

Materials List for:

# Gradient Strain Chip for Stimulating Cellular Behaviors in Cell-laden Hydrogel

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URL: <https://www.jove.com/video/53715>

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## Materials

Name	Company	Catalog Number	Comments
1.5 mL black microcentrifuge tube	Argos Technologies	03-391-161	This one can be replaced with a neutral color of 1.5 mL tube covered with aluminum foil
10x DPBS	Sigma-Aldrich	56064C	
Alexa Fluor 488 phalloidin	Invitrogen	A12379	
BSA	Sigma	A1595	
Calcein	Molecular Probe	C1430	For labeling viable cells
CCD	PCO. Imaging	Pixelfly qe	
Cell membrane permeating solution	Sigma-Aldrich	X100	0.5% Triton X-100 for permeating cell membrane
DAPI	Sigma-Aldrich	D8417	Cell nucleus staining
Dialysis membrane	Sigma-Aldrich	D9527	Molecular weight cut-off = 14,000
DMEM	Gibco	11995-065	
Double-side tape	3M	8003	
FBS	Hyclone	SH30071.03	
Gelatin	Sigma-Aldrich	G2500	gel strength 300, type A, from porcine skin
High frequency electronic corona generator	Electro-technic products	MODEL BD-20	
Methacrylic Anhydride	Sigma-Aldrich	276685	
Micro syringe	Hamilton	80501	50 µL
Microscope	Olympus	IX71	Include two filter sets: LF405/LP-B-000 and LF488/LP-C-000 from Semrock
Oxygen plasma machine	Harrick plasma	PDC-001	
Paraformaldehyde	Sigma-Aldrich	P6148	For fixing cell
PDMS	DOW CORNING	Sylgard 184	Mixture for PDMS chip cast-molding fabrication
Pen-Strep	Gibco	10378-016	penicillin/streptomycin
Photoinitiator	CIBA	Irgacure 2959	
Propidium iodide	Sigma-Aldrich	P4170	For labeling dead cells
Sterile Filtration cup	Millipore	SCGPT05RE	
TMSPMA	Sigma-Aldrich	440159	For hydrogel immobilization
Ultrasonicator	Delta	D150H	150W, 43kHz
UV light	DAIHAN	WUV-L10	
Freeze Dryer	FIRSTEK	150311025	

NIH3T3(fibroblast)	Food Industry Research and Development Institute(FIRDI)	08C0011	
MOXI Z Mini Automated Cell Counter	ORFLO	MXZ001	