Editorial

Dear ESTIV members,

Here is the new ESTIV newsletter including an update on in vitro toxicology and information on what was done in the last six months and what is in preparation for the near future.

Many events on very interesting and current topics are reported in it such as the IVTS meetings and symposium in the UK, Cell Control in a Petri Dish meeting in London, The International Conference of Alternatives to Animal Experimentation in Portugal and the CELLTOX Course 2013 organized in Italy.

Heartiest congratulations to Professor Per Artursson for the Björn Ekwall Memorial Award and to Professor Marcel Leist who received the Felix Wankel Animal Welfare award.

I would like to take this opportunity to remind you about ESTIV 2014 to be held in Egmond aan Zee in the Netherlands, on which the Board is working actively. In fact, ESTIV now has concrete plans to organize its next conference as a joint event together with the summer school of the FP7/Cosmetics Europe SEURAT-1 consortium as well as a meeting of the NOTOX project. We also like to thank all members for their contribution and all of those who have collaborated on this issue. Hope you find this information to be interesting.

Have a nice summer and best wishes to all.

Francesca Caloni

Message from the President

Dear colleagues,

As noted in our annual report sent earlier on June, ESTIV is and will continue to be engaged in fostering scientific exchanges through the support of scientific meetings, collaboration with similar societies, and representation at key stakeholders meetings. Furthermore, as a follow-up to the big success encountered with the first practical training course organized by ESTIV during its 2012 Congress in Lisbon, we now aim at organizing training courses dedicated to those interested in having an overview of the in vitro toxicology field from the more basic aspects to the final application. We hope to be able to provide you with further information in short time.

The present newsletters provides with inspiring insights on a number of activities that took place during the last months. In particular, key milestones have been achieved regarding the regulatory acceptance of alternative methods. In addition, growing interest from the in vitro toxicology community focuses on more complex endpoints and test systems. Recent developments allow obtaining more relevant models, such as induced pluripotent stem cells based on human cells and new cell lines more representative of normal cells. More complex and organ-like 3D models are also key elements to obtain more relevant models and better predict the effects of a toxicant and/or a drug may have on humans. I hope the information shared here with you can inspire you before a well deserved summer break!

Chantra Eskes
President of ESTIV
Björn Ekwall Memorial Award 2013

Professor Per Artursson

Professor Per Artursson (Sweden) is the recipient of the Björn Ekwall Memorial Award for the year 2013 in recognition of his scientific achievements in the field of drug design and delivery and for the innovative design and successful implementation of in vitro methods in pharmacy and toxicology.

The Björn Ekwall Memorial Award will be given to Professor Per Artursson at the occasion of the 29th Workshop of SSCT, 25-27 September 2013, Vilvorde Course Center, Charlottenlund, Denmark. At the workshop, Professor Artursson will deliver the Björn Ekwall Memorial Lecture.

P. Artursson studied pharmacy at Uppsala University, where he also presented his PhD thesis in 1985. He spent one year as a post doc. fellow at the Medical Products Agency, Uppsala (1986) and one year as a visiting scientist at the Advanced Drug Delivery Research, Ciba-Geigy, England (1987) before taking up a position as Assistant Professor in Pharmaceutics, Uppsala University. In 1992 he was appointed to his present post as Professor in Dosage Form Design at the Department of Pharmaceutics, Uppsala University, Sweden. He is also holding a Honorary Doctorate in pharmacy at Kuopio University, Finland.

P. Artursson has made a significant career in the research of pharmacy, especially in drug absorption, disposition and delivery. He has made globally pioneer research contribution in development of in vitro models for the prediction of drug absorption through small intestine. Current research interests are directed towards predictive pharmacokinetics (ADMET) and biopharmaceutics in drug discovery and development. In particular, the role of drug transporting proteins in the cellular uptake, accumulation, metabolism and elimination of drugs and drug-like molecules is studied.

During the course of his research P. Artursson has developed a number of new, scientifically sound and animal saving, in vitro models based on advanced cell and molecular biology. These models have been adopted by the drug industry for the prediction of drug absorption in the drug discovery process. They have also been important for the development of in vitro and in silico methods in large international studies like MEIC and ACuteTox projects, in which P. Artursson has participated.

