

Materials List for:

Bioprintable Alginate/Gelatin Hydrogel 3D *In Vitro* Model Systems Induce Cell Spheroid Formation

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URL: <https://www.jove.com/video/57826>

DOI: [doi:10.3791/57826](https://doi.org/10.3791/57826)

Materials

Name	Company	Catalog Number	Comments
Sodium alginate	FMC BioPolymer	CAS-No: 9005-38-3	Protanal LF 10/60 FT
Gelatin	Sigma-Aldrich	G9391	Type B gelatin from bovine skin
Dubelcco's phosphate buffered saline (DPBS 1X)	Gibco	LS14190136	1×, w/o calcium, w/o magnesium
Magnetic hotplate	Corning	N/A	Stirrer/hot plate model PC-420
50 mL centrifuge tubes	Corning	352098	Falcon® 50mL High Clarity PP Centrifuge Tube, Conical Bottom, Sterile
Centrifuge	GMI	N/A	Sorvall RT6000D, GMI, USA
Calcium chloride anhydrous	Sigma-Aldrich	C1016	
MilliQ water	Millipore	N/A	
Millipore 0.22 µm filters	Millipore	SLGS033SB	Millex-GS Syringe Filter Unit, 0.22 µm, mixed cellulose esters, 33 mm, ethylene oxide sterilized
Oscillation rheometer MCR 302	Anton Paar	N/A	
Rheometer measuring tool CP25	Anton Paar	79038	Conical plate geometry for rheometer
RheoCompass	Anton Paar	N/A	Software controlling rheometer MCR 302
Scanning electron microscope	Hitachi	N/A	SEM, Hitachi SU-3500 Variable Pressure
Paraformaldehyde, 96%, extra pure	Acros Organics	416785000	
Dulbecco modified eagle medium (DMEM)	Gibco	11965092	
Antibiotic/Antimycotic solution (100X) stabilized	Sigma	A5955	
Fetal bovine serum	Wisent Bioproducts	080-150	
Cell culture T-75 flasks	Sigma-Aldrich	CLS430641	75 cm ² TC-Treated surface treatment
3D bioprinter BioScaffolder 3.1	GeSiM	N/A	
GeSim software	GeSiM	N/A	Software controlling BioScaffolder 3.1

10cc cartridge UV resist	EFD Nordson	7012126	
End cap	EFD Nordson	7014472	
Tip cap	EFD Nordson	7014469	
Piston	EFD Nordson	7012182	
Stainless nozzle G25	EFD Nordson	7018345	
Water bath	VWR	N/A	
Agarose	Sigma-Aldrich	A9539	Bioreagent, for molecular biology
Costar 6-well plates	Corning	3516	TC-Treated Multiple Well Plates, Individually Wrapped, Sterile
Confocal spinning disk inverted microscope	Olympus Life Science	N/A	Olympus IX83
MTS assay kit	Promega	G3582	CellTiter 96® Aqueous One Solution Cell Proliferation Assay
Live/Dead viability cytotoxicity kit	Molecular Probes, ThermoFisher Scientific	L3224	
Trypsin 0.25/EDTA 1X	Gibco	25200-072	
Corning 96-well plate	Corning	3595	Clear Flat Bottom Polystyrene TC-Treated Microplate, Individually Wrapped, with Low Evaporation Lid, Sterile
Autoclave Tuttner	Heidolph Brinkmann	N/A	Heidolph Tuttner 2540E Autoclave Sterilizer Electronic Model with 4 Stainless Steel Trays, 23L Capacity
Trypan blue	Invitrogen	T10282	0.4% solution
Ethanol	Commercial Alcohols	P016EA95	Greenfield Speciality Alcohols
CO ₂ Incubator	Panasonic	N/A	MCO 19AIC-PA
Lyophilizer	SP Scientific	N/A	Virtis Sentry 2.0
SolidWorks	Dassault Systems	N/A	A CAD software used to build demonstrative propeller-like model
MATLAB	The MathWorks	N/A	A programming software used to generate G-code for BioScaffolder 3.1