

Materials List for

Medium-Throughput Drug- and Radiotherapy Screening Assay using Patient-Derived Organoids

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Materials

Name	Company	Catalog Number	Comments
Required equipment			
384-well bioluminescence platereader; e.g. Tecan Spark 10M plate reader	Tecan		
Brightfield microscope with large field of view lens (2.5x)			
Digital dispenser; e.g. Tecan D300e	Tecan		Drug dispensing
6 MV photon beam irradiator	Elekta model Synergy, Elekta Sweden		
Liquid handler with large nozzle ("standard tube") cassettes; e.g. Multidrop Combi Reagent Dispenser	Thermo Scientific		
Plastic container with plate holder insert for radiotherapy	Home-made		
Spark control method editor software			
Standard tissue culturing equipment (LAF cabinet, incubator, centrifuge, waterbath, etc)			
Required materials			
1.5 mL plastic tubes			
15- and 50-mL plastic tubes			
5, 10- and 25-mL sterile plastic pipets			
6-well cell culture plates			
Black 384-well ultra-low-attachment clear-bottom plate; e.g.. Corning 384 flat black	Corning	4588	

Breathe-Easy sealing membrane	Merck		pre-cut polyurethane medical-grade membrane with acrylic adhesive
Glasstic slide			10-chambered slide with hemocytometer grid
Multidrop Combi Reagent Dispenser standard tube dispensing cassette	Thermo Scientific		
Plugged Pasteur's pipet of which the tip has been tightened in a flame			
Reversible 20/40/70/100 µm filters: PluriStrainer	Pluriselect	e.g. 43-50020-03	
Sterile P1000, P200, P20 and P2 pipet tips and low-retention filter tips (e.g. Sapphire tips)	Greiner	750266	
T8 Plus and D4 Plus cassettes	HP/Tecan		
Required reagents			
100 x Glutamax			L-glutamine substitute
1 M HEPES			
30% (v/v) Tween-20 diluted in PBS			
70% EtOH			
Advanced-DMEM/F12	Thermo Scientific	12634-010	
CellTiter-Glo 3D cell viability assay	Promega	G9681	
Compounds to test screen, including Staurosporin or other positive control			
Dispase II	Sigma-Aldrich	D4693	
DMSO			
ECM for CRC: growth-factor reduced Matrigel, phenol-free	Corning	356231	
ECM for HNSCC PDOs: BME, Cultrex RGF Basement membrane extract, Type R1	R&D Systems	3433-005-R1	
Expansion growth medium (specific for each organoid type)			
Organoid growth factors (specific for each organoid type)			
PBS			
Pen/Strep (100 U/mL)			
ROCK inhibitor: Y-27632	Abmole	M1817	
TrypLE			
Required Software Packages:			
GraphPad Prism			
Microsoft Excel			