In 2004, he founded a new unit at his department, dedicated to pharmaceutical screening and informatics: the Centre for Pharmaceutical Informatics (CPI) and in 2010, the unit was transformed into the National Platform for Drug Optimization and Pharmaceutical Profiling (UDOPP). This platform provides information and support, as well as collaborative research, to academia and industry almost entirely based on in vitro and in silico methods.

P. Artursson is listed as one of the world 100 most cited scientists in Pharmacology and Toxicology since 2004 (ISI). He has published about 150 original articles, 18 review articles and 18 book chapters.

Professor Erik Walum
Vice-president of the
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Felix Wankel Animal Welfare Award

Marcel Leist, co-director of CAAT-Europe at the University of Konstanz, has been awarded the Felix Wankel Animal Welfare Award for his work on in vitro test systems in the area of reproductive toxicology. The work used differentiating stem cells to model human nervous system development and disturbances. He shares this prestigious award with Stephan Reichl, who was recognized for his work on human cornea models. The Felix-Wankel research prize is
the oldest of its kind. Candidates are chosen approximately biannually through the veterinary faculty of the University of Munich, and international recipients have included Bruce Ames, Peter Singer, Karel Hala and Coenraad Hendriksen, among others. More information can be found at: http://www.aktuelles.uni-konstanz.de/presseinformationen/2013/38/.

Report on IVTS 2012 meeting 20-21 November 2012

The IVTS 2012 two day meeting at the University of London’s Senate House in the heart of Bloomsbury, focused on cardiotoxicity, reproductive toxicity, renal toxicity, and epigenetics in toxicology. The IVTS meeting received positive feedback on the quality of talks and scientific content, and is grateful to the speakers, exhibitors and attendees who made the meeting a great success. Christine Mummery (from Leiden University Medical Centre, The Netherlands) started the meeting with a plenary overview of the use of human pluripotent stem cells to provide in vitro models for cardiotoxicology. James Sidaway (AstraZeneca) then followed by describing the use of human embryonic stem cell derived cardiomyocytes to develop in vitro models for cardiotoxicology. The theme of HCA continued with Michael Cross (MRC Centre for Drug Safety Science, University of Liverpool) looking at human cardiac microvascular endothelial cells and their role in cardiovascular drug toxicity. Gary Mirams (University of Oxford) closed the session on an in silico theme, describing how previously generated data on many compounds had been used to derive a computational model of QT interval prolongation in a simulated rabbit myocyte. This type of modelling has the potential to replace animal tissue experiments in the future to derive data for risk assessment of drugs for effects on cardiac ion channels.

The renal toxicity session started with Jamie Davis (University of Edinburgh) providing an excellent overview of the topics and possible solutions for developing functional kidney models. Colin Brown (Newcastle University) described using human and rodent proximal tubule models to help understand species differences in pharmacokinetic profiles and drug transport, and Daniela Riccardi (Cardiff University) described the use of human primary renal cells to look at the effects of anti-cancer drugs specifically targeting fibroblast growth factor receptors on mineral ion homeostasis. The lack of good renal cell lines was addressed by Moin Saleem (University of Bristol) and he described the conditional immortalisation of cells using a temperature sensitive SV40T transgene and also hTERT immortalisation methods to produce more representative cell lines.

The second day began with Aldert Piersma (RIVM Centre for Health Protection, The Netherlands) who gave a comprehensive overview of the most promising and popular alternatives for developmental toxicity testing with a focus on rat whole embryo culture, use of zebra fish and the embryonic stem cell test. Anita Naidoo (GlaxoSmithKline) discussed methods, practicalities and problems encountered in the development of an in vitro model of the blood-testis barrier (BTB) using adult rat cells. The theme of the BTB was continued by Philippe Durand (Kallistem) who described relatively long term rat seminiferous tube cultures (up to four weeks), to investigate testicular dysgenesis syndrome (in particular the effects of dibutyl phthalate) and illustrated the difficulties involved in recapitulating in vitro the phenotypic effects seen in vivo.

