

# ALTEX

## ALTERNATIVES TO ANIMAL EXPERIMENTATION

### **Food for thought ...**

Grace Patlewicz, Nicholas Ball,  
Richard A. Becker et al.

**Read-across approaches –  
misconceptions, promises  
and challenges ahead**

Marilena P. Etna, Elena  
Giacomini, Martina Severa et al.

**A human dendritic  
cell-based *in vitro* model to  
assess *Mycobacterium  
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Catherine Willett, Jessica Caverly  
Rae, Katy O. Goyak et al.

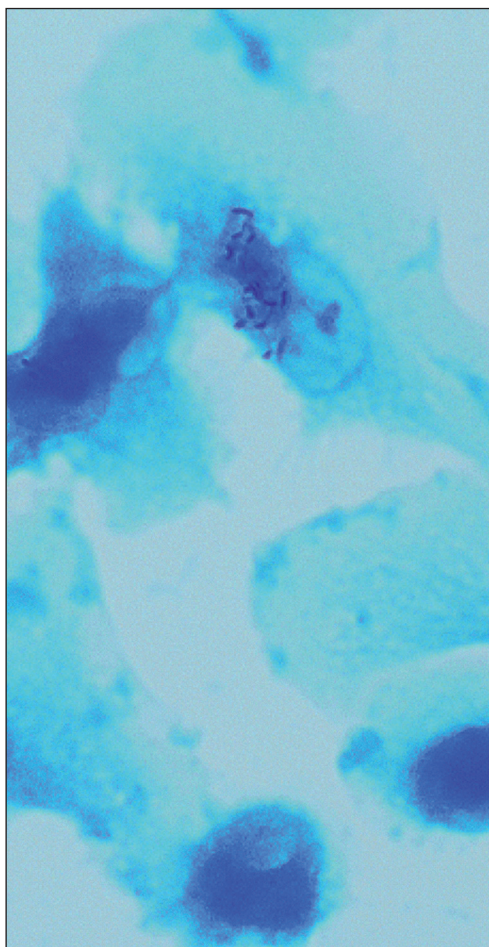
**Pathway-based toxicity:  
History, current  
approaches, and liver  
fibrosis and steatosis  
as prototypes**

Domenico Gadaleta, Fabiola  
Pizzo, Anna Lombardo et al.

**A *k*-NN algorithm for  
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### **t4 workshop report**

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## Dear readers,

This issue of ALTEX celebrates our 30<sup>th</sup> anniversary: The first issue of ALTEX was published in December 1984, already with our trademark 3R logo.

I would like to take this opportunity to thank all current and former staff, past and present members of the board and the editorial board, all authors and reviewers, members and sponsors of ALTEX Edition for all their contributions over the past 30 years that have helped ALTEX grow to an internationally recognized journal. And thank you, our readers, for your loyalty to and interest in ALTEX. Special mention goes to Thomas Hartung, who in this issue publishes his 100<sup>th</sup> contribution to ALTEX and whose Food for thought... column now has been going strong for 8 years. The Thomson Reuters Journal Citations Report calculated an impact factor of 3.630 for ALTEX for 2013, which has increased our 5-year impact factor further to 3.261, one more indication that the work being done in the 3Rs field is gaining increasing attention.

“Read across” is the topic of the Food for thought... article by Patlewicz and colleagues. This term refers to *in silico* techniques that are used to predict the toxicity of chemicals based on what is already known about similar structures. It is the most commonly used alternative to animal experiments used in the context of REACH registrations to fill in data gaps, so with the next REACH deadline looming in 2018, now is a good time to find out about the potential and the limitations of this approach.

Putting this into practice, Gadaleta et al. introduce such a read across technique designed to predict oral sub-chronic toxicity in the rat. They used a large set of existing *in vivo* data to develop and fine-tune their approach, and then validated the algorithm against a separate set of existing data.

Etna and colleagues demonstrate how dendritic cells derived from human blood samples can be used to assess whether a novel tuberculosis vaccine will induce an effective immune response. They suggest that this approach could be used to se-

lect further promising vaccine candidates before performing animal tests.

A review on pathway-based toxicity, with special focus on the mechanisms of action of two liver diseases, by Willett et al., explains this concept, the associated terms and provides information on the various current international activities in this field. The review is complemented by a workshop report, with the same lead author, which brought together the experts working on this field to find consensus and discuss further steps.

Every batch of botulinum toxin must be tested for its potency, mostly by the mouse bioassay in which groups of animals are given different dosages of toxin to determine at which dosage half of them die. The only existing alternative method is proprietary. Eckle and colleague here present the non-proprietary, *in vitro* assay they are developing: They follow the change in muscle fiber activity in cultures of nerve and muscle cells from embryonic spinal cord slices upon exposure to botulinum toxin.

Two t<sup>4</sup> workshop reports give insight into the *status quo* and the potential of 3D cultures and high content imaging and Burm and colleagues report on a workshop on alternatives to the use of non-human primates in research, while Stefanie Schindler and I give you a taste of what you missed if you did not attend the 9<sup>th</sup> World Congress on Alternatives and Animal Use in the Life Sciences.

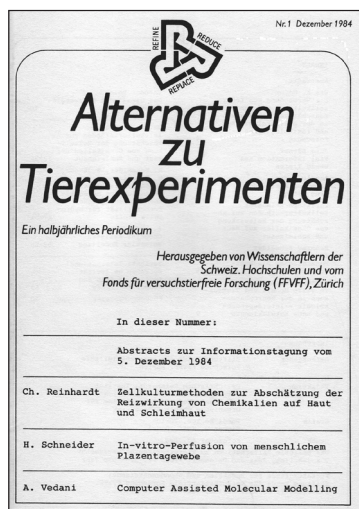
In our Corners section we welcome a contribution from our new member, the IUF – Leibniz Research Institute for Environmental Medicine, in addition to updates from CAAT, ecopa, ICCVAM/NICEATM and IIVS. The News informs you on the latest developments in our field and the Calendar already stretches well into 2015.

On the last few pages you will find an appreciation of Alan Goldberg’s achievements in the 3Rs field on occasion of his 75<sup>th</sup> birthday and retirement from the CAAT boards. The ALTEX team wishes you all the best, Alan!

Thank you again for your support of ALTEX in 2014.

Sonja von Aulock

and the ALTEX Editorial Team: Franz P. Gruber, Thomas Hartung, Hans Peter Hoesli, Michael M. Hughes, Goran Krummenacher, Petra Mayr, Carolin Rauter and Joanne Zurlo with Stefanie Schindler and the ALTEX Board



The first issue of ALTEX

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Dendritic cells infected with *Microbacterium tuberculosis* live-attenuated SO2 vaccine obtained with acid-fast staining. Excerpt of Fig. 3C from Etna et al., 397-406.

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ALTEX is devoted to the publication of research on the development and promotion of alternatives to animal experiments according to the 3R concept of Russell and Burch: Replace, Reduce, and Refine. Animal experiments are defined by the editors as all experimental procedures involving the use of animals in testing, research, and education or to obtain tissues, organs, and other animal-derived products which may cause pain or distress to animals.

ALTEX is also devoted to the bioethics of the complex relationship between humans and animals. Articles published in ALTEX must express a basic concern for the dignity of living creatures and the recognition of animals as our partners.

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Manuscripts submitted to ALTEX are evaluated by two expert reviewers. The evaluation takes into account the scientific merit of a manuscript and its contribution to animal welfare and the 3R principle.

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