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

Supporting information

Colon Epithelium Barrier with Vascularized Crypts to Model Inflammatory Bowel Disease

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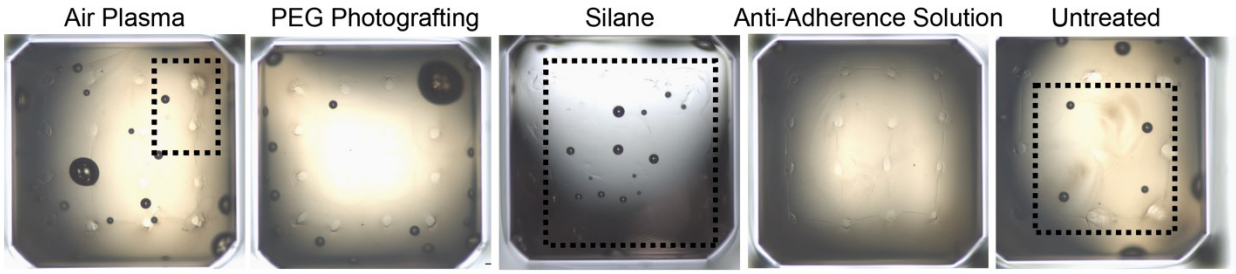
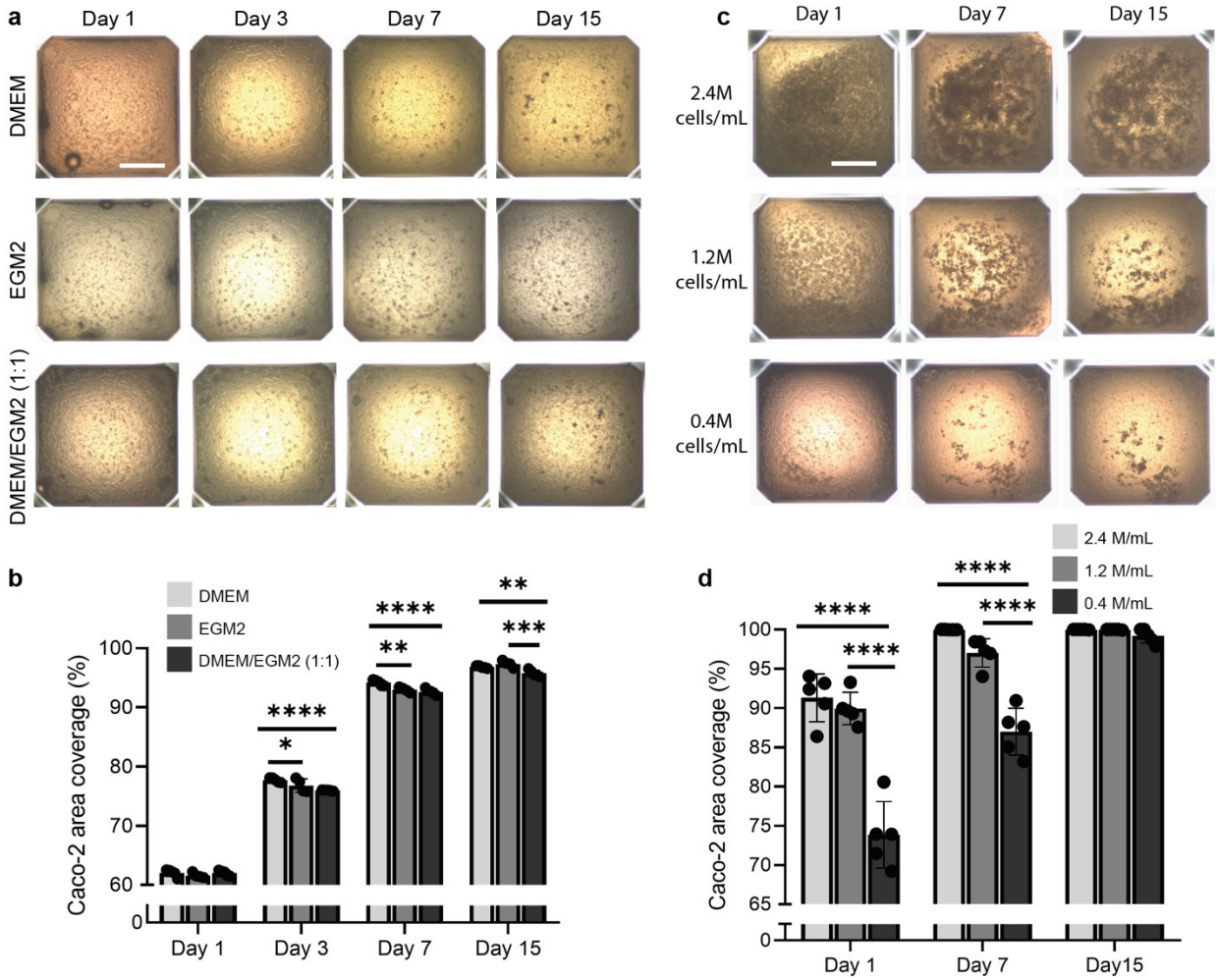
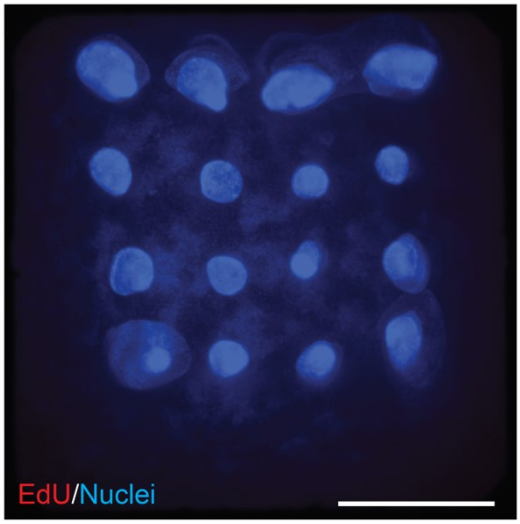


Supplementary Figure 1. Surface functionalization of TopoStamp pin arrays. Black boxes outline patterning failure from gel warping.

