

Materials List for

Gelatin Methacryloyl Granular Hydrogel Scaffolds: High-throughput Microgel Fabrication, Lyophilization, Chemical Assembly, and 3D Bioprinting

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Materials

Name	Company	Catalog Number	Comments
1H,1H-perfluoro-1-octanol	Alfa Aesar, MA, USA	B20156-18	98% purity
Biopsy punch	Integra Miltex, NY, USA	33-31A-P/25	1.5 mm Biopsy Punch with Plunger System
Blunt needle	SANANTS	30-002-25	25 G
Bruker Avance NEO 400 MHz	400 MHz Bruker NEO, MA, USA		NMR device
Centrifuge	Eppendorf, Germany	5415 C	
Centrifuge tube	Celltreat, MA, USA	229423	
Coffee filters	BUNN, IL, USA	20104.0006	BUNN 8-12 Cup Coffee Filters, 6 each, 100 ct
Desiccator	Thermo Scientific	5311-0250	Nalgene Vacuum Desiccator, PC Cover and Body, 280 mm OD
Deuterium oxide	Sigma, MA, USA	151882	
Dialysis membrane (12-14 kDa)	Spectrum Laboratories, NJ, USA	08-667E	
Dulbecco's phosphate buffered saline (DPBS, 1x)	Sigma, MA, USA	56064C-10L	dry powder, without calcium, without magnesium, suitable for cell culture
Erlenmeyer flask	Corning, NY, USA	4980	Corning PYREX
Ethanol	VWR, PA, USA	89125-188	Koptec 200 proof
External thread cryogenic vials (cryovials)	Corning, NY, USA	430659	
Freeze dryer	Labconco, MO, USA	71042000	Equipped with vacuum pump (Catalog# 7587000)
Gelatin powder	Sigma, MA, USA	G1890-5100G	Type A from porcine skin, gel strength ~300 g Bloom
Glass microscope slides	VWR, PA, USA	82027-788	
Hotplate	FOUR E'S SCIENTIFIC	MI0102003	5 inch Magnetic Hotplate Stirrer Max Temp 280 °C/536 °F
Kimwipes	Fischer scientific, MA, USA	06-666	
KMPR 1000 negative photoresist series	Kayaku Advanced Materials, MA, USA	121619	KMPR1025 and KMP1035 are included

LAPONITE XLG	BYK USA Inc., CT, USA	2344265	
Lithium phenyl-2,4,6-trimethylbenzoylphosphinate (LAP)	Sigma, MA, USA	900889-1G	>95%
Luer-Lok connector	BD, NJ, USA	BD 302995	
MA/BA Gen4-Serie Mask- und Bond-Aligner	SÜSS MicroTeck, German		Nanofabrication device
Methacrylate anhydride	Sigma, MA, USA	276685-100ML	contains 2,000 ppm topanol A as inhibitor, 94%
Milli-Q water	Millipore Corporation, MA, USA	ZRQSVR5WW	electrical resistivity $\approx 18 \text{ M}\Omega$ at 25 °C, Direct-Q 5 UV Remote Water Purification System
Novec 7500 engineering fluid	3M, MN, USA		3M ID 7100003723
Oven	VWR, PA, USA	VWR-1410	1410 Vacuum Oven
Parafilm	Fischer scientific, MA, USA	HS234526C	
Pasteur pipette	VWR, PA, USA	14673-010	
Petri dish	VWR, PA, USA	25384-092	polystyrene
Pico-Surf	Sphere Fluidics, UK	C022	(5% (w/w) in Novec 7500)
Pipette	VWR, PA, USA	89079-970	
Pipette tips	VWR, PA, USA	87006-060	
Plasma cleaner chamber	Harrick Plasma, NY, USA	PDC-001-HP	
Polydimethylsiloxane	Dow Corning, MI, USA	2065623	SYLGARD 184 Silicone Elastomer Kit
Positive displacement pipette	Microman E M100E, Gilson, OH, USA	M100E	
Silicon wafers	UniversityWafer, MA, USA	452/1196	4-inch mechanical grade
Spatula	VWR, PA, USA	231-0104	Disposable
SU-8	Kayaku Advanced Materials, MA, USA		
Syringe pump	Harvard Apparatus, MA, USA	70-2001	PHD 2000
Trichloro(1H,1H,2H,2H-perfluorooctyl)silane	Millipore Sigma, MA, USA	448931-10G	97%
Tygon tubings	Saint-globain, PA, USA	AAD04103	
UV light	QUANS		Voltage: 85 V-265 V AC / Power: 20 W
Vacuum filtration unit	VWR, PA, USA	10040-460	0.20 μm
Vortex	Fischer scientific, USA	14-955-151	Mini Vortex Mixer