Newsletter

BB3R introduces: BB3R Junior Professorships

Sarah Hedtrich (Freie Universität Berlin) and her colleagues develop **human-based disease models of human epithelia**, with the current focus on skin and bronchial epithelium. A major goal is to replace or at least reduce animal models in basic and preclinical research by more predictive models. This is of great importance, since currently more than 80% of new drugs fail in clinical phases, for which at least one reason is the low predictivity of animal models.

For the generation of the disease models various approaches are pursued, such as the modulation of disease-associated genes, the use of patient cells and the implementation of immune cells. Based on this, skin models emulating clinical characteristics of atopic eczema in vitro were developed. In the future, a further focus will be on studying inter-tissue crosstalk, which seems important for several diseases, such as atopic dermatitis and allergic asthma.

The research group of **Andrea Volkamer (Charité Universitätsmedizin Berlin)** focuses on *in silico toxicology*. Nowadays, that more and more new substances are being synthesized every year, fast prior analysis of their toxicological potential, i.e., their harmful effects on humans, animals, plants and the environment, becomes inevitable. Using the ever-growing amount of available compound toxicity data, we aim to develop structure-based methods for risk assessment to come closer to the vision of transforming toxicology into a predictive science and reducing animal testing. Our research focuses on computer-aided prediction of off-target effects, design of safer drugs as well as the identification of novel structural alerts (toxic fragments) and toxicity targets using ligand- as well as protein-based structural and physico-chemical information. Furthermore, the group collaborates with BASF SE, Ludwigshafen (PD Dr. R. Landsiedel), on the application of such computer models for read-across.

Upcoming Events

- October 19th/20th Seminar and Workshop: "In vitro Simulation of Fracture Healing and Bone Remodelling" [details and registration]
- November 7th/8th: "Danish 3R Symposium" in Copenhagen [details and registration]
- December 6th: "RegMed Forum – Advanced Disease Models" in Berlin [details and registration].

New publications

- Corte et al, PLoS ONE, 2017: Refining experimental dental implant testing in the Göttingen Minipig using 3D computed tomography - A morphometric study of the mandibular canal [online publication]
- Zscheppang et al, Biotechnol J, 2017: Human pulmonary 3D models for translational research [online publication]

Contact: lisa.grohmann@fu-berlin.de