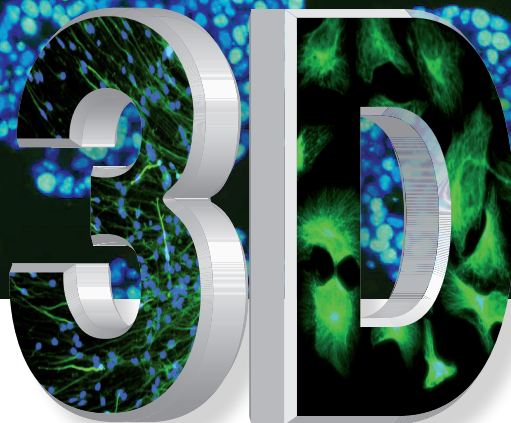


**PROGRAMME**

5 – 7 June 2018  
Konzerthaus Freiburg · Germany

**3D Cell Culture 2018**  
How close to '*in vivo*' can we get?  
Models, Applications & Translation

[www.dechema.de/3DCC2018](http://www.dechema.de/3DCC2018)



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### COMMITTEE

<b>Hansjörg Hauser</b>	Helmholtz Centre for Infection Research, Braunschweig/D
<b>Jens M. Kelm</b>	Competence Centre TEDD, Wädenswil/CH
<b>Uwe Marx</b>	TissUse GmbH, Berlin/D
<b>Tobias May</b>	InSCREENeX GmbH, Braunschweig/D
<b>Thomas Noll</b>	University of Bielefeld/D
<b>Ralf Pörtner</b>	Hamburg University of Technology/D
<b>Markus Rimann</b>	Zurich University of Applied Sciences, Wädenswil/CH
<b>Heinz Ruffner</b>	Novartis Institutes for BioMedical Research, Basel/CH
<b>Karin Tiemann</b>	DECHEMA e. V., Frankfurt Main/D

### VENUE

Konzerthaus Freiburg  
Konrad-Adenauer-Platz 1  
79098 Freiburg  
Germany  
Website: [www.konzerthaus.freiburg.de](http://www.konzerthaus.freiburg.de)

### ORGANISER AND CONTACT

DECHEMA e.V.  
Theodor-Heuss-Allee 25  
60486 Frankfurt am Main  
Germany  
  
Christopher Diaz Maceo  
Phone: +49 (0)69 7564-243  
Fax: +49 (0)69 7564-176  
E-mail: [christopher.diaz@dechema.de](mailto:christopher.diaz@dechema.de)

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### POSTER PROGRAMME

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Tuesday, 5 June 2018

09:30 **Registration**10:30 **Welcome Address****Effects of Microenvironment***Chair: H. Hauser<sup>1</sup>; <sup>1</sup> Helmholtz Centre for Infection Research, Braunschweig/D*10:35 **KEYNOTE LECTURE****Engineering organoid development**M. Lutolf<sup>1</sup>; <sup>1</sup>Ecole Polytechnique Fédérale de Lausanne/CH11:20 **Macromolecular crowding in 2D and 3D culture systems: creating of cell and stem cell specific microenvironments**M. Raghunath<sup>1</sup>; N. Kohli<sup>1</sup>; <sup>1</sup> Zurich University of Applied Sciences, ICBT, Wädenswil/CH11:40 **Redefining cell culture environment with combinatorial biomatrices**A. Thomas<sup>1</sup>; <sup>1</sup> B CUBE Center for Molecular Bioengineering, Center for Molecular and Cellular Bioengineering – TU Dresden/D12:00 **iPSC-derived neurospheroids recapitulate development and pathological signatures of brain microenvironment**A. Terrasso<sup>1</sup>; D. Simão<sup>1</sup>; N. Bayó-Puxan<sup>2</sup>; F. Arez<sup>1</sup>; M. Silva<sup>1</sup>; M. Sousa<sup>1</sup>; S. Creysells<sup>3</sup>; P. Gomes-Alves<sup>1</sup>; N. Raimundo<sup>4</sup>; E. Kremer<sup>3</sup>; P. Alves<sup>1</sup>; C. Brito<sup>1</sup>; <sup>1</sup> iBET, Instituto de Biologia Experimental e Tecnológica, Oeiras, Portugal; Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Oeiras, Portugal; Oeiras/P; <sup>2</sup> Institute of Biomedicine of the University of Barcelona (IBUB); Institut de Génétique Moléculaire de Montpellier, CNRS UMR 5535; Université de Montpellier, Barcelona; Montpellier/E; <sup>3</sup> Institut de Génétique Moléculaire de Montpellier, CNRS UMR 5535; Université de Montpellier, Montpellier/F; <sup>4</sup> Universitätsmedizin Göttingen, Institut für Zellbiochemie, Göttingen/D12:20 **Expansion of mouse pancreatic organoids in a chemically defined three-dimensional matrix**N. Rischert<sup>1</sup>; H. Wurst<sup>1</sup>; T. Moreth<sup>2</sup>; L. Hof<sup>2</sup>; E. Stelzer<sup>2</sup>; M. Huch<sup>3</sup>; F. Pampaloni<sup>2</sup>; B. Angres<sup>1</sup>; <sup>1</sup> Cellendes GmbH, Reutlingen/D; <sup>2</sup> Goethe-Universität Frankfurt am Main/D; <sup>3</sup> University of Cambridge/UK12:40 **Lunch Break / Posters / Exhibition****Imaging and Analytics***Chair: R. Pörtner<sup>1</sup>; <sup>1</sup> Hamburg University of Technology/D*14:00 **KEYNOTE LECTURE****Observing three-dimensional biological specimens with light sheet-based fluorescence microscopy (LSFM)**E. H. K. Stelzer<sup>1</sup>; <sup>1</sup> Buchmann Institute for Molecular Life Sciences – Goethe University Frankfurt am Main/D

Tuesday, 5 June 2018

14:45 **Image-based quantification of immunotherapies effects in 3D environment**K. Yan<sup>1</sup>; L. Daszkiewicz<sup>1</sup>; L. Price<sup>1</sup>; <sup>1</sup> OcellO B.V., Leiden/NL15:05 **3D culture models for investigating recruitment of stem cells to the vascular niche**Y. Atlas<sup>1</sup>; C. Gorin<sup>2</sup>; C. Chaussain<sup>2</sup>; S. Germain<sup>1</sup>; L. Muller<sup>1</sup>; <sup>1</sup> CIRB, Collège de France, Paris/F; <sup>2</sup> Descartes University, Dental School, Paris/F15:25 **STATARRAYS<sup>®</sup>: microcavity arrays as a useful tool to detect single cell migration in a 4D co-culture model of human bone marrow**E. Gottwald<sup>1</sup>; S. Giselbrecht<sup>1</sup>; R. Truckenmüller<sup>1</sup>; V. Colditz<sup>2</sup>; C. Nies<sup>2</sup>; <sup>1</sup> 300MICRONS GmbH, Karlsruhe/D; <sup>2</sup> Karlsruhe Institute of Technology (KIT), Karlsruhe/D15:45 **Coffee Break / Posters / Exhibition****Predictive Model Systems***Chair: T. May<sup>1</sup>; <sup>1</sup>InSCREENeX GmbH, Braunschweig/D*16:15 **KEYNOTE LECTURE****3D human liver spheroid systems for analyses of liver diseases, liver function, drug metabolism and toxicity**M. Ingelman-Sundberg<sup>1</sup>; <sup>1</sup> Karolinska Institutet, Stockholm/S17:00 **Novel predictive 3D cultivation models for validating small molecules against KSHV infection**T. Dubich<sup>1</sup>; C. Lipps<sup>1</sup>; T. May<sup>2</sup>; M. Stadler<sup>1</sup>; T. Schulz<sup>3</sup>; D. Wirth<sup>1</sup>; <sup>1</sup> Helmholtz Centre for Infection Research, Braunschweig/D; <sup>2</sup> InSCREENeX GmbH, Braunschweig/D; <sup>3</sup> Institute of Virology, Hannover Medical School, Hannover/D17:20 **Three-dimensional tumor cell growth stimulates autophagic flux and recapitulates chemotherapy resistance**C. Bingel<sup>1</sup>; E. Koeneke<sup>1</sup>; J. Ridinger<sup>1</sup>; A. Bittmann<sup>1</sup>; M. Sill<sup>2</sup>; H. Peterziel<sup>1</sup>; J. Wrobel<sup>1</sup>; I. Rettig<sup>1</sup>; T. Milde<sup>1</sup>; U. Fernekorn<sup>3</sup>; F. Weise<sup>3</sup>; A. Schober<sup>3</sup>; O. Witt<sup>1</sup>; I. Oehme<sup>2</sup>; <sup>1</sup> CCU Pediatric Oncology, German Cancer Research Center (DKFZ), Heidelberg/D; <sup>2</sup> German Cancer Research Center (DKFZ), Heidelberg/D; <sup>3</sup> Dpt of Nano-Biosystem Technology, TU Ilmenau/D17:40 **KEYNOTE LECTURE****Synthetic Biology-Inspired Treatment Strategies of the Future**M. Fussenegger<sup>1</sup>; <sup>1</sup> ETH Zurich/CH18:25 **Poster Session / Poster Party (18:25 – 21:00)**18:30 **SECTION MEMBER ASSEMBLY (Room K3+K4 / 18:30 – 19:30)**

