

Materials List for:

Analysis of Retinoic Acid-induced Neural Differentiation of Mouse Embryonic Stem Cells in Two and Three-dimensional Embryoid Bodies

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URL: <https://www.jove.com/video/55621>

DOI: [doi:10.3791/55621](https://doi.org/10.3791/55621)

Materials

Name	Company	Catalog Number	Comments
Materials			
MEFs	EMD Millipore	PMEF-CF	ESC feeder layer
ESC	EMD Millipore	CMTI-2	
Cell culture dish (60 mm)	Eppendorf	30701119	Cell culture
Cell culture dish (100 mm)	Falcon	353003	Cell culture
Petri dish (100 mm)	Corning	351029	Hanging drops
24-well plate	Greiner Bio-One	662160	2D EBs
6-well plate	Eppendorf	30720113	Transfection
Dark 1.5 mL centrifuge tube	Celltreat Scientific Products	229437	RA stock solution
Microscope cover-glass	Fisherbrand	12-545-80	Circular, 12 mm diameter
Superfrost-plus microscope slides	Fisherbrand	12-550-15	
3D collagen culture kit	EMD Millipore	ECM675	3D culture
Effectene Transfection Reagent	Qiagen	301427	Stem cell transfection
Microcon Centrifugal Filters (10 kDa)	EMD Millipore	MRCPR010	Protein concentration
Reagents			
DMEM	Lonza	12-709F	MEFs culture
IMDM	Gibco	12440-046	ESCs culture
Fetal bovine serum (FBS)	EMD Millipore	ES-009-B	ESCs culture
Gelatin	Sigma-Aldrich	G2625	Dish coating
LIF	R&D Systems	8878-LF-025	To maintain ESC pluripotency
MEM Non-Essential Amino Acids Solutions	Gibco	11140050	Cell culture
2-Mercaptoethanol	Gibco	21985023	Cell culture
Penicillin-Streptomycin	Gibco	15140122	Cell culture
Gentamicin	Gibco	15750060	Cell culture
MycoZap Plus-PR	Lonza	VZA-2022	Cell culture
0.25% Trypsin-EDTA	Gibco	25200-072	Cell culture
DMSO	Sigma-Aldrich	D2650	
All-trans-retinoic acid	Sigma-Aldrich	R2625-50MG	Induction of neural differentiation
Bovine Serum Albumin	Sigma-Aldrich	A7030-50G	Blocking and antibody dilution
Triton X-100	Sigma-Aldrich	T8787-100ML	Cell membrane permeabilization

Cell strainer	Corning	352360	
Prolong Gold anti-fade reagent with DAPI	Life Tech.	P36931	Mounting reagent
16% Paraformaldehyde	Electron Microscopy Sciences	15710	Cell fixation
Fibronectin	R&D Systems	1030-FN	Dish coating
PBS	Gibco	10010049	
Collagenase type I	Worthington Biochem. Corp	LS004196	EB dissociation
Name	Company	Catalog Number	Comments
Primary Antibodies			
Nestin (Rat-401)	Santa Cruz Biotech	sc-33677	Detection of neural differentiation
Oct4	Santa Cruz Biotech	sc-5279	Detection of neural differentiation
Nanog	Bethyl Laboratories	A300-398A	Detection of neural differentiation
Sox2	Cell Signaling	3579	Detection of neural differentiation
Tubulin b3 (AA10)	Santa Cruz Biotech	sc-80016	Detection of neural differentiation
Name	Company	Catalog Number	Comments
Secondary Antibodies			
Donkey anti-Mouse-Alexa555	Life Tech.	A31570	Immunofluorescence
Donkey anti-mouse-Alexa488	Life Tech.	A21202	Immunofluorescence
Name	Company	Catalog Number	Comments
Instruments			
Wide-field microscope	Nikon	Eclipse TS100	Cell culture imaging
Confocal microscope	Nikon	C2	Immunofluorescence imaging