

Materials List for

# Forming, Confining, and Observing Microtubule-Based Active Nematics

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## Materials

Name	Company	Catalog Number	Comments
20 kD PEG (polyethylene glycol))	Sigma Aldrich	1419109	Depletion agent CAS Number: 125061-88-3
3-(trimethoxysilyl)propyl methacrylate	Sigma Aldrich	M6514-50ML	CAS Number: 2530-85-0
3D printer & Resin	Phrozen		Phrozen sonic mini 8K 3D printer - Aqua Gray 8K resin
40% Acrylamide Solution	BIO-RAD	1610140	CAS Number: 7732-18-5, 79-06-1
Acetic Acid	Fisher		CAS Number: 64-19-7
Acetone	Sigma Aldrich		CAS Number: 67-64-1
Adhesive sheets (NOTE: "Parafilm" is an alternative)	Grace Bio-Labs	620001	SecureSeal
Ammonium Persulfate	Sigma Aldrich	A3678	CAS Number: 7727-54-0
Aquapel (NOTE: "RainX" is an alternative)	Aquapel Glass Treatment		hydrophobic glass treatment
ATP (Adenosine triphosphate)	Sigma Aldrich	A1852	CAS Number: 34369-07-8
Beakers	VWR		
Catalase	Sigma Aldrich	C9322	CAS Number: "9001-05-2"
Desiccator	Bel-art		
Digital CMOS camera	Hamamatsu	ORCA - Flash4.0 LT+	
DTT (Dithiothreitol)	Sigma Aldrich	D9779	CAS Number: "3483-12-3"
EGTA (3,12-bis(carboxymethyl)-6,9-dioxa-3,12-diazatetradecane-1,14-dioic acid)	Sigma Aldrich	MFCD00004291	CAS Number: 67-42-5
Ethanol	Sigma Aldrich		CAS Number: 64-17-5
Fluorescence microscope	Leica	DM 2500P	
Glass Coverslips	VWR	48368-040	
Glass Slides	VWR	16004-430	
Glucose	Sigma Aldrich	G7021	CAS Number: 50-99-7
Glucose Oxidase	Sigma Aldrich	345386	CAS Number: 9001-37-0
GMPCPP (guanylyl 5'- $\alpha$ , $\beta$ -methylene diphosphonate)	Jena Bioscience	NU-405S	CAS Number: 14997-54-7

HFE7500 Oil	3M		
Hot Plate	Fisher Scientific	Thermix hot plate model 100M	
Isopropyl Alcohol	VWR		
KCl (potassium chloride)	Sigma Aldrich	P5405	CAS Number: 7447-40-7
Methanol	Sigma Aldrich		CAS Number: 67-56-1
MgCl <sub>2</sub> (Magnesium Chloride)	Sigma Aldrich	208337	CAS Number: 7786-30-3
Microcentrifuge tubes	Eppendorf - Thermo Fisher	1.5 mL	
Nanopure water purifier	Sartorius	arium mini	
NaOH (Sodium hydroxide)	Sigma Aldrich	SX0603	CAS Number: 1310-73-2
Petri Dishes	VWR		
PH Meter	Thermo Scientist	Orion 3 STAR	
Phosphoenol-pyruvate (PEP)	Sigma Aldrich	MFCD00044476	CAS Number: 4265-07-0
PIPES (1,4-Piperazinediethanesulfonic acid)	Sigma Aldrich		CAS Number: 5625-37-6
Pipettes (0.2 - 1000 µl)	VWR		
Pluronic F-127	Sigma Aldrich	2594628	
RAN Surfactant ( <b>NOTE:</b> "FluoSurf" from Emulso is an alternative)	Ran Biotechnologies	008-FluoroSurfactant-2wth-50G	
Silicon Oil (100mpa s-1000 mpa s)	Sigma Aldrich		CAS Number: 63148-52-7
Streptavidin	Thermofisher	S888	
Swinging Bucket Centrifuge	Thermo Scientist	Sorvall legend RT+	
Sylgard 184 Elastomer base	World Precision Instruments	SYLG184	
Sylgard 184 Elastomer Curing agent	World Precision Instruments	SYLG184	
Table top centrifuge	Eppendorf	MiniSpin Plus	
TEMED (Tetramethylethylenediamine)	BIO-RAD	1610800	CAS Number: 110-18-9
Trolox (6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid)	Sigma Aldrich	MFCD00006846	CAS Number: 53188-07-1
Tubulin	Cytoskeleton	T240-B	
Tubulin (Rhodamine labeled)	Cytoskeleton	TL590M-A	
Ultracentrifuge	Beckman	Optima Max-TL	
UV Light	RapidFix		
UV-curable glue ( <b>NOTE:</b> "Norland NO81" is an alternative)	RapidFix		
Water Bath	Thelco		
Whatman Filter paper	Sigma Aldrich	WHA1001325	