

Materials List for:

A Microfluidic System with Surface Patterning for Investigating Cavitation Bubble(s)–Cell Interaction and the Resultant Bioeffects at the Single-cell Level

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Materials

Name	Company	Catalog Number	Comments
Reagent/Materials			
75 mm x 38 mm Plain Microscope Slides	Corning	2947-75X38	
Acetone	Sigma Aldrich, Co.	320110	ACS reagent, ≥99.5%
Isopropyl alcohol	Sigma Aldrich, Co.	W292907	≥99.7%, FCC, FG
Sulfuric acid	Sigma Aldrich, Co.	320501	ACS reagent, 95.0-98.0%
Hydrogen peroxide	Sigma Aldrich, Co.	216763	30 wt.% in H ₂ O
Primer P-20	Microchem	MCC Primer 80/20	
NFR photoresist	JSR	NFR016D2	
Photomask	Photoplotstore	N/A	4x4 Direct write mask
MF-319 Developer	Shipley (Rohm and Haas)	Microposit MF-319	
1165 Photoresist Remover	Dow Chemical, Co.	DEM-10018073	1-methyl-2-pyrrolidinone based
S1813 photoresist	Shipley (Rohm and Haas)	S1813	
PLL-g-PEG	SuSoS	PLL(20)-g[3.5]- PEG(2)	
HEPES	ThermoFisher Scientific	15630080	
Paraffin film	HACH	251764	
SU-2025 photoresist	Microchem	SU-2025	
PDMS	Dow Corning	184 SIL ELAST KIT 0.5KG	
Microbore Tubing	Saint-Gobain PPL Corp.	S-54-HL	
Metal pins	New England Small Tube	NE-1300-01	Cut Tube (straight), 0.025" OD x 0.017" ID x 0.50" Long
HeLa cells	Duke Cell Culture Facility	(307-CCL-2) HeLa, p.148	
DPBS (1x) buffer	ThermoFisher Scientific	14190144	
DMEM culture medium	ThermoFisher Scientific	11995065	
Fibronectin Bovine Protein, Plasma	ThermoFisher Scientific	33010018	
0.25% Trypsin-EDTA (1x)	ThermoFisher Scientific	25200056	
Propidium Iodide	ThermoFisher Scientific	P21493	
Carboxylate Microspheres 1.00 μm	Polysciences, Inc	08226-15	
Carboxylate Microspheres 2.00 μm	Polysciences, Inc	18327-10	
EDC (1-ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride)	ThermoFisher Scientific	22980	
Sulfo-NHS	Sulfo-NHS (N-hydroxysulfosuccinimide)	24510	
Peptide-2000	Advanced BioMatrix	5020-5MG	

FITC Annexin V	ThermoFisher Scientific	A13199	
Fura-2, AM	ThermoFisher Scientific	F1221	
DMSO	Sigma Aldrich, Co.	D2650	
F-127	invitrogen	P6866	0.2 µm filtered (10% Solution in Water)
Reduced serum media	ThermoFisher Scientific	11058021	
Name	Company	Catalog Number	Comments
Equipment			
Plasma asher	Emitech	K-1050X	O ₂ / Ar plasma ashing of photoresist and other organic materials
Mask aligner	SUSS MicroTec	Karl Suss MA6/BA6	
E-beam evaporator	CHA Industries	CHA Industries Solution E-Beam	
RIE	Trion Technology	Trion Technology Phantom II	(oxide/ nitride/ polymer) etching
Stereoscope	AmScope	American Scope SM-4TZ-FRL	Stereo Microscope
Syringe pump	Chemyx Inc	NanoJet	
Cell culture incubator	NuAire	AutoFlow NU-8500 Water Jacket CO ₂ Incubator	
Biological Safety Cabinets	NuAire	NU-425-400	
Water bath	VWR	1122s	
Centrifuge	IEC	Centra CL2	
Microscope	Zeiss	Axio Observer Z1	
Nd:YAG laser (laser 1)	New Wave Research	Tempest	
Nd:YAG laser (laser 2)	New Wave Research	Orion	
Delay generator	Berkeley Nucleonics	BNC 565-8c	
Flash lamp	Dyna-Lite	ML1000 fiber-coupled flashtube	
high speed camera	DRS Hadland	Imacon 200	
high speed camera	Shimadzu	HPV-X	
high speed camera	Vision Research	Phantom V7.3	
PIV software	LaVision	DaVis 7.2	
camera	Zeiss	AxioCam MRc 5	
software	Zeiss	AxioVision	
PTI system	Horiba	S/N: 1705 RAM-X	
EasyRatio software	Horiba	Easy Ratio Pro 2	version 2.3.125.86
63× objective	Zeiss	LD Plan Neofluar	