

Materials List for:

A High-throughput Cell Microarray Platform for Correlative Analysis of Cell Differentiation and Traction Forces

Kerim B. Kaylan¹, Andreas P. Kourouklis¹, Gregory H. Underhill¹

¹Department of Bioengineering, University of Illinois at Urbana–Champaign

Correspondence to: Gregory H. Underhill at gunderhi@illinois.edu

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Materials

Name	Company	Catalog Number	Comments
0.2 µm syringe filter	Pall Corporation	4433	Match with appropriately-sized Luer lock plastic syringes.
100 × penicillin–streptomycin solution	Fisher Scientific	SV30010	
22 × 60 mm coverglasses	Electron Microscopy Sciences	63765	
3-(trimethoxysilyl)propyl methacrylate (3-TPM)	Sigma-Aldrich	440159	Store under inert gas per manufacturer's instructions. Exposure of 3-TPM to air could compromise silanization of glass substrates. CAUTION: 3-TPM is a combustible liquid. Keep away from heat, sparks, open flames, and hot surfaces and use only in a chemical fume hood.
3-[(3-Cholamidopropyl)dimethylammonio]propanesulfonate hydrate (CHAPS)	Sigma-Aldrich	C3023	
35 mm glass-bottom Petri dishes	Cell E&G	GBD00002-200	13 mm well consisting of #1.5 coverglass. Enables TFM and live-cell imaging.
384-well polypropylene V-bottom microplate, non-sterile	USA Scientific	1823-8400	
6-well polystyrene microplates	Fisher Scientific	08-772-1B	35 mm glass-bottom Petri dishes fit into wells of microplate, easing array fabrication.
Acetone	Sigma-Aldrich	179973	
Acrylamide	Sigma-Aldrich	A3553	CAUTION: Exposure to acrylamide can result in acute toxicity and irritation. Wear protective gloves, clothing, and eye protection.
Collagen I, rat tail	EMD Millipore	08-115MI	
Collagen III, human	EMD Millipore	CC054	
Collagen IV, human	EMD Millipore	CC076	
Crosslinker, 365 nm	UVP	CL-1000	
Dextran, rhodamine B-conjugated, 70 kDa	ThermoFisher Scientific	D1841	Used as a marker for array location.
Dimethyl sulfoxide	Fisher Scientific	BP231	
Dulbecco's phosphate-buffered saline (PBS)	Fisher Scientific (HyClone)	SH3001302	
Ethyl alcohol	Decon Labs	2701	

Ethylenediaminetetraacetic acid (EDTA)	Sigma-Aldrich	ED	
Fc-recombinant DLL1, mouse	R&D Systems	5026-DL-050	
Fc-recombinant DLL4, mouse	AdipoGen	AG-40A-0145-C050	
Fc-recombinant JAG1, rat	R&D Systems	599-JG-100	
Fibronectin, human	Sigma-Aldrich	F2006	
Fluorescent microscope, inverted	Zeiss	Axiovert 200M	Ensure microscope is equipped with a robotic stage for both automated fluorescent imaging and TFM. Environmental control (<i>i.e.</i> , 37 °C and 5% CO ₂) is highly advisable for TFM.
Fluoromount G with DAPI	SouthernBiotech	0100-20	
Glacial acetic acid	Sigma-Aldrich	695092	CAUTION: Acetic acid is flammable and corrosive. Wear protective gloves, clothing, and eye protection.
Glycerol	Sigma-Aldrich	M6145	
Irgacure 2959	BASF Corporation	55047962	
Laminin, mouse	EMD Millipore	CC095	
Methanol	Sigma-Aldrich	179957	
Microarray scanner	GenePix	4000B	Fluorophores must be Cy3- or Cy5-compatible.
Microarrayer	Digilab	OmniGrid Micro	Other microarrayers of similar or greater capability can readily be substituted.
Microscope slides, 25 × 75 mm	Sigma-Aldrich	CLS294775X25	~0.9 – 1.1 mm thickness.
<i>N,N'</i> -Methylenebisacrylamide (bisacrylamide)	Sigma-Aldrich	M7279	CAUTION: Exposure to acrylamide can result in acute toxicity and irritation. Wear protective gloves, clothing, and eye protection.
Paraformaldehyde (PFA), 16% v/v	Electron Microscopy Sciences	RT15710	Prepare PFA fresh (do not store) for optimal fixation. CAUTION: Exposure to PFA can result in acute toxicity and can also irritate or corrode skin on contact. Wear protective gloves, clothing, and eye protection and use only in a chemical fume hood.
Protein A/G, recombinant	ThermoFisher Scientific	21186	
Pyrex drying tray, 2,000 mL	Fisher Scientific	15-242B	
Rectangular 4-chambered culture dish	Fisher Scientific (Nunc)	12-565-495	For cell culture on arrayed microscope slides.
Sodium acetate	Sigma-Aldrich	S2889	
Sodium hydroxide	Sigma-Aldrich	415413	CAUTION: NaOH is highly caustic and can cause severe skin burns and eye damage. Wear protective gloves, clothing, and eye protection.
Stealth pin for arraying	ArrayIt	SMP3	Clean pins after each array run using the instructions of the manufacturer. Produces 150 micron domains; purchase other pin sizes (75–450 microns) as suited to your particular application.

Triton X-100	Sigma-Aldrich	X100	
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