DECHEMA Working Groups Cell Culture Technology and Medical Biotechnology

## Wednesday, 6 June 2018

08:30 **Registration****Advanced Models – Skin***Chair: U. Marx<sup>1</sup>; <sup>1</sup>TissUse GmbH, Berlin/D*09:00 **KEYNOTE LECTURE****In vitro skin models for clinical research and transplantation**S. Gibbs<sup>1</sup>; <sup>1</sup>VU University Medical Center Amsterdam/NL09:45 **Towards an immunocompetent skin model to study and develop materials for wound healing**C. Griffoni<sup>1</sup>; B. Sentürk<sup>1</sup>; M. Rottmar<sup>1</sup>; K. Maniura<sup>1</sup>; <sup>1</sup>Empa - Swiss Federal Laboratories for Materials Science and Technology, St Gallen/CH10:05 **vascSkin-on-a-chip: combination strategies of human skin-equivalents and vasculature**K. Schimek<sup>1</sup>; A. Thomas<sup>2</sup>; T. Hasenberg<sup>3</sup>; G. Giese<sup>4</sup>; U. Marx<sup>3</sup>; R. Lauster<sup>4</sup>; G. Lindner<sup>4</sup>; <sup>1</sup>Technische Universität Berlin, FG Medizinische Biotechnologie, Berlin/D; <sup>2</sup>Cellbricks GmbH, Berlin/D; <sup>3</sup>TissUse GmbH, Berlin/D; <sup>4</sup>Technische Universität Berlin/D10:25 **MUG-Mel2, a novel highly pigmented and well characterized NRAS mutated human melanoma cell line in 3D culture**B. Rinner<sup>1</sup>; G. Gandolfi<sup>2</sup>; K. Meditz<sup>1</sup>; M. Frisch<sup>1</sup>; K. Wagner<sup>1</sup>; A. Ciarrocchi<sup>2</sup>; F. Torricelli<sup>2</sup>; R. Koivuniemi<sup>3</sup>; J. Niklander<sup>3</sup>; B. Liegl-Atzwagner<sup>1</sup>; B. Lohberger<sup>1</sup>; E. Heitzer<sup>1</sup>; N. Ghaffari-Tabrizi-Wizsy<sup>1</sup>; D. Zweytick<sup>1</sup>; I. Zalaudek<sup>1</sup>; <sup>1</sup>Medical University of Graz, Graz/A; <sup>2</sup>Laboratorio di Ricerca Traslazionale Arcispedale S. Maria Nuova - IRCCS, Reggio Emilia/I; <sup>3</sup>University of Helsinki, Helsinki/FIN10:45 **Coffee Break / Posters / Exhibition****Advanced Models - Vascularization, Muscle***Chair: H. Ruffner<sup>1</sup>; <sup>1</sup>Novartis Institutes for BioMedical Research, Basel/CH*11:15 **Pre-vascularized cell cultivation system to generate perfused 3D co-culture models**J. Prade<sup>1</sup>; M. Busek<sup>2</sup>; M. Wiele<sup>1</sup>; F. Sonntag<sup>2</sup>; M. Meyer<sup>1</sup>; <sup>1</sup>FILK gGmbH, Freiberg/D; <sup>2</sup>Fraunhofer-Institut für Werkstoff- und Strahltechnik, Dresden/D11:35 **Generation of 3D human cardiac microtissues with tissue-like functionality**M. Valls-Margarit<sup>1</sup>; O. Iglesias-García<sup>2</sup>; C. Di Guglielmo<sup>2</sup>; L. Sarlabous<sup>1</sup>; R. Paoli<sup>1</sup>; J. Comelles<sup>1</sup>; D. Blanco-Almazán<sup>1</sup>; S. Jiménez-Delgado<sup>2</sup>; O. Castillo-Fernández<sup>3</sup>; J. Samitier<sup>1</sup>; R. Jané<sup>1</sup>; E. Martínez<sup>1</sup>; Á. Raya<sup>2</sup>; <sup>1</sup>Institute for Bioengineering of Catalonia, Barcelona/E; <sup>2</sup>Center of Regenerative Medicine in Barcelona/E; <sup>3</sup>Institute of Microelectronics of Barcelona, Bellaterra/E11:55 **KEYNOTE LECTURE****Advanced induced pluripotent stem cell (iPSC) screens**M. Müller<sup>1</sup>; <sup>1</sup>Novartis Institutes for BioMedical Research, Basel/CH12:40 **Lunch / Posters / Exhibition**

## Wednesday, 6 June 2018

**From Models to High Throughput***Chair: J. Kelm<sup>1</sup>; <sup>1</sup>Competence Centre TEDD, Wädenswil/CH*14:00 **Merging high-content and high-throughput screening: Microphysiological Organ-on-a-Chip systems featuring complex human tissues with physiological structure and function**P. Loskill<sup>1</sup>; <sup>1</sup>Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart/D14:20 **Modification of a standardized 3D in vitro tumor-stroma model for high throughput screening of candidates of new tumor therapeutics**S. Hensler<sup>1</sup>; C. Kühnbach<sup>1</sup>; M. Mueller<sup>1</sup>; <sup>1</sup>HFU Hochschule Furtwangen, Villingen-Schwenningen/D14:40 **Development of a matrix-based technology platform for the high throughput analysis of 3D cell cultures**M. Rimann<sup>1</sup>; A. Picononi<sup>1</sup>; E. Bono<sup>1</sup>; E. Felley-Bosco<sup>2</sup>; C. Hund<sup>3</sup>; R. Pellaux<sup>3</sup>; A. Meyer<sup>3</sup>; <sup>1</sup>Zurich University of Applied Sciences, ICBT, Wädenswil/CH; <sup>2</sup>Laboratory of Molecular Oncology, Zurich University Hospital, Zurich/CH; <sup>3</sup>FGen GmbH, Basel/CH15:00 **Magnetic 3D Bioprinting for High-Throughput Compound Screening and Translational Applications**G. Souza<sup>1</sup>; G. Bartholomeusz<sup>2</sup>; <sup>1</sup>The University of Texas Health Science Center, Houston/USA; <sup>2</sup>UT MD Anderson Cancer Center, Houston/USA15:20 **Simple and robust microfluidic platform for spheroid culturing in a high-throughput manner**J. Kim<sup>1</sup>; H. Choi<sup>1</sup>; <sup>1</sup>Daegu Gyeongbuk Institute of Science and Technology, Daegu/ROK15:40 **Microtissues meet microfluidics – next generation microphysiological tilting system**K. Renggli<sup>1</sup>; C. Lohasz<sup>1</sup>; S. Bürgel<sup>1</sup>; D. Fluri<sup>2</sup>; A. Hierlemann<sup>1</sup>; O. Frey<sup>2</sup>; <sup>1</sup>ETH Zürich, Basel/CH; <sup>2</sup>Inspheo AG, Schlieren/CH16:00 **Coffee Break / Posters / Exhibition**

## Wednesday, 6 June 2018

## From Models to Clinical and Industrial Solutions

Chair: T. Nolt<sup>1</sup>; <sup>1</sup> University of Bielefeld/D

- 16:30 **KEYNOTE LECTURE**  
**The application of microphysiological systems in drug discovery using case studies from safety and efficacy questions**  
 L. Ewart<sup>1</sup>; <sup>1</sup> AstraZeneca, Cambridge/UK
- 17:15 **Bringing 3D Tumor Models to the clinic – predictive value for personalized medicine**  
 K. Halfter<sup>1</sup>; B. Mayer<sup>2</sup>; <sup>1</sup> SpheroTec GmbH, Munich/D; <sup>2</sup> Hospital of the LMU Munich/D
- 17:35 **Single-donor iPSC derived Multi-Organ-Chips**  
 A. Ramme<sup>1</sup>; L. Koenig<sup>1</sup>; D. Faust<sup>1</sup>; A. Krebs<sup>1</sup>; T. Hasenberg<sup>1</sup>; E. Dehne<sup>1</sup>; U. Marx<sup>1</sup>;  
<sup>1</sup> TissUse GmbH, Berlin/D
- 17:55 **Rethinking Drug Development – 3D Disease Models for Advanced Preclinical Drug Evaluation**  
 M. Schäfer-Korting<sup>1</sup>; S. Hedtrich<sup>1</sup>; V. Kral<sup>1</sup>; G. Weindl<sup>1</sup>; J. Plendl<sup>1</sup>; C. Thöne-Reineke<sup>1</sup>;  
 B. Kleuser<sup>2</sup>; R. Preissner<sup>3</sup>; A. Pries<sup>3</sup>; A. Volkamer<sup>3</sup>; R. Lauster<sup>4</sup>; A. Luch<sup>5</sup>; G. Schönfelder<sup>5</sup>;  
 M. Weber<sup>6</sup>; <sup>1</sup> Freie Universität Berlin/D; <sup>2</sup> Potsdam University, Potsdam/D;  
<sup>3</sup> Charité Universitätsmedizin Berlin/D; <sup>4</sup> Technische Universität Berlin/D; <sup>5</sup> Federal  
 Institute for Risk Assessment, Berlin/D; <sup>6</sup> Zuse Institute Berlin/D
- 18:15 **End of Lecture Programme**
- 19:30 **CONFERENCE DINNER**  
 Schlossbergrestaurant Dattler  
 Am Schlossberg 1  
 79104 Freiburg  
 (dinner ticket required)

## Thursday, 7 June 2018

08:30 Registration

## Advanced Models – From Liver to Lung

Chair: M. Rimann<sup>1</sup>; <sup>1</sup> Zurich University of Applied Sciences, Wädenswil/CH

