

**Dear readers,**

The Tenth Congress on Alternatives and Animal Use in the Life Sciences brought together several hundreds of stakeholders to report on and learn about progress and developments in the 3Rs field. Seattle greeted participants with fantastic weather and added a solar eclipse as a special bonus. The “3Rs in Action” presented an attractive program shared over the nine Congress Themes covering the 3Rs in academia, translation, refinement, animal welfare, ethics, innovative models for safety and efficacy, sustainability, systems biology and big data, as well as lessons learned and global cooperation. The Abstract book, with 700 summaries of the oral and poster presentations, is available at <http://www.altex.ch/altex-proceedings/wc-10-seattle>. The organizers chose not to print the abstract book in order to reduce the conference’s environmental footprint; instead, it was included in a mobile app, which was appreciated and used widely by the participants. The ALTEX Prize 2017 was awarded for a t⁴ workshop report on microphysiological systems by Uwe Marx and colleagues in a ceremony during the congress (see the News). The preparations for the next World Congress, which will take place in Maastricht, The Netherlands, on August 23-27, 2020, have already begun.

In this issue, Tom Luechtefeld and Thomas Hartung give you Food for thought ... on the opportunities and challenges of computational toxicology. Mushrooming databases of toxicological data beg the creation of models that will predict whether untested chemicals are toxic; however, much consideration and scrutiny is required to build models that will predict toxic effects of new structures with high accuracy and reliability while avoiding a multitude of potential pitfalls.

While much progress has been made in replacing animal tests for the safety assessment of chemicals used for different purposes, these tests mostly have not been adapted to the safety assessment of medical devices, such as catheters, gloves and plasters. The t⁴ workshop report by Myers et al. explores the potential of *in vitro* tests to replace tests on animals performed to assure the safety of the multitude of medical devices and makes recommendations on how to speed up the process.

Food chemicals is a further field that has not adopted some of the methodology now commonly used in the safety assessment of ingredients of medicines or pesticides. Comparisons have shown that *in vitro* models using human cells can better predict the adsorption, distribution, metabolism and excretion of chemicals in humans than measurements in animals. However, Punt et al. find that safety assessments of food chemicals still rely heavily on animal experiments for prediction of these properties and call for more research into improving and validating quantitative alternative methods for kinetics, as these would both reduce animal use and increase the relevance of the safety assessments for humans.

Four articles in this issue of ALTEX deal with alternative methods to assess the potential of chemicals to cause allergic contact dermatitis, i.e., skin sensitization. The GARD assay identifies skin sensitizers by their ability to turn a signature group of genes on or off, respectively, in a human cell line modeling the activation of dendritic cells in the skin. Here, Johansson and colleagues demonstrate that the test can identify known sensitizers within a large group of blinded chemicals, i.e., chemicals supplied by a third party labeled only with a code to ensure an impartial assessment. Zeller et al. expand the same assay to investigate how well it can differentiate between strong and weak skin sensitizers. Leontaridou et al. deal with the problem that outcomes of the various skin sensitization tests are not neat “yes” or “no” answers but ranges of values through which a cut-off line is drawn to differentiate positive from negative results. They argue that an additional result category termed “borderline” would be useful for values that lie too close to the cut-off line to make a certain call. Such “borderline” results could help to determine the outcome when results from multiple tests are merged into a final prediction. Belot and colleagues remind us that *in vitro* tests often still involve the use of fetal calf serum or other products of animal origin. They adapt the KeratinoSens™ assay for skin sensitization, which is accepted as an OECD test, to a fully animal-product-free method and verify that this adapted method produces the same results as the original method, meaning that it is compliant with the OECD test guideline.

In the News, the University of Utrecht announces that the FCS-free platform is now online and Norecopa introduces PREPARE, planning guidelines for animal experiments that complement the ARRIVE guidelines on reporting on animal experiments.

The ALTEX website is currently being updated with new features and an online manuscript submission and handling system due to go online in early 2018. We hope the new website will enhance your submission and reading experience and welcome your feedback.

Thank you for your support as readers, authors, members and sponsors of ALTEX in 2017.

Sonja von Aulock
and the ALTEX Editorial Team: Franz P. Gruber,
Thomas Hartung, Hans Peter Hoesli, Michael M. Hughes,
Goran Kruppenacher, Petra Mayr, Carolin Rauter
and Joanne Zurlo
with Mardas Daneshian and the Board of ALTEX Edition