

**Dear readers,**

Moving the EUSAAT Congress forward from September to August this year has not affected the abstract submission and registration numbers, so the organizers are looking forward to a successful anniversary meeting on August 24-27 in Linz. ALTEX Proceedings will again make the Abstract Book available online in advance of the Congress to allow you to arrive well prepared.

E-cigarettes are mentioned in ALTEX for the first time in this issue: this product poses novel challenges to toxicity testing owing to the thousands of substances used as flavors. These may be considered safe for oral consumption but are untested for inhalation toxicity. Thomas Hartung provides Food for Thought ... on how this challenge may be approached.

Who would have thought that *Dictyostelium* does not like bitter substances and indicates this by rolling up into a ball? Cocorocchio et al. describe this phenomenon and propose that it can be used to screen new drugs for this property, which reduces patient compliance, instead of the rat brief access taste aversion (BATA) test.

Fawzy Elnady, who recently published a short communication in ALTEX (<http://dx.doi.org/10.14573/altext.1505111>) on the usefulness of ethically sourced preserved animal organs for endoscopy training now describes his novel preservation technique, which runs at room temperature with easily sourced chemicals, in detail. This method has far-reaching potential for education and training in biosciences and medicine world-wide.

Constança Carvalho and colleagues investigated how results or methods from animal studies on attention deficit hyperactivity disorder (ADHD) have influenced clinical studies, arriving at the conclusion that funding in this area would be better invested otherwise in future as the impact is extremely low. This article fits in with a series of recent papers investigating the same question for a range of other diseases, all showing that animal models of human disease too often point us in the wrong direction.

The beautiful confocal image on the cover of this issue shows a new human alveolar epithelial cell line with type I characteristics. Type I cells form the barrier for gaseous exchange in the lung, i.e., they make up most of the alveolar surface but until now there has been no cell line that presents the characteristic properties of the primary cells.

This new cell line described by Kuehn et al. could be highly useful to study how inhaled drugs, chemicals and nano-materials (and perhaps even e-cigarette flavors) act in the human lung.

Commercially available human induced pluripotent stem cell (iPSC) derived neurons hold great promise for neurotoxicity testing. Tukker et al. compare the properties of cells from different supplies with regard to formation of neuronal structures and spontaneous activity, neuronal subtypes and bursting. They conclude that the cells can already be employed for screening purposes, and that further optimization and characterization may enable animal-free neurotoxicity testing in the future.

Uwe Marx and colleagues have put together an extensive t⁴ workshop report detailing the enormous potential of microphysiological systems to improve the representation of human organs and organ systems *in vitro* for drug development, modelling not only healthy tissue but also different stages of disease, drug pharmacokinetics and predicting treatment efficacy. They could also improve safety testing of chemicals used for all different purposes. The report gives a full introduction to this field, presents the current *status quo*, and explains where it is going and how it can get there.

This highly interesting collection of articles is complemented by a letter and workshop report as well as Corners and News from around the globe. Numerous research prizes are currently awaiting nominations, so please consider whether results that have recently caught your attention may qualify.

Finally, I would like to congratulate Heike Behrens-Nicol on winning the ALTEX Prize (generously sponsored by the Doerenkamp-Zbinden Foundation) and would like to thank all authors, reviewers, readers and our staff for their interest and contribution to 3Rs work, which is reflected in our current impact factor of 5.824.

Enjoy reading this issue of ALTEX,

Sonja von Aulock
Editor in chief, ALTEX