- 09:00 **Metabolic cross talk between human pancreatic islet and liver spheroids in a micro-physiological system - Towards a novel human ex vivo model of Type 2 Diabetes**  
 S. Bauer<sup>1</sup>; C. Wennberg Huldt<sup>2</sup>; K. Kanebratt<sup>2</sup>; I. Durieux<sup>1</sup>; D. Gunne<sup>1</sup>; S. Andersson<sup>2</sup>;  
 L. Ewart<sup>3</sup>; W. Haynes<sup>2</sup>; I. Maschmeyer<sup>1</sup>; A. Winter<sup>1</sup>; C. Ämmälä<sup>2</sup>; U. Marx<sup>1</sup>; T. Andersson<sup>2</sup>;  
<sup>1</sup> TissUse GmbH, Berlin/D; <sup>2</sup> AstraZeneca, Mölndal/S; <sup>3</sup> AstraZeneca, Cambridge/UK
- 09:20 **Mimicking human physiology at Transwell-based barrier models of the proximal tubulus – The ZEBRA-Chip**  
 F. Schmieder<sup>1</sup>; D. Förster<sup>2</sup>; M. Hempel<sup>1</sup>; J. Sradnick<sup>2</sup>; B. Hohenstein<sup>2</sup>; F. Sonntag<sup>1</sup>;  
<sup>1</sup> Fraunhofer Institute for Material and Beam Technology IWS, Dresden/D; <sup>2</sup> Division  
 of Nephrology, Department of Internal Medicine III, University Hospital Carl Gustav  
 Carus Dresden/D
- 09:40 **Human and mouse intestinal organoids as model system for studying drug transport**  
 T. Zietek<sup>1</sup>; E. Rath<sup>2</sup>; F. Reichart<sup>3</sup>; H. Kessler<sup>3</sup>; G. Ceyhan<sup>4</sup>; I. Demir<sup>4</sup>; H. Daniel<sup>1</sup>;  
<sup>1</sup> Technische Universität München, Freising/D; <sup>2</sup> TUM ZIEL Institute for Food & Health,  
 Freising/D; <sup>3</sup> TUM Institute for Advanced Study, Garching/D; <sup>4</sup> Dept. of Surgery,  
 Klinikum rechts der Isar, München, Germany
- 10:00 **Microstructured 3D model of small intestine epithelium: breaking the mold**  
 M. García-Díaz<sup>1</sup>; A. G. Castaño<sup>1</sup>; G. Altay<sup>1</sup>; N. Torras<sup>1</sup>; R. Martin-Venegas<sup>2</sup>; R. Ferrer<sup>1</sup>;  
 E. Martínez<sup>1</sup>; <sup>1</sup> Institute for Bioengineering of Catalonia, Barcelona/E; <sup>2</sup> Universitat de  
 Barcelona/E
- 10:20 **Long-term culture of rat Precision-Cut Lung Slices using Lab-on-Chip technology as an ex vivo system with prolonged viability**  
 S. Konzok<sup>1</sup>; S. Dehmel<sup>1</sup>; V. Neuhaus<sup>1</sup>; J. Labisch<sup>1</sup>; S. Grünzner<sup>2</sup>; F. Sonntag<sup>2</sup>; A. Braun<sup>1</sup>;  
 K. Sewald<sup>1</sup>; <sup>1</sup> Fraunhofer Institute for Toxicology and Experimental Medicine ITEM,  
 Hannover/D; <sup>2</sup> Fraunhofer Institute for Material and Beam Technology IWS/Dresden  
 University of Technology, Dresden/D
- 10:40 **Coffee Break / Posters / Exhibition**

## PROGRAMME

Thursday, 7 June 2018

### Safety and Toxicity Testing

Chair: U. Marx<sup>1</sup>; <sup>1</sup>TissUse GmbH, Berlin/D

11:15

#### KEYNOTE LECTURE

**Advanced cell models, organs on a chip & microphysiological systems in drug safety assessment: the need, the vision – and challenges to overcome**

A. Roth<sup>1</sup>; <sup>1</sup>F. Hoffmann-La Roche Ltd., Basel/CH

12:00

**A Novel 3D Human Liver Fibrosis Model for Anti-fibrotic Drug Discovery and Safety Testing**

S. Messner<sup>1</sup>; <sup>1</sup>Insphero AG, Schlieren/CH

12:20

**Bioprinted kidney model to assess nephrotoxicity**

M. Nossowitz<sup>1</sup>; M. Rimann<sup>2</sup>; N. Hernando<sup>3</sup>; C. Wagner<sup>3</sup>; U. Graf-Hausner<sup>1</sup>; M. Raghunath<sup>1</sup>; <sup>1</sup>Zurich University of Applied Sciences, ICBT, Waedenswil/CH; <sup>2</sup>Zurich University of Applied Sciences, ICBT, Wädenswil/CH; <sup>3</sup>University of Zurich/CH

12:40

**Microfluidic Platform for Advanced Embryotoxicity Testing in vitro**

J. Boos<sup>1</sup>; A. Michlmayr<sup>1</sup>; K. Renggli<sup>1</sup>; O. Frey<sup>2</sup>; A. Hierlemann<sup>1</sup>; <sup>1</sup>ETH Zürich, Basel/CH; <sup>2</sup>Insphero AG, Schlieren/CH

13:00

**Closing Remarks**

13:05

Lunch / Posters / Exhibition

14:15

End of the Conference

## EXHIBITORS

**abc biopply**  
applied biomedical concepts

**ariadne.ai**

**CELLNTEC**  
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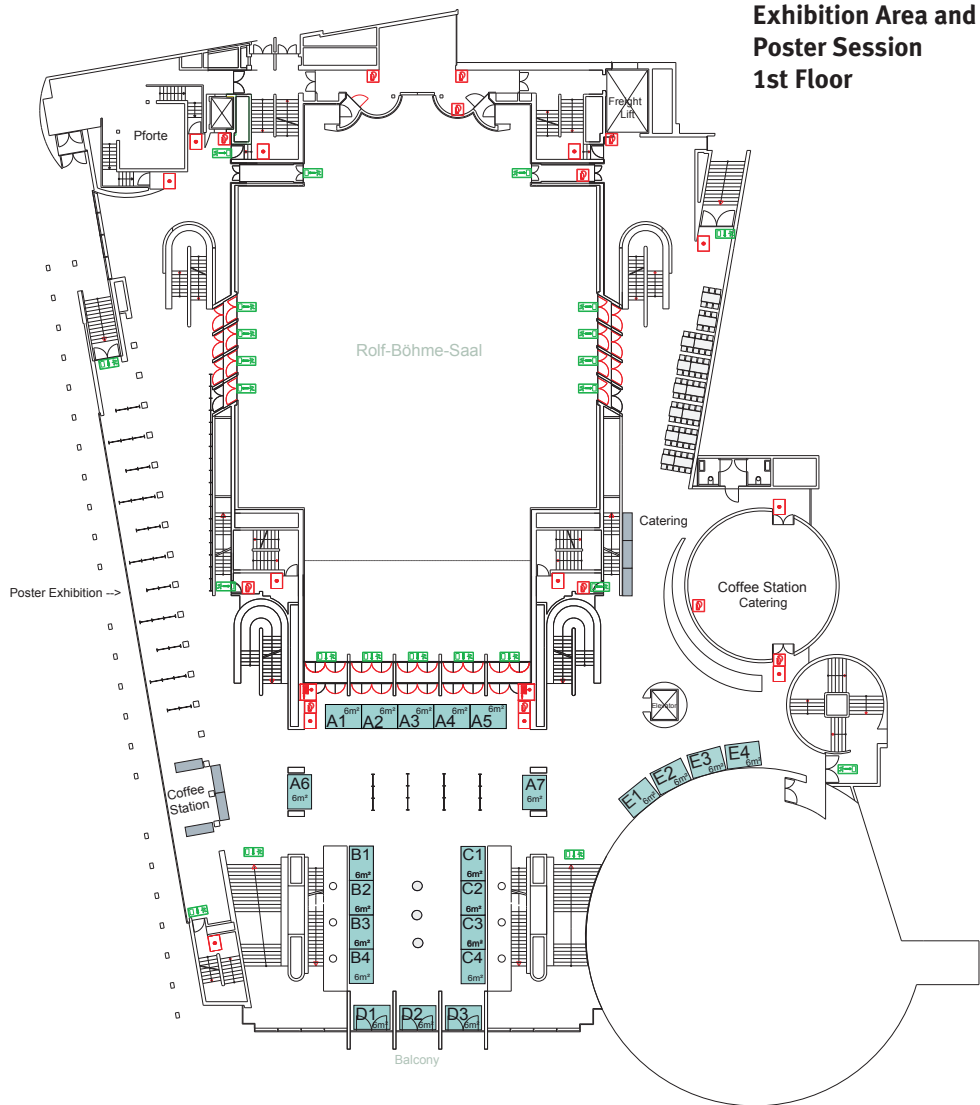
**tebu-bio**  
Innovative Lab Services & Reagents

