

Controlled Strain of 3D Hydrogels under Live Microscopy Imaging

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Materials

Name	Company	Catalog Number	Comments
Alexa Fluor 546 carboxylic acid, succinimidyl ester	Invitrogen	A20002	
Cell Medium (DMEM High Glucose)	Biological Industries	01-052-1A	Add 10% FBS, 1% PNS, 1% L-Glutamine, 1% Sodium Pyruvate
Cover Slip #1.5	Bar-Naor Ltd.	BN72204-30	22×40 mm
DIMETHYL SULPHOXIDE 99.5% GC DMSO	Sigma-Aldrich Inc.	D-5879-500 ML	
Dulbecco's Phosphate-Buffered Saline	Biological Industries	02-023-1A	
EVICEL Fibrin Sealant (Human)	Omrix Biopharmaceuticals	3902	Fibrinogen: 70 mg/mL, Thrombin: 800-1200 IU/mL
Fibrinogen Buffer	N/A		Recipe for 1L: 7g NaCl, 2.94g trisodium citrate dihydrate, 9g glycine, 20g arginine hydrochloride & 0.15g calcium chloride dihydrate. Bring final volume to 1L with PuW (pH 7.0-7.2)
Fluorescent micro-beads FluoSpheres (1 μm)	Invitrogen	F8820	Orange (540/560) Provided as suspension (2% solids) in water plus 2 mM sodium azide
High-Temperature Silicone Rubber	McMaster-Carr	3788T41	580 μm-thick E = 1.5 Mpa Poisson Ratio = 0.48 Tensile Strength = 4.8 MPa Upper limit of stretch = +300% engineering strain
HiTrap desalting column 5 mL (Sephadex G-25 packed)	GE Healthcare	17-1408-01	
HIVAC-G High Vacuum Sealing Compound	Shin-Etsu Chemical Co., Ltd.	HIVAC-G 100	
ImageJ FIJI software ³⁹	National Institute of Health, Bethesda, MD	Version 1.8.0_112	

Microcontroller (Arduino Uno + Adafruit Motorshield v2.3)	Arduino/Adafruit	Arduino-DK001/Adafruit-1438	
MicroVL 21R Centrifuge	Thermo Scientific	75002470	
Parafilm	Bemis	PM-996	
Primovert Light Microscope	Carl Zeiss Suzhou Co., Ltd.	491206-0011-000	
SCyUS CAD (Solidworks)	Dassault Systèmes	N/A	
SCyUS Code ³⁷	N/A	N/A	
Servomotor - TowerPro SG-5010	Adafruit	155	
SL 16R Centrifuge	Thermo Scientific	75004030	For 50 mL tubes
Sterile 10 cm non-culture plates	Corning	430167	
Thrombin buffer	N/A		Recipe for 1L: 20g mannitol, 8.77g NaCl, 2.72g sodium acetate trihydrate, 24 mL 25% Human Serum Albumin, 5.88g calcium chloride. Bring final volume to 1L with PuW (pH 7.0)
Trypsin EDTA Solution B (0.25%), EDTA (0.05%)	Biological Industries	03-052-1B	
USB Cable (Type B Male to Type A Male)	N/A	N/A	
Zeiss LSM 880 Confocal Microscope	Carl Zeiss AG	2811000417	
ZEN 2.3 SP1 FP3 (black)	Carl Zeiss AG	Release Version 14.0.0.0	