

# >>> ANNOUNCEMENT



## Dr. Daniela Lössner

Queensland University of Technology, Institute of Health  
and Biomedical Innovation, Brisbane, Australia

### An engineered tumour-stroma niche provides new insights into disease progression

#### ABSTRACT

Tissue engineering technologies, which have originally been designed to reconstitute damaged tissue structure and function, can mimic not only tissue regeneration processes but also cancer development and progression. Bioengineered approaches allow cell biologists to develop sophisticated experimentally and physiologically relevant cancer models to recapitulate the complexity of the disease seen in patients. Tissue engineering tools enable three-dimensionality based on the design of biomaterials and scaffolds that re-create the geometry, chemistry, function and signalling milieu of the native tumour microenvironment. Three-dimensional (3D) microenvironments, including cell-derived matrices, biomaterial-based cell culture models and integrated co-cultures with engineered stromal components, are powerful tools to study dynamic processes like proteolytic functions associated with cancer progression, metastasis and resistance to therapeutics. In this review, we discuss how biomimetic strategies can reproduce a humanised niche for human cancer cells, such as peritoneal or bone-like microenvironments, addressing specific aspects of ovarian and prostate cancer progression and therapy response.

#### BIO

- Since 2012      Research Fellow, Cancer and Molecular Medicine Program, Chronic Disease and Aging Theme, Faculty of Health, Queensland University of Technology, Brisbane, Australia
- 2007 – 2012    Postdoc, Cells and Tissue Domain, Cancer Program, Faculty of Health, Queensland University of Technology, Brisbane, Australia
- 2003 – 2007    PhD at the Clinical Research Unit, Department of Obstetrics and Gynaecology, Technical University of Munich, Germany
- 1999 – 2003    M.Sc. in Biological Sciences, Friedrich-Schiller University, Jena, Germany
- 1997 – 1999    B.Sc. in Biological Sciences, Friedrich-Alexander University Erlangen-Nuernberg, Germany

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**July 22, 2014 at 11 a.m.**

Leibniz-Institut für Polymerforschung Dresden e. V.  
Max Bergmann Center of Biomaterials Dresden  
Seminar Room B1, Ground Floor, Budapester Straße 27

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Contact: Prof. Carsten Werner, IPF/Max Bergmann Center of Biomaterials Dresden