**TEDD**

**UNION BIOMETRICA**  
Large Particle Analysis and Sorting

The Biofore Company **UPM**

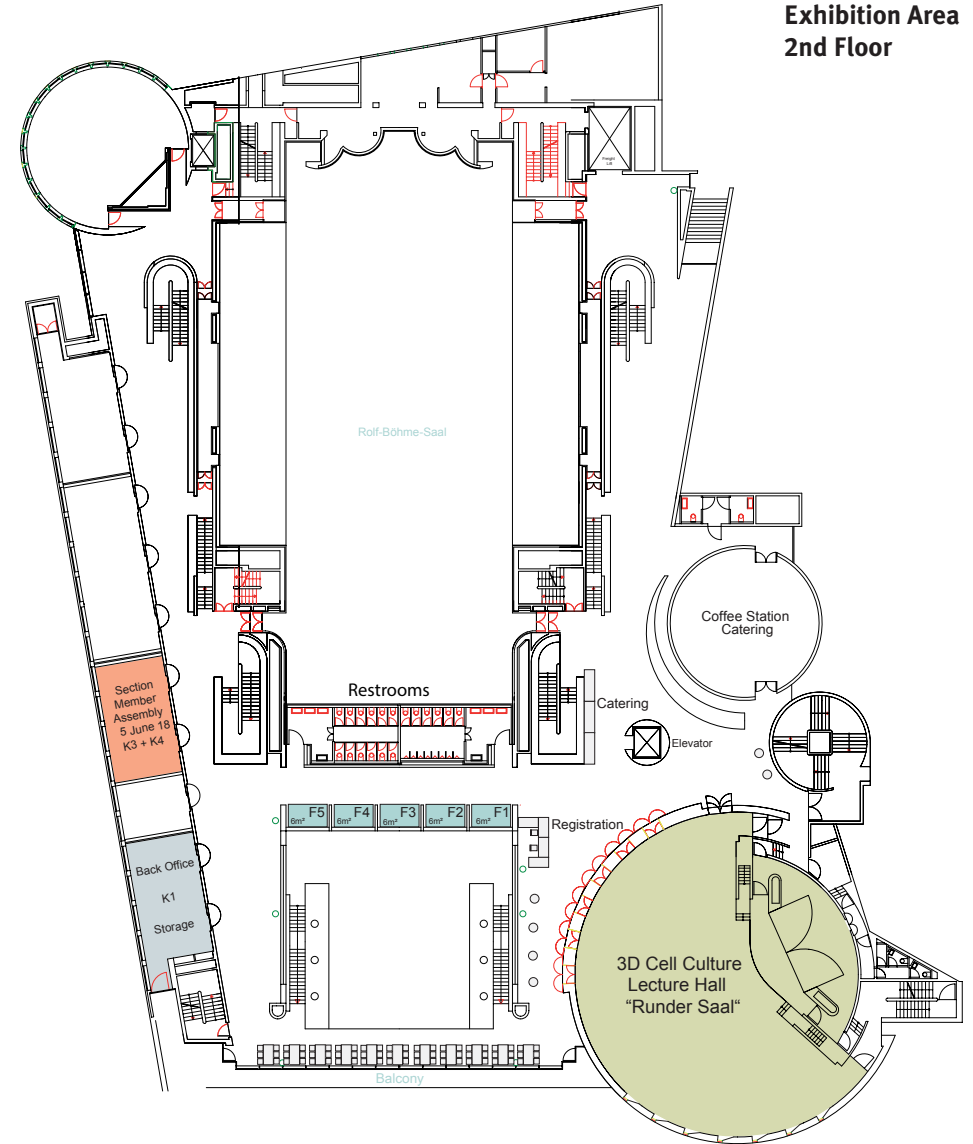
## FLOOR PLAN



### Exhibitors – 1st Floor

- |                                   |   |  |
|-----------------------------------|---|--|
| A1 Promega GmbH                   | B2 tebu-bio GmbH  | D1 Competence Centre TEDD                    |
| A2 Cellon S.A.                    | B3 Kugelmeiers AG   | D2 Ocello B.V.                               |
| A3 Union Biometrica, Inc.         | B4 PeproTech GmbH   | D3 CellSystems® Biotechnologie Vertrieb GmbH |
| A4 UPM-Kymmene Corporation        | C1 MBL International  | E1 CELLnTEC Advanced Cell Systems AG         |
| A5 Cenibra GmbH                   | C2 I&L Biosystems GmbH                                      | E2 abc biopply ag                            |
| A6 Greiner Bio-One GmbH           | C3 STEMCELL Technologies Germany GmbH                       | E3 LOT-QuantumDesign GmbH                    |
| A7 PreSens Precision Sensing GmbH | C4 Fraunhofer-Institut für Werkstoff- und Strahltechnik IWS | E4 Noviocell BV                              |
| B1 ChemoMetec GmbH                |   |  |

## FLOOR PLAN



### Exhibitors – 2nd Floor

- |                         |
|-------------------------|
| F1 Corning BV           |
| F2 ariadne-service gmbh |
| F3 RIGENERAND Srl       |
| F4 PromoCell GmbH       |
| F5 ROKIT Inc.           |

1.1. Advanced cell culture models

- P1.1.01 **Advanced physiologically relevant 3D models for pre-clinical screening**  
D. Sabino<sup>1</sup>; I. Fixe<sup>1</sup>; A. Foucher<sup>1</sup>; F. Carpentier<sup>1</sup>; M. Rochet<sup>1</sup>; I. Topin<sup>1</sup>; E. Mennesson<sup>1</sup>; N. Normand<sup>1</sup>; <sup>1</sup> tebu-bio, Le Perray en Yvelines/F
- P1.1.02 **Evaluation of EGFR induced on-target and target-mediated adverse effects in a microfluidic 3D human lung tumour – full thickness skin co-culture model**  
J. Hübner<sup>1</sup>; M. Raschke<sup>2</sup>; I. Rüttschle<sup>1</sup>; S. Schnurre<sup>2</sup>; S. Gräßle<sup>1</sup>; I. Maschmeyer<sup>1</sup>; U. Marx<sup>1</sup>; T. Steger-Hartmann<sup>2</sup>; <sup>1</sup> TissUse GmbH, Berlin/D; <sup>2</sup> Bayer AG, Berlin/D
- P1.1.03 **A 3D High-Content Screening assay as model system for polycystic kidney disease**  
H. Bange<sup>1</sup>; T. Booi<sup>2</sup>; W. Leonhard<sup>3</sup>; K. Yan<sup>1</sup>; D. Peters<sup>3</sup>; L. Price<sup>1</sup>; <sup>1</sup> Ocello B.V., Leiden/NL; <sup>2</sup> LACDR, Leiden University, Leiden/NL; <sup>3</sup> Leiden University Medical Centre, Leiden/NL
- P1.1.04 **Parallelized Heart-on-a-chip with integrated Force Sensing incorporating human iPS-derived cardiac microtissues**  
C. Probst<sup>1</sup>; O. Schneider<sup>1</sup>; S. Fuchs<sup>1</sup>; P. Loskill<sup>1</sup>; <sup>1</sup> Fraunhofer IGB, Stuttgart/D
- P1.1.05 **Establishment of an advanced in vitro model to study nanomaterial-intestinal barrier interactions**  
C. Hempt<sup>1</sup>; C. Hirsch<sup>1</sup>; M. Kucki<sup>1</sup>; P. Wick<sup>1</sup>; T. Buerki-Thurnherr<sup>1</sup>; <sup>1</sup> Empa - Swiss Federal Laboratories for Materials Science and Technology, St.Gallen/CH
- P1.1.06 **The Ocular DynaMITES – A dynamic microfluidic in vitro system with improved predictability of ocular drug absorption**  
N. Reißner<sup>1</sup>; K. Mattern<sup>2</sup>; A. Dietzel<sup>2</sup>; S. Reichl<sup>1</sup>; <sup>1</sup> TU Braunschweig/ Institut für Pharmazeutische Technologie, Braunschweig/D; <sup>2</sup> TU Braunschweig/ Institut für Mikrotechnik, Braunschweig/D
- P1.1.07 **Cell Processing in Microreactors: Real-time Monitoring of Cell Metabolism Using Sensor Particles and Surface Based, Gentle Cell Detachment**  
K. Uhlig<sup>1</sup>; C. Gehre<sup>2</sup>; S. Prill<sup>2</sup>; M. Stahl<sup>2</sup>; C. Duschl<sup>2</sup>; E. Schmälzlin<sup>3</sup>; L. Dähne<sup>4</sup>; T. Hellweg<sup>5</sup>; <sup>1</sup> Fraunhofer-Institut für Zelltherapie und Immunologie IZI, Potsdam/D; <sup>2</sup> Fraunhofer-Institute for Cell Therapy and Immunology, Potsdam/D; <sup>3</sup> Colibri Photonics GmbH, Potsdam/D; <sup>4</sup> Surflay Nanotec GmbH, Berlin/D; <sup>5</sup> Bielefeld University, Bielefeld/D
- P1.1.08 **Evaluation of a Novel Cell Culture Platform with Various Barrier Forming Cells for Dynamic Cultivation**  
S. Hinkel<sup>1</sup>; K. Mattern<sup>2</sup>; A. Dietzel<sup>2</sup>; S. Reichl<sup>1</sup>; C. Müller-Goymann<sup>1</sup>; <sup>1</sup> TU Braunschweig/ Institut für Pharmazeutische Technologie, Braunschweig/D; <sup>2</sup> TU Braunschweig/ Institut für Mikrotechnik, Braunschweig/D
- P1.1.09 **Ready-to-use 3D spheroid culture as a standard tool**  
I. Prieto<sup>1</sup>; <sup>1</sup> StemTek Therapeutics, DERIO/E
- P1.1.10 **Dual targeting of prognostic biomarkers in the 3D microtumor model of advanced colorectal cancer**  
C. Ilmberger<sup>1</sup>; O. Hoffmann<sup>2</sup>; J. Gülden<sup>2</sup>; T. Bühl<sup>2</sup>; J. Werner<sup>2</sup>; B. Mayer<sup>2</sup>; <sup>1</sup> SpheroTec GmbH, Munich/D; <sup>2</sup> Hospital of the LMU Munich, Munich/D

