

Materials List for

# Directly Measuring Forces Within Reconstituted Active Microtubule Bundles

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jove.com/video/63819

## Materials

Name	Company	Catalog Number	Comments
10W Ytterbium Fiber Laser, 1064nm	IPG Photonics	YLR-10-1064-LP	
405/488/561/640nm Laser Quad Band Set for TIRF applications	Chroma	TRF89901v2	
6x His Tag Antibody, Biotin Conjugate	Invitrogen	#MA1-21315-BTIN	
Acetone, HPLC grade	Fisher Scientific	18-608-395	
Alpha casein from bovine milk	Sigma	1002484390	
ATP	Fisher Scientific	BP413-25	
Benzonase	Novagen	70746-3	
Biotin-PEG-SVA-5000	Laysan Bio, Inc.	NC0479433	
BL21 (DE3) Rosetta Cells	Millipore Sigma	71-400-3	
Catalase	MP Biomedicals LLC	190311	
CFI Apo 100X/1.49NA oil immersion TIRF objective	Nikon	N/A	
Chloramphenicol	ACROS Organics	227920250	
Coverslip Mini-Rack, for 8 coverslips	Fisher Scientific	C14784	
Delicate Task Wipers	Kimberly-Clark	34120	
Dextrose Anhydrous	Fisher Scientific	BP3501	
D-Sucrose	Fisher Scientific	BP220-1	
DTT	Fisher Scientific	BP172-25	
Ecoline Immersion Thermostat E100 with 003 Bath	LAUDA-Brinkmann	27709	
EDTA	Fisher Scientific	BP118-500	
EGTA	Millipore Corporation	32462-25GM	
FIJI / Image J	<a href="https://fiji.sc/">https://fiji.sc/</a>	N/A	
Frosted Microscope Slides	Corning	12-553-10	75mmx25mm, with thickness of 0.9-1.1mm
Glucose Oxidase	MP Biomedicals LLC	195196	Type VII, without added oxygen

GMPCPP	Jena Biosciences	JBS-NU-405S	Can be stored for several months at -20 °C and up to a year at -80 °C
Gold Seal-Cover Glass	Thermo Scientific	3405	
HEPES	Fisher Scientific	BP310-500	
Imidazole	Fisher Scientific	03196-500	
IPTG	Fisher Scientific	BP1755-10	
Laboratory dessicator	Bel-Art	999320237	190mm plate size
Kanamycin Sulfate	Fischer Scientific	BP906-5	
KIF5A K439 (aa:1-439)-6His	Gilbert Lab, RPI	N/A	doi.org/10.1074/jbc.RA118.002182
Kimwipe	Kimberley Clark	Z188956	lint-free tissue
Immersion Oil, Type B	Cargille	16484	
Lens Tissue	ThorLabs	MC-5	
LuNA Laser launch (4 channel: 405, 488, 561, 640nm)	Nikon	N/A	
Lysozyme	MP Biomedicals LLC	100834	
Magnesium Acetate Tetrahydrate	Fisher Scientific	BP215-500	
Microfuge 18	Beckman Coulter	367160	
MPEG-SVA MW-5000	Laysan Bio, Inc.	NC0107576	
Neutravidin	Invitrogen	PI31000	
Nikon Ti-E inverted microscope	Nikon	N/A	Nikon LuN4 Laser
Ni-NTA Resin	Thermo Scientific	88221	
Oligonucleotide - CACCTATTCTGAGTTTGC GCGA GAACTTCAAAGGC	IDT	N/A	
Oligonucleotide - GCCTTTGAAAGTTCTCGCGCAA ACTCAGAATAGGTG	IDT	N/A	
Open-top thickwall polycarbonate tube, 0.2 mL, 7 mm x 22 mm	Beckman Coulter	343755	
Optima-TLX Ultracentrifuge	Beckman Coulter	361544	
Paclitaxel (Taxol equivalent)	Thermo Fisher Scientific	P3456	
PIPES	ACROS Organics	172615000	
PMSF	Millipore	7110-5GM	
Porcine Tubulin, biotin label	Cytoskeleton, Inc.	T333P	
Porcine Tubulin, HiLyte 647 Fluor	Cytoskeleton, Inc.	TL670M	far red labelled
Porcine Tubulin, Rhodamine	Cytoskeleton, Inc.	TL590M	
Porcine Tubulin, Tubulin Protein	Cytoskeleton, Inc.	T240	
Potassium Acetate	Fisher Scientific	BP364-500	
Prime 95B sCMOS camera	Photometric	N/A	
Quadrant Detector Sensor Head	ThorLabs	PDQ80A	
Quikchange Lightning Kit	Agilent Technologies	210518	
Sodium Bicarbonate	Fisher Scientific	S233-500	
Sodium Phosphate Dibasic Anhydrous	Fisher Scientific	BP332-500	
Square Cover Glasses	Corning	12-553-450	18 mm x 18 mm, with thickness of 0.13-0.17 mm
Streptavidin Microspheres	Polysciences Inc.	24162-1	
Superose-6 Column	GE Healthcare	29-0915--96	
TCEP	Thermo Scientific	77720	
TLA-100 Fixed-Angle Rotor	Beckman Coulter	343840	

Ultrasonic Cleaner (Sonicator)	Vevor	JPS-08A(DD)	304 stainless steel, 40 kHz frequency, 60 W power
Vectabond APTES solution	Vector Laboratories	SP-1800-7	
Windex Powerized Glass Cleaner with Ammonia-D	S.C. Johnson	SJN695237	