

Materials List for:

Automated Contraction Analysis of Human Engineered Heart Tissue for Cardiac Drug Safety Screening

Ingra Mannhardt¹, Umer Saleem¹, Anika Benzin¹, Thomas Schulze¹, Birgit Klampe¹, Thomas Eschenhagen¹, Arne Hansen¹

¹Department of Experimental Pharmacology and Toxicology, Cardiovascular Research Center, University Medical Center Hamburg-Eppendorf and DZHK (German Center for Cardiovascular Research)

Correspondence to: Ingra Mannhardt at i.mannhardt@uke.de

URL: <https://www.jove.com/video/55461>

DOI: [doi:10.3791/55461](https://doi.org/10.3791/55461)

Materials

Name	Company	Catalog Number	Comments
EHT analysis instrument	EHT Technologies GmbH	A0001	Software is included
EHT PDMS rack	EHT Technologies GmbH	C0001	
EHT PTFE spacer	EHT Technologies GmbH	C0002	
EHT electrode	EHT Technologies GmbH	P0001	
EHT pacing adapter/cable	EHT Technologies GmbH	P0002	
24-well-plate	Nunc	144530	
6 well-cell culture plate	Nunc	140675	
15 mL falcon tube, graduated	Sarstedt	62,554,502	
Cell scraper	Sarstedt	831,830	
Spinner flask	Integra	182 101	
Stirrer Variomag/ Cimatec Biosystem Direct	Thermo scientific	70101	Adjust rotor speed to 40 rpm
T175 cell culture flask	Sarstedt	831,812,002	
V-shaped sedimentation rack	Custom made at UKE Hamburg	na	
10× DMEM	Gibco	52100	
1-Thioglycerol	Sigma Aldrich	M6145	
2-Phospho-L-ascorbic acid trisodium salt	Sigma Aldrich	49752	
Activin-A	R&D systems	338-AC	
Agarose	Invitrogen	15510-019	
Aprotinin	Sigma Aldrich	A1153	
Aqua ad injectabilia	Baxter GmbH	1428	
B27 PLUS insulin	Gibco	17504-044	
BMP-4	R&D systems	314-BP	
Collagenase II	Worthington	LS004176	
DMEM	Biochrom	F0415	
DMSO	Sigma Aldrich	D4540	
DNase II, type V (from bovine spleen)	Sigma	D8764	
Dorsomorphin	abcam	ab120843	
EDTA	Roth	8043.2	
Fetal calf serum	Gibco	10437028	
FGF2	Miltenyi Biotec	130-104-921	
Fibrinogen (bovine)	Sigma Aldrich	F8630	

Geltrex	Gibco	A1413302	For coating: 1:200 dilution
HBSS w/o $\text{Ca}^{2+}/\text{Mg}^{2+}$	Gibco	14175-053	
HEPES	Roth	9105.4	
Horse serum	Life technologies	26050088	
Human serum albumin	Biological Industries	05-720-1B	
Insulin, human	Sigma Aldrich	I9278	
L-Glutamin	Gibco	25030-024	
Lipidmix	Sigma Aldrich	L5146	
Matrigel	BD Biosciences	354234	For EHT reconstitutionmix.
N-Benzyl-p-Toluenesulfonamide	TCI	B3082-25G	
PBS w/o $\text{MgCl}_2/\text{CaCl}_2$	Biochrom	14190	
Penicillin/Streptomycin	Gibco	15140	
Pluronic F-127	Sigma Aldrich	P2443	
Polyvinyl alcohol	Sigma Aldrich	P8136	
RPMI 1640	Gibco	21875	
Sodium selenite	Sigma Aldrich	S5261	
TGF β 1	Peprotech	100-21	
Thrombin	Sigma Aldrich	T7513	
Transferrin	Sigma Aldrich	T8158	
Y-27632	Biorbyt	orb6014	
hiPSC	Custom made at UKE hamburg	na	
iCell cardiomyocytes kit	Cellular Dynamics International	CMC-100-010-001	
Pluricyte cardiomyocyte kit	Pluriomics	PCK-1.5	
Cor.4U - HiPSC cardiomyocytes kit	Axiogenesis AG	Ax-C-HC02-FR3	
Cellartis cardiomyocytes	Takara Bio USA, Inc.	Y10075	