- P1.1.11 **Permeation Measurement for 3D Skin Culture in a Membrane Insert System**  
H. Hsu<sup>1</sup>; K. Schimek<sup>2</sup>; U. Marx<sup>3</sup>; R. Pörter<sup>4</sup>; <sup>1</sup> Technische Universität Hamburg-Harburg, Hamburg/D; <sup>2</sup> Department Medical Biotechnology of Biotechnology, Technische Universität Berlin, Berlin/D; <sup>3</sup> TissUse GmbH - TU Berlin, Berlin/D; <sup>4</sup> Institute of Bioprocess- and Biosystems Engineering, Hamburg University of Technology, Hamburg/D
- P1.1.12 **Preservation of tumor architecture and heterogeneity in long-term cultures of patient-derived explants**  
S. Abreu<sup>1</sup>; S. da Mata<sup>2</sup>; F. Silva<sup>3</sup>; M. Teixeira<sup>1</sup>; T. Franchi Mendes<sup>1</sup>; R. Fonseca<sup>4</sup>; B. Filipe<sup>2</sup>; S. Morgado<sup>2</sup>; I. Francisco<sup>2</sup>; M. Mesquita<sup>2</sup>; C. Albuquerque<sup>2</sup>; J. Serpa<sup>5</sup>; P. Chaves<sup>2</sup>; I. Rosa<sup>2</sup>; A. Felix<sup>5</sup>; E. R. Boghaert<sup>6</sup>; V. E. Santo<sup>1</sup>; C. Brito<sup>1</sup>; <sup>1</sup> iBET/ITQB-NOVA, Oeiras/P; <sup>2</sup> IPOLFG, Lisboa/P; <sup>3</sup> CEDOC-FCM-NOVA, Lisboa/P; <sup>4</sup> IPOLFG and FMUL, Lisboa/P; <sup>5</sup> IPOLFG and CEDOC-FCM-NOVA, Lisboa/P; <sup>6</sup> AbbVie, Chicago/USA
- P1.1.13 **Establishment of a murine intestinal tissue model based on immortalized primary epithelial cells**  
C. Fey<sup>1</sup>; T. Truschel<sup>2</sup>; M. Schweinlin<sup>1</sup>; H. Walles<sup>3</sup>; T. May<sup>2</sup>; M. Metzger<sup>3</sup>; <sup>1</sup> Department of Tissue Engineering and Regenerative Medicine (TERM), University Hospital Würzburg, Würzburg/D; <sup>2</sup> InSCREENeX GmbH, Braunschweig/D; <sup>3</sup> Translational Center Würzburg “Regenerative Therapies for Oncology and Musculoskeletal Diseases” (TZKME), Würzburg branch of the Fraunhofer Institute of Silicate Research (ISC), Würzburg/D
- P1.1.14 **Development of a human epidermal burn wound model**  
V. Schneider<sup>1</sup>; <sup>1</sup> Uniklinik Würzburg, Würzburg/D
- P1.1.15 **Initial screening of novel copolymer micelles for biocompatibility and effects on cell motility**  
Y. Yordanov<sup>1</sup>; D. Aluani<sup>1</sup>; B. Tzankov<sup>1</sup>; V. Tzankova<sup>1</sup>; R. Kalinova<sup>2</sup>; I. Dimitrov<sup>3</sup>; V. Bankova<sup>4</sup>; M. Popova<sup>4</sup>; B. Trusheva<sup>4</sup>; K. Yoncheva<sup>1</sup>; <sup>1</sup> Faculty of Pharmacy, Medical University of Sofia, Sofia/BG; <sup>2</sup> Institute of Polymers, Bulgarian Academy of Sciences, Sliven/BG; <sup>3</sup> Institute of Polymers, Bulgarian Academy of Sciences, Sofia/BG; <sup>4</sup> Institute of Organic Chemistry with Center for Phytochemistry, Bulgarian Academy of Sciences, Sofia/BG
- P1.1.16 **An injectable hybrid hydrogel for tissue engineering applications**  
R. Wittig<sup>1</sup>; B. Baumann<sup>2</sup>; M. Lindén<sup>2</sup>; <sup>1</sup> Institute for Laser Technologies in Medicine & Metrology (ILM) at Ulm University, Ulm/D; <sup>2</sup> Institute for Inorganic Chemistry II, Ulm University, Ulm/D
- P1.1.17 **A tissue engineered Full Thickness Skin Equivalent based on a non-contracting, biophysical optimised collagen type-I hydrogel**  
P. Fey<sup>1</sup>; C. Reuter<sup>2</sup>; T. Finger<sup>1</sup>; M. Engstler<sup>2</sup>; H. Walles<sup>3</sup>; F. Groeber-Becker<sup>1</sup>; <sup>1</sup> Fraunhofer ISC - Translationszentrum für Regenerative Therapien TLZ-RT, Würzburg/D; <sup>2</sup> Julius-Maximilians Universität Würzburg, Würzburg/D; <sup>3</sup> Universitätsklinikum Würzburg, Würzburg/D
- P1.1.18 **Cell on cell – functionally immortalized smooth muscle cells as building blocks for 3D tissues**  
A. Bleisch<sup>1</sup>; <sup>1</sup> InSCREENeX GmbH, Braunschweig/D



P1.1.11 **Evaluation of local inflammatory reactions following subcutaneous injection of a pro-inflammatory cocktail in a fully human ex vivo skin model**  
C. Jarret<sup>1</sup>; E. Pagès<sup>1</sup>; E. Raude<sup>2</sup>; F. Seeliger<sup>3</sup>; L. Brandén<sup>3</sup>; E. Braun<sup>1</sup>; M. Ingesten<sup>3</sup>; P. Descargues<sup>4</sup>; <sup>1</sup> GENOSKIN SAS, Toulouse/F; <sup>2</sup> LAAS CNRS, Toulouse/F; <sup>3</sup> Drug Safety and Metabolism, IMED Biotech Unit, Astra Zeneca, Gothenburg/S; <sup>4</sup> Genoskin Inc., Boston (MA)/USA

P1.1.20 **A microchip array-based 3D culture system for the in vitro differentiation of osteoblasts**  
W. Zhang<sup>1</sup>; P. Tomakidi<sup>2</sup>; T. Steinberg<sup>2</sup>; R. Kohal<sup>3</sup>; E. Gottwald<sup>4</sup>; B. Altmann<sup>1</sup>; <sup>1</sup> G.E.R.N., Department of Oral and Maxillofacial Surgery, University Medical Center Freiburg, Freiburg im Breisgau/D; <sup>2</sup> Department of Oral Biotechnology, University Medical Center Freiburg, Freiburg im Breisgau/D; <sup>3</sup> Department of Prosthetic Dentistry, University Medical Center Freiburg, Freiburg im Breisgau/D; <sup>4</sup> 300MICRONS GmbH, Karlsruhe/D

P1.1.21 **Automating 3D cell culture using a wood-derived hydrogel**  
L. Paasonen<sup>1</sup>; <sup>1</sup> UPM-Kymmene Corporation, Helsinki/FIN

P1.1.22 **Combining pluripotent stem cell-derived models of the blood-brain barrier with Multi-Organ-Chip systems**  
L. Koenig<sup>1</sup>; A. Ramme<sup>1</sup>; D. Faust<sup>1</sup>; E. Dehne<sup>1</sup>; U. Marx<sup>1</sup>; <sup>1</sup> TissUse GmbH, Berlin/D

P1.1.23 **Microspheres-based scaffolds from poly(3-hydroxybutyrate) for 3D cell growth**  
D. Chesnokova<sup>1</sup>; I. Zharkova<sup>1</sup>; A. Bonartsev<sup>1</sup>; V. Voinova<sup>1</sup>; <sup>1</sup> Lomonosov Moscow State University, Faculty of Biology, Moscow/RUS

P1.1.24 **In vitro 3D bladder cancer model using PDX-derived cells**  
R. Amaral<sup>1</sup>; A. Ma<sup>2</sup>; H. Zhang<sup>2</sup>; K. Swiech<sup>1</sup>; C. Pan<sup>2</sup>; <sup>1</sup> University of Sao Paulo, Ribeirao Preto/BR; <sup>2</sup> University of California Davis, Sacramento/USA

### 1.2 Innovative disease models

P1.2.01 **A tissue engineering approach to model Primary Ciliary Dyskinesia**  
N. Lodes<sup>1</sup>; H. Walles<sup>2</sup>; S. Hackenberg<sup>3</sup>; H. Hebestreit<sup>4</sup>; M. Steinke<sup>2</sup>; <sup>1</sup> University Hospital Würzburg, Chair of Tissue Engineering and Regenerative Medicine, Würzburg/D; <sup>2</sup> University Hospital Würzburg, Chair of Tissue Engineering and Regenerative Medicine; Fraunhofer Institute for Silicate Research, Translational Center Regenerative Therapies, Würzburg/D; <sup>3</sup> University Hospital Würzburg, Department of Otorhinolaryngology, Plastic, Aesthetic and Reconstructive Head and Neck, Würzburg/D; <sup>4</sup> University Hospital Würzburg, Department of Paediatrics, Würzburg/D

P1.2.02 **Characterisation of Bordetella pertussis virulence mechanisms using engineered human airway tissue models**  
D. Kessie<sup>1</sup>; <sup>1</sup> Julius-Maximilians Universität Würzburg, Würzburg/D

P1.2.03 **Establishment and initial characterization of a simple 3D organotypic wound healing model**  
S. Hensler<sup>1</sup>; C. Kühnbach<sup>2</sup>; J. Parente<sup>3</sup>; S. Krueger-Ziolek<sup>4</sup>; K. Moeller<sup>4</sup>; M. Mueller<sup>2</sup>; <sup>1</sup> HS Furtwangen, Villingen-Schwenningen/D; <sup>2</sup> Molecular Cell Biology Lab, Institute of Technical Medicine, HFU Furtwangen, Villingen-Schwenningen/D; <sup>3</sup> Institute of Technical Medicine, HFU Furtwangen University, Villingen-Schwenningen/D; <sup>4</sup> Institute of Technical Medicine, HFU Furtwangen University, Villingen-Schwenningen/D

P1.2.04 **Novel 3D tumour models with stromal components to evaluate the efficacy of immunotherapy with gene-engineered ROR1-specific CAR T cells**  
J. Kühnemund<sup>1</sup>; <sup>1</sup> University Hospital Würzburg, Department of Tissue Engineering & Regenerative Medicine, Würzburg, Germany; Würzburg/D

P1.2.05 **Evaluation of pharmacological responses in InflammaSkin®, a fully human full-thickness ex vivo skin model reproducing key features of psoriatic lesions**  
P. Lovato<sup>1</sup>; C. Jarret<sup>2</sup>; E. PAGES<sup>2</sup>; A. David<sup>2</sup>; E. Braun<sup>2</sup>; H. Norsgaard<sup>1</sup>; P. Descargues<sup>3</sup>; <sup>1</sup> LEO Pharma, Ballerup/DK; <sup>2</sup> GENOSKIN SAS, Toulouse/F; <sup>3</sup> Genoskin Inc., Boston (MA)/USA

P1.2.06 **Generation of human induced pluripotent stem cells (hiPSc)-derived hepatocyte organoids to study liver size control**  
E. Saponara<sup>1</sup>; <sup>1</sup> Novartis Institutes of Biomedical Research, Basel/CH

### 1.3 Complex and multi-cell type models

P1.3.01 **Using the Real Architecture For 3D Tissue (3D RAFT™) System as a Versatile Tool to Build in vitro Epithelial Barrier Models**  
T. Willstaedt<sup>1</sup>; J. Langer<sup>1</sup>; S. Schaepermeier<sup>2</sup>; S. Buesch<sup>2</sup>; T. D'Souza<sup>1</sup>; L. Hussain<sup>1</sup>; J. Schroeder<sup>2</sup>; <sup>1</sup> Lonza Walkersville Inc., Walkersville, MD/USA; <sup>2</sup> Lonza Cologne GmbH, Cologne/D

