

Enhanced Viability for Ex vivo 3D Hydrogel Cultures of Patient-Derived Xenografts in a Perfused Microfluidic Platform

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Citation

Sablatura, L.K., Bircsak, K.M., Shepherd, P., Queiroz, K., Farach-Carson, M.C., Constantinou, P.E., Saleh, A., Navone, N., Harrington, D.A. Enhanced Viability for Ex vivo 3D Hydrogel Cultures of Patient-Derived Xenografts in a Perfused Microfluidic Platform. *J. Vis. Exp.* (), e60872, doi:10.3791/60872 (2020).

Date Published

December 5, 2020

DOI

10.3791/60872

URL

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Materials

Name	Company	Catalog Number	Comments
1N NaOH			any suitable tissue culture grade
60 mm round tissue culture dishes			any suitable
6-well tissue culture plates			any suitable
70 µm cell strainers	Corning	431751	or equivalent
Centrifuge	Eppendorf	5810R with suitable rotor and buckets for 15/50 mL conical centrifuge tubes	or equivalent
Density gradient centrifugation solution	Millipore Sigma	P1644	Percoll
Dimethylsulfoxide			any suitable tissue culture grade
Dissociation enzyme solution	StemCell Technologies	07921	ACCUMAX
DMEM-F12	ThermoFisher Scientific	11039021	or equivalent
Forceps			any suitable
HA hydrogel kit	ESI BIO	GS311	HyStem (Hyaluronic acid-SH and PEGDA)
Hanks Balanced Salt Solution	Lonza	10-527F	or equivalent
Heat-inactivated fetal bovine serum	Atlanta Biologicals	S11150	
Hemocytometer	Fisher Scientific	02-671-51B Hausser BrightLine	or equivalent
Hoechst 33342	ThermoFisher Scientific	H1398	or equivalent
Image processing software	Oxford Instruments	Imaris 9.3	or equivalent
LIVE/DEAD Cell Viability/Cytotoxicity Kit (Calcein-AM/Ethidium Homodimer-1)	ThermoFisher Scientific	L3224	or equivalent
Microfluidic culture plate	Mimetas	9603-400-B	2-lane OrganoPlate

Microscope	Nikon	A1R	or equivalent
Multichannel pipette	Eppendorf	3125000036	or equivalent
PDX-derived tumor tissue			obtained under IRB approval for human tissue and IACUC approval for animal host
Penicillin-streptomycin	ThermoFisher Scientific	15140-122	or equivalent
Perfusion rocker	Mimetas	OrganoPlate Perfusion Rocker Mini	
pH strips (pH 5-9)			any suitable
Phosphate-buffered saline solution	Lonza	17-516F	or equivalent
Razor blades			any suitable
Rotating xy-shaker	VWR	Advanced 3500 Orbital Shaker	or equivalent
Scalpel handle			any suitable
Single channel repeating pipette	Eppendorf	22260201	
Sterile, 15mL conical centrifuge tubes			any suitable
Sterile, 50mL conical centrifuge tubes			any suitable