

Materials List for:

PIP-on-a-chip: A Label-free Study of Protein-phosphoinositide Interactions

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Materials

Name	Company	Catalog Number	Comments
Coverslip			
Glass Coverslips: Rectangles	Fisher Scientific	12-544B	22 x 40 x 0.16 - 0.19 mm, No. 1 1/2; Borosilicate Glass
7X Cleaning Solution	MP Biomedicals	976670	Detergent
PYREX Crystallizing Dish	Corning	3140-190	Borosilicate glass dish with a flat bottom; Diameter x Height (190 x 100 mm); Distributor: VWR (89090-700)
Sentry Xpress 2.0	Paragon Industries	SC-2	Kiln
Name			
Company			
Catalog Number			
Comments			
PDMS			
Sylgard 184 Silicone Elastomer Kit	Dow Corning	4019862	Polydimethylsiloxane (PDMS); Distributor: Ellsworth Adhesives
PYREX Desiccator	VWR	89134-402	Vacuum Rated
Biopsy punch	Harris	15110-10	Harris Uni-Core; 1.0 mm diameter; Miltex Biopsy Punch with Plunger (Cat. No. 15110-10) can be used as an alternative
Name			
Company			
Catalog Number			
Comments			
Device			
Plasma Cleaning System	PlasmaEtch	PE25-JW	2-stage Direct Drive Oil Vacuum Pump, O2 service (Krytox Charged)
Digital Hot Plate	Benchmark	H3760-H	Purchased through Denville Scientific (Cat. No. 1005640)
Frosted Micro Slides	VWR	48312-003	Frosted, Selected, and Precleaned; Made of Swiss Glass; Thickness: 1 mm; Dimensions: 75 x 25 mm; GR 144
Name			
Company			
Catalog Number			
Comments			
Mold			
AutoCAD	Autodesk	v.2016	Drafting software for the photomask design
Photomask	CAD/Art Services	N/A	Design with black background and clear features was printed at 20k dpi resolution on a transparent mask (5 x 7 in) by CAD/Art Services
Silicone Wafers	University Wafer	1575	Prime Grade, Single Side Polished; 100 mm (4 inch) Diameter; 525 um Thickness

SU-8 50	MicroChem Corp.	N/A	Negative Tone Photoresist; Penn State Nanofabrication Facility Property
SU-8 Developer	MicroChem Corp.	N/A	Penn State Nanofabrication Facility Property
Name	Company	Catalog Number	Comments
SUV			
1-palmitoyl-2-oleoyl-sn-glycero-3-phosphocholine	Avanti Polar Lipids	850457C	POPC
L- α -phosphatidylinositol-4-phosphate	Avanti Polar Lipids	840045X	PI4P
L- α -phosphatidylinositol-4,5-bisphosphate	Avanti Polar Lipids	840046X	PI(4,5)P2
1-palmitoyl-2-oleoyl-sn-glycero-3-phosphoethanolamine	Avanti Polar Lipids	850757C	POPE; Required for the synthesis of α SRB-POPE
Lissamine Rhodamine B Sulfonyl Chloride (mixed isomers)	ThermoFisher Scientific	L-20	Required for the synthesis of α SRB-POPE
pH Sensitive Fluorescent Lipid Probe (α SRB-POPE)	In-house	N/A	In-house Synthesis (Huang D. et al. 2013)
Glass Scintillation Vial	VWR	66022-065	20 mL volume capacity
Aquasonic 250D	VWR	N/A	Ultrasonic Water Bath
Nuclepore Track-Etched Membranes	Whatman	110605	Polycarbonate Membrane; Diameter: 25 mm; Pore Size: 0.1 μ m; Distributor: Sigma-Aldrich
Chloroform	VWR	CX1054-6	HPLC grade
LIPEX Extruder	Transferra Nanosciences	T.001	LIPEX 10 mL Thermobarrel Extruder
Viscotek 802 DLS	Malvern Instruments	N/A	Dynamic Light Scattering; Penn State X-Ray Crystallography Facility Property
Name	Company	Catalog Number	Comments
Data Analysis			
GraphPad Prism	GraphPad Software	v.6	Curve-fitting software for data analysis
Name	Company	Catalog Number	Comments
Microscope			
Axiovert 200M Epifluorescence Microscope	Carl Zeiss Microscopy	N/A	Microscope
AxioCam MRm Camera	Carl Zeiss Microscopy	N/A	Camera
X-Cite 120	Excelitas Technologies	N/A	Light Source
Alexa 568 Filter Set	Carl Zeiss Microscopy	N/A	Ex/Em 576/603 nm
AxioVision LE64 v.4.9.1.0 Software	Carl Zeiss Microscopy	N/A	Image Processing Software
Name	Company	Catalog Number	Comments
Other			
Tips	VWR	10034-132	200 μ L pipette tips; Thin and smooth tip for applying the protein solution into the microfluidic channel
Tips	VWR	53509-070	10 μ L pipette tips; Thin and smooth tip for applying the vesicle solution into the microfluidic channel
Orion Star A321 pH meter	Thermo Scientific	STARA3210	pH meter
Orion micro pH probe	Thermo Scientific	8220BNWP	micro pH probe

N-(2-Hydroxyethyl)-Piperazine-N'-(2-Ethanesulfonic Acid)	VWR	VWRB30487	HEPES, Free Acid
Sodium Chloride	VWR	BDH8014-2.5KGR	NaCl
Tubing	Allied Wire & Cable	TFT-200-24 N	Internal Diameter: 0.020-0.026 inches (0.051-0.066 cm); Wall Thickness: 0.010 inches (0.025 cm); Flexible Polytetrafluoroethylene Thin-Wall Tubing; Natural Color
Nitrogen Gas - Industrial	Praxair	N/A	Local Provider
Oxygen Gas - Industrial	Praxair	N/A	Local Provider
Liquid Nitrogen	Praxair	N/A	Local Provider