
Supporting information

Zein increases the cytoaffinity and biodegradability of scaffolds

3D-printed with zein and poly(ϵ -caprolactone) composite ink

Linzhi Jing,^{a,c} Xiang Wang,^a Hang Liu,^b Yuyun Lu,^c Jinsong Bian^{a,d}, Jie Sun^{*,b} and Dejian Huang^{*,a,c}

a) National University of Singapore (Suzhou) Research Institute, 377 Linquan Street, Suzhou, Jiangsu 215123, China

b) Department of Industrial Design, Xi'an Jiaotong-Liverpool University, 111 Ren'ai Road, Suzhou, Jiangsu 215123, China

c) Food Science and Technology Programme, c/o Department of Chemistry, National University of Singapore, 3 Science Drive 3, Singapore 117543

d) Department of Pharmacology, Yong Loo Lin School of Medicine, National University of Singapore Blk MD3, 16 Medical Drive Level 4, 04-01, Singapore 117600

* To whom correspondence should be made. Jie Sun, email: Jie.Sun@xjtlu.edu.cn .

Dejian Huang, email: chmhdj@nus.edu.sg.

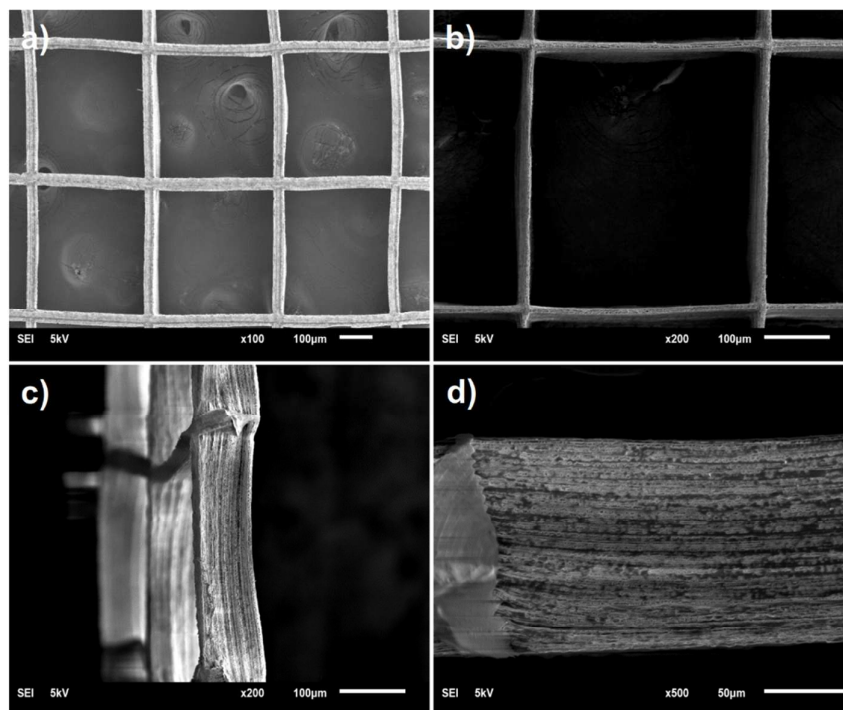


Figure S1. SEM images of PCL/zein-20 scaffolds after 12 days enzyme-accelerated degradation (PBS, with 0.1 mg/mL proteinase k and 1% antibiotics at 37 °C). a) Back view, b) Top view, c) and d) Cross-sectional view.

