

Materials List for:

Light-mediated Formation and Patterning of Hydrogels for Cell Culture Applications

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Materials

Name	Company	Catalog Number	Comments
Custom Peptides	Various Vendors	----	Peptides may also be synthesized via standard SPPS techniques with materials from vendors including ChemImpex and ChemPep.
4-arm PEG Thiol, MW 20k	JenKem USA	4ARM-SH	Listed under Multi-arm Homofunctional PEGs. PEG4SH may also be synthesized as previously referenced.
Lithium Phenyl-2,4,6-trimethylbenzoylphosphinate	Colorado Photopolymer Solutions	Li-TPO	
Dimethyl Phenylphosphonite	Sigma Aldrich	149470	Caution, causes severe skin burns and eye damage. Wear protective gloves, clothing, and eye protection.
2,4,6-Trimethylbenzoyl Chloride	Sigma Aldrich	682519	Caution, causes severe skin burns and eye damage. Wear protective gloves, clothing, and eye protection.
Lithium Bromide	Sigma Aldrich	213225	
2-Butanone	Sigma Aldrich	360473	
Flask, Round Bottom, 100 ml	Chemglass	CG-1506-05	
80 ml Filter Funnel, Buchner, Medium Frit	Chemglass	CG-1402-L-02	Filter paper inside a regular glass funnel may be used if desired.
Magnetic Stir Bars	Various Vendors	----	
Magnetic Stirring and Hot Plate	Various Vendors	----	
Vacuum Dessicator	Various Vendors	----	
Deuterium Oxide	Acros Organics	16630	
Dulbecco's Phosphate Buffered Saline	ThermoFisher Scientific	14190-250	
Penicillin Streptomycin	ThermoFisher Scientific	15070-063	
Fungizone	ThermoFisher Scientific	15290-018	
Trypsin-EDTA (0.5%), no phenol red	ThermoFisher Scientific	15400-054	Select appropriate medium and trypsin depending on cell type.
Microcentrifuge tubes	Various Vendors	----	1.5 or 2 ml sizes, sterile.
BD Syringe with Slip (Luer) Tips (Without Needle)	Fisher Scientific	14-823-16H	Product number listed here is for a 1 ml syringe (16H), Various sizes are available (14-823-XX).
Fisherfinest Premium Plain Glass Microscope Slides	Fisher Scientific	12-544-1	

High-Purity Silicone Rubber, 0.010" Thick, 6" x 8" Sheet, 55A Durometer (Gasket)	McMaster Carr	87315K62	
Ethanol, 200 Proof	Decon Labs	2701	
RainX, Original	Amazon	800002243	May be purchased from other vendors.
Sigmacote	Sigma Aldrich	SL2	
Photomasks	Advance Reproductions Corporation	----	Photomask Division, different designs may be printed as desired.
DTNB; Ellman's Reagent; 5,5-dithio-bis(2-nitrobenzoic acid)	ThermoFisher Scientific	PI-22582	
Sodium Phosphate Dibasic	Sigma Aldrich	S5136	
Ethylenediaminetetraacetic acid	Sigma Aldrich	E6758	
Sodium Hydroxide, Pellets/ Certified ACS	Fisher Scientific	S318	
Orthophosphoric Acid	Alfa Aesar	33266	
Cysteine Hydrochloride Monohydrate	Sigma Aldrich	C7880	
LIVE/DEAD Viability/Cytotoxicity Kit, for mammalian cells	ThermoFisher Scientific	L-3224	
CellTiter 96 Aqueous One Solution Assay	Promega	G3582	
Centrifuge	Various Vendors	----	Capable of speeds at 90-110 x g.
Multiwell Plate Reader	Various Vendors	----	Capable of reading absorbance at 405 nm in a 96-well plate.
Epifluorescent or Confocal Microscope	Various Vendors	----	To visualize peptide patterns and cells within hydrogels.
Omicure Exfo Series 2000	Excelitas Technologies	----	Alternate light systems may be used to polymerize hydrogels.
Zeiss Zen Lite Software	Zeiss	----	Available at zeiss.com; compatible with images taken on Zeiss microscopes
ImageJ	NIH	----	Available at imagej.nih.gov; applicable for general image analysis