10th Congress of Toxicology in Developing Countries (CTDC10)
12th Congress of the Serbian Society of Toxicology (12th SCT)

FINAL PROGRAMME

Metropol Palace Hotel
April 18-21, 2018
Belgrade, Serbia
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10th Congress of Toxicology in Developing Countries (CTDC10)
12th Congress of the Serbian Society of Toxicology (12th SCT)

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It is with pleasure and excitement that I welcome you to the joint 10th Congress of Toxicology in Developing Countries and 12th Serbian Congress of Toxicology. The idea of organizing both meetings together was approved by IUTOX and SETOX General Assemblies a few years ago. It should be emphasized that this is the first time that our country has the opportunity to host a worldwide international toxicology meeting gathering representatives from all over the world, coming from surrounding countries such as Croatia, Macedonia, Bosnia and Herzegovina, Montenegro, Hungary, Romania, but also from far destinations such as the United States of America, Australia, Japan, China, South Africa... I would like to express my gratitude to the invited speakers, eminent professors and experts in different fields of toxicology who will present their current investigations, many thanks to all the researchers who will have the opportunity to present their results, exchange and discuss issues related to toxicology, to the exhibitors and sponsors, and to all the ones that made this event possible.

The Congress is organized through symposia, workshops, continuing education courses, oral and poster presentations, and as a result of additional efforts of our participants we will have the opportunity to take part in three interesting round tables. Serbian Academy of Sciences and Arts enabled organization of the tribune on Toxicology as well as exhibition History of Toxicology, as a part of this congress.

In addition to excellent scientific, we offer you attractive social program and chance to experience charming April days and exciting sights and sounds of Belgrade.

On behalf of the Serbian Society of Toxicology, citizens of Belgrade and the whole Serbia, I wish you a warm welcome with hope that we will make of this congress a memorable international event.

Sincerely,

Vesna Matović
President of Serbian Society of Toxicology
President CTDC10
On behalf of IUTOX and our 63 member societies that span the globe, welcome to the 10th Congress of Toxicology in Developing Countries (CTDC10). Under the strong leadership of Prof. Dr. Vesna Matović, the Serbian Society of Toxicology (SETOX) has planned a superb scientific program complemented by prominent scientists from around the world to lecture on diverse topics covering many aspects of toxicology. The Congress starts off with a strong continuing education program and progresses to highly engaging and relevant workshops, plenary lectures and innovative roundtable discussions.

IUTOX is grateful to the many sponsors that generously supported this Congress. I offer my personal thanks to the American College of Toxicology (ACT), the British Toxicology Society (BTS), The German Society of Toxicology (GST), the Italian Society of Toxicology, the Japanese Society of Toxicology (JSOT), and the Society of Toxicology (SOT) all IUTOX member societies that partnered with SETOX and provided generous financial and intellectual contributions to bring this congress to a region where toxicology is underrepresented.

We also extend a hearty welcome and thank you to the World Health Organization for providing the Congress with excellent programming including two lectures and a roundtable. IUTOX is an Non-Governmental Organization (NGO) in official relations with WHO and we are grateful for their consistent support and collaboration to help us serve the thousands of scientists we represent with training and programs in developing countries, which are critically important to helping us meet our mission.

Against the backdrop of a thriving arts and music scene and a rich history as one of Europe's oldest cities, Belgrade serves as the perfect host for the CTDC10 meeting. Surely, those who are lucky enough to join us this week will not be disappointed. Nestled at the nexus of the Danube and Sava rivers, Belgrade dazzles visitors with a broad cross section of architectural styles and an excellent collection of museums and other historical sites. This White City and its gracious people have provided a beautiful, welcoming venue for an unforgettable congress.

I wish you an exciting week marked by the pursuit of outstanding science and knowledge and the opportunity to expand your network with new friends and colleagues.

