ADVANCED MATERIALS

Supporting Information

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Cardiomyocyte-Driven Actuation in Biohybrid Microcylinders

*Jaewon Yoon, Tom W. Eyster, Asish C. Misra, and Joerg Lahann**

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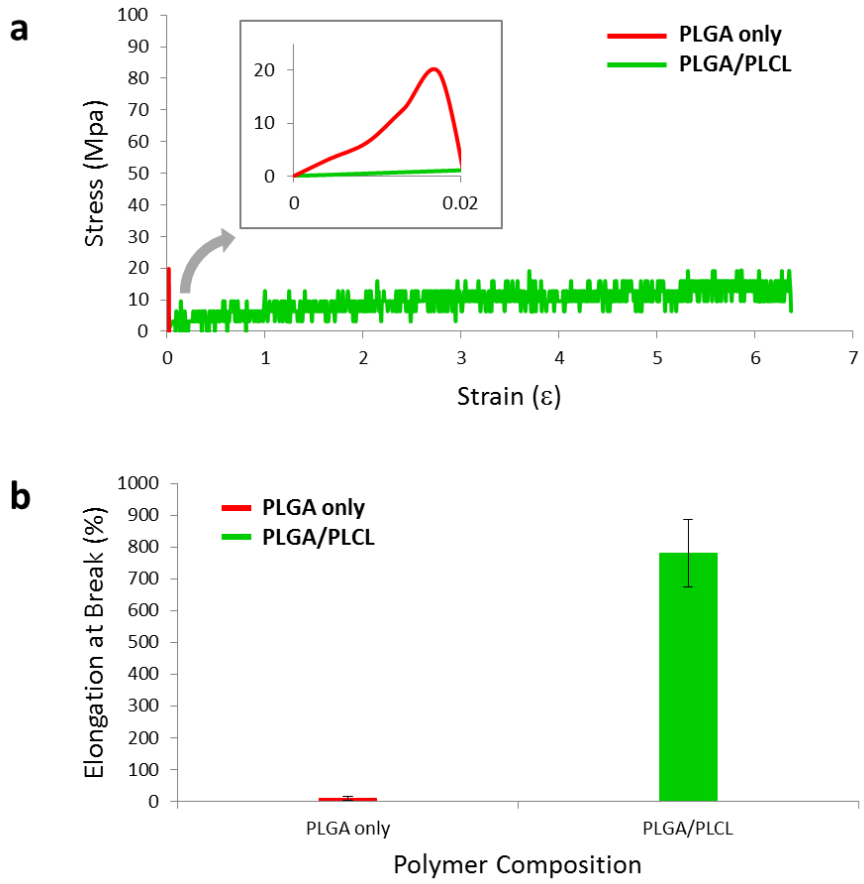


Figure S1. Mechanical properties comparing two types of bicompartmental microfibers: PLGA only and PLGA/PLCL. (a) Stress-strain curves. (b) Elongation at break vs. polymer composition.

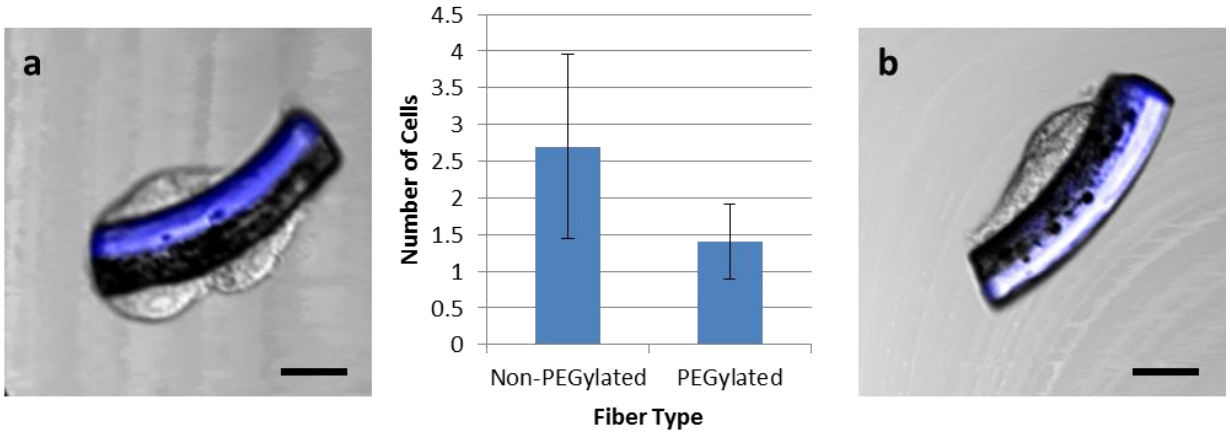
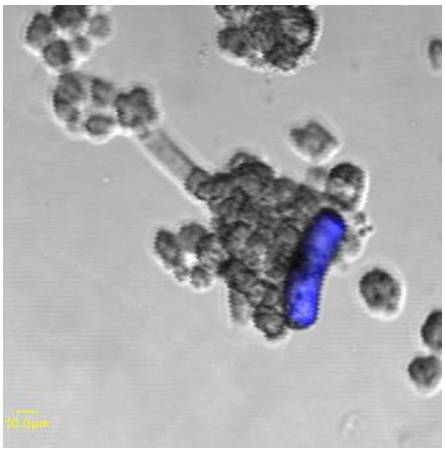


Figure S2. The average number of NIH3T3 Fibroblasts on PLGA/PLCL microcylinders. (a) Before modification with PEG. (b) After modification with PEG. The quantification anaylsis was performed based on CLSM images with sample size of 10 (p-value < 0.05). Scale bars represent 20 μm.

Microfibers and Microcylinders	Polymer Compositions for Each Compartment	Solvents
Figures 2a	1) 30 w/v% PLGA (no dye) 2) 30 w/v% PLGA + 9 w/v% COT-PLA, blue dye	chloroform : DMF, 95 : 5 (v/v)
Figures 2b	1) 30 w/v% PLGA (no dye) 2) 30 w/v% PLGA + 9 w/v% COT-PLA (no dye)	chloroform : DMF, 95 : 5 (v/v)
Figures 3	1) 30 w/v% PLGA + 0.9 w/v% magnetite (no dye) 2) 30 w/v% PLGA + 9 w/v% COT-PLA, blue dye	chloroform : DMF, 95 : 5 (v/v)
Figure 4, 5	1) 25 w/v% PLCL + 0.75 w/v% magnetite (no dye) 2) 30 w/v% PLGA + 9 w/v% COT-PLA, blue dye	chloroform : cyclohexane : DMF, 45 : 50 : 5 (v/v/v)

Table S1. Lists of polymer composition of the two jetting solutions for preparing bicompartmental microfiber used in each figure.



Movie S1. Movie showing the bending behavior of PLGA/PLCL microcylinders driven by the beating of cardiomyocytes.