

Materials List for:

The Specification of Telencephalic Glutamatergic Neurons from Human Pluripotent Stem Cells

Erin M. Boisvert^{1,2}, Kyle Denton¹, Ling Lei¹, Xue-Jun Li^{1,3}

¹Department of Neuroscience, The University of Connecticut Health Center

²Department of Genetics and Developmental Biology, The University of Connecticut Health Center

³Stem Cell Institute, The University of Connecticut Health Center

Correspondence to: Xue-Jun Li at xjli@uchc.edu

URL: <https://www.jove.com/video/50321>

DOI: [doi:10.3791/50321](https://doi.org/10.3791/50321)

Materials

Name	Company	Catalog Number	Comments
Dulbecco's modified eagle medium with F12 nutrient mixture (DMEM/F12)	Gibco	11330-032	
Knockout Serum Replacer	Gibco	10828-028	
L-glutamine (200 mM)	Gibco	25030	
Non Essential Amino Acids	Gibco	1140-050	
2-Mercapto-ethanol (14.3 M)	Sigma	M-7522	
Neurobasal medium	Gibco	21103-049	
N2	Gibco	17502-048	
B27	Gibco	12587-010	
Heparin	Sigma	H3149	
Poly-L-ornithine hydrobromide (polyornithine)	Sigma	116K5103	
Laminin (human)	Sigma	L-6274	
Laminin (mouse)	Invitrogen	23017-015	
FBS	Gemini	100-106	
Bovine serum albumin (BSA)	Sigma	A-7906	
Dispase	Gibco	17105-041	
Collagenase	Invitrogen	17104-019	
Accutase	Innovative Cell Technologies	AT104	
ROCK Inhibitor	Stemgent	04-0012	
SB431542	Stemgent	04-0010	
Dorsomorphin	Stemgent	04-0024	
Fibroblast growth factor 2 (FGF2, bFGF)	Invitrogen	13256-029	
Trypsin inhibitor	Gibco	17075	
0.1% gelatin	Millipore	ES-006-B	
Foxg1 antibody	Dr. Y. Sasai		
Hoxb4 antibody (1:50)	Developmental Studies Hybridoma Bank	I12	
Pax6 antibody (1:5000)	Developmental Studies Hybridoma Bank	PAX6	
Nkx2.1 antibody (1:200)	Chemicon	MAB5460	
Tbr1 antibody (1:2000)	Chemicon	AB9616	

vGLUT1 antibody (1:100)	Synaptic Systems	135302	
Brain derived neurotrophic factor (BDNF)	PreproTech Inc.	450-02	
Glial derived neurotrophic factor (GDNF)	PreproTech Inc.	450-10	
Insulin growth factor 1 (IGF1)	PreproTech Inc.	100-11	
Cyclic AMP (cAMP)	Sigma	D-0260	
Sonic hedgehog (SHH)	R&D	1845-SH	
50 ml tubes	Becton Dickinson (BD)	352098	
15 ml tubes	BD	352097	
6 well plates	BD	353046	
24 well plates	BD	353047	
T25 flasks (untreated)	BD	353009	
T75 flasks (untreated)	BD	353133	
Coverslips	Chemiglass Life Sciences	1760-012	
6 cm Petri dishes	BD	353004	
9" glass pipetes	Fisher	13-678-20D	
Steriflip filters (0.22 µm)	Millipore	SCGP00525	
Stericup filters 1,000 ml (0.22 µm)	Millipore	SCGPU10RE	
Phase contrast microscope (Observer A1)	Zeiss	R2625	
Carbon dioxide incubator (Hera Cell 150)	Thermo Electron Corporation		
Biosafety hood (Sterilgard III Advance)	The Baker Company		
Centrifuge (5702 R)	Eppendorf		