The free communications included a variety of talks: Obinna Ubah (University of Aberdeen), the IVTS poster prize winner at the March 2012 British Toxicology Society meeting, described his anti-cancer studies with novel mitochondrial targeted flavonoid-based molecules, Lucinda Cowling (University of York) discussed histone acetylation of normal human urothelial cells exposed to cadmium as a measure of epigenetic effects of this human carcinogen, Gary Hutchison (Edinburgh Napier University) showed effects of nanoparticles on Sertoli cells which is part of the EUFP7 ‘Managing the Risk of engineered Nanoparticles (MARINA)’ project, and finally Robin Williams (Royal Holloway, University of London) ended
the session with a presentation on the use of the social amoeba *Dictyostelium* as a new model for early identification of emetic liability of drugs.

The final session of the meeting focussed on epigenetics in toxicology and linked IVTS 2012 with the Industrial Genotoxicity Group (IGG) of the UK Environmental Mutagenesis Society (UKEMS). Lorraine Young (University of Nottingham) gave us a fantastic introduction to epigenetics and how understanding epigenetic modifications during embryonic development may provide insights into our understanding of functional relevance. Nessa Carey (Pfizer) followed with some interesting human-relevant examples of where epigenetics may be involved such as foetal alcohol syndrome and development of anticancer drugs which target the epigenome of cancer cells. She also highlighted how such drugs are used and the importance of intergenerational transmission of epigenetic changes.

As the first event of this kind to be held in Portugal, the conference specifically aimed at promoting the debate and sharing of information regarding the 3R's policies on animal use and highlighting the replacement of animal models for suitable and ethical alternatives, such as *in vitro* and *in silico* models, as well as alternative experimental designs.

The event was organized by the Portuguese Society for Humane Education (SPEdH) and co-sponsored by the Almada City Council, the European Partnership for Alternative Approaches to Animal Testing (EPAA), Hotel Melia Capuchos, Fundação Luso-Americana para o Desenvolvimento (FLAD), Liga Portuguesa para os Direitos do Animal (LPDA) and Mercado do Site.

The conference had approximately 100 participants coming from universities, animal facilities, research laboratories, regulatory agencies, cosmetic industry, animal welfare NGO’s as well as general public willing to learn more on this subject.

The vast majority of Portuguese students and researchers attending the congress were positively impressed by the alternatives presented at the conference and became interested on the subject. The general public gained valuable tools to be more participative as decision makers and people from different backgrounds and different perspectives on the animal experimentation issue gained more knowledge and respect towards each other, allowing for constructive dialogues. All Portuguese participants agreed that Portugal needs to have more investment in the field of Alternatives to Animal Experimentation and after this conference this is one step closer to happening.

**International Conference of Alternatives to Animal Experimentation**

26-27 January, Almada, Portugal

**CELLTOX Course – March to June 2013:**

“Alternative methods – replacement”
The Italian Association for in Vitro Toxicology (Celltox, www.celltox.it) organized the first training course on “Alternative methods – replacement”. The objectives of this course were within the aims of the Association: “...to promote the use of in vitro systems in pharmacological and toxicological research...and to organize courses to train young researchers...”.

The event, for its high scientific and innovative content and also for being organized without external sponsoring, was accredited as ECM (Education Continuous in Medicine) at the Italian Ministry of Health by assigning 5 credits per module.

Experts both from the legislative and regulatory areas, and from the basic to very innovative applied biological and toxicological research provided their expertise and exchanged their knowledge.

The topics addressed were divided into:

- Module I: “Actuality on Alternative Methods”
- Module II: “Regulatory and applicative aspects”
- Module III: “The models for the alternative methods - 1”
- Module IV: “The models for the alternative methods - 2”

All modules were very intense and followed with great interest by the participants at the end of the lectures. Pleasant and fruitful discussions continued during lunch time and at the end of the day. All the participants briefly presented their fields of activity. Interestingly, for many of them it was the first introduction to alternatives and this experience represented a basis to start introducing alternative methods in their respective research programs.

The event produced a “think tank” committed to disseminate the principles of the 3Rs and to give new ideas and stimuli to the Association.

The organizers acknowledge all the speakers for their willingness and enthusiasm in presenting their areas of expertise, and their ability to stimulate the interest and active discussions from participants.

