

Materials List for:

# High Efficiency Differentiation of Human Pluripotent Stem Cells to Cardiomyocytes and Characterization by Flow Cytometry

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URL: <https://www.jove.com/video/52010>

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## Materials

Name	Company	Catalog Number	Comments
<b>Cell Culture</b>			
BD Matrigel, hESC-qualified matrix	BD Biosciences	354277	
Accutase cell detachment solution	Stem Cell Technologies	7920	
Dulbecco's phosphate buffered saline (DPBS), no calcium, no magnesium	Life Technologies	14190-136	
Dimethyl sulfoxide (DMSO, Hybri-Max, sterile-filtered)	Sigma Aldrich	D2650	
Sodium bicarbonate	Sigma Aldrich	53817	
Citric acid	Sigma Aldrich	C2404-100G	
Y-27632 dihydrochloride selective p160ROCK inhibitor	R&D Systems	1254	
L-Ascorbic acid-2-phosphate sesquimagnesium salt hydrate	Sigma Aldrich	A8960-5G	
Sodium selenite	Sigma Aldrich	S5261-10G	
Transferrin (Optiferrin – Defined, Animal-free, Recombinant Human)	Invitria	777TRF029	
Fibroblast growth factor 2 (FGF2)	R&D Systems	4144-TC-01M	
Transforming growth factor beta 1 (TGFβ1)	Peprotech	100-21	
DMEM/F12 with L-Glutamine and 15 mM HEPES	Life Technologies	11330-032	
Insulin	Sigma Aldrich	I9278-5ML	
CHIR-99021 HCl	Sellekchem	S2924	
IWR-1	Sigma Aldrich	I0161	
RPMI 1640 with L-Glutamine	Life Technologies	11875-093	
B-27 Supplement Minus Insulin	Life Technologies	A1895601	
B-27 Supplement (with Insulin)	Life Technologies	17504-044	
Fetal bovine serum	Life Technologies	10437	
<b>Flow Cytometry Reagents</b>			
Phosphate buffered saline (10x)	Quality Biological Inc.	119-069-151	

Hank's balanced salt solution without Ca <sup>2+</sup> and Mg <sup>2+</sup>	Life Technologies	14175-095	
BD Cytotfix	BD Biosciences	554655	
BD Phosflow perm buffer III	BD Biosciences	558050	
16% Paraformaldehyde	Thermo Scientific	28906	
Methanol	Sigma Aldrich	179957-4L	
Acetone	Mallenckrodt Chemicals	2440-16	
Triton X-100	Amresco	M236-10ML	
Goat serum	Life Technologies	16210-064	
Trypan blue solution, 0.4%	Life Technologies	15250-061	
<b>Materials</b>			
5 ml Round bottom polystyrene tube (without cap)	Corning	352008	For preparation of cells for flow cytometry
5 ml Round bottom polystyrene tube (with 35 µM cell strainer snap cap)	Corning	352235	For preparation of cells for flow cytometry
2 ml rubber bulbs	Fischer Scientific	03-448-24	
9" borosilicate unplugged glass Pasteur pipets	BioExpress	P-2904-2	
0.65 ml Microcentrifuge tubes, graduated, green	GeneMate	C-3259-G	
1.5 ml Microcentrifuge tubes, graduated, red	GeneMate	C-3260-R	
TC20 automated cell counter	BioRad	145-0102	
Counting slides for TC20	BioRad	145-0011	
6-well Flat bottom tissue-culture treated plate	Corning	353046	
20 ml Syringes	BD Plastipak	300613	For filter sterilization of aliquots
Sterile syringe filters, 0.2 µm polyethersulfone	VWR	28145-501	For filter sterilization of aliquots
250 ml Filter system, 0.22 µm polyethersulfone, sterilizing, low binding	Corning	431096	For filter sterilization of bulk media
500 ml filter system, 0.22 µm polyethersulfone, sterilizing, low binding	Corning	431097	For filter sterilization of bulk media
<b>Antibodies and Isotype Controls</b>			
Anti-TNNI3 (clone: 284 (19C7))	Abcam	ab19615	Primary antibody
Anti-TNNT2 (clone: 1C11)	Thermo Scientific	MA1-16687	Primary antibody
Anti-MYL2 (MLC2v, clone: 330G5)	Synaptic Systems	310111	Primary antibody
Anti-MYL7 (MLC2a, clone: 4E7)	Abcam	AB131661	Primary antibody
Anti-IRX4	Bioss	BS-9464R	Primary antibody
Alexa Fluor 488 Goat anti-mouse IgG1	Life Technologies	A21121	Secondary antibody
Alexa Fluor 647 Goat anti-mouse IgG2a	Life Technologies	A21241	Secondary antibody
Alexa Fluor 488 Goat anti-mouse IgG2b	Life Technologies	A21141	Secondary antibody
Phycoerythrin(PE) Goat anti-rabbit IgG	R&D Systems	F0110	Secondary antibody
Mouse IgG1	BD Biosciences	557273	Isotype Control

Mouse IgG2a	eBiosciences	16-4724-81	Isotype Control
Rabbit IgG-PE	R&D Systems	IC105P	Isotype Control
<b>TaqMan Probesets for qRT-PCR</b>			
ACTB	Life Technologies	Hs01060665	
Brachyury T	Life Technologies	Hs00610080	
CASQ2	Life Technologies	Hs00154286	
IRX4	Life Technologies	Hs01100809	
ISL1	Life Technologies	Hs00158126	
MESP1	Life Technologies	Hs01001283	
MYH11 (SMMHC)	Life Technologies	Hs00224610	
MYH6	Life Technologies	Hs01101425	
MYL2 (MLC2v)	Life Technologies	Hs00166405	
MYL7 (MLC2a)	Life Technologies	Hs01085598	
MYOG	Life Technologies	Hs01072232	
NKX2.5	Life Technologies	Hs00231763	
NPPA	Life Technologies	Hs01081097	
POU5F1	Life Technologies	Hs04260367	
SOX17	Life Technologies	HS00751752	
TNNI1	Life Technologies	Hs00913333	
TNNI2	Life Technologies	Hs00268536	
TNNI3	Life Technologies	HS00165957	
TNNT2	Life Technologies	Hs00165960	