

# A Simplified Method for Generating Kidney Organoids from Human Pluripotent Stem Cells

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## Citation

Przepiorski, A., Crunk, A.E., Holm, T.M., Sander, V., Davidson, A.J., Hukriede, N.A. A Simplified Method for Generating Kidney Organoids from Human Pluripotent Stem Cells. *J. Vis. Exp.* (), e62452, doi:10.3791/62452 (2021).

## Date Published

April 13, 2021

## DOI

10.3791/62452

## URL

jove.com/video/62452

## Materials

Name	Company	Catalog Number	Comments
2-Mercaptoethanol	Thermo Fisher	21-985-023	
Anti-adherence rinsing solution	STEMCELL Technologies	7010	
CHIR99021	STEMCELL Technologies	72054	10 mM stock in DMSO
Corning disposable spinner flasks	Fisher Scientific	07-201-152	
Corning Ultra-Low Attachment 6-well plates	Fisher Scientific	07-200-601	
Corning Slow-Speed Stirrers	Fisher Scientific	11-495-03	Multi plate magnetic stirrer for spinner flask culture
Dispase	STEMCELL Technologies	7923	Aliquot and freeze
DMEM, low glucose, pyruvate, no glutamine, no phenol red	Thermo Fisher	11054020	
DPBS 1x, no calcium, no magnesium	Thermo Fisher	14-190-250	
Egg / Oval Stirring Bars	2mag	PI20106	
Excelta General-Purpose Tweezers	Fisher Scientific	17-456-103	Keep sterile in the cell culture hood
EZBio Single Use Media Bottle, 250mL	Foxo Life Sciences	138-3211-FLS	Used to make PVA 10%
Falcon Standard Tissue Culture Dishes (100 mm)	Thermo Fisher	08-772E	
Fisherbrand Sterile Aspirating Pipet 2mL	Fisher Scientific	14-955-135	
Fisherbrand Cell Lifters - Cell lifter	Fisher Scientific	08-100-240	
Fisherbrand Multi Function 3D Rotators	Fisher Scientific	88-861-047	Orbital shaker
Geltrex LDEV-Free Reduced Growth Factor Basement Membrane Matrix	Thermo Fisher	A1413302	<b>BME.</b> Aliquot on ice and freeze. Another suitable matrix alternative is Matrigel or Cultrex.
Gentle Cell Dissociation Reagent	STEMCELL Technologies	7174	<b>GCDR</b>
GlutaMAX Supplement	Thermo Fisher	35-050-061	L-glutamine supplement.
HEPES (1M)	Thermo Fisher	15-630-080	

Insulin-Transferrin-Selenium-Ethanolamine	Thermo Fisher	51-500-056	<b>ITSE</b>
KnockOut Serum Replacement - Multi-Species	Thermo Fisher	A3181502	<b>KOSR</b> . Aliquot and freeze
Lipid Mixture 1, Chemically Defined	Millipore-Sigma	L0288-100ML	
MEM Non-Essential Amino Acids Solution	Thermo Fisher	11140-050	
MilliporeSigma Stericup Quick Release-GP Sterile Vacuum Filtration System 500mL	Fisher Scientific	S2GPU05RE	
MilliporeSigma Stericup Quick Release-GP Sterile Vacuum Filtration System 250mL	Fisher Scientific	S2GPU02RE	
MIXcontrol MTP / Variomag TELEcontrol MTP Control Unit	2mag	VMF 90250 U	
MIXdrive 6 MTP / Variomag TELEdrive 6 MTP Microplate Stirring Drive	2mag	VMF 40600	<b>6MSP</b>
MP Biomedicals 7X Cleaning Solution	Fisher Scientific	MP0976670A4	<b>Tissue culture suitable detergent</b> . Make a 5% solution in water
mTeSR1	STEMCELL Technologies	85850	<b>hPSC medium</b> . TeSR-E8, NutriStem XF, and mTeSR Plus medium have also been tested and are suitable alternatives.
Nunc 50 mL Conical, Sterile Centrifuge Tubes	Fisher Scientific	12-565-270	
Nunc 15mL Conical Sterile Centrifuge Tubes	Fisher Scientific	12-565-268	
Penicillin-Streptomycin	Thermo Fisher	15-140-122	Aliquot and freeze
Plasmocin	Invivogen	ant-mpt	<b>Anti-mycoplasma reagent</b> . Aliquot and freeze
pluriStrainer® 200 µm	Fisher Scientific	NC0776417	Cell strainer
pluriStrainer® 500 µm	Fisher Scientific	NC0822591	Cell strainer
Poly(vinyl alcohol) 87-90% hydrolyzed (PVA)	Millipore-Sigma	P8136-250G	10% in DPBS stirring at 98 degrees C until dissolves, make in 138-3211-FLS
ROCK inhibitor Y-27632 (ROCKi)	STEMCELL Technologies	72304	10 mM stock in DPBS
Sterile Disposable Serological Pipets - 10mL	Fisher Scientific	13-678-11E	
Sterile Disposable Serological Pipets - 25mL	Fisher Scientific	13-678-11	
Sterile Disposable Serological pipette - 5 mL	Fisher Scientific	13-678-12D	
TeSR-E5	STEMCELL Technologies	5916	Serum-free, low protein base medium for <b>E5-ILP</b>
Variomag distriBOX 2 Distributor	2mag	VMF 90512	If you use more than one MIXdrive