

Materials List for:

A Combined 3D Tissue Engineered *In Vitro*/*In Silico* Lung Tumor Model for Predicting Drug Effectiveness in Specific Mutational Backgrounds

Claudia Göttlich^{*1}, Lena C. Müller^{*1}, Meik Kunz^{*3}, Franziska Schmitt¹, Heike Walles^{1,4}, Thorsten Walles², Thomas Dandekar³, Gudrun Dandekar^{1,4}, Sarah L. Nietzer¹

¹Department of Tissue Engineering and Regenerative Medicine (TERM), University Hospital Wuerzburg

²Department of Cardiothoracic Surgery, University Hospital Wuerzburg

³Department of Bioinformatics, University Wuerzburg

⁴Translational Center Wuerzburg, Fraunhofer Institute Interfacial Engineering and Biotechnology IGB

*These authors contributed equally

Correspondence to: Thomas Dandekar at dandekar@biozentrum.uni-wuerzburg.de, Gudrun Dandekar at gudrun.dandekar@uni-wuerzburg.de

URL: <https://www.jove.com/video/53885>

DOI: [doi:10.3791/53885](https://doi.org/10.3791/53885)

Materials

Name	Company	Catalog Number	Comments
Bioreactors	Chair of Tissue Engineering and Regenerative Medicine, Würzburg (GER)		Bioreactor setup
BioVoxel Toolbox (ImageJ / Fiji)	Jan Brocher, Thorsten Wagner, https://github.com/biovoxel/BioVoxel_Toolbox		
Cell crowns	Chair of Tissue Engineering and Regenerative Medicine, Würzburg (GER)		for static 3D culture
CellDesigner	http://www.celldesigner.org/	-	This software was used for drawing the network.
Citrate buffer stock solution (10x)	in house production		42 g/L Citric acid monohydrate, 17.6 g/L Sodium hydroxide pellets in deionized water, pH 6.0, stored at RT.
Citrate buffer working solution	in house production		10% Citrate buffer stock solution in demineralized water, stored at RT.
Citric acid monohydrate	VWR, Darmstadt (GER)	1002441000	used for the citrate buffer
Cover slips	VWR, Darmstadt (GER)	631-1339	
DAPI Fluoromount-G™	SouthernBiotech, Birmingham (USA)	SBA-0100-20	
Databases such as KEGG, HPRD and QIAGEN (Genes & Pathways)	http://www.genome.jp/kegg/pathway.html ; http://www.hprd.org/ ; https://www.qiagen.com/de/geneglobe/	-	Different known literature databases were used for generating the network topology.
Female Luer Lug Style Tee	Mednet, Münster (GER)	FTLT-1	Bioreactor setup
Female Luer Thread Style with 5/16" Hex to 1/4-28 UNF Thread	Mednet, Münster (GER)	SFTLL-J1A	Bioreactor setup
Fetal Calf Serum	Bio&SELL, Feucht (GER)	FCS.ADD.0500	not heat-inactivated
Gefitinib	Absource Diagnostics GmbH, München (GER)	S1025-100 mg	100 mM stock solution with DMSO
Glas flask (Schott, GER) provided with glas hose connection	Weckert, Kitzingen (GER)	custom made	
Histofix 4% (Paraformaldehyd)	Carl Roth, Karlsruhe (GER)	P087.1	
Hose coupling	Mednet, Münster (GER)	CC-9	Bioreactor setup

Incubator for bioreactors	Chair of Tissue Engineering and Regenerative Medicine, Würzburg (GER)		Bioreactor setup
M30 CytoDeath™ ELISA	Peviva, Bromma (SWE)	10900	
Male Luer Integral Lock Ring	Mednet, Münster (GER)	MTLL230-J1A	Bioreactor setup
Moisture chamber	custom made		
Mouse anti Pan-Cytokeratin	Sigma-Aldrich, Munich (GER)	C2562-2ML	Clone C-11+PCK-26+CY-90+KS-1A3 +M20+A53-B/A2, used 1/100 for immunofluorescence
Needlefree Swabable Valve Female Luer	Mednet, Münster (GER)	NVFMLLPC	Bioreactor setup, for sampling, gamma-sterilized
O-Ring MVQ 10 red 37 x 3 mm	Arcus Dichtelemente, Seevetal (GER)	21444	O-ring large, Bioreactor setup
O-Ring MVQ 70 red 27 x 2.5 mm	Arcus Dichtelemente, Seevetal (GER)	19170	O-ring small, Bioreactor setup
PAP pen	Dako, Hamburg (GER)	S002	
Paraffin	Carl Roth, Karlsruhe (GER)	6642.6	
Peristaltic pump	Ismatec, Wertheim-Mondfeld (GER)		Bioreactor setup
Phosphate Buffered Saline	Sigma-Aldrich, Munich (GER)	D8537-6x500ml	
Pump tubing cassette	Ismatec, Wertheim (GER)	IS 3710	Bioreactor setup
Rabbit anti Ki67	Abcam, Cambridge (UK)	ab16667	Clone SP6, used for 1/100 for IF
Rabbit anti Vimentin	Abcam, Cambridge (UK)	ab92547	used 1/100 for IF
RPML-1640 medium	Life technologies, Darmstadt (GER)	61870-044	warm in 37 °C waterbath before use
Silicone tube	Carl Roth GmbH, Karlsruhe (GER)	HC66.1	Bioreactor setup
Sodium Hydroxide	Sigma-Aldrich, München (GER)	30620-1KG-R	used for the citrate buffer
SQUAD	http://sbos.eu/docu/docu/SQUAD/doku.php.htm	-	This software was used for performing the semiquantitative simulations.
Sterile air filter, pore size 0.2 µm	Sartorius Stedium Biotech, Göttingen (GER)	16596-HYK	Bioreactor setup
Syringe Luer Lok 5 ml	BD Biosciences, Heidelberg (GER)	309649	for bioreactor sampling
Tissue culture test plates: 6-, 12-, 24-, 96- well	TPP Techno Plastic Products AG, Trasadingen (GER)	92006, 92012, 92024, 92048	
Transforming growth factor-beta 1 (TGF-β1) with carrier	Cell Signaling, Frankfurt (GER)	8915LC	stock solution in sterile citrate buffer pH 3.0
Triton X-100	Sigma-Aldrich, München (GER)	X100-1L	
Tween-20	Sigma-Aldrich, München (GER)	P7949-500ml	for washing buffer of immunofluorescent staining