President of IUTOX

Jun Kanno, MD, PhD
Committees

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Vesna Matović

Honorary President
Jun Kanno

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Petar Bulat

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Stefan Mandić-Rajčević

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Elaine Faustman
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Hanan Ghantous
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Jaw-Jou Kang
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Jose Manautou
Sameeh Mansour
Alfonso Peña Martínez
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Azman Seeni Mohamed
Uche Osunkwo
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Marijana Ćurčić
Daniijela Đukić-Ćosić
Verica Jovanović
Slobodan Nikolić
Nataša Ognanović
Elizabet Paunović
Ivanka Popović
Zoran Šegrt
Jasmina Jović-Stošić
Slobodan Tošović
Dragana Vujanović
Zorica Vujić
Radoje Čolović
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<td>Continuing Education Courses</td>
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<tr>
<td>09:00-16:00</td>
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<td>09:00-12:00</td>
<td>Ivo Andrić B</td>
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<td>Carcinogenicity Studies: Perspectives on design and execution for successful product registration</td>
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<td>RISK21: A Practical Framework for Risk Assessment in the 21st Century</td>
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<td>Water Security: Integrating Lessons Learned for Water Quality and Sustainability</td>
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<td>Health-Based Limits for Toxicological Risk Assessment: setting acceptable daily limits for pharmaceutical and chemical safety</td>
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<td>Opening ceremony</td>
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<td>08:00-16:00</td>
<td>Registration</td>
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</table>
| 08:30-09:30  | Plenary Lecture (Ivo Andrić B Hall)  
Jun Kanno  
Introduction to the Concept of “Signal Toxicity” |
| 09:30-10:00  | Coffee BREAK                                                                                     |
|              | Ivo Andrić B Hall  
Ivo Andrić A Hall  
Lavender Hall  
Aristotle Hall |
| 10:00-12:00  | Advances in Molecular Metal Toxicology  
Development in Methodologies to Address Mixture Risk Assessment  
Antimicrobial Coatings in Health Care Setting: Efficiency versus Safety  
Short Communications Session |
| 12:00-13:00  | ROUND TABLE: Ivo Andrić B Hall  
Promoting Undergraduate Toxicology Education and Career Opportunities for Students in Developing Countries  
WHO Chemical Risk Assessment Network Meeting |
| 13:00-14:00  | Lunch Break, Exhibition and Poster Viewing  
Guru Lunch: Claudio Colosio, Hanan Ghantous |
|              | Ivo Andrić B Hall  
Ivo Andrić A Hall  
Lavender Hall  
Aristotle Hall |
| 14:00-16:00  | Applicability and Limitation of Non Animal Testing in Safety Assessment  
Arachnids: a Workshop Addressing Facts, Fallacies, Clinical Manifestations, Differential Diagnosis, and Management of Spider Bite and Scorpion Sting  
Short Communications |
| 16:30-20:00  | Belgrade Presentation (15 min, Ivo Andrić B Hall)  
Belgrade City Tour and Networking Walk  
Toxicology History Room/Exhibition Visit |
<p>| 21:00-00:00  | Free Night Out in Belgrade and IUTOX EC Dinner                                                   |</p>
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<td>The Search for Safe Replacements for Endocrine Disrupting Chemicals</td>
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<td>09:30-10:00</td>
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<td>The Significance of Drug/Xenobiotic Metabolizing Enzyme Polymorphisms in Cancer/Diseases</td>
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<td>Evaluation of Safety Profile of Herbal Products</td>
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<td>Workshop: Product Stewardship and Regulatory Toxicology in the Oil and Gas Chemistry</td>
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<td>Women in Toxicology in Developing Countries</td>
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<td>13:00-14:00</td>
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<td>14:00-15:00</td>
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<td>Claudio Colosio</td>
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<td>From Pre-marketing Studies and Authorization Dossiers to New Prospects for Pesticide Risk Assessment in Rural Enterprises</td>
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<td>15:00-17:00</td>
<td>Ivo Andrić B Hall</td>
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<td>Exposure and Risk Assessment of Pesticide Use in Agriculture: Approaches, Tools, and Advances</td>
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<td>Ivo Andrić A Hall</td>
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<td>Incorporating Information on Chemical Mixtures into Chemical Risk Assessments</td>
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<td>Substances of Abuse: Global trends, Prevention, and Management</td>
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<td>Mattek Workshop</td>
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<td>In Vitro Reconstructed 3D Models for the Safety Assessment of Cosmetics, Chemicals, Drugs and Medical Devices</td>
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<td>Coffee BREAK</td>
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<td>17:15-19:15</td>
<td>From Assessment of Internal Exposure to Chemicals to Action to Prevent Adverse Health Impacts: The Role of Human Biomonitoring</td>
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<td>20:00-00:00</td>
<td>Gala Dinner</td>
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<tr>
<td>08:00-08:30</td>
<td>Registration</td>
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<tr>
<td>08:30-09:30</td>
<td><strong>Plenary Lecture</strong> (Ivo Andrić B Hall)</td>
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<td>Lucia de Luca</td>
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<td>Communications in the Area of Toxicology: a Challenging Task?</td>
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<tr>
<td>09:30-09:45</td>
<td><strong>Coffee BREAK</strong></td>
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<td>09:45-11:45</td>
<td><strong>Ivo Andrić B Hall</strong></td>
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<td>Influence of Endocrine-Disrupting Chemicals (EDCs) on Development and Reproduction</td>
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<td><strong>Ivo Andrić A Hall</strong></td>
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<td>Emerging and Known Natural Toxins: Environmental Fate and Human Risk</td>
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<td><strong>Lavender Hall</strong></td>
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<td>Toxicity of Respirable Particulate Matter in Ambient Air</td>
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<td>11:45-13:15</td>
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<td>Toxicology Data and Online Tools in Support of Research and Publications</td>
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<td>13:15-14:15</td>
<td><strong>Round Table</strong> (Ivo Andrić B Hall)</td>
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<td>Toxicology for Health in the United Nations Sustainable Development Goals</td>
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<td>14:15-15:00</td>
<td><strong>Closing Ceremony</strong> (Ivo Andrić B Hall)</td>
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DETAILED PROGRAMME
Carcinogenicity Studies: Perspectives on Design and Execution for Successful Product Registration
- Organized by the American College of Toxicology -
  Owen McMaster¹, Hanan Ghantous¹, Scott Boley², Thomas Larsen³, John Vahle⁴
  ¹ACT, ²MPI Research, ³Covance Laboratories, Inc. ⁴Lilly

The guidelines for carcinogenicity testing of drugs, biologics, and environmental chemicals have undergone recent revisions. Evaluation of the carcinogenic potential of therapeutic agents is now a very complex, multi-step process which is conducted only for chemicals which meet certain criteria. The practical aspects of running these large studies create challenges even for those with experience. This course will begin by exploring the history of carcinogenicity testing followed by an overview of the current international guidelines. The design and execution of carcinogenicity studies will then be discussed in detail, with topics including dose justification, strain differences, routes of administration, diet, the choice of negative controls, positive controls, sentinel animals, biomarkers, and formulations. The collection, evaluation and categorization of histopathology data will be detailed including topics such as background lesions, historical control data, toxicity vs neoplastic findings, toxicity vs exaggerated pharmacology, peer reviews, Pathology Working Groups and various statistical approaches. The procedures for evaluating data from carcinogenicity studies differ in the various regulatory and environmental agencies. The interpretation