P1.3.02 **Towards a three-dimensional microfluidic in vitro model to assess efficacy & safety of immune-stimulatory antibody drugs**  
R. Nudischer<sup>1</sup>; C. Bertinetti-Lapatki<sup>2</sup>; C. Claus<sup>3</sup>; K. Renggli<sup>4</sup>; C. Lohasz<sup>4</sup>; O. Frey<sup>5</sup>; A. Hierlemann<sup>4</sup>; A. Roth<sup>2</sup>; <sup>1</sup> F. Hoffmann-La Roche Ltd., Basel/CH; <sup>2</sup> Roche Pharma Research and Early Development, Roche Innovation Center Basel, Basel/CH; <sup>3</sup> Roche Pharma Research and Early Development, Roche Innovation Center Zürich, Schlieren/CH; <sup>4</sup> ETH Zürich, D-BSSE Basel, Basel/CH; <sup>5</sup> Insphero AG, Schlieren/CH

P1.3.03 **MSCs Isolation in 3D cell culture conditions: challenges, modeling and perspectives**  
D. Egger<sup>1</sup>; M. Kirsch<sup>2</sup>; T. Scheper<sup>2</sup>; A. Lavrentieva<sup>2</sup>; C. Kasper<sup>3</sup>; <sup>1</sup> Department of Biotechnology, University of Natural Resources and Life Sciences, Vienna/A; <sup>2</sup> Institute of Technical Chemistry, Leibniz University Hanover, Hannover/D; <sup>3</sup> Department of Biotechnology, University of Natural Resources and Life Sciences, Vienna/D

P1.3.04 **Retina-on-a-Chip: Merging Organoid and Organ-on-a-Chip technology for complex multi-layer tissue models**  
J. Chuchuy<sup>1</sup>; K. Achberger<sup>2</sup>; C. Probst<sup>1</sup>; J. Haderspeck<sup>3</sup>; J. Rogal<sup>1</sup>; S. Liebau<sup>2</sup>; P. Loskill<sup>1</sup>; <sup>1</sup> Fraunhofer IGB, Stuttgart/D; <sup>2</sup> Eberhard Karls Universität Tübingen, Tübingen/D; <sup>3</sup> Eberhard Karls Universität Tübingen, Stuttgart/D

- P1.3.05 **WAT-on-a-Chip: Microphysiological systems integrating white adipose tissue**  
J. Rogal<sup>1</sup>; C. Binder<sup>2</sup>; E. Rubiu<sup>2</sup>; C. Probst<sup>2</sup>; K. Schenke-Layland<sup>3</sup>; P. Loskill<sup>1</sup>; <sup>1</sup> Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB & Eberhard Karls University Tübingen, Stuttgart/D; <sup>2</sup> Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart/D; <sup>3</sup> Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB & Eberhard Karls University Tübingen, Tübingen/D
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- P1.3.06 **High content screening of intestinal organoid cultures to visualize and quantify immune responses**  
M. Madej<sup>1</sup>; B. Herpers<sup>1</sup>; L. Salinaro<sup>1</sup>; K. Yan<sup>1</sup>; L. Daszkiewicz<sup>1</sup>; L. Price<sup>1</sup>; <sup>1</sup> Ocello B.V., Leiden/NL
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- P1.3.07 **3D co-cultivation of beta cells and mesenchymal stromal/stem cells for diabetes therapy**  
F. Petry<sup>1</sup>; P. Czermak<sup>1</sup>; D. Salzig<sup>1</sup>; <sup>1</sup> Institute of Bioprocess Engineering and Pharmaceutical Technology, University of Applied Sciences Mittelhessen, Gießen/D
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- P1.3.08 **Modeling tumor microenvironment to address the dynamics of tumor, stromal and immune cell interactions**  
S. Rebelo<sup>1</sup>; C. Brito<sup>2</sup>; D. Simão<sup>3</sup>; <sup>1</sup> iBET/ITQBAX-UNL, Oeiras/P; <sup>2</sup> iBET, Instituto de Biologia Experimental e Tecnológica, Oeiras, Portugal; Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Oeiras, Portugal, Oeiras/P; <sup>3</sup> iBET, Oeiras/P
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- P1.3.09 **Development of a 3D spheroid SK-MEL-28 tumor model and its characterisation**  
J. Klicks<sup>1</sup>; R. Rudolf<sup>1</sup>; M. Hafner<sup>1</sup>; <sup>1</sup> Hochschule Mannheim, Mannheim/D
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- P1.3.10 **Trace Amines and Fatty Acids are Essential Endogenous Signaling Factors for β-Cell Activity and Insulin Secretion**  
S. Hauke<sup>1</sup>; C. Schultz<sup>2</sup>; <sup>1</sup> European Molecular Biology Laboratory (EMBL), Heidelberg/D; <sup>2</sup> Oregon Health and Science University (OHSU), Portland, OR/USA
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- P1.3.11 **In vitro vascularization of a human bone marrow model.**  
K. Keskin<sup>1</sup>; S. Sieber<sup>1</sup>; U. Marx<sup>2</sup>; R. Lauster<sup>1</sup>; M. Rosowski<sup>1</sup>; <sup>1</sup> Technische Universität Berlin, FG Medizinische Biotechnologie, Berlin/D; <sup>2</sup> TissUse GmbH, Berlin/D
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- P1.3.12 **Development and characterization of PDX-derived 3D tumor microtissues as platform for screening targeted molecular therapeutics**  
F. Chiovaro<sup>1</sup>; N. Buschmann<sup>2</sup>; I. Agarkova<sup>2</sup>; A. Maier<sup>3</sup>; S. Messner<sup>2</sup>; J. Schueler<sup>3</sup>; P. Guye<sup>2</sup>; <sup>1</sup> InSphero AG, Schlieren/CH; <sup>2</sup> InSphero AG, Schlieren/CH; <sup>3</sup> Charles River, Freiburg im Breisgau/D
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- P1.3.13 **Imitation of the long-lived plasma cell survival niche of the human bone marrow in vitro**  
Z. Uyar<sup>1</sup>; S. Sieber<sup>1</sup>; U. Marx<sup>2</sup>; R. Lauster<sup>1</sup>; M. Rosowski<sup>1</sup>; <sup>1</sup> Technische Universität Berlin/D
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- P1.3.14 **Development of a Cardiac Organoid Culture System with hiPSC-derived Cardiomyocytes**  
M. Schulze<sup>1</sup>; B. Ulmer<sup>1</sup>; M. Lemoine<sup>1</sup>; A. Fischer<sup>1</sup>; T. Eschenhagen<sup>1</sup>; <sup>1</sup> University Medical Center Hamburg-Eppendorf/D

- P1.3.15 **Neuronal differentiation of human iPSCs in 3DProSeed hydrogel well plate and establishment of glia co-cultures**  
S. de Leeuw<sup>1</sup>; V. Milleret<sup>2</sup>; B. Simona<sup>3</sup>; R. Urbanet<sup>2</sup>; M. Ehrbar<sup>2</sup>; C. Tackenberg<sup>1</sup>; <sup>1</sup> Institute for Regenerative Medicine, University of Zürich, Schlieren/CH; <sup>2</sup> Department of Obstetrics, University hospital Zürich, Zürich/CH; <sup>3</sup> Ectica Technologies AG, Zürich/CH
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- P1.3.16 **Contractile work contributes to maturation of energy metabolism in hiPSC-derived cardiomyocytes**  
B. Ulmer<sup>1</sup>; A. Stoehr<sup>2</sup>; M. Schulze<sup>1</sup>; S. Patel<sup>3</sup>; M. Gucek<sup>3</sup>; I. Mannhardt<sup>1</sup>; S. Funcke<sup>1</sup>; E. Murphy<sup>3</sup>; T. Eschenhagen<sup>1</sup>; A. Hansen<sup>1</sup>; <sup>1</sup> UKE, Hamburg/D; <sup>2</sup> Karolinska Institutet, Huddinge/S; <sup>3</sup> National Heart Lung and Blood Institute, Bethesda/USA
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- P1.3.17 **Development of microvascular structures inside porous fibrin coated polydioxanon and PLLA/PLGA scaffolds**  
S. Heene<sup>1</sup>; S. Thoms<sup>1</sup>; R. Jonczyk<sup>1</sup>; T. Scheper<sup>1</sup>; C. Blume<sup>1</sup>; <sup>1</sup> Leibniz Universität Hannover, Hannover/D

#### 1.4 Predictivity and validation

- P1.4.01 **Patient-derived 3D tumor cultures for clinical diagnostics and pre-clinical drug development.**  
S. Basten<sup>1</sup>; B. Herpers<sup>1</sup>; K. Yan<sup>1</sup>; T. Giesemann<sup>2</sup>; J. Schueler<sup>2</sup>; W. Vader<sup>3</sup>; L. Price<sup>4</sup>; <sup>1</sup> Ocello B.V., Leiden/NL; <sup>2</sup> Charles River, Freiburg/D; <sup>3</sup> Vitroscan B.V., Leiden/NL; <sup>4</sup> Ocello B.V., Leiden/D
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- P1.4.02 **Detailed Cell-Material Interactions in 3D Cell Culture Systems**  
R. Harjumäki<sup>1</sup>; R. Nugroho<sup>2</sup>; J. Valle-Delgado<sup>2</sup>; Y. Lou<sup>1</sup>; M. Yliperttula<sup>1</sup>; M. Österberg<sup>2</sup>; <sup>1</sup> University of Helsinki, Helsinki/FIN; <sup>2</sup> Aalto University, Espoo/FIN
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- P1.4.03 **Towards controlling the mobility of flowing cells in a hanging-drop network for microphysiological systems**  
N. Rousset<sup>1</sup>; M. de Geus<sup>1</sup>; A. Kaestli<sup>1</sup>; K. Renggli<sup>1</sup>; A. Hierlemann<sup>1</sup>; <sup>1</sup> ETH Zürich, Basel/CH

#### 2.1 Translation of models to solutions

- P2.1.01 **Three-dimensional in vitro co-culture model for nanoparticle-mediated transfection**  
V. Sokolova<sup>1</sup>; N. Bialas<sup>1</sup>; L. Rojas<sup>1</sup>; M. Epple<sup>1</sup>; <sup>1</sup> Inorganic Chemistry, University of Duisburg-Essen, Essen/D
- 
- P2.1.02 **Microphysiological system based on human liver microtissues for intrinsic clearance prediction**  
F. Hürlimann<sup>1</sup>; S. Mannino<sup>2</sup>; C. Lohasz<sup>3</sup>; K. Renggli<sup>3</sup>; A. Hierlemann<sup>3</sup>; L. Suter-Dick<sup>2</sup>; O. Frey<sup>1</sup>; <sup>1</sup> InSphero AG, Schlieren/CH; <sup>2</sup> University of Applied Sciences and Arts Northwestern Switzerland, Muttenz/CH; <sup>3</sup> ETH Zürich, D-BSSE, Basel/CH

