International Journal of Bioprinting

RESEARCH ARTICLE

Bioprinting of hydrogel beads to engineer pancreatic tumor-stroma microtissues for drug screening

Supplementary File

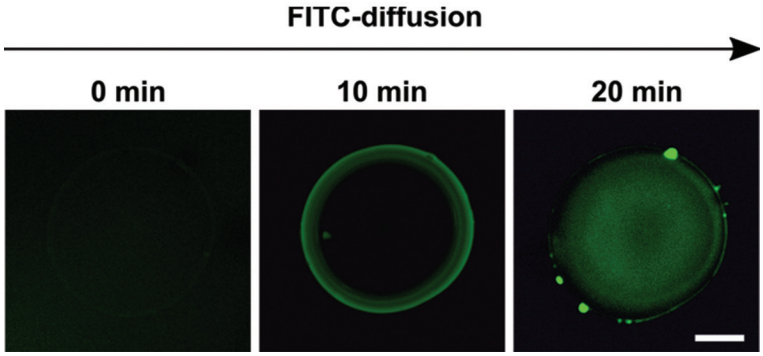

Figure S1. Characterization of the diffusion gradient within the GelMa beads by fluorescein isothiocyanate solution incubated with different periods of time. Scale bar = 200 μm.

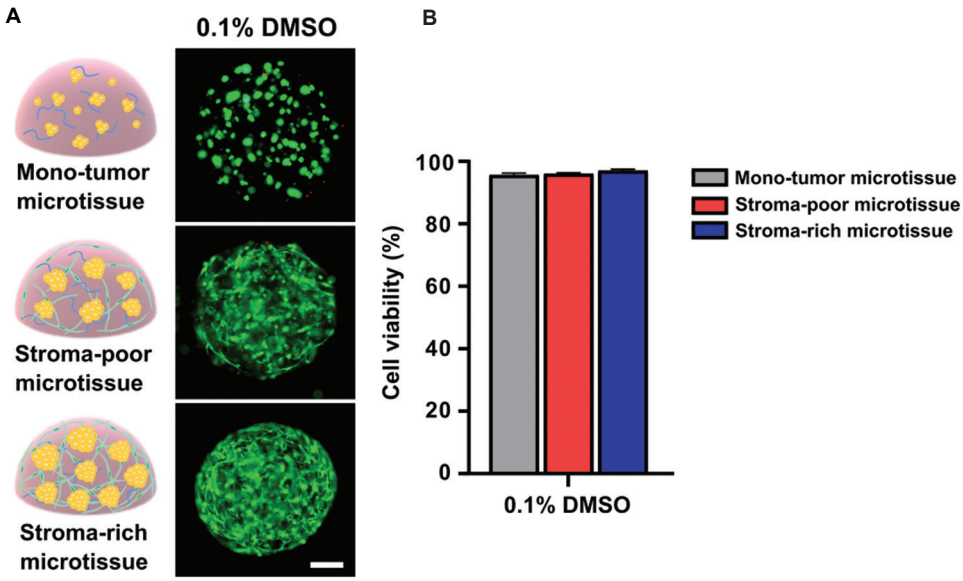

Figure S2. Control experiments for drug screening by treating pancreatic ductal adenocarcinoma (PDAC) models with 0.1% dimethyl sulfoxide (DMSO). (A) Representative fluorescent micrographs of PDAC models after incubation with culture medium containing 0.1% DMSO for 72 h. Scale bar = 200 μm. (B) Cell viabilities. Experimental values are expressed in mean ± standard error, $n = 3$.

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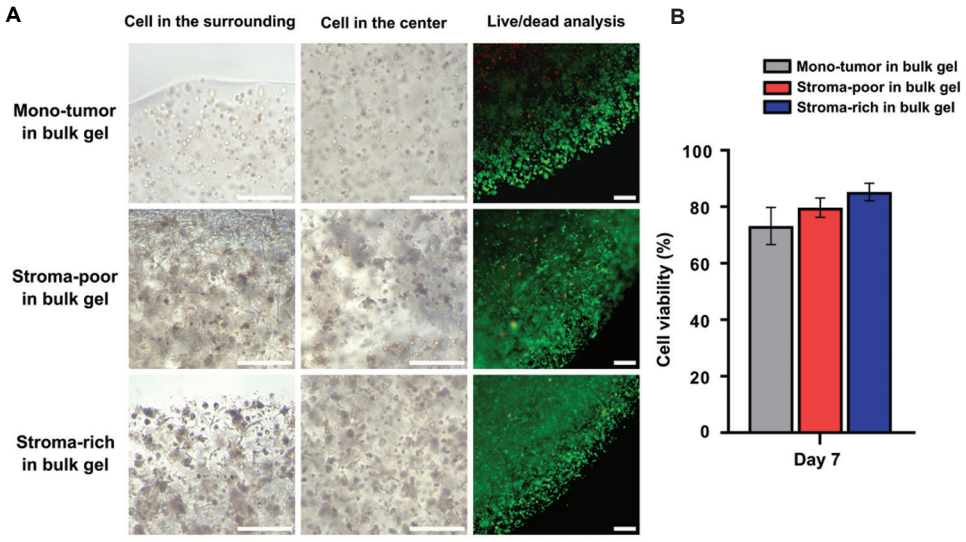

Figure S3. Characterization of cells cultured in a bulk GelMA hydrogel. (A) Representative live/dead staining images of three models. Scale bar = 200 μm. (B) Cell viability. Experimental values are expressed in mean ± standard error, $n = 3$.

Table S1. Cell viability analysis of the engineered 3D PDAC models during 1-week culture and the area of Calcein-AM and PI

Culture days / PDAC models		Day 1		Day 4		Day 7	
		Area*Calcein -AM* (μm²)	Area*PI* (μm²)	Area*Calcein -AM* (μm²)	Area*PI* (μm²)	Area*Calcein -AM* (μm²)	Area*PI* (μm²)
Mono-tumor microtissue	#1	56532.8	888.4	59053.4	1287.4	90201.4	925.8
	#2	52157.8	1485.0	61455.3	1353.3	80308.6	1865.9
	#3	49670.7	1014.9	69721.0	1182.8	80834.1	1486.3
Stroma-poor microtissue	#1	94688.7	1787.1	227530.9	4945.7	384535.1	14759.8
	#2	98296.7	1588.3	245683.1	9848.9	399767.5	8210.2
	#3	99023.7	1594.7	233458.1	6829.8	394621.6	19167.0
Stroma-rich microtissue	#1	130512.6	1105.3	345061.9	16690.3	582332.1	30233.7
	#2	125047.7	1368.8	357534.8	15304.7	585375.7	32164.2
	#3	139568.6	1711.0	354001.7	12787.9	590670.1	30871.6

3D: Three dimensional, PDAC: Pancreatic ductal adenocarcinoma, PI: Propidium iodide