

Materials List for:

# Generating Controlled, Dynamic Chemical Landscapes to Study Microbial Behavior

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## Materials

Name	Company	Catalog Number	Comments
(3-Aminopropyl) triethoxysilane (APTES)	Sigma-Aldrich	A3648	>98% purity, highly toxic
CELLSTAR tube	Greiner Bio-One	210261	50 ml
Centrifuge	Eppendorf	5424R	to eliminate spent media from the bacterial culture
Digital Incubators Incu-Line	VWR-CH	390-0384	to bake 3D master
Duster	VWR-CH	16650-22	to clean the wafer and microchannels
Hot plate	VWR-CH	444-0601	to bond the microchannels
Isopropanol	Sigma-Aldrich	W292907	
LightSafe micro centrifuge tubes	Sigma-Aldrich	Z688312	1.5 ml
MATLAB	Mathworks		for image analysis and bacterial tracking
Microcentrifuge tube	Eppendorf	30120086	1.5 ml
Microscope glass slide	VWR-CH	631-1552	
Microscope Nikon Eclipse TiE	Nikon Instruments	MEA53100	with motorized stage
MNI-Glutamate	Tocris Bioscience	1490	>98 % purity, photosensitive
Mold printing equipment	Stratasys		Objet30 3D printer
Mold printing service	3D Printing Studios	Custom	<a href="https://www.3dprintingstudios.com/">https://www.3dprintingstudios.com/</a>
Nanodrop One UV-Vis Spectrophotometer	Thermo Fisher Scientific	ND-ONE-W	to calibrate the uncaging
NIS Elements	Nikon Instruments		Microscope Imaging Software
Oven Venti-Line	VWR-CH	466-3516	to bake PDMS (with forced convection)
Photoresist SU-8-3050	MicroChem Corp.	SU8-3050	
Plasma chamber Zepto	Diener Electronic	ZEPTO-1	to functionalize the surfaces before bonding
Polycarbonate membrane	Sterlitech	PCT0447100	0.4 µm pore size, 19 % open area, 24 µm thickness
Polyethylene microtubing	Scientific Commodities	BB31695-PE/2	I.D. x O.D.: 0.015" x 0.043" / 0.38mm x 1.09mm

Polystyrene Petri dish	VWR-CH	25373-100	bottom surface (90 mm x 15 mm) to bond the millifluidic device
Scale	VWR-CH	611-2605	to weight PDMS mixture
sCMOS camera Andor Zyla	Oxford Instruments		for phase contrast and fluorescence microscopy (max 100 fps)
Sea salt	Instant Ocean	Product No. SS1-160p	
SolidWorks 2015	Dassault Systemes SolidWorks		Used to design the mold
Spectra X light engine	Lumencolor		for LED 395 nm
Sylgard 184	Dow Corning	110-41-155	PDMS Si Elastomer Kit; curing agent
Syringe (Luer-Lok)	B Braun Omnifix	4616308F	
Syringe Needle	Agani	A228	from 10 to 30 ml
Syringe Pump 11 Pico Plus Elite	Harvard Apparatus	70-4506	Terumo Agani 23 gauge 5/8 inch (16mm)
VeroGrey	Stratasys		Dual Syringe Pump
Vortex-Genie	Scientific Industries	SI-0236	Mold Material