2.2 Clinical applications

- P2.2.01 **Silencing GALNT1 or GALNT2 suppresses malignant phenotypes of pancreatic cancer cells**  
T. Yeh<sup>1</sup>; M. Huang<sup>1</sup>; <sup>1</sup> National Taiwan University College of Medicine, TAIPEI/RC
- P2.2.02 **Production of clinical grade temporary epidermal substitute obtained from hESC derived keratinocytes for the treatment of sickle cell leg ulcers: a challenge for regenerative medicine**  
S. Domingues<sup>1</sup>; Y. Masson<sup>1</sup>; A. Poulet<sup>1</sup>; M. Saidani<sup>1</sup>; J. Polentes<sup>1</sup>; G. Lemaitre<sup>1</sup>; M. Peschanski<sup>1</sup>; C. Baldeschi<sup>1</sup>; <sup>1</sup> ISTEM/CECS, Corbeil-Essonnes/F
- P2.2.03 **Establishment of a Novel Functional in Vitro Assay to Investigate the Angiogenic Potential of Colonic Adenocarcinomas**  
S. Bring Truelsen<sup>1</sup>; G. Hagel<sup>1</sup>; N. Mousavi<sup>2</sup>; H. Harling<sup>2</sup>; K. Qvortrup<sup>2</sup>; O. Thastrup<sup>1</sup>; J. Thastrup<sup>1</sup>; <sup>1</sup> 2cureX A/S, Birkerød/DK; <sup>2</sup> University of Copenhagen, Copenhagen/DK

3.1 Innovative, advanced analytics

- P3.1.01 **Imaging oxygen gradients in cell aggregates and in spheroids**  
R. Meier<sup>1</sup>; R. Meier<sup>1</sup>; <sup>1</sup> PreSens Precision Sensing GmbH, Regensburg/D
- P3.1.02 **Application of video analysis for the evaluation of cardiac contractility in different in vitro model systems including freshly isolated adult rat cardiomyocytes and human iPSC-derived cardiomyocytes in 2D- and 3D-culture**  
P. Beauchamp<sup>1</sup>; S. Adrian<sup>2</sup>; S. Longnus<sup>2</sup>; T. Suter<sup>2</sup>; C. Zuppinger<sup>3</sup>; <sup>1</sup> Bern University, Bern/CH; <sup>2</sup> Bern University Hospital, Bern/CH; <sup>3</sup> University Hospital Bern, Bern/CH

3.2 Specific assay development

- P3.2.01 **Microfluidics: a powerful tool to recreate in vivo environment**  
C. Vergne<sup>1</sup>; B. Rouffet<sup>2</sup>; S. Renard<sup>3</sup>; M. Verhulsel<sup>2</sup>; <sup>1</sup> Fluigent, Villejuif/FP; <sup>2</sup> Fluigent, Villejuif/F; <sup>3</sup> Fluigent GmbH, Jena/D
- P3.2.02 **An assay to characterize the impact of cigarette smoke exposure on mucociliary clearance in-vitro.**  
S. Frentzel<sup>1</sup>; L. Ortega Torres<sup>1</sup>; S. Majeed<sup>1</sup>; P. Leroy<sup>1</sup>; F. Zanetti<sup>1</sup>; M. van der Toorn<sup>1</sup>; M. Peitsch<sup>1</sup>; J. Hoeng<sup>1</sup>; <sup>1</sup> Philip Morris Products S.A., Neuchatel/CH
- P3.2.03 **Minimalistic hydrogel matrices to direct early neural progenitors from pluripotent stem cells in 3D culture**  
A. Meinhardt<sup>1</sup>; A. Ranga<sup>2</sup>; E. Tanaka<sup>3</sup>; M. Lutolf<sup>4</sup>; C. Werner<sup>5</sup>; <sup>1</sup> Leibniz Institute of Polymer Research Dresden, Max Bergmann Center of Biomaterials Dresden/D; <sup>2</sup> KU Leuven, Leuven/B; <sup>3</sup> Research Institute of Molecular Pathology, Vienna/A; <sup>4</sup> Ecole Polytechnique Fédérale de Lausanne, Lausanne/CH; <sup>5</sup> Leibniz Institute of Polymer Research Dresden, Max Bergmann Center of Biomaterials Dresden, and Center for Regenerative Therapies Dresden, TU Dresden, Dresden/D

- P3.2.04 **Real-Time Assay for Apoptosis using Complementation of Annexin V Luciferase Subunits**  
T. Riss<sup>1</sup>; K. Kupcho<sup>1</sup>; J. Shultz<sup>1</sup>; J. Hartnett<sup>1</sup>; R. Hurst<sup>1</sup>; W. Zhou<sup>2</sup>; R. Akiyoshi<sup>3</sup>; A. Niles<sup>1</sup>; <sup>1</sup> Promega Corporation, Madison/USA; <sup>2</sup> Promega Biosciences, San Louis Obispo/USA; <sup>3</sup> Olympus Corporation, Tokyo/J
- P3.2.05 **Benefits of Real-Time Measurements of Cell Health in 2D or 3D Using a Plate Reader**  
T. Riss<sup>1</sup>; <sup>1</sup> Promega Corporation, Madison/USA
- P3.2.06 **Volume Regulation of HaCaT Spheroids in Response to Hypotonic Stimuli**  
E. von Molitor<sup>1</sup>; Hochschule Mannheim, Mannheim/D
- P3.2.07 **Calcium signals in taste-bud like 3D cultures**  
T. Cesetti<sup>1</sup>; E. von Molitor<sup>1</sup>; R. Rudolf<sup>1</sup>; M. Hafner<sup>1</sup>; P. Scholz<sup>2</sup>; K. Riedel<sup>2</sup>; <sup>1</sup> Hochschule Mannheim, Mannheim/D; <sup>2</sup> BRAIN AG, Zwingenberg/D

3.3 New devices for 3D cell culture

- P3.3.01 **Scaffold-Free Aggregate Cultivation of Mesenchymal Stem Cells in a Stirred Tank Bioreactor**  
C. Kasper<sup>1</sup>; D. Egger<sup>2</sup>; I. Schwedhelm<sup>3</sup>; J. Hansmann<sup>3</sup>; <sup>1</sup> Boku, Vienna/A; <sup>2</sup> DBT - University of Natural Resources and Life Sciences (BOKU), Vienna/A; <sup>3</sup> Translational Center, University Hospital Wuerzburg, Würzburg/D
- P3.3.02 **Guiding 3D cell migration in deformed synthetic hydrogel micro-structures**  
M. Dietrich<sup>1</sup>; H. Le Roy<sup>2</sup>; D. Brückner<sup>3</sup>; H. Engelke<sup>4</sup>; R. Zantl<sup>5</sup>; J. Rädler<sup>6</sup>; C. Broedersz<sup>3</sup>; <sup>1</sup> Faculty of Physics and Center for NanoScience, Ludwig-Maximilians-University and ibidi GmbH, Munich/D; <sup>2</sup> École Normale supérieure Paris-Saclay, Cachan/F; <sup>3</sup> Arnold-Sommerfeld Center for Theoretical Physics and Center for NanoScience, Ludwig-Maximilians-University, Munich/D; <sup>4</sup> Department of Chemistry and Center for NanoScience, Ludwig-Maximilians-University, Munich/D; <sup>5</sup> ibidi GmbH, Martinsried/D; <sup>6</sup> Faculty of Physics and Center for NanoScience, Ludwig-Maximilians-University, Munich/D
- P3.3.03 **Scaffold-Free Aggregate Cultivation of Mesenchymal Stem Cells in a Stirred Tank Bioreactor**  
C. Kasper<sup>1</sup>; <sup>1</sup> University of Natural Resources and Life Sciences, Vienna, Vienna/A
- P3.3.04 **Development, Characterization and Application of a Parallelizable Perfusion Bioreactor for 3D Cell Culture**  
D. Egger<sup>1</sup>; M. Fischer<sup>1</sup>; A. Clementi<sup>1</sup>; J. Hansmann<sup>2</sup>; C. Kasper<sup>3</sup>; <sup>1</sup> University of Natural Resources and Life Sciences, Vienna, Vienna/A; <sup>2</sup> University Hospital Würzburg/D; <sup>3</sup> University of Natural Resources and Life Sciences, Vienna, Vienna/D
- P3.3.05 **A modular perfusion microbioreactor system for oxygen level control and optimization for bone tissue engineering**  
J. Schmid<sup>1</sup>; M. Schieker<sup>2</sup>; R. Huber<sup>1</sup>; <sup>1</sup> University of Applied Sciences Munich, Munich/D; <sup>2</sup> Ludwig-Maximilians University Munich (LMU), Munich/D

