



27th October 2016

TEDD Annual Meeting

50 shades of 3D: from ultraflat 3D to recellularised organs. Harnessing the constructional and metabolic potential of human cells *in vitro*.

Competence Centre Tissue Engineering for Drug
Development and Substance Testing

www.zhaw.ch/icbt/tedd

Introduction

As the new Director of the TEDD Competence Centre I would like to extend a warm welcome to the existing, new, and future members of this growing network.

Form follows function is a principle associated with modernist architecture and industrial design in the 20th century. However, considering contemporary tissue culture and efforts to render cell-based systems and complex tissue equivalents more physiological, the term *function follows form* would equally apply. Be it building connective tissue structures, or stacking cellular compartments allowing for crosstalk between different cell types – all these efforts have one goal: to emulate *in vivo*-like functionality. Part of this functionality is rooted in the spatial relationships between cells and connective tissue structures. Therefore, three-dimensional (3D) cell culture technology has emerged as one of the fastest growing experimental approaches in the life sciences. The 3D cell culture market is predicted to reach 1.35 billion USD by 2021 from currently 470 Million USD this year at a CAGR of 23.6% (marketsandmarkets.com).

This TEDD annual meeting will highlight current segments of the 3D cell culture market, namely scaffold free, scaffold-based, bioprinting, and the use of recellularised tissues. This year we shall shed some light on metabolic tissue engineering, namely the generation of human brown fat cells from progenitor cells. Brown fat was originally assumed to be present only in babies and small infants, but there is increasing evidence that also adults have brown fat deposits to varying degrees. What makes brown fat so interesting is its capacity to become a fuel guzzler after activation, increasing the metabolic rate and burning calories.

Come and listen to the talks, which will cover new technologies to empower cells to perform on a higher physiological level and receive the latest information about current activities in research and industry in the field. During the extended lunch you will have ample opportunity for discussion and networking, and also be able to visit our industrial and research partners' exhibition, where they share their latest ideas and technologies.

Join our community to take the next steps to spearhead implementation and prevalidation of 3D tissue models for widespread commercial use.

I look forward to seeing you in Wädenswil,
best regards,



Michael Raghunath

Director, TEDD Competence Centre

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BIOTECH™
National Thematic Network

Program – Thursday, 27th October 2016

09.00	Registration and welcome coffee
09.30	Opening of the meeting Prof. Dr. Christian Hinderling, Director of the Institute of Chemistry and Biotechnology, Zurich University of Applied Sciences (ZHAW)
09.40	Metabolic Tissue Engineering: a tale of two fats Dr. Michael Raghunath, Director, TEDD Competence Centre, Zurich University of Applied Sciences (ZHAW)
10.20	Regulation of brown fat formation and function Prof. Dr. Christian Wolfrum, Department of Health Sciences and Technology, ETH Zurich, Switzerland
11.00	Complex vascularized tissue models and their application Prof. Dr. Heike Walles, Department Tissue Engineering & Regenerative Medicine, TERM, University Hospital Würzburg Translational Center Würzburg, Regenerative Therapies in Oncology and Musculoskeletal Disease Würzburg, branch of the Fraunhofer Institut Interfacial Engineering and Biotechnology (IGB), Germany
11.40	Short talks <ul style="list-style-type: none">• Human 3D-cocultures for the study of liver fibrosis Prof. Dr. Laura Suter-Dick, University of Applied Sciences and Arts Northwestern Switzerland• Adding metabolic competence to 3D cell-based assays using a spheroid-based microphysiological system Dr. Olivier Frey, InSphero AG, Switzerland
12.00	Networking lunch, poster presentation and exhibition
14.00	Fabrication of functional human skeletal muscle tissue for drug testing using 3D bioprinting Dr. Hansjoerg Keller, Novartis Institutes for BioMedical Research, Switzerland
14.40	Short talks <ul style="list-style-type: none">• Engineering human hair follicles <i>in vitro</i> – opportunities in regenerative medicine and cosmetics testing Dr. Uwe Marx, TissUse GmbH, Germany• Evaluation by 3D imaging of the molecular activity in pre-clinical phases Dr. Jean-Michel Lagarde, imactiv-3d, France• SiMPLnext SA - Hi-Fi <i>in vitro</i>. Delivering on the promises of permeable supports for tissue engineering Dr. Silvia Angeloni Suter, CSEM & SiMPLnext, Switzerland
15.20	Application of human cell culture techniques to create cosmetic stories Dr. Fred Züllli, Mibelle Group, Switzerland
16.00	Final remarks and TEDD next steps Dr. Michael Raghunath, Director, TEDD Competence Centre, Zurich University of Applied Sciences (ZHAW)
16.20	Aperitif and networking

General Information

Exhibition

Selected industrial and academic partners will present their latest technologies and ideas. This platform will enable discussions, collaboration and the generation of new network projects.

List of exhibitors

RUWAG Handels AG • Biotek Instruments GmbH • Tecan Schweiz AG • SiMPLInext SA • C-CIT Sensors • OLS-OMNI Life Sciences GmbH • Microsynth AG • LLS Rowiak Laserlab Solutions GmbH • Culture Collection of Switzerland AG • Peptigeldesign • ChemoMetec GmbH • Lonza Cologne GmbH • Fujifilm Manufacturing Europe • Molecular Devices (UK) Ltd

Fee

TEDD members	free of charge
other participants	CHF 120.-
students	CHF 60.-

Registration

Via www.zhaw.ch/icbt/tedd or via qr code.

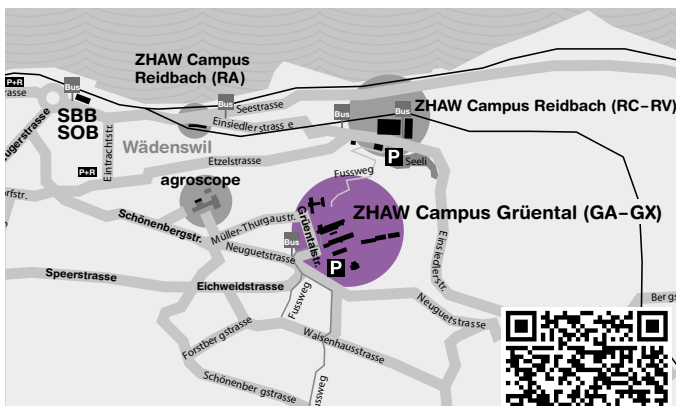
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Venue

Aula 203, Campus Grüental, Wädenswil, Switzerland



www.zhaw.ch/icbt/tedd