We, as organizers, aimed at responding the big need for courses on the scientific divulgation of the 3Rs culture. Certain that the “seed” of the 3Rs culture has been planted
Report on IVTS Symposium at the BTS Spring Meeting, 07-10 April 2013, Solihull, UK

This year, the IVTS symposium at the British Toxicology Society (BTS) was entitled “Surrogate species: the bridge between in vitro models and regulatory toxicology species”. Joanne Livermore (University of Manchester) described the specific use of *Galleria mellonella* (wax moth) for screening toxicity of antimicrobials. This was followed by two talks embracing up-to-date ‘omics and pathway approaches in two invertebrate species’. Mark Viant (University of Birmingham) discussed the use of *Daphnia* with the aim of discovering predictive molecular markers of ecologically relevant toxic responses. Matthew Rand (University of Rochester School of Medicine and Dentistry, U.S.A.) followed this with discussion of the discovery and validation of toxicity gene pathways in *Drosophila*. Adrian Harwood (Cardiff University) then went on to describe the utility of the social amoeba, *Dictyostelium*, as a cell-based system to probe drug mechanisms, cytotoxicity and teratogenicity. Hilda Witters (VITO, Belgium) finished the session with a comprehensive account of the validation of Zebrafish embryo and larval assays to study developmental and neurotoxic potential of chemicals and drugs. In addition, congratulations are due to Philip Probert of Newcastle University who was awarded the IVTS Poster Prize at the meeting. Philip’s poster “Metabolic and Toxicity Screening Potential of B13 Progenitor-Derived Hepatocyte-like Cells” can be viewed at: [http://www.ivts.org.uk/site/early-career-support/](http://www.ivts.org.uk/site/early-career-support/).

On 2013, the IVTS held a joint meeting with the Cell Control in a Petri Dish collaborative network on the 19th April in central London entitled ‘*In vitro* assay development and its application in toxicity testing’. Speakers and delegates were drawn from both industry and academia providing a vibrant atmosphere and networking opportunities. Delegates learned about a variety of *in vitro* models and assay approaches that could enable improved *in vitro* detection of toxicities. Robin Williams (Royal Holloway, University of London) described the use of the social amoeba, *Dictyostelium* to detect emesis of new chemical entities. This was followed by Amy Pointon (AstraZeneca) describing the use of stem cells in toxicity testing, with a specific focus on the *in vitro* detection of cardiotoxicity. Kelly BeruBe (Cardiff University) followed with a highly entertaining talk involving the use of 3D glasses to help describe the development and use of a working model of the human lung (Metabowl™). Rod Benson then went on to describe the use and challenges of high throughput imaging using 2D and 3D *in vitro* models. To conclude the morning session, Colin Brown (Newcastle University) described the development of *in vitro* models of nephrotoxicity, particularly focusing on the role of drug transporters and the biomarker Kim1. The afternoon session started with a talk by Christoph Giese (ProBioGen) describing the development and application of an organoid model of the human lymph node. This was followed by Colin Wilde (AvantiCell Science) discussing the availability of human primary cells. The final talk of the day was by David Fluri (InSphero) describing the development, characterisation and application of liver and cardiac 3D spheroids. To learn more about this event please visit: [http://www.nottingham.ac.uk/pharmacy/cell-control-in-a-petri-dish.aspx](http://www.nottingham.ac.uk/pharmacy/cell-control-in-a-petri-dish.aspx).

Report on Cell Control in a Petri Dish meeting, 19 April 2013

Chiara Urani
CellCox

**NOTOX** Predicting long term toxic effects using computer models based on systems characterization of organotypic culture

With the enforcement of the complete ban on animal testing for cosmetics (14*th* March 2013), the need for reliable and validated *in vitro* alternative testing methods for risk assessment, is more
urgent than ever before. NOTOX is one of the building block projects of the SEURAT-1 (safety evaluation ultimately replacing animal testing) research initiative, jointly funded by the European Commission and Cosmetics Europe for a period of five years. The main focus of the NOTOX project is to develop a systems based strategy for the assessment of human relevant repeated dose toxicity using organotypic cultures.