- P3.3.06 **Gelatin-based hydrogels for 3D cell culture: stability at physiological temperatures by UV-crosslinking or nanoparticles**  
K. Kruppa<sup>1</sup>; A. Lavrentieva<sup>2</sup>; T. Scheper<sup>1</sup>; I. Pepelanova<sup>3</sup>; <sup>1</sup> Institute of Technical Chemistry, Leibniz University Hanover/D; <sup>2</sup> Institute of Technical Chemistry/Leibniz University Hanover/D; <sup>3</sup> Institute of Technical Chemistry, Hannover/D
- P3.3.07 **A tubing-free, microfluidic tilting platform for the realization of in vivo-like drug exposure scenarios for three-dimensional microtissues**  
C. Lohasz<sup>1</sup>; O. Frey<sup>2</sup>; K. Renggli<sup>1</sup>; A. Hierlemann<sup>1</sup>; <sup>1</sup> ETH Zürich, Basel/CH; <sup>2</sup> Insphero AG, Schlieren/CH
- P3.3.08 **Organ-on-a-Disc – Enabling technology for the parallelization and automation of microphysiological systems**  
S. Schneider<sup>1</sup>; O. Schneider<sup>1</sup>; F. Erdemann<sup>1</sup>; C. Probst<sup>1</sup>; P. Loskill<sup>1</sup>; <sup>1</sup> Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart/D
- P3.3.09 **Porous, ultralight 3D tubular scaffolds from short electrospun nanofibers**  
M. Merk<sup>1</sup>; C. Adhart<sup>1</sup>; <sup>1</sup> ZHAW Zürcher Hochschule für Angewandte Wissenschaften, Wädenswil/CH
- P3.3.10 **Enhanced cardiomyocyte maturation in a microfluidic system as a potential platform for pharmacological screening**  
T. Kolanowski<sup>1</sup>; M. Busek<sup>2</sup>; S. Grünzner<sup>3</sup>; F. Sonntag<sup>2</sup>; K. Guan<sup>1</sup>; <sup>1</sup> TU Dresden, Faculty of Medicine Carl Gustav Carus, Institute of Pharmacology and Toxicology, Dresden/D; <sup>2</sup> Fraunhofer Institute of Material and Beam Technology IWS, Dresden/D; <sup>3</sup> Fraunhofer Institute of Material and Beam Technology IWS; TU Dresden, Faculty of Manufacturing Technology, Dresden/D
- P3.3.11 **Autonomous Plug&Play Multi-Organ-Chips with Integrated Pumping and Sensing**  
F. Sonntag<sup>1</sup>; C. Probst<sup>2</sup>; S. Grünzner<sup>3</sup>; M. Busek<sup>4</sup>; P. Loskill<sup>5</sup>; <sup>1</sup> Fraunhofer-Institut für Werkstoff- und Strahltechnik IWS, Dresden/D; <sup>2</sup> Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart/D; <sup>3</sup> Fraunhofer Institute for Material and Beam Technology IWS / Dresden University of Technology, Dresden/D; <sup>4</sup> Fraunhofer Institute for Material and Beam Technology IWS, Dresden/D; <sup>5</sup> Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB / Eberhard Karls University Tübingen, Stuttgart/D
- P3.3.12 **vasQchip: A blood vessel scaffold for the reconstruction and 3D bioprinting of 3D-tissues in vitro**  
U. Schepers<sup>1</sup>; <sup>1</sup> Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D
- P3.3.13 **A non-invasive microscopy platform for the online monitoring of human induced pluripotent stem cell aggregation in suspension cultures in small-scale stirred tank bioreactors**  
I. Schwedhelm<sup>1</sup>; D. Egger<sup>2</sup>; P. Wiedemann<sup>3</sup>; T. Schwarz<sup>4</sup>; H. Walles<sup>1</sup>; J. Hansmann<sup>4</sup>; <sup>1</sup> University Hospital Würzburg/D; <sup>2</sup> University of Natural Resources and Life Sciences, Vienna/A; <sup>3</sup> Mannheim University of Applied Sciences, Mannheim/D; <sup>4</sup> Fraunhofer Institute for Silicate Research ISC, Würzburg/D

- P3.3.14 **Comparison of 2D and 3D cultures of primary hepatocytes on hepatocellular functions and hepatotoxicity**  
H. Dinter<sup>1</sup>; A. Ullrich<sup>2</sup>; D. Runge<sup>2</sup>; <sup>1</sup> Hochschule Biberach/D; <sup>2</sup> Primacyt Cell Culture Technology GmbH, Schwerin/D
- P3.3.15 **Funnel-Guided Positioning of Multi-cellular Microtissues to Build Macrotissues**  
K. Manning<sup>1</sup>; A. Thomson<sup>2</sup>; J. Morgan<sup>2</sup>; <sup>1</sup> Brown University, Providence, RI/USA; <sup>2</sup> Brown University, Providence/USA
- P3.3.16 **A novel 3D microwell array for analysis of adhesion independent micro-tumours**  
A. Thomsen<sup>1</sup>; C. Aldrian<sup>2</sup>; Y. Thomann<sup>3</sup>; A. Grosu<sup>2</sup>; P. Bronsert<sup>4</sup>; M. Leu<sup>5</sup>; P. Lund<sup>6</sup>; <sup>1</sup> University Medical Center Freiburg, Freiburg/D; <sup>2</sup> Medical Center – University of Freiburg, Freiburg/D; <sup>3</sup> Freiburg Material Research Center and Institute for Macromolecular Chemistry, Freiburg/D; <sup>4</sup> Institute for Surgical Pathology, Medical Center – University of Freiburg, Freiburg/D; <sup>5</sup> abc biopply ag, Solothurn/CH; <sup>6</sup> Department of Radiation Oncology, Ortenau-Klinikum, Offenburg/D
- P3.3.17 **Integration of 3d printed hollow hydrogel fiber with microfluidic system to develop a perfusable nephron model.**  
A. Akkineni<sup>1</sup>; D. Förster<sup>2</sup>; J. Sardnick<sup>2</sup>; F. Schmieder<sup>3</sup>; F. Sonntag<sup>3</sup>; M. Gelinsky<sup>1</sup>; A. Lode<sup>1</sup>; <sup>1</sup> Centre for Translational Bone, Joint and Soft Tissue Research, TU Dresden/D; <sup>2</sup> University Hospital Carl Gustav Carus, TU Dresden, Dresden/D; <sup>3</sup> Fraunhofer Institute for Material and Beam Technology IWS, Dresden/D

### 3.5 High-throughput and automatisaton

- P3.5.01 **Impedance analysis of viability of Schistosoma mansoni larvae for drug screening application**  
M. Modena<sup>1</sup>; K. Chawla<sup>1</sup>; F. Lombardo<sup>2</sup>; S. Burgel<sup>1</sup>; G. Panic<sup>2</sup>; J. Keiser<sup>2</sup>; A. Hierlemann<sup>1</sup>; <sup>1</sup> ETH Zürich, Basel/CH; <sup>2</sup> University of Basel/CH
- P3.5.02 **Magnetic 3D Bioprinting for High-Throughput and Automated Hepatotoxicity Testing**  
G. Souza<sup>1</sup>; B. Larson<sup>2</sup>; <sup>1</sup> The University of Texas Health Science Center, Houston/USA; <sup>2</sup> Biotek Instruments, Inc., Winooski/USA
- P3.5.03 **Cytotoxicity Evaluation of Nanoparticles using Automatic 3D Cell Culture System**  
M. Heo<sup>1</sup>; <sup>1</sup> Korea Research Institute of Standards and Science, Yuseong-gu, Daejeon/ROK
- P3.5.04 **Automated large-scale production and deposition of spheroids**  
K. Tröndle<sup>1</sup>; <sup>1</sup> University of Freiburg, Technical Faculty, Freiburg/D

3.6 3D printing

- P3.6.01 **Characterization of GelMa and alginate hydrogels for bioprinting: printability, polymerization and biocompatibility**  
 L. Raddatz<sup>1</sup>; C. Schmitz<sup>1</sup>; P. Gellermann<sup>1</sup>; M. Kirsch<sup>1</sup>; D. Geier<sup>2</sup>; S. Beutel<sup>1</sup>; T. Becker<sup>2</sup>; T. Scheper<sup>3</sup>; I. Pepelanova<sup>1</sup>; A. Lavrentieva<sup>1</sup>; <sup>1</sup> Institute of Technical Chemistry, Leibniz University Hanover, Hannover/D; <sup>2</sup> Institute of Brewing and Beverage Technology, Forschungszentrum Weihenstephan, Technical University Munich/D; <sup>3</sup> Institute of Technical Chemistry/Leibniz University Hanover, Hannover/D
- P3.6.03 **Engineering bio-mimetic vasculature with photolithographic fabrication techniques**  
 A. Thomas<sup>1</sup>; K. Schimek<sup>1</sup>; G. Giese<sup>2</sup>; A. Kreuder<sup>1</sup>; T. Grix<sup>1</sup>; L. Kloke<sup>3</sup>; <sup>1</sup> Technische Universität Berlin/D; <sup>2</sup> Freie Universität Berlin/D; <sup>3</sup> Cellbricks GmbH, Berlin/D
- P3.6.04 **Characterisation of bioprinted mandibular osteoblasts for engineering an in vitro jaw bone model**  
 A. Amler<sup>1</sup>; A. Thomas<sup>1</sup>; T. Grix<sup>1</sup>; R. Lauster<sup>1</sup>; L. Kloke<sup>2</sup>; <sup>1</sup> TU Berlin, Berlin/D; <sup>2</sup> Cellbricks GmbH, Berlin/D
- P3.6.05 **3D Bioprinting of hydrogels for viral Infection and transduction with viral gene vectors**  
 T. Hiller<sup>1</sup>; <sup>1</sup> TU Berlin, Berlin/D
- P3.6.06 **3D-printed drug delivery systems for cell therapy: A new approach for the treatment of Diabetes Mellitus**  
 A. Pössl<sup>1</sup>; P. Schlupp<sup>1</sup>; T. Schmidts<sup>1</sup>; F. Runkel<sup>1</sup>; <sup>1</sup> Technische Hochschule Mittelhessen, Gießen/D
- P3.6.07 **Imaging of O<sub>2</sub> concentration and spatial distribution in 3D bioprinted hydrogel scaffolds using O<sub>2</sub> sensing nanoparticles**  
 A. Akkineni<sup>1</sup>; A. Lode<sup>1</sup>; E. Trampe<sup>2</sup>; K. Koren<sup>2</sup>; F. Krujatz<sup>1</sup>; M. Kühl<sup>2</sup>; M. Gelinsky<sup>1</sup>; <sup>1</sup> Technische Universität Dresden, Dresden/D; <sup>2</sup> University of Copenhagen/DK
- P3.6.08 **Modelling of a microfluidic device to study tumor cell extravasation**  
 C. Kühnbach<sup>1</sup>; R. Glunz<sup>1</sup>; M. Mueller<sup>1</sup>; F. Baganz<sup>2</sup>; V. Hass<sup>1</sup>; <sup>1</sup> HFU Hochschule Furtwangen University, Villingen-Schwenningen/D; <sup>2</sup> UCL University College London, London/UK

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