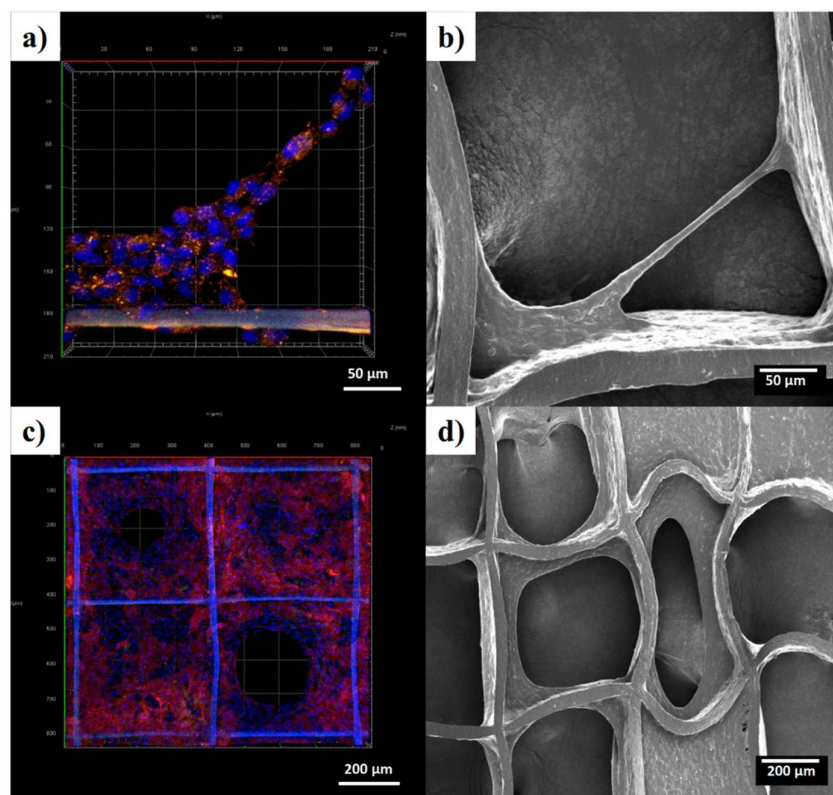


Figure S2. CLSM and SEM images of NIH/3T3 cell attached on PCL/zein-20 scaffold, a) and b) 2 days culture; c) and d) 7 days culture.

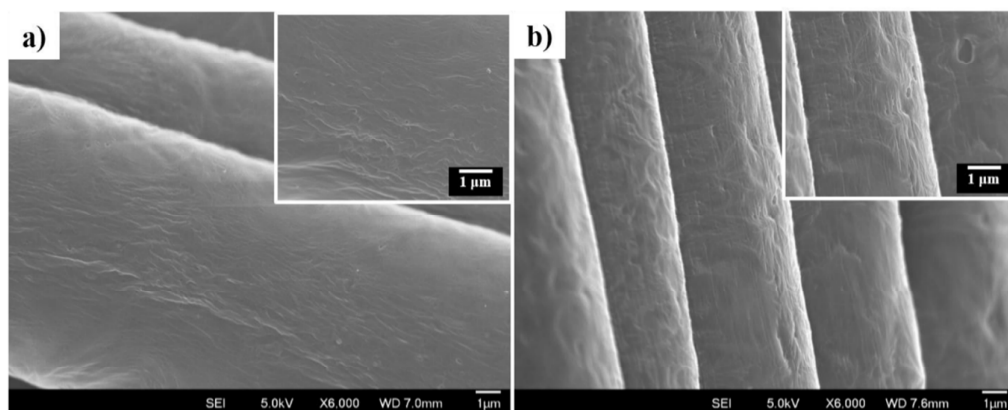


Figure S3. SEM images of fiber surface morphology after 14 day cultures of H1299 cell line. a) PCL scaffold and b) PCL/zein-20 scaffold.

Table S1. Summary of original data of enzyme accelerated degradation of PCL and PCL/zein scaffolds in PBS (10 mM, pH 7.4) at 37 oC, 5.0% CO₂ with addition of 0.1 mg/mL proteinase k and 1% antibiotics.

	PCL		PCL/zein-10		PCL/zein-20	
	Mean	SD	Mean	SD	Mean	SD
Day 0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Day 2	1.1%	0.2%	14.8%	1.7%	23.9%	1.1%
Day 4	1.3%	0.2%	24.5%	2.1%	32.0%	0.4%
Day 6	1.5%	0.2%	32.6%	0.7%	41.3%	1.3%
Day 8	1.6%	0.2%	39.1%	0.9%	45.6%	1.2%
Day 10	1.6%	0.1%	46.2%	1.5%	50.9%	1.7%
Day 12	1.7%	0.1%	50.0%	1.3%	54.2%	1.6%