

Materials List for

Microfluidic Tools for Probing Fungal-Microbial Interactions at the Cellular Level

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Materials

Name	Company	Catalog Number	Comments
Agar	Difco Laboratories	214010	Used to solidify culture medium for bacterial and fungal cultivation within Petri dishes
Aluminum foil	Fisher Scientific Ltd	11759408	
AutoCAD 2021	Autodesk, USA		
Autoclave (VX-75)	Systec		
Centrifuge (5810R)	Eppendorf		
Chlorotrimethylsilane	Merck Life Sciences	386529	CAUTION: Chlorotrimethylsilane is a hazardous substance. Wear appropriate PPE and handle with care. Avoid contact with skin and eyes and prevent inhalation. Keep away from sources of ignition and use in a well-ventilated area.
Cork borer	SLS	COR1000	
Developer solution (mr-Dev 600)	Microresist Technologies		CAUTION: mr-Dev 600 developer solution is flammable
Erlenmeyer flasks	VWR	214-1108	e.g. 200 mL; choose size to suit your exact needs
Ethanol (70% v/v)	Fisher Scientific Ltd	E/0650DF/15	Diluted from 99.8% (Analytical Reagent Grade)
Fiji	ImageJ		Exemplar software package for imaging processing
Filtered, compressed air			Available as standard in most labs. Alternatively, an oil-free compressor with air regulator can be used.
Flat-headed wafer tweezers	SLS	INS5026	
Forceps	Fisher Scientific Ltd	10008051	Bent, sharp
Glass bottom petri dish	World Precision Instruments	FD35-100	35 mm
Glass bottom petri dish	World Precision Instruments	FD5040-100	50 mm
Glass crystallisation dishes	VWR	216-1865	Used for washing of PDMS slabs
Glass crystallisation dishes	VWR	216-1866	Used in the development of master moulds

Glass media bottles	Fisher Scientific Ltd	15456113	e.g. 250 mL; choose size to suit your exact needs
Glass syringe (Hamilton)	Fisher Scientific Ltd	10625251	Used for dispensing chlorotrimethylsilane
Hot plate (HP 160 III BM)	SAWATEC		
Inoculation loop	VWR	COPA175CS01	
Isopropyl alcohol	Sigma-Aldrich	W292907	
Laminar flow hood	Air Science (PCR)		Exemplar laminar flow hood used for device fabrication
LB medium	Fisher Scientific Ltd	BP9723-500	Exemplar nutrient broth for bacterial overnight culture
Light emitting diode light engine (LedHUB)	Omicron-Laserage Laserprodukte GmbH		Exemplar light source that can be used for imaging fungal-microbial interactions (fluorescence)
MA6 Ultraviolet mask aligner	Suss Microtec		
Malt extract	VWR	84618	Used to make exemplar fungal culture medium (Malt extract agar)
Mask Writer	Applied Materials	4700DP	Example of a mask writer which can be used to print photo-mask for photolithography
Master mould plastic mount			3D-printed bespoke holder manufactured in-house
Microbiological safety cabinet (BioMat2)	Contained Air Solutions		Exemplar MSC used for microbial culture and device inoculation
Milli-Q purified water			Available as standard in biology labs.
NaOH	Fisher Scientific Ltd	BP359-500	
NIS-Elements Advanced Research imaging software	Nikon		Exemplar software package for image acquisition
NIS-Elements Free Viewer	Nikon		Exemplar software package for viewing acquired images
Oven (Binder BD115)	Fisher Scientific Ltd	15602126	Used for curing poly(dimethylsiloxane)(PDMS)
Oven (CLO-2AH-S)	KOYO		Used for preparing silicon wafers
Parafilm	Bemis	HS234526B	transparent film
Petri dishes, square sterile	Fisher Scientific Ltd	11708573	120.5 mm
Petri dishes, sterile	Fisher Scientific Ltd	15370366	90 mm
Photolithography mask	Micro Lithography Services Ltd. UK		
Plasma cleaner (Zepto)	Diener Electronic	100012601	
Plastic cup	Semadeni	8323	
Plastic spatula	Semadeni	3340	
Portable precision balance (OHAUS Scout)	Fisher Scientific Ltd	15519631	Used for weighing PDMS, media components etc.
Precision cutter	Syneo	HS1251135P1183	Cutting edge diameter: 3.18 mm
Precision cutter	Syneo	HS1871730P1183S	Cutting edge diameter: 4.75 mm
Profilometer	Bruker		Dektak XT-stylus
Razor blades	Häberle Labortechnik	9156110	
Refridgerator	Haden		4-6 °C
Retiga R1 CCD camera	Qimaging		Exemplar camera that can be used for imaging fungal-microbial interactions
Scotch magic tape	Office Depot	3969954	19 mm invisible tape; clear tape
Shaking incubator (Cole-Parmer SI500)	Fisher Scientific Ltd	10257954	

Silicon wafer	Inseto		100 mm
Soda lime glass plate	Inseto		125 mm x 125 mm x 2 mm. Used to hold photolithography mask in mask aligner
Sodium chloride	Sigma-Aldrich	S7653	
Spincoater	SAWATEC	SM-180-BM	
SU-8 2010 photoresist	MicroChem		CAUTION: SU-8 photoresist is hazardous, take care when handling and prevent inhalation and contact with skin. Flammable, potentially carcinogenic and toxic to the environment.
Sylgard 184 elastomer kit	VWR	634165S	Used for the preparation of poly(dimethylsiloxane)(PDMS) devices
Temperature controlled incubator	Okolab		Exemplar incubator that can be used for imaging fungal-microbial interactions
Ti2-E inverted epifluorescence microscope	Nikon	MEA54000	Exemplar microscope that can be used for imaging fungal-microbial interactions
Ultrasonic cleaner S-Line	Fisher Scientific Ltd	FB15050	
Vacuum desiccator	Fisher Scientific Ltd	10528861	Silicisation and PDMS degassing should be conducted in separate desiccators
x10/0.3 NA CFI Plan Fluor DL objective lens	Nikon	MRH20105	Exemplar objective lens that can be used for imaging fungal-microbial interactions
x20/0.45 NA CFI Plan Fluor DL objective lens	Nikon	MRH48230	Exemplar objective lens that can be used for imaging fungal-microbial interactions