As such, NOTOX aims at establishing a systems biology platform for long-term toxicity prediction with closely linked experimental and computational technologies comprising of physiological and structural data. Data from “-omics” such as epigenomics, transcriptomics, proteomics, metabolomics and fluxomics will be integrated for studying and modelling toxicity pathways at the molecular, cellular and tissue levels. Experiments are designed to investigate physiologically relevant, repeated low doses of test compounds on human cellular systems which resemble the in vivo situation. Biokinetics is given due importance in these test systems. The strategies developed in this project will be of great benefit to not only cosmetics industry but also to the chemical and pharmaceutical industry. The ultimate goal is to provide animal free and more ethical, scientifically based testing strategies for repeated dose toxicity in order to meet European legislative demands.

For the information of general public and stakeholders, NOTOX has produced an 8 minutes film describing the main aims of the project. With a statement from Dr Ruxandra Draghia-Akli, head of the Health Directorate General of the European Commission, the film underlines how leading academic experts from various research fields, along with representatives from small and medium sized enterprises collaborate successfully to provide safe solutions to replace animal testing for safety assessment. Hard copies of the film can be sent to those interested upon request.

The NOTOX film is available on the project website:  http://www.notox-sb.eu/film

Milestone in animal-free testing strategies: two in vitro methods accepted for the first time for the identification of non-irritant chemicals in the field of eye irritation

A major milestone has been achieved in the search of animal-free testing strategies: revised OECD test guidelines extending the applicability domain of two in vitro methods - the Bovine Corneal Opacity and Permeability (BCOP) test and the Isolated Chicken Eye (ICE) test - have been adopted by the OECD for the purpose of eye irritation testing.

This is the first time that in vitro methods are accepted for the identification of non-irritant chemicals in the field of eye irritation. Both in vitro methods are using ex-vivo isolated eyes from animals slaughtered for human consumption and will contribute to the substitution of the Draize eye irritation test performed on the eyes of living rabbits.

The revision of two OECD Test Guidelines based on organotypic methods for eye irritation testing was adopted at the OECD meeting of the Working Group of National Coordinators of the Test Guideline Programme held in Paris on 9 to 11 April 2013.

The two test guidelines had originally been adopted in 2009 for the identification of serious eye damage/eye irritation of chemicals further to retrospective validation by the US Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) in collaboration with EURL ECVAM and the Japanese Center for the Validation of Alternative Methods (JaCVAM). Additional validation of the two tests showed their usefulness also for the identification of chemicals not requiring classification for serious eye damage/eye irritation (i.e. non-irritant chemicals), thus leading to the revision of the test guidelines under the co-lead of EURL ECVAM and the Netherlands.
Mapping the Human Toxome: Human Toxome Project Website Launched

The website for the Human Toxome Project was launched on April 11th, 2013. The Human Toxome Project was established to comprehensively map pathways of endocrine disruption (ED), representing a first step towards mapping the human toxome. The consortium is led by Principal Investigator Thomas Hartung and co-investigators Melvin E. Andersen, Kim Boekelheide, Albert J. Fornace, Jr., David J. Dix, Michael Rosenberg, and Jim Yager.

More info at: [http://humantoxome.com](http://humantoxome.com)

Reviews of Health Research that Identify Opportunities to Focus on Disease Pathways and Human Biology-Based Research Modalities

Health research aims to discover the causes of human illness and to prevent or treat them, but the returns on today’s investment in health research are becoming harder to see. The average time and cost to develop a drug continue to escalate, yet fewer new medicines reach the market. A key reason is the inability of animal models to sufficiently reflect human diseases, leading to failures in translation and late stage attrition. The problem is recognised by researchers, pharmaceutical companies and regulatory authorities, inspiring the Innovative Medicines Initiative in Europe, the Critical Path Initiative in the United States, and other similar efforts to overcome scientific bottlenecks, improve success and reduce costs, time-to-market, and overall waste associated with current drug attrition rates.

The reviews will critically evaluate the contributions and limitations of animal-based models of human diseases, and identify opportunities for progress through the application of 21st-century paradigms, including understanding disease pathways using the growing toolbox of human biology-based models and technologies.

