

Materials List for:

Synaptic Microcircuit Modeling with 3D Cocultures of Astrocytes and Neurons from Human Pluripotent Stem Cells

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Materials

Name	Company	Catalog Number	Comments
6 well plate	Fisher Scientific	08-772-1B	
15 mL conical tubes	Olympus Plastics	28-101	
Accutase	Sigma	A6964-100ML	Detachment solution
AggreWell plate	Stemcell Technologies	34850	
Anti-Adherence Rinsing Solution	Stemcell Technologies	7010	Prevent cell adhesion to microwell plates
Anti/anti	Thermofisher	15240062	
B27	Thermofisher	17504044	Media Supplement
BrainPhys neuronal medium	Stemcell Technologies	5790	Neurophysiological basal medium alternative
Circular glass coverslips	Neuvitro	GG-12-oz	
Cryostor CS10	Stemcell Technologies	7930	Cryopreservation medium with 10% DMSO
DMEM/F12	Thermofisher	10565-042	With GlutaMAX supplement
DMH-1	Stemcell Technologies	73634	HAZARD: Toxic if swallowed. Working concentration: 2 μ M
Donkey serum	Lampire Biological Laboratories	7332100	Working concentration: 5% in primary blocking buffer, 1% in secondary blocking buffer
Doxycycline Hydrochloride (Dox)	Sigma	D3072-1ml	HAZARD: Toxic for pregnant women. Working concentration: 2 μ g/mL
Epidermal growth factor (EGF)	Peprotech	AF-100-15	Working concentration: 10 ng/mL
Fibroblast growth factor-2 (FGF)	Peprotech	100-18B	Working concentration: 10 ng/mL
Fluoromount-G mounting solution	Southern Biotech	0100-01	
Glass slides	Fisherbrand	22-037-246	
Goat serum	Lampire Biological Laboratories	7332500	Working concentration: 5% in primary blocking buffer, 1% in secondary blocking buffer
Hemocytometer or automatic cell counter	Life Technologies	AMQAX1000	
Heparin	Sigma	H3149-50KU	Working concentration: 2 mg/mL
Magnetic plate	DLAB	8030170200	
Matrigel membrane matrix	Corning	354230	ECM coating solution. Working concentration: 80 μ g/ml. Prepare on ice and ensure that pipettes, tubes, and media are pre-chilled.
MEA 2100 System	Multichannel Systems	MEA2100	
Mounting solution			

N2	Thermofisher	17502048	Media Supplement
OCT	Tissue-Tek	4583	Tissue embedding solution for cryosectioning
Pap Pen (Aqua Hold)	Scientific Device Laboratory	9804-02	
Paraformaldehyde (PFA)	Acros Organics	169650025	HAZARD: Toxic if inhaled. Working concentration: 4% in PBS
Phosphate buffered saline (PBS)	Stemcell Technologies	CA008-300	
Poly-l-ornithine (PLO)	Sigma	P3655-100MG	Working concentration: 0.5 mg/mL
Rectangular glass cover slips	Fisherfinest Premium Superslip	12-545-88	
ReLeSR	Stemcell Technologies	5872	Detachment and passaging reagent
Rho-Kinase Inhibitor Y27632- (Y)	Tocris	1254	Working concentration: 10 uM
SB431542	Stemcell Technologies	72234	Working concentration: 2 uM
Spinner flasks	Fisher Scientific	4500-125	
Sucrose	Fisher Chemical	S5-3	Working concentration: 20% or 30% in PBS
T25 Culture Flask	Olympus Plastics	25-207	Vented caps
T75 Culture Flask	Olympus Plastics	25-209	Vented caps
Terg-A-zyne	Sigma	Z273287-1EA	Detergent. Working concentration: 1%
TeSR-E8 basal medium	Stemcell Technologies	5940	Human pluripotent stem cell (hPSC) medium
TeSR-E8 supplements	Stemcell Technologies	5940	Supplements for human pluripotent stem cell medium
TritonX-100	Sigma	X100-500ML	Detergent for cell permeabilization. Working concentration: 0.25% in blocking buffer
Trypan blue	Invitrogen	T10282	
Antibodies			
AlexaFluor 488	Thermofisher	A-11029	Secondary antibody
AlexaFluor 594	Thermofisher	A-11037	Secondary antibody
Ezrin	Thermofisher	MA5-13862	Primary antibody; astrocytes perisynaptic
GFAP	Chemicon	MAB360	Primary antibody; astrocytes
GFP	Aves	GFP-1020	Primary antibody; astrocytes
GlT1	Gift from Dr. Jeffrey Rothstein	n/a	Primary antibody; astrocytes
Homer	Synaptic Systems	160 011	Primary antibody; neurons, post-synaptic
MAP2	Synaptic Systems	188 004	Primary antibody; neurons
PSD95	Abcam	ab2723	Primary antibody; neurons, post-synaptic
S100	Abcam	ab868	Primary antibody; astrocytes
Synapsin 1	Synaptic Systems	106 103	Primary antibody; neurons, pre-synaptic
TuJ1/ β 3-tubulin (TUBB3)	Covance	MMS-435P	Primary antibody; neurons