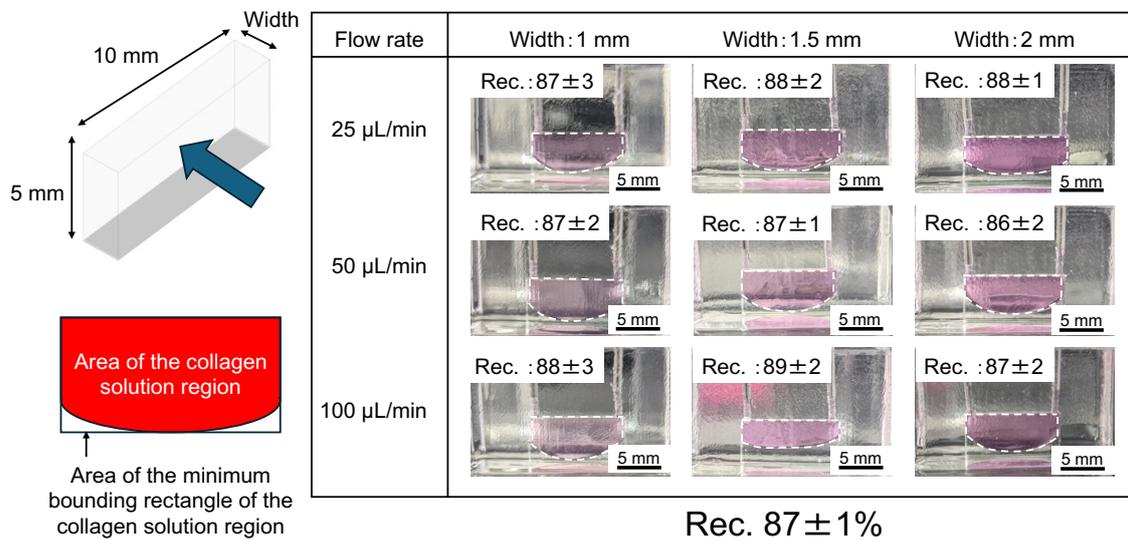


Figure S4: Rectangularity of the collagen solution region with respect to channel dimension ($5 \times 10 \times \text{width}$) and collagen solution introduction flowrate. Collagen region was imaged by smartphone followed by the direction indicated by arrow. Rectangularity is abbreviated as “Rec”.

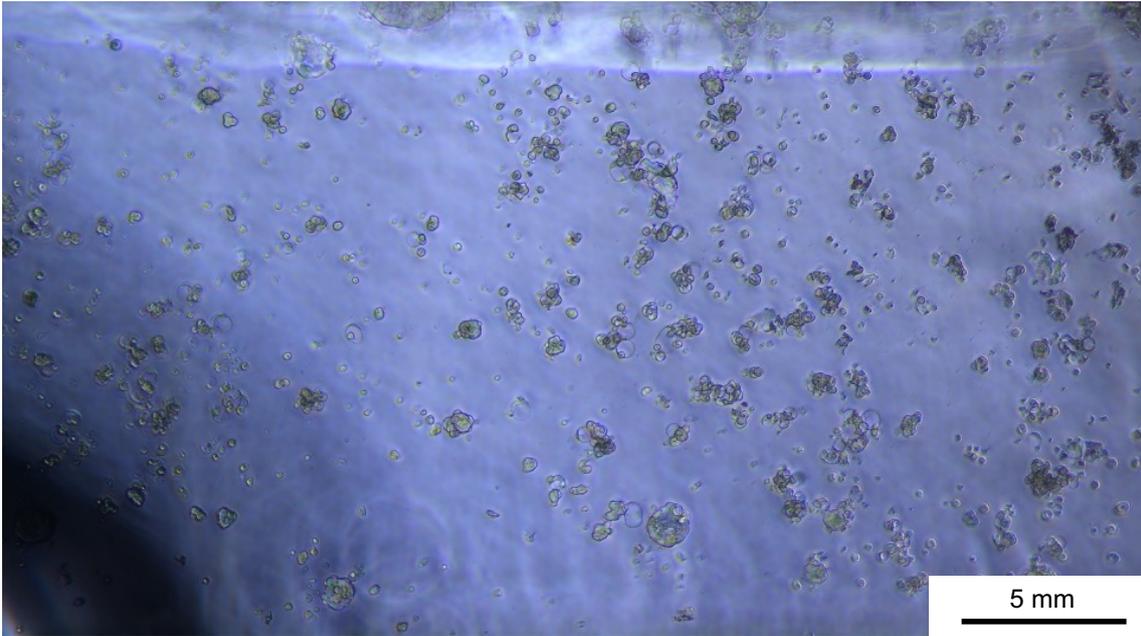


Figure S5: Caco-2 cells seeded onto a liquid-liquid interface without collagen coating. The image was captured 2 days post-seeding.

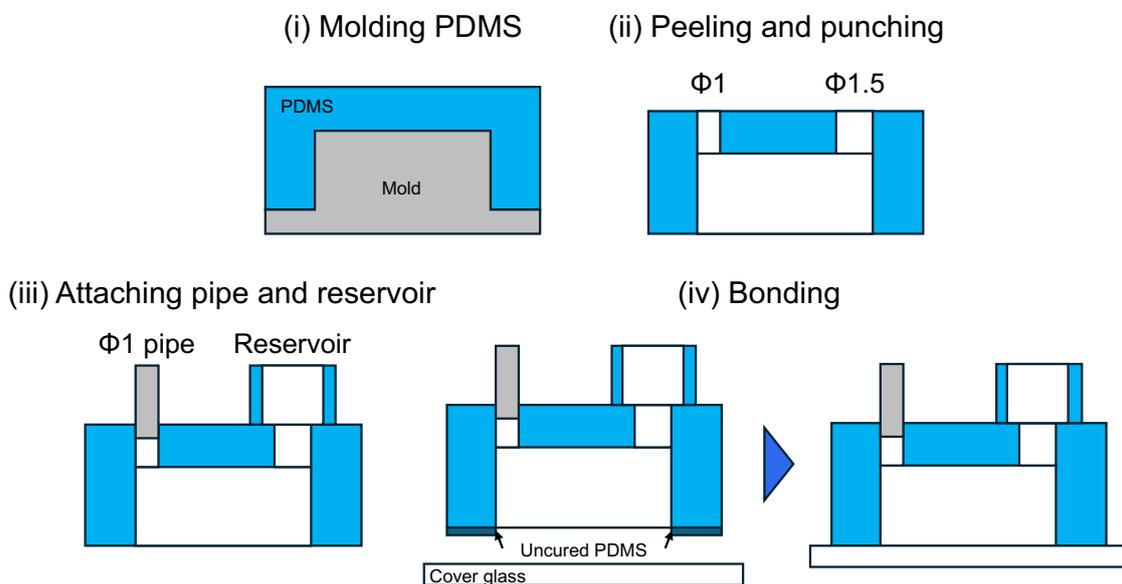


Figure S6: Fabrication procedure of the microfluidic device. (i) Molding PDMS. (ii) Peeling and punching. (iii) Attaching pipe and reservoir. (iv) Bonding.

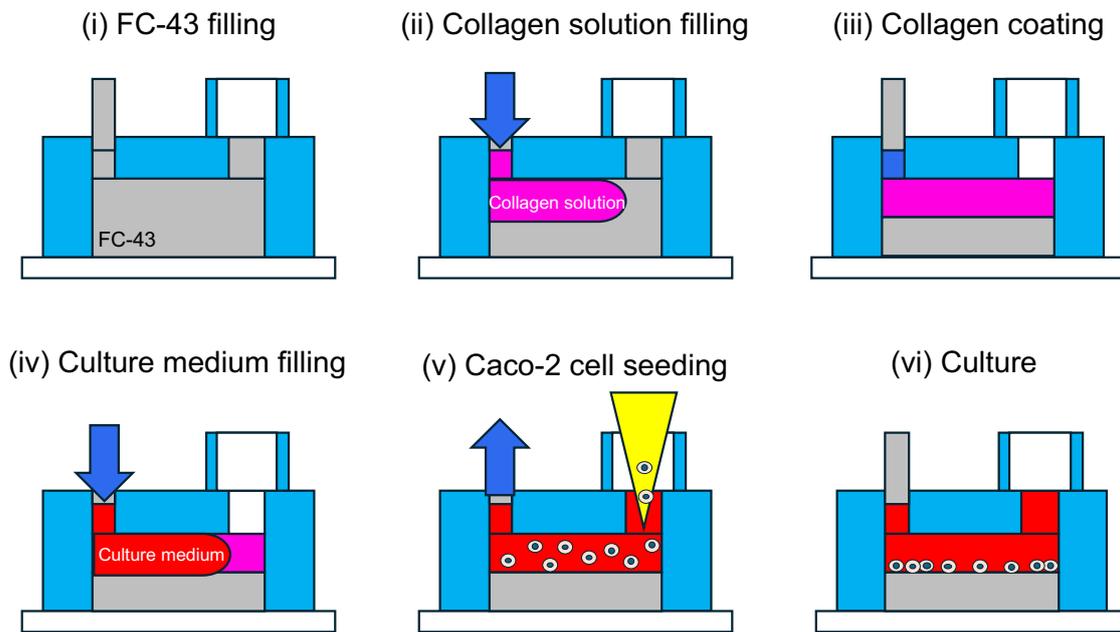


Figure S7: Caco-2 cell culture procedure in the microfluidic device. (i) FC-43 filling. (ii) Collagen solution filling. (iii) Collagen coating. (iv) Culture medium filling. (v) Caco-2 cell seeding. (vi) Culture.

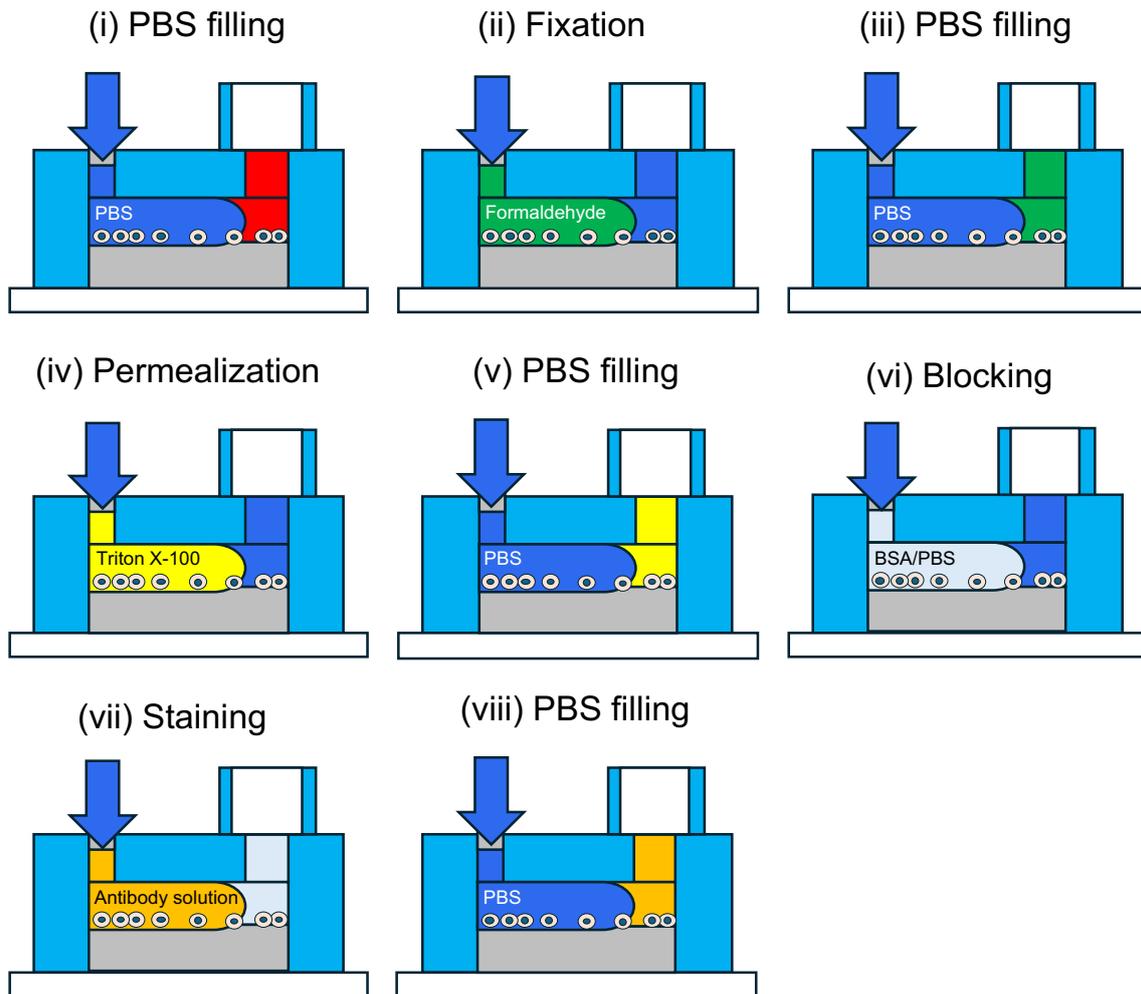


Figure S8: Immunostaining procedure in the microfluidic device. (i) PBS filling. (ii) Fixation. (iii) PBS filling. (iv) Permealization. (v) PBS filling. (vi) Blocking. (vii) Staining. (viii) PBS filling.