

Materials List for

# Sarcomere Shortening of Pluripotent Stem Cell-Derived Cardiomyocytes using Fluorescent-Tagged Sarcomere Proteins.

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## Materials

Name	Company	Catalog Number	Comments
1-Thioglycerol	Sigma-Aldrich	M6145-25	
2-Mercaptoethanol (55mM)	Thermo Fisher Scientific	21985-023	
2-methacryloyloxyethyl phosphorylcholine (MPC) polymer,	NOF Corp.	LIPIDURE-CM5206	
2-Propanol	Fujifilm wako	166-04836	
35-mm imaging dish with a polymer coverslip (μ-Dish 35 mm, high)	ibidi	81156	
AAVproR Helper Free System (AAV6) (vectors; pHelper, pRC6, pAAV-CMV-Vector)	Takara	6651	
ACTN2-mCherry (AR12, AR21) hiPSCs	N.A.		We inserted IRES-puromycin resistant cassette to 3' UTR of TNNT2 locus and mCherry around the stop codon of ACTN2 in 610B1 hiPSC line, following a method describe elsewhere (Anzai, Methods Mol Biol, in press)
B-27 Supplement (50X), serum free	Thermo Fisher Scientific	17504-044	
B-27 Supplement, minus insulin	Thermo Fisher Scientific	A18956-01	
B27 supplement (50X), minus Vitamin A	Thermo Fisher Scientific	12587-010	
Benzonase (25 U/μL)	Merck Millipore	70746	
Blasticidin S Hydrochloride	Fujifilm wako	029-18701	
BMP-4, Human, Recombinant,	R&D Systems, Inc.	314-BP-010	
Bovine Serum Albumin	Sigma-Aldrich	A4503-100g	
C59, Wnt Antagonist (WntC59)	abcam	ab142216	
CAD drawing software,	Robert McNeel and Associates, WA, USA	Rhinoceros 6.0	
Centrifugal ultrafiltration unit (100k MWCO), Vivaspin-20	Sartorius	VS2042	
CHIR99021	Cayman	13122	
Chromium etchant	Nihon Kagaku Sangyo Co., Ltd., Japan	N14B	

Chromium mask coated with AZP1350	Clean Surface Technology Co., Japan	CBL2506Bu-AZP	
Dr. GentLE Precipitation Carrier (20mg/mL Glycogen, 3 M Sodium Acetate (pH 5.2))	Takara	9094	
Dulbecco's Modified Eagle's Medium (DMEM) - high glucose	Sigma-Aldrich	D6429-500	
Dulbecco's Modified Eagle's Medium (DMEM) - high glucose, without sodium pyruvate	Sigma-Aldrich	D5796	
Ethanol (99.5)	Fujifilm wako	057-00456	
Fetal Bovine Serum	Moregate	59301104	
FGF-10, Human, Recombinant,	R&D Systems, Inc.	345-FG-025	
Fibroblast Growth Factor(basic), human, recombinant	Fujifilm wako	060-04543	
Gelatin from porcine skin powder	Sigma-Aldrich	G1890-100g	
Glasgow Minimum Essential Medium (GMEM)	Sigma-Aldrich	G5154-500	
GLASS BOTTOM culture plates	MatTek	P24G-1.5-13-F/H	
Ham's F-12	Thermo Fisher Scientific	11765-062	
Iscove's Modified Dulbecco's Medium (IMDM)	Thermo Fisher Scientific	12440-061	
L-alanine-L-glutamine (GlutaMAX Supplement, 200mM)	Thermo Fisher Scientific	35050-061	
L(+)-Ascorbic Acid Sodium Salt	Fujifilm wako	196-01252	
Laminin-511 E8 fragment (LN511-E8, iMatrix-511)	Nippi	892012	
Mask aligner	Union Optical Co., Ltd., Japan	PEM-800	
Maskless lithography tool	NanoSystem Solutions, Inc., Japan	D-Light DL-1000	
MEM Non-Essential Amino Acids Solution (100X)	Thermo Fisher Scientific	11140-050	
Millex-HV Syringe Filter Unit, 0.45 µm, PVDF (0.45-µm filter)	Merck Millipore	SLHVR33RS	
Myom2-RFP (SMM18)	N.A.		Developed in our previous paper (Chanthra, Sci Rep, 2020)
N-2 Supplement (100X)	Thermo Fisher Scientific	17502-048	
ORCA-Flash4.0 V3 digital CMOS camera	Hamamatsu	C13440-20CU	
PD0325901	Stemgent	04-0006-10	
Penicillin-Streptomycin (10,000 U/mL)	Thermo Fisher Scientific	15140-122	
Petri dish	Sansei medical co. Ltd	01-004	
Phenol/Chloroform/Isoamyl alcohol (25:24:1)	Nippon Gene	311-90151	
Polydimethylsiloxane (PDMS) elastomer	Dow Corning Corp., MI, USA	SILPOT 184	
polyethylenimine MAX (MW. 40,000)	Polyscience	24765-1	
Positive photoresist developer	Tokyo Ohka Kogyo Co., Ltd., Japan	NMD-3	
PowerUp SYBR Green Master Mix	Thermo Fisher Scientific	A25742	
Proteinase K	Takara	9034	

Puromycin Dihydrochloride	Fujifilm wako	166-23153	
Recombinant Human/Mouse/Rat Activin A Protein	R&D Systems, Inc.	338-AC-050	
Recombinant trypsin-like protease (rTrypsin; TrypLE express)	Thermo Fisher Scientific	12604-039	
RPMI1640 Medium	Thermo Fisher Scientific	11875-119	
Silicon wafer	Matsuzaki Seisakusyo Co., Ltd., Japan	N.A.	
Sodium Pyruvate (100 mM)	Thermo Fisher Scientific	11360-070	
Spin-coater	Mikasa Co., Ltd., Japan	MS-A100	
Spinning confocal microscopy	Oxford Instruments	Andor Dragonfly Spinning Disk System	
StemSure LIF, Mouse, recombinant, Solution (10 <sup>6</sup> U)	Fujifilm wako	195-16053	
SU-8 3010	Kayaku Advanced Materials, Inc., MA, USA	SU-8 3010	
SU-8 developer	Kayaku Advanced Materials, Inc., MA, USA	SU-8 developer	
Tris-EDTA	Nippon Gene	314-90021	
Vascular Endothelial Growth Factor-A165(VEGF), Human, recombinant	Fujifilm wako	226-01781	