Applicants will have a scientific PhD (or equivalent) and current or recent research experience in the academic, private or public sectors, as well as publications relevant to the disease area they propose to address. HSI has already published a critical review of asthma research [1] and reviews on Alzheimer’s and Parkinson’s diseases and motor neuron disease are in preparation.

HSI is now interested in further disease areas where the current research paradigm can be critically reviewed on a scientific basis and where a draft ‘roadmap’ can be envisaged using mainly contemporary human-specific models and technologies. With the aid of systems biology, disease pathways and networks can increasingly be researched by means of advanced clinical and ex vivo studies and sophisticated in vitro models using human cells (including induced pluripotent stem cells).

For these 21st-century techniques to achieve their full potential, HSI believes that a new paradigm will be needed in medical research and drug discovery: one that is less dependent on animal models, conceptually and in practice. A similar transition is already well underway in chemical toxicology [2].

Three grants of up to US$10,000 (or equivalent) will be payable to the successful applicants for writing and publishing each review. Further grants will be available for disseminating the work at scientific conferences and workshops.

In early September 2013, HSI will circulate a Request for Proposals relating to this project (closing date for applications will be mid-October).

For further information contact Dr Gill Langley: glangley@hsi.org.
New fellowship scheme from the In Vitro Toxicology Society (IVTS)

As part of our ongoing support to early career scientists, 2013 saw the launch of the IVTS mini-fellowship scheme. The scheme has been set up to aid research training opportunities for scientists in techniques which are not available at their home institution. The fellowships are designed to allow early career scientists to set up collaborations with established scientists, learn new techniques useful for their own research, and to promote further career development particularly in the field of in vitro toxicity research. The scheme is open to IVTS members that are either students currently enrolled on a PhD Programme or Post-doctoral Scientists within 10 years of obtaining their PhD. More details about this new scheme can be found on our website: http://www.ivts.org.uk/site/early-career-support/. Although the closing date for this year’s submission has passed, we intend to make this an annual scheme.

Awards

2014 CAAT Science-based Refinement Awards: Call for Proposals

Attention veterinarians, lab technicians, animal technicians, and all who work with laboratory animals: The Johns Hopkins Center for Alternatives to Animal Testing (CAAT) now is accepting proposals for the 2014 Science-based Refinement Awards (formerly the Animal Welfare Enhancement Awards). The focus of these awards is to elicit scientific evidence to support the enhancement of the housing, handling and/or experimental situations for laboratory animals. Deadline for Submission is September 30, 2013. PDF Poster Available for download and distribution at: http://altweb.jhsph.edu/news/2012/sci_based_refinement_awards%202014.pdf

More information can be found at: http://caat.jhsph.edu/programs/awards/AWE/2014/index.html.

EPAA 3R Laboratory technician Prize

In 2013, the EPAA will grant a €3000 prize to a laboratory technician involved in implementing and raising awareness of Replacement, Reduction and Refinement of animal testing.

While most of the current Three Rs prizes and awards target scientists, much of the processes using animals for safety science are actually performed by laboratory technicians and animal care takers. The purpose of this prize is to target those actually implementing alternative approaches to animal testing and raise awareness of their role for the day to day implementation of Three Rs principles and, in particular, for seizing opportunities for further Refinement. Animal technicians mainly contribute to one main ‘R’ – Refinement and this is what the prize should focus on. Most animal technicians are not working on replacement or reduction. In addition there are few prizes for the neglected R of refinement. It is the hardest R to provide sound scientific evidence on. Therefore, this prize is an opportunity to first, recognise animal technicians as opposed to scientists and second, promote refinement – the R that has the benefit for the animals that still need to be used in experiments. Refinement refers to improvements to scientific procedures and husbandry which minimise actual or potential pain, suffering, distress or lasting harm and/or improve animal welfare in situations where the use of animals is unavoidable.
More information can be found at: http://ec.europa.eu/enterprise/epaa/3_4_awards.htm

Meetings calendar

1-4 September 2013
Eurotox 2013 - Interlaken, Switzerland
www.eurotox2013.com

20 September 2013
10th Anniversary Symposium of Fincopa – Implementation of the Directive 2010/63/EU in Finland
Tampere, Norway
www.uta.fi.jarjestot.ficopa/

