

Generation of Human Brain Organoids for Mitochondrial Disease Modeling

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Materials

Name	Company	Catalog Number	Comments
2-mercaptoethanol	Gibco	31350-010	
Affinity Designer	Serif (Europe) Ltd		Layout software; Vector graphics editor
Alexa Fluor 488 donkey anti-guinea pig	Sigma Aldrich	SAB4600033-250UL	1:300
Alexa Fluor 488 donkey anti-mouse	Thermo Fisher Scientific	A-31571	1:300
Antimycin A	Sigma Aldrich	1397-94-0	
Anti- β -Tubulin III (TUJ-1)	Sigma Aldrich	T8578	1:2000
Argon Laser	Melles Griot		Any other Laser, e.g., diode lasers emitting 488 is fine, too
Ascorbic acid	Sigma	A92902	
B-27 with Vitamin A	Gibco	17504044	
Bacto Agar	Becton Dickinson		3% in PBS, store solution at -20 °C
BDNF	Miltenyi Biotec	130-093-0811	
cAMP	Sigma	D0627	
Cell Star cell culture 6 well plate	Greiner-Bio-One	657160	
Chemically Defined Lipid Concentrate	Gibco	11905031	
Confocal laser scanning microscope C1	Nikon Microscope Solutions		Modular confocal microscope system
Corning Matrigel Growth Factor Reduced (GFR) Basement membrane matrix, Phenol Red-free, LDEV-free	Corning	356231	Matrix component
CyQUANT Cell Proliferation Assay Kit	Thermo Fisher	C7026	
DMEM/F12	ThermoFisher	31330038	

DMSO	Sigma	D2660-100ML	
Donkey anti-goat Cy3	Merck Millipore	AP180C	1:300
Donkey anti-mouse Cy3	Merck Millipore	AP192C	1:300
Donkey anti-rabbit Cy3	Merck Millipore	AP182C	1:300
DPBS	Gibco	14190250	
DS-Q1Mc camera	Nikon Microscope Solutions		
Eclipse 90i upright widefield microscope	Nikon Microscope Solutions		
Eclipse E 600FN upright microscope	Nikon Microscope Solutions		
Eclipse Ts2 Inverted Microscope	Nikon Microscope Solutions		
EZ-C1 Silver Version 3.91	Nikon Microscope Solutions		Imaging software for confocal microscope
FCCP	Sigma Aldrich	370-86-5	
Fetal Bovine Serum	Gibco	10270-106	
GDNF	Miltenyi Biotec	130-096-291	
Glasgow MEM	Gibco	11710-035	
Glass Pasteur pipette	Brand	747715	Inverted
Glutamax	Gibco	35050-061	
Helium-Neon Laser	Melles Griot		Every other Laser, e.g., diode lasers emitting 594 is fine, too
Heparin	Merck	H3149-25KU	
HERACell 240i CO ₂ Incubator	Thermo Scientific	51026331	
Hoechst 33342	Invitrogen	H3570	1:2500
Image J 1.53c	Wayne Rasband National Institute of Health		Image processing Software
Injekt Solo 10 mL/ Luer	Braun	4606108V	
Knockout Serum Replacement	Gibco	10828010	
Laser (407 nm)	Coherent		Any other Laser, e.g., diode lasers emitting 407 is fine, too
Map2	Synaptic Systems	No. 188004	1:1000
Maxisafe 2030i			
MEM NEAA	Gibco	11140-050	
mTeSR Plus	Stemcell Technology	85850	iPSC medium
Multifuge X3R Centrifuge	Thermo Scientific	10325804	
MycoAlert Mycoplasma Detection Kit	Lonza	# LT07-218	
N2 Supplement	Gibco	17502-048	
Needle for single usage (23G x 1" TW)	Neoject	10016	
NIS-Elements Aadvanced Research 3.2	Nikon		Imaging software
Oligomycin A	Sigma Aldrich	75351	
Orbital Shaker Heidolph Unimax 1010	Heidolph	543-12310-00	
PAP Pen	Sigma	Z377821-1EA	To draw hydrophobic barrier on slides.
Papain Dissociation System kit	Worthington	LK003150	
Paraformaldehyde	Merck	818715	4% in PBS, store solution at -20 °C
Pasteur pipette 7mL	VWR	612-1681	Graduated up to 3 mL
Penicillin-Streptomycin	Gibco	15140-122	
Plan Apo VC 20x / 0.75 air DIC N2 ∞/0.17 WD 1.0	Nikon Microscope Solutions		Dry Microscope Objective

Plan Apo VC 60x / 1.40 oil DIC N2 ∞/0.17 WD 0.13	Nikon Microscope Solutions		Oil Immersion Microscope Objective
Polystyrene Petri dish (100 mm)	Greiner Bio-One	664161	
Polystyrene round-bottom tube with cell-strainer cap (5 mL)	Falcon	352235	
Potassium chloride	Roth	6781.1	
ProLong Glass Antifade Mountant	Invitrogen	P36980	
Qualitative filter paper	VWR	516-0813	
Rock Inhibitor	Merck	SCM075	
Rotenone	Sigma	83-794	
S100β	Abcam	Ab11178	1:600
SB-431542	Cayman Chemical Company	13031	
Scalpel blades	Heinz Herenz Hamburg	1110918	
SMI312	Biologend	837904	1:500
Sodium bicarbonate	Merck/Sigma	31437-1kg-M	
Sodium chloride	Roth	3957	
Sodium dihydrogen phosphate	Applichem	131965	
Sodium Pyruvate	Gibco	11360070	
SOX2	Santa Cruz Biotechnology	Sc-17320	1:100
StemPro Accutase Cell Dissociation Reagent	Gibco/StemPro	A1110501	Reagent A
Super Glue Gel	UHU	63261	adhesive gel
SuperFrost Plus	VWR	631-0108	
Syringe for single usage (1 mL)	BD Plastipak	300015	
TB2 Thermoblock	Biometra		
TC Plate 24 Well	Sarstedt	83.3922	
TC Plate 6 Well	Sarstedt	83.392	
TGFβ3	Miltenyi Biotec	130-094-007	
Tissue Culture Hood	ThermoFisher	51032711	
TOM20	Santa Cruz Biotechnology	SC-11415	1:200
Triton-X	Merck	X100-5ML	
UltraPure 0.5M EDTA	Invitrogen	15575020	
Vibratome Microm HM 650 V	Thermo Scientific		Production terminated, any other adjustable microtome is fine, too.
Vibratome Wilkinson Classic Razor Blade	Wilkinson Sword	70517470	
Whatman Benchkote	Merck/Sigma	28418852	
Wnt Antagonist I	EMD Millipore Corp	3378738	
XF 96 extracellular flux analyser	Seahorse Bioscience	100737-101	
XF Assay DMEM Medium	Seahorse Bioscience	103680-100	
XF Calibrant Solution	Seahorse Bioscience	100840-000	
XF96 FluxPak (96-well microplate)	Seahorse Bioscience	102416-100	