

ALTEX

ALTERNATIVES TO ANIMAL EXPERIMENTATION

Food for thought ...

Thomas Hartung
**E-cigarettes and the need
and opportunities
for alternatives
to animal testing**

Research Article

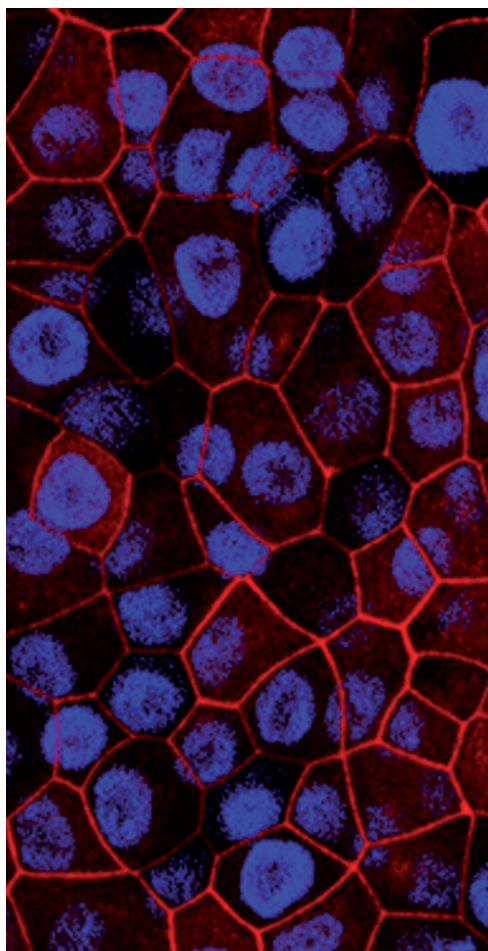
Marco Coccorocchio,
Robert Ives, David Clapham,
Paul L. R. Andrews and
Robin S. B. Williams
**Bitter tastant responses
in the amoeba *Dictyostelium*
correlate with rat and
human taste assays**

Research Article

Fawzy A. Elnady
**The Elnady Technique:
An innovative, new method
for tissue preservation**

Research Article

Constança Carvalho,
Mariana Vieira Crespo,
Luísa Ferreira Bastos,
Andrew Knight and Luís Vicente
**Contribution of animal
models to contemporary
understanding of attention
deficit hyperactivity disorder**



Research Article

Anna Kuehn, Stephanie Kletting,
Cristiane de Souza Carvalho-
Wodarz et al.

**Human alveolar epithelial
cells expressing
tight junctions to model
the air-blood barrier**

Research Article

Anke M. Tukker,
Martje W. G. D. M. de Groot,
Fiona M. J. Wijnolts, Emma E. J.
Kasteel, Laura Hondebrink and
Remco H. S. Westerink

**Is the time right for *in vitro*
neurotoxicity testing
using human iPSC-derived
neurons?**

t4 Workshop Report

Uwe Marx, Tommy B. Andersson,
Anthony Bahinski et al.

**Biology-inspired
microphysiological system
approaches to solve
the prediction dilemma
of substance testing**

Letter

Workshop report

Calendar

Corners

News



**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 nanomaterials (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

LINZ 2016

20th European Congress on Alternatives to Animal Testing

EUSAAT 2016

17th Annual Congress of EUSAAT

EUSAAT

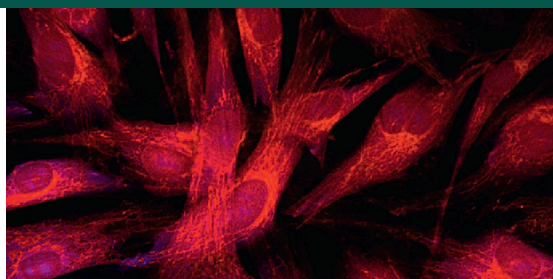
*European Society for
Alternatives to Animal Testing*

The European 3Rs Society



www.eusaat-congress.eu

24 – 27 August 2016 – University of Linz, Austria



Call for papers

Topics/tentative sessions

- 25th Anniversary of 3R Congresses on Alternatives in Linz: MEGAT & EUSAAT
- Global Cooperation on Implementing the 3Rs
- Ethical and Legal Issues
- Implementing EU Dir 63/2010
- Novel Approaches in Efficacy and Safety Testing – Human 3D Models & Multi-Organ-Chips
- Stem Cells & Reproductive Toxicity (including mEST & hEST)
- Refinement & Welfare: Culture of Care, Best Practice Approaches, Avoidance of Severe Suffering
- Replacement: New Approaches
- Predictive Toxicology: QSAR & Read Across
- Specific Endpoints of Toxicity I: oral & repeated-dose Toxicity, Inhalation Toxicity
- Specific Endpoints of Toxicity II: Sensitization, Nano-toxicology & Bio-barriers
- Efficacy and Safety Testing of Drugs, Biologicals and Vaccines
- Disease Models in vitro versus in vivo
- Advanced GMO models – CRISPR/cas in vitro versus in vivo
- 3Rs in Education and Academia
- „Young Scientists“ session
- Free communications

Deadlines for the submission of abstracts:

for oral presentations: 31 May 2016
for posters: 31 May 2016

Scientific Committee – Co-chairs

Horst Spielmann, EUSAAT, FU-Berlin, D-Berlin
Ellen Fritsche, EUSAAT, IUF, D-Düsseldorf
Manfred Liebsch, SET, D-Königs-Wusterhausen
Erwin Roggen, ecopa, ivtip, 3Rs Management & Consulting, DK-Kongens Lyngby

Exhibition – EUSAAT 2016 / Linz 2016

We invite you to present your company or institution at the EUSAAT 2016 / Linz 2016 congress. For further information and registration for the exhibition, please visit the congress website www.eusaat-congress.eu

Congress fees

before 25 July 2016 - early bird fees

members of EUSAAT: EUR 175.–
general registration fee: EUR 270.–
students: EUR 95.–

after 25 July 2016

members of EUSAAT: EUR 217.–
general registration fee: EUR 334.–
students: EUR 106.–
students: EUR 106.–

Congress office and further information

appl communications & consulting e. U. | Helmut Appl
A-4225 Luftenberg/Donau | Laimbauerweg 15 | mob/fax: +43 676 410 47 12 | mail: congress2016@eusaat-congress.eu

Subscribe to ALTEX

Support open access publication of 3Rs research



SUBSCRIPTION SERVICE

ALTEX Edition, Weinmannngasse 86
8700 Kuesnacht ZH, Switzerland
Phone: +41 44 380 0830, Fax: +41 44 380 0832
e-mail: subs@altex.ch

First name

Last name

Institute/Library
(if applicable)

Address

State

Zip code

Country

e-mail

Date/signature

Please send completed form to the above address.

ALTEX (four issues):

☐ Individual subscription

\$ 120 / 85 €

☐ Library

\$ 240 / 170 €

(companies, institutes, libraries)

☐ Reduced

\$ 62 / 46 €

(students, animal protection organizations,
selected scientific societies)

Prices include postage for all European
countries.

Additional costs for shipment outside of Europe:
5 € per issue.

The subscription is renewed automatically
at the end of the year unless it is cancelled.

I want to pay by

☐ credit card

☐ check

☐ electronic bank transfer

☐ please send me an invoice

ALTEX is available online:
<http://altweb.jhsph.edu/altex> and www.altex-edition.org