25-27 September 2013
SSCT 29th Scientific meeting
Charlottenlund, Denmark
www.ssct.se

20-23 November 2013
CIFARP – 9th International Congress of Pharmaceutical Sciences
Ribeirão Preto, Brazil
www.cifarp.com.br/site/

10-11 December 2013
In Vitro Medical Device Testing Symposium
Johns Hopkins Mt. Washington Conference Center Baltimore, MD

21-25 October 2013

Latinfarma 2013
La Havana, Cuba
www.latinfarma.com

4-5 November 2013
IVTS Annual meeting
University of Leicester, UK
http://www.ivts.org.uk/site/annual-meeting-2013/

11-14 June 2014
18th Congress of the European Society of Toxicology In vitro
Egmond aan Zee, The Netherlands
www.estiv2014.org

24-28 August 2014
9th World Congress on Alternatives and Animal Use in Life Sciences: “Humane Science in the 21st Century”
Prague, Czech Republic
www.wc9prague.org
Recent Publications of ESTIV members


Groothuis GMM and de Graaf IAM (2013) Precision-cut intestinal slices as in vitro tool for studies on drug metabolism. Curr Drug Metab 14(1), 112-119


Leist M, Hartung T. Inflammatory findings on species extrapolations: humansare definitely no 70-kg mice. Arch Toxicol 87(4), 563-567


personal care, chemical and pharmaceutical industry.


ESTIV Affiliated Societies

Associazione Italiana Tossicologia *In vitro* - CellTox

Dutch-Belgium Society for *In vitro* Methods – INVITROM

UK *In vitro* Toxicology Society – IVTS

Scandinavian Society for Cell Toxicology – SCCT

ESTIV membership fee

**Membership fee**

The membership for an individual member for 2013 is € 30.00. If you are also a member of one of the affiliated societies (CellTOX, SSCT, INVITROM, IVTS), the membership amount to € 18.00.

**Method of Payment**

Bank Transfer

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BIC: RABONL2U

Attention of: ESTIV

Polderkade 1, NL-5345 RR Oss, The Netherlands

Due to the high costs of applying for and cashing EuroCheques, please do not use this means of payment.

It is also possible to pay the membership fees by our convenient and secure online credit card payment services (PayPal). To use these services, please visit the ESTIV website at [www.estiv.org](http://www.estiv.org)

Laura Suter-Dick

**ESTIV e-mail list**

ESTIV has an e-mail list, which has the potential to be a very valuable resource. There are many types of questions that you could pose to the list, whether you are a junior or a senior scientist. To send a message to all ESTIV members on the list (presently more than 200 colleagues), simply address your e-mail to estiv@freelists.org

Please do not be concerned about security. This is a “closed” list, which means the “list-owner” (Jan van der Valk) is able to select who is allowed to join. Only ESTIV members can receive the message. The ESTIV secretary advises the “list-owner” of eligible members.

If you have never received a message from the ESTIV list, it is because you have not informed us of your e-mail address. Please correct this by sending a message to me at [j.vandervalk@uu.nl](mailto:j.vandervalk@uu.nl), and your name will be added.

Jan van der Valk

"ESTIV also owns a group on LinkedIn, to communicate and to allow ESTIV members to update each other on career moves, etc.

The group is only open to ESTIV members. Search for the group "ESTIV" and register".

Laura Suter-Dick
### ESTIV Executive Board Members

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<td><a href="mailto:aasvenningsen@health.sdu.dk">aasvenningsen@health.sdu.dk</a></td>
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<tr>
<td>Elsa Casimiro</td>
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<td><a href="mailto:emvmcasimiro@sapp.pt">emvmcasimiro@sapp.pt</a></td>
</tr>
</tbody>
</table>

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### ESTIV Honorary Members

Monique Adolphem, Michael Balls, Diane Benford, Bas Blaauboer, Bob Combes, Sjeng Horbach, Horst Spielmann, Jan Van der Valk, Flavia Zucco

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For more information on ESTIV and membership application contact

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