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Appendix

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Human Neural Organoids for Studying Brain Cancer and Neurodegenerative Diseases

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Materials List for:

Human Neural Organoids for Studying Brain Cancer and Neurodegenerative Diseases

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Materials

Name	Company	Catalog Number	Comments
6-well plate (6-well plate)	Falcon / Corning	07-201-588	
ABI Prism 7900 HT detection system (Real-Time PCR detection systems)	Applied Biosystems	Discontinued	
Aggrewell 400 (Microwell culture plates)	StemCell Technologies	34421	
Amplifier (W2100-HS32) (Amplifier)	Multi Channel Systems		
Anti-EGFR (phospho Y1101) antibody	Abcam	ab76195	1/100 dilution
Anti-GFAP Antibody	Dako	Z334	1/1000 dilution
Anti-Nestin, Human Antibody	Millipore	ABD69	1/400 dilution
Anti-Synapsin I Antibody	Chemicon	AB1543P	1/500 dilution
B27 supplements (B27)	Life Technologies / Invitrogen	1238	For both protocol, stock solution 100x, final solution 1x
Brain-derived neurotrophic factor (BDNF)	Cell Guidance	GFH1-2	For both protocol, stock solution 100 µg/mL in pure H ₂ O, final solution 20 ng/mL
CHIR-99021 (GSK-3β inhibitor)	Axon Medchem	ct99021	For Dopaminergic protocol, stock solution 7.5 mM in DMSO, final solution 3 µM
Compound E a γ-secretase inhibitor (γ-secretase inhibitor)	Calbiochem	CAS 209986-17-4	For both protocol (gamma-secretase inhibitor XXI), stock solution 5 mM in DMSO, final solution 1 µM
Coulochem III (Coulometric detector parameters)	Thermo scientific		
Dibutyl cyclic-AMP (Dibutyl cAMP)	Sigma	D0627	For Dopaminergic protocol, stock solution 0.5 M in DMSO, final solution 0.5 mM
Dimethyl Sulfoxide Pure (DMSO)	Sigma-Aldrich	C6164	Compounds solvent, ready to use
Dulbecco's Modified Eagle Medium (DMEM)	Life Technologies	12491-015	For cell culture, ready to use

Dulbecco's Modified Eagle Medium Mixture F-12 (DMEM-F12)	Gibco	11320033	For cell culture, ready to use
EDTA 0.1 mM (EDTA)	Life Technologies	AM9912	For cell culture, ready to use
Epidermal Growth Factor (EGF)	Gibco	PHG0313	For GIC culture, stock solution 100 µg/mL in pure H ₂ O, final solution 10 ng/mL
Fibroblast Growth Factor 20 (FGF20)	Peprtech	100-41	For Dopaminergic protocol, stock solution 100 µg/mL in pure H ₂ O, final solution 5 ng/mL
fibroblast growth factor 8 (FGF8)	Peprtech	GFH176-5	For Dopaminergic protocol, stock solution 100 µg/mL in pure H ₂ O, final solution 100 ng/mL
Fibroblast growth factor-basic (bFGF)	Gibco	PHG0024	For GIC culture, stock solution 100 µg/mL in pure H ₂ O, final solution 10 ng/mL
G5 supplements (G5)	Invitrogen	17503012	For GIC culture, stock solution 100x, final solution 1x
Glial cell-derived neurotrophic factor (GDNF)	Cell Guidance	GFH2-2	For both protocol, stock solution 100 µg/mL in pure H ₂ O, final solution 20 ng/mL
Hydrophilic polytetrafluoroethylene membrane (PTFE membrane)	BioCell-Interface	Discontinued	
LDN-193189 (BMP inhibitor)	Axon Medchem /Stemgen	04-0072-02 /1509	Dual/Smad, stock solution 5 mM in DMSO, final solution 0.5 µM
L-glutamine (L-glutamine)	Gibco	25030081	L-Glutamine (200 mM), stock solution 200 mM, final solution 2 mM
Matrigel (extracellular matrix)	BD Biosciences	354277	hESC-qualified Matrix, stock solution 18-22 mg/mL, final solution 180-220 µg/mL
Millicell-CM Culture plate insert (0.4 µm) (Culture plate insert)	Millipore	PICM03050	
Monoclonal Anti-β-Tubulin III antibody	Sigma	T8660	1/1000 dilution
MS Orbital Shaker, MS-NOR-30 (Orbital shaker)	Major Science	MS-NRC-30	
N2 supplements (N2)	Invitrogen	17502-048	For GIC culture, stock solution 100x, final solution 1x
Nanodrop (Nanodrop)	Thermo Fisher Scientific	Discontinued	
Neurobasal (Neurobasal)	Life Technologies / Gibco	21103049	Maintenance and maturation embryonic neuronal cell populations , ready to use
Non-Essential Amino Acids (NEAA)	Gibco	11140	Non-essential Amino Acids 100X, stock solution 100x, final solution 1x
Nurr1 Antibody (M-196)	Santa Cruz	Sc-5568	1/100 dilution
Nutristem (hESC medium)	Biological Industries	05-100-1A	Stem cell media, ready to use
Penicilin / Streptomycin (Penicilin / Streptomycin)	Life Technologies / Gibco	15140122	For cell culture, stock solution 5 mg/mL, final solution 50 µg/mL
Perchloric acid 0.1N (HClO ₄)	Merck	100519	For HPLC, ready to use
Phosphate Buffered Saline without Ca ²⁺ /Mg ²⁺ (PBS without Ca ²⁺ /Mg ²⁺)	Life Technologies	14190250	For cell culture, ready to use
PrimeScript RT-PCR Kit (Reverse transcription kit)	Takara	RR014A	

Purmorphamin (smoothened agonist)	Calbiochem	SML0868	For Dopaminergic protocol, stock solution 10 mM in DMSO, final solution 2 μ M
Rho-associated Kinase Y-27632 (ROCK)	Abcam Biochemicals	ab120129-1	Rock Inhibitor, stock solution 50 mM in DMSO, final solution 10 μ M
RNeasy mini kit (RNA extraction kit)	Qiagen	74104	
SB-431542 (TGF β /Activin/Nodal inhibitor)	Ascent	Asc- 163	Dual-Smad, stock solution 50 mM in DMSO, final solution 10 μ M
Sonic Hedgehog (SHH)	Cell Guidance	GFH168-5	For Dopaminergic protocol, stock solution 100 μ g/mL in pure H ₂ O, final solution 100 ng/mL
StemPro Accutase (hESC enzymatic solution)	Gibco	A11105-01	hESC enzymatic solution, ready to use
Symmetry C-18,5 mm (4.6 150mm ²) (Reversed-phase column)	Waters Corporation		
T150 flask (T150 flask)	Falcon	08-772-1F	
TH Antibody (F-11)	Santa Cruz	Sc-25269	1/200 dilution
Transforming Growth Factors beta 3 (TGF β 3)	Cell Guidance	GFH109-2	For Dopaminergic protocol, stock solution 100 μ g/mL in pure ethanol , final solution 1 ng/mL
Trichostatine A (inhibitor of histone deacetylase)	Sigma	T8552	For Dopaminergic protocol, stock solution 100 μ M in DMSO, final solution 20 nM
TrypLE (recombinant enzymatic solution)	Invitrogen	12604021	recombinant enzymatic solution, ready to use
Trypsin 0.25% (enzymatic solution)	Life Technologies	15050065	enzymatic solution, ready to use
W2100, Multi Channel Systems (Data acquisition system)		WAT045905	
X-vivo (serum free medium)	Lonza	BE04-743Q	serum free medium, ready to use