

Materials List for:

# A Novel Stretching Platform for Applications in Cell and Tissue Mechanobiology

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## Materials

Name	Company	Catalog Number	Comments
PDMS	Ellsworth Adhesives	184 SIL ELAST KIT 0.5KG	The ratio base to cross-linker used in this protocol is 20:1. Mix in a laminar hood to keep dust from contaminating your
FluoSpheres fluorescent microspheres	Invitrogen	F8810	Keep away from light.
Linear voice coil	Moticon	LVCM-051-051-01	The motor comes in two pieces (magnet and coil). It has to be mounted on a ball bearing system to be functional.
Ball bearing slide	Edmund Optics	NT37-360	Miniature and Small Linear Motion Ball Bearing Slides
Linear positioning stage	Edmund Optics	38-960	Center Drive 1.25" Square Linear Translation Stages
Optical encoder	GSI microE systems	Mercury II 1600S - 0.5um resolution	reflective incremental encoder.
Motion controller	Galil	DMC-2143(DIN)-DC48 with AMP-20440	4 axis controller with a 4 axis amplifier
Load cell	Honeywell	31 low	miniature load cell with a range of 0-150 g
Insect minutens pins (0.20 mm)	Pin Service Austerlitz Insect pins		Stainless steel pins that are banded in an opened triangle shape
SU-8 2050	Micro Chem	SU-8 2050	Permanent epoxy negative photoresist. Keep away from heat and light
Air-plasma treatment system	Glowresearch		Autoglow Oxygen Plasma System
Rat-tail collagen	Invitrogen	A10483-01	Collagen I, Rat Tail 5 mg/ml
Hoechst 33342	Invitrogen	R37605	DNA-specific fluorescent dye. Keep in the fridge.
Kapton (Polyimide Film) Insulated Flexible Heaters	omega.ca	KHLV-0504/(10)-P	28 V flexible heaters; can be supplied with a 24 V
1/16 DIN Autotune Temperature and Process Controllers	omega.ca	CN63200-R1-LV	Temperature controller; supply 24 V.
DMEM culture medium	Hyclone	SH3024301	Dulbecco's Modified 30 Eagle Medium. Keep at 4 °C
Penicillin-Streptomycin	Hyclone	SV30010	Keep stock frozen. Keep working solution at 4 °C.

Fetal bovine serum (FBS)	Hyclone	SH3039603C	Keep frozen.
Trypsin 0.05%	Hyclone	SH30236.02	Keep frozen. Digestion of cell attachment proteins for subcultivation
Hepes	Wisent Inc	330-050-EL	HEPES-buffered salt solution
NaCl	Fisher Scientific	BP358-1	HEPES-buffered salt solution / Krebs physiological solution
KCl	Fisher Scientific	BP366-500	HEPES-buffered salt solution / Krebs physiological solution
MgSO <sub>4</sub>	Fisher Scientific	M65-500	HEPES-buffered salt solution / Krebs physiological solution
CaCl <sub>2</sub>	Fisher Scientific	C614-500	HEPES-buffered salt solution / Krebs physiological solution
Dextrose	Fisher Scientific	BP220-1	HEPES-buffered salt solution / Krebs physiological solution
NaHCO <sub>3</sub>	Fisher Scientific	BP328-1	Krebs physiological solution
KH <sub>2</sub> PO <sub>4</sub>	Fisher Scientific	BP362-500	Krebs physiological solution
Carbogen 95% O <sub>2</sub> /5% CO <sub>2</sub>	Lindle	DIN:02154749	Krebs physiological solution oxygenation
Nocodazole	Sigma	M1404	Microtubules depolymerization agent
Cytochalasin-D	Sigma	C8273	Actin filaments depolymerization agent
Anti- $\alpha$ -SMA-FITC	Sigma	F3777	Used to stain and quantify smooth muscle cells content
Picrosirius red stain	Fluka	43665	Used to stain and quantify collagen content