

Facilitating Cerebral Organoid Culture via Lateral Soft Light Illumination

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Materials

Name	Company	Catalog Number	Comments
0.2 µm Filter	NEST Biotechnology, China	331001	
1000 µL wide-bore pipette tip	Thermo Fisher Scientific, USA	9405163	
200 µL wide-bore pipette tip	Thermo Fisher Scientific, USA	9405020	
2-Mercaptoethanol	Merck, Germany	8057400005	
4% Paraformaldehyde	Servicebio, China	G1101	
6-well low adhesion plate	NEST Biotechnology, China	703011	It is used for EBs suspension cultures
Aacute cell detachment solution	STEMCELL Technologies, Canada	07920	It is used to digest iPSC into single cells.
AggreWell800 24-well	STEMCELL Technologies, Canada	34811	Microporous culture plate for EBs preparation.
Anti-Adherence Rinsing Solution	STEMCELL Technologies, Canada	07010	Rinsing solution for cultureware to prevent cell adhesion
B27-vit. A supplement	Thermo Fisher Scientific, USA	12587010	
bFGF	Peprtech, USA	GMP100-18B	
BSA	Beyotime Biotechnology, China	ST025	
Centrifuge	Eppendorf, Germany	5810 R	It can be used for centrifugation of various types of centrifuge tubes, reagent bottles and working plates.
Cover glass	Shitai Laboratory Equipment, China	10212020C	
DAPI	Beyotime Biotechnology, China	C1002	Used for nuclear staining. After DAPI was combined with double stranded DNA, the maximum excitation wavelength was 364nm and the maximum emission wavelength was 454nm.
DMEM-F12	Thermo Fisher Scientific, USA	11330032	
ES-quality FBS	Thermo Fisher Scientific, USA	10270106	

Ficoll Paque	General Electric Company, USA	17-5442-02	Isolate the peripheral blood mononuclear cells according to Ficoll-Paque method.
Gelatin	Sangon Biotech, China	A609764	
Glutamax supplement	Thermo Fisher Scientific, USA	35050061	
Glutamax supplement	Thermo Fisher Scientific, USA	17504044	
Goat anti-Chicken IgY secondary antibody	Abcam, UK	ab150171	Goat anti-Chicken IgG. Conjugation: Alexa Fluor 647. Ex: 652 nm, Em: 668 nm. Use at 1:500 dilution.
Goat anti-Mouse IgG secondary antibody	Abcam, UK	ab150120	Goat anti-Mouse IgG. Conjugation: Alexa Fluor 594. Ex: 590 nm, Em: 617 nm. Use at 1:500 dilution.
Goat anti-Rabbit IgG secondary antibody	Abcam, UK	ab150077	Goat Anti-Rabbit IgG. Conjugation: Alexa Fluor 488. Ex: 495 nm, Em: 519 nm. Use at 1:500 dilution.
Heparin	Merck, Germany	H3149	
Horizontal shaker	Servicebio, China	DS-H200	Relative centrifugal force (RCF) of 0.11808 x g is more appropriate, according to the manufacturer INFORS HT (Switzerland).
Insulin	Merck, Germany	I9278-5ML	
KOSR	Thermo Fisher Scientific, USA	10828028	
Matrigel	Corning, USA	354277	Matrigel will solidify in the environment higher than 4 °C, so it should be sub packed at low temperature.
MEM-NEAA	Thermo Fisher Scientific, USA	11140050	
mTeSR1	STEMCELL Technologies, Canada	85850	iPSC culture medium
N2 supplement	Thermo Fisher Scientific, USA	17502048	
Neurobasal	Thermo Fisher Scientific, USA	21103049	
OCT4 primary antibody	Abcam, UK	ab19857	Host: Rabbit. Dissolve with 500 µL PBS. Use at 1:200 dilution.
Pathological frozen slicer	Leica, Germany	Leica CM1860	
PAX6 primary antibody	Abcam, UK	ab78545	Host: Mouse. Use at 1:100 dilution.
PBS	STEMCELL Technologies, Canada	37350	
Penicillin-Streptomycin	Thermo Fisher Scientific, USA	15140122	
PSC dissociation solution	Beijing Saibei Biotechnology, China	CA3001500	Enzyme free dissociation solution can be used for iPSC digestion and passage.
Sendai Reprogramming Kit	Thermo Fisher Scientific, USA	A16518	Establish iPSC according to the protocol of Sendai Reprogramming Kit.
Slide Glass	Shitai Laboratory Equipment, China	188105W	
Soft light lamp	NUT	NUT	A simple self made device, refer to supplementary figure 2 for preparation.
STEMdiff Cerebral Organoid Kit	STEMCELL Technologies, Canada	8570	Contain: 1. EB Formation Medium; 2. Induction Medium; 3. Expansion Medium; 4. Maturation Medium.
STEMdiff Cerebral Organoid Maturation Kit	STEMCELL Technologies, Canada	8571	Maturation Medium
Sucrose	Sangon Biotech, China	A502792	
Triton X-100	Merck, Germany	X100	
TUJ1 primary antibody	Abcam, UK	ab41489	Host: Chicken. Use at 1:1000 dilution.
Vaseline	Sangon Biotech, China	A510146	

Y-27632	STEMCELL Technologies, Canada	72302	Prepare a 5 mM stock solution in PBS, resuspend 1 mg in 624 μ L of PBS.
Weblink			
Raw sequencing data	Genome Sequence Archive (Genomics, Proteomics & Bioinformatics 2021) in National Genomics Data Center (Nucleic Acids Res 2022), China National Center for Bioinformation / Beijing Institute of Genomics, Chinese Academy of Sciences	GSA-Human: HRA002430	https://ngdc.cncb.ac.cn/gsa-human/