

Creation of a Knee Joint-on-a-Chip for Modeling Joint Diseases and Testing Drugs

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Materials

Name	Company	Catalog Number	Comments
3-isobutyl-1-methylxanthine	Sigma -Aldrich	I17018-1G	
6 well non-tissue culture plate	Corning Falcon® Plates	351146	
24 well non-tissue culture plate	Corning Falcon® Plates	351147	
30 mL syringes	BD Syringe Luer Lock Cascade Health	302832	
Alcian blue stain	EK Industries	1198	1% w/v, pH 1.0
Advanced DMEM	Gibco	12491-015	
αMEM	Gibco	12571-063	
Antibiotic-antimycotic	Gibco	15240-062	
Biopsy punch	Integra Miltex	12-460-407	
BODIPY® fluorophore	Molecular Probes		
Bone morphogenic protein 7 (BMP7)	Peprtech		
Curved forceps	Fisher Brand	16100110	
DMEM	Gibco	11995-065	Dulbecco's Modified Eagle Medium
Dexamethasone	Sigma -Aldrich	02-05-2002	
E-Shell 450 photopolymer in	EnvisionTec	RES-01-4022	
Fetal Bovine Serum	Gemini-Bio Products	900-208	
GlutaMAX	Gibco	3505-061	
gelatin from bovine skin	Hyclone	1003372809	
Hank's Balanced Salt Solution	Sigma -Aldrich	SH30588.02	
indomethacin	Sigma -Aldrich	I7378-56	
Insulin-Transferrin-Selenium-Ethanolamine (ITS)	Gibco	51500-056	
interleukin 1β	Peprtech	200-01B	

Leur-loc connectors	Cole-Parmer Instruments	45508-50	
L-proline	Sigma -Aldrich	115388-93-7	
β -glycerophosphate	Sigma -Aldrich	1003129352	
Medium bags	KiYATEC	FC045	
Methacrylic Anhydride	Sigma -Aldrich	102378580	
Phosphate buffered Saline	Corning	21-040-CM	
Pointed forceps	Fisher Brand	12000122	
Silicon mold	McMaster-Carr	RC00114P	
Silicon o-rings	McMaster-Carr	ZMCCs1X5	1mm x 5mm
SolidWorks	Dassault Systèmes SE, Vélizy-Villacoublay, France		
Surgical Blades	Integra Miltex	4-122	
Syringe pump	Lagato210P, KD Scientific	Z569631	10 syringe racks
T-182 tissue culture flasks	Fisher Brand	FB012939	
Tissue Culture Dish 150 mm	Fisher Brand	FB012925	
Transforming Growth Factor Beta (TGF- β 3)	Peprtech	100-36E	
Trypsin	Gibco	25200-056	
UV Flashlight	KBS	KB70109	395 nm
Vida Desktop 3D Printer	EnvisionTec		
Vitamin D3	Sigma -Aldrich	32222-06-3	1,25-dihydroxyvitamin D3