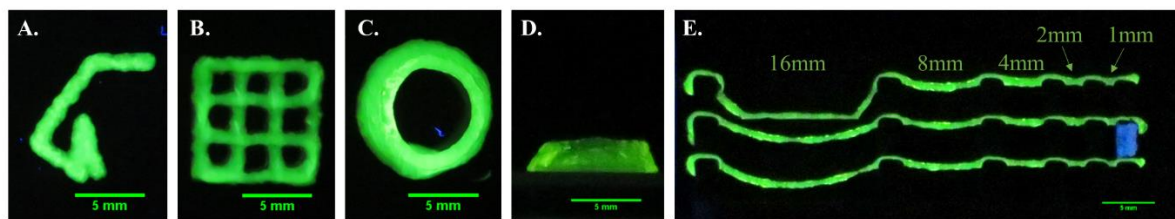


Decellularized Skin Extracellular Matrix (dsECM) Improves the Physical and Biological Properties of Fibrinogen Hydrogel for Skin Bioprinting Applications

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Supplementary Materials:



F.	Artifact Test	Fibrinogen	Fibrinogen + 1% dsECM	Fibrinogen + 2% dsECM	<i>p</i> -value
A.	Turn Angle (125°)	125.4 ± 2.6	126.4 ± 0.5	129.5 ± 2.0	<i>p</i> = 0.617
	Turn Angle (90°)	88.3 ± 0.2	87.7 ± 4.0	84.2 ± 3.5	<i>p</i> = 0.617
	Turn Angle (55°)	59.1 ± 1.3	56.7 ± 2.0	59.7 ± 1.1	<i>p</i> = 0.617
	Turn Angle (20°)	22.9 ± 2.8	20.2 ± 3.2	19.5 ± 1.8	<i>p</i> = 0.617
	Filament Thickness	1.2 ± 0.1	1.1 ± 0.1	1.1 ± 0.1	<i>p</i> = 0.152 *
	Filament Uniformity	1.0 ± 0.0	1.0 ± 0.0	1.0 ± 0.0	<i>p</i> = 0.317
B.	Crosshatch Pore Size	1.6 ± 0.3	2.6 ± 0.2	2.2 ± 0.1	<i>p</i> = 0.002 ***
	Crosshatch PR Value	0.94 ± 0.01	0.92 ± 0.01	0.94 ± 0.01	<i>p</i> = 0.052 *
C.	Tube Wall Thickness	2.2 ± 0.3	1.8 ± 0.2	2.1 ± 0.2	<i>p</i> = 0.126 *
	Tube Radial Accuracy	0.9 ± 0.0	0.9 ± 0.0	0.9 ± 0.0	<i>p</i> = 0.592
	Average Tube Height	2.6 ± 0.1	2.2 ± 0.1	2.4 ± 0.0	<i>p</i> = 0.003 ***
	Average Tube Width	9.7 ± 0.5	9.3 ± 0.1	9.1 ± 0.0	<i>p</i> = 0.076 *
E.	Deflection Overhang (16mm)	-3.0 ± 0.0	-2.5 ± 0.4	-2.8 ± 0.4	<i>p</i> = 0.007 ***
	Deflection Overhang (8mm)	-0.9 ± 0.1	-0.8 ± 0.2	-0.9 ± 0.1	<i>p</i> = 0.832
	Deflection Overhang (4mm)	-0.5 ± 0.1	-0.4 ± 0.1	-0.4 ± 0.0	<i>p</i> = 0.623
	Deflection Overhang (2mm)	-0.3 ± 0.0	-0.3 ± 0.0	-0.2 ± 0.0	<i>p</i> = 0.940
	Deflection Overhang (1mm)	-0.2 ± 0.0	-0.2 ± 0.0	-0.1 ± 0.0	<i>p</i> = 0.987

Figure S1: Artifact printability data. (A) Turn accuracy, (B) crosshatch, (C) tube width, (D) tube height, and (E) overhang deflection tests were performed. (F) A table with detailed results of each printability test by hydrogel type. Data are presented as the mean ± the SD, with the associated *p*-value.

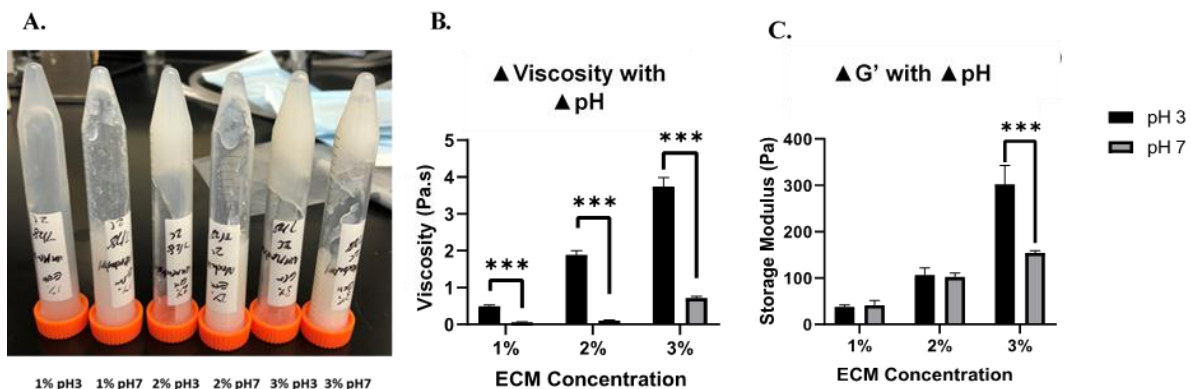


Figure S2: pH effect on human skin ECM rheological properties. (A) Image of various ECM solutions at pH3 and pH7. Phase separation was observed in ECM solutions at pH7, (B) average viscosity, and (C) average G' of various ECM solutions at pH3 and pH7.