

Materials List for

Scalable Generation of Mature Cerebellar Organoids from Human Pluripotent Stem Cells and Characterization by Immunostaining

Teresa P. Silva^{1,2}, Tiago G. Fernandes¹, Diogo E. S. Nogueira¹, Carlos A. V. Rodrigues¹, Evguenia P. Bekman^{1,2,3}, Yas Hashimura⁴, Sunghoon Jung⁴, Brian Lee⁴, Maria Carmo-Fonseca², Joaquim M. S. Cabral¹

¹iBB - Institute for Bioengineering and Biosciences and Department of Bioengineering, Instituto Superior Técnico, Universidade de Lisboa ²Instituto de Medicina Molecular João Lobo Antunes, Faculdade de Medicina, Universidade de Lisboa ³The Discoveries Centre for Regenerative and Precision Medicine, Lisbon Campus, Universidade de Lisboa ⁴PBS Biotech, Inc, Camarillo, CA, USA

Corresponding Author

Joaquim M. S. Cabral
joaquim.cabral@tecnico.ulisboa.pt

Citation

Silva, T.P., Fernandes, T.G., Nogueira, D.E.S., Rodrigues, C.A.V., Bekman, E.P., Hashimura, Y., Jung, S., Lee, B., Carmo-Fonseca, M., Cabral, J.M.S. Scalable Generation of Mature Cerebellar Organoids from Human Pluripotent Stem Cells and Characterization by Immunostaining. *J. Vis. Exp.* (), e61143, doi:10.3791/61143 (2020).

Date Published

June 13, 2020

DOI

10.3791/61143

URL

jove.com/video/61143

Materials

Name	Company	Catalog Number	Comments
3MM paper	WHA3030861	Merck	
Accutase	A6964 - 500mL	Sigma	cell detachment medium
Anti-BARHL1 Antibody	HPA004809	Atlas Antibodies	
Anti-Calbindin D-28k Antibody	CB28	Millipore	
Anti-MAP2 Antibody	M4403	Sigma	
Anti-N-Cadherin Antibody	610921	BD Transduction	
Anti-NESTIN Antibody	MAB1259-SP	R&D	
Anti-OLIG2 Antibody	MABN50	Millipore	
Anti-PAX6 Antibody	PRB-278P	Covance	
Anti-SOX2 Antibody	MAB2018	R&D	
Anti-TBR1 Antibody	AB2261	Millipore	
Anti-TBR2 Antibody	ab183991	Abcam	
Anti-TUJ1 Antibody	801213	Biologend	
Apo-transferrin	T1147	Sigma	
BrainPhys Neuronal Medium N2-A & SM1 Kit	5793 - 500mL	Stem cell technologies	
Chemically defined lipid concentrate	11905031	ThermoFisher	
Coverslips 24x60mm	631-1575	VWR	
Crystallization-purified BSA	5470	Sigma	
DAPI	10236276001	Sigma	
Dibutyryl cAMP	SC- 201567B -500mg	Frilabo	
DMEM-F12	32500-035	ThermoFisher	
Fetal bovine serum	A3840001	ThermoFisher	

Gelatin from bovine skin	G9391	Sigma	
Glass Copling Jar	E94	ThermoFisher	
Glutamax I	10566-016	ThermoFisher	
Glycine	MB014001	NZYtech	
Ham's F12	21765029	ThermoFisher	
Human Episomal iPSC Line	A18945	ThermoFisher	iPSC6.2
IMDM	12440046	ThermoFisher	
Insulin	91077C	Sigma	
iPS DF6-9-9T.B		WiCell	
Iso-pentane	PHR1661-2ML	Sigma	
L-Ascorbic acid	A-92902	Sigma	
Matrigel	354230	Corning	basement membrane matrix
Monothioglycerol	M6154	Sigma	
Mowiol	475904	Millipore	mounting medium
mTeSR1	85850 -500ml	Stem cell technologies	
N2 supplement	17502048	ThermoFisher	
Neurobasal	12348017	ThermoFisher	
Paraformaldehyde	158127	Sigma	
PBS-0.1 Single-Use Vessel	SKU: IA-0.1-D-001	PBS Biotech	
PBS-MINI MagDrive Base Unit	SKU: IA-UNI-B-501	PBS Biotech	
Recombinant human BDNF	450-02	Peprtech	
Recombinant human bFGF/FGF2	100-18B	Peprtech	
Recombinant human FGF19	100-32	Peprtech	
Recombinant human GDNF	450-10	Peprtech	
Recombinant human SDF1	300-28A	Peprtech	
ROCK inhibitor Y-27632	72302	Stem cell technologies	
SB431542	S4317	Sigma	
Sucrose	S7903	Sigma	
SuperFrost Microscope slides	12372098	ThermoFisher	adhesion microscope slides
Tissue-Tek O.C.T. Compound	25608-930	VWR	
Tris-HCL 1M	T3038-1L	Sigma	
Triton X-100	9002-93-1	Sigma	
Tween-20	P1379	Sigma	
UltraPure 0.5M EDTA, pH 8.0	15575020	ThermoFisher	