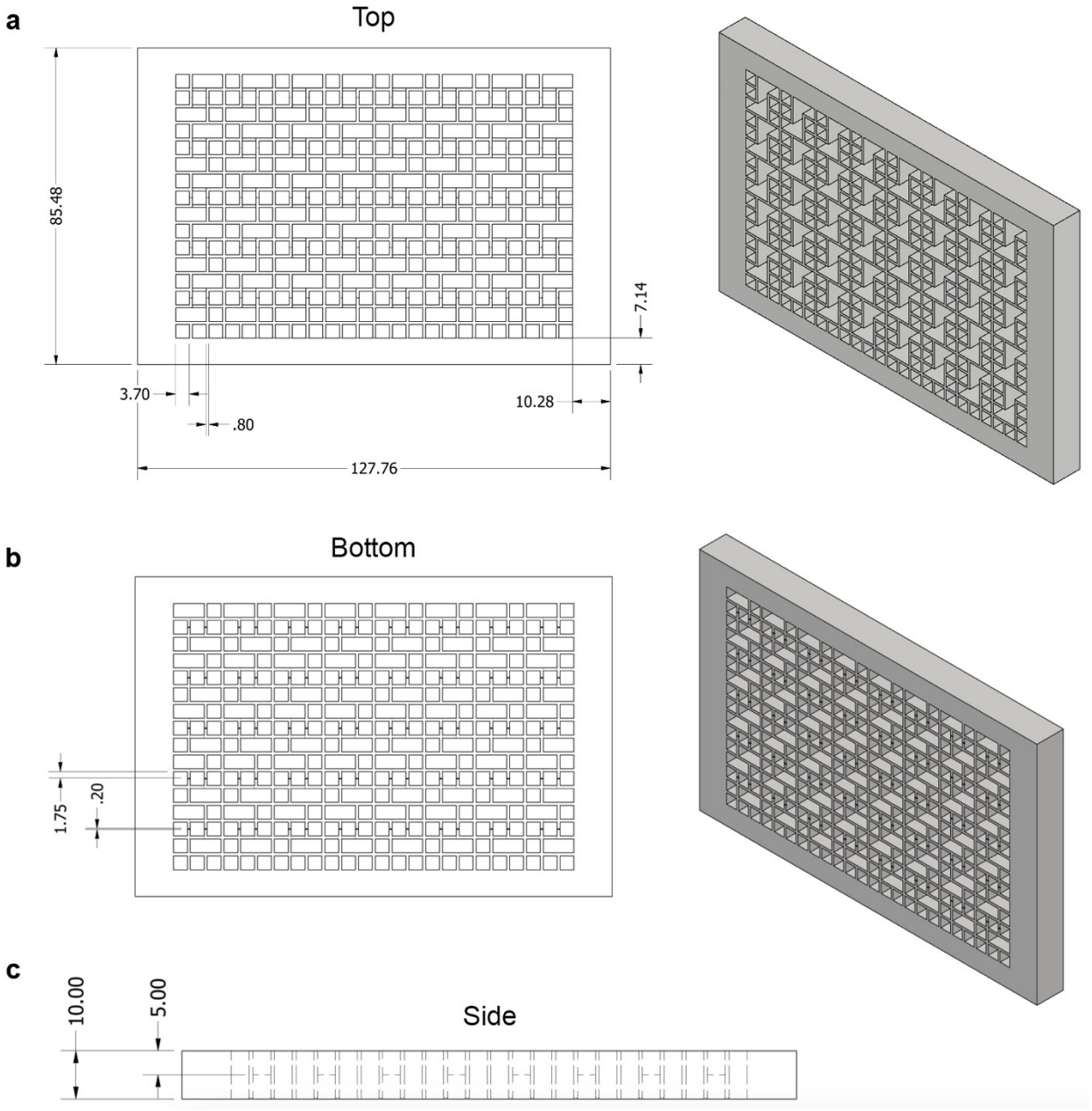


Supplementary Figure 2. Caco-2 cultivation in various media and seeding densities. a, Brightfield images of Caco-2 proliferation in various cell media. Scale bar, 1 mm. **b,** Quantified Caco-2 proliferation in varying media *(n* =

*5;*P<0.05 **P<0.01 ***P<0.001 ****P<0.0001)*. **c,** Brightfield images of Caco-2 expansion at various seeding densities. Scale bar, 1 mm. **d,** Quantification of Caco-2 confluence at varying seeding densities *(n = 5; ****P<0.0001)*. All data is presented as mean ± s.d.



Supplementary Figure 3. Fluorescence image of Secondary Alexa Fluor™ 647 azide conjugate in EdU-patterned Caco-2 tissues in the IFlowPlate. Edu (red), nuclei (blue). Scale bar, 1 mm.



Supplementary Figure 4. IFlowPlate Duo dimensions. a, Top-down (left) and oblique (right) views. **b,** Bottom-up (left) and oblique (right) views. **c,** Side view. All dimensions are in millimetres.

Supplementary Video 1. Single crypt 3D rotation.

Supplementary Video 2. Full crypt-patterned monolayer 3D rotation.

Supplementary Video 3: Vascularized crypt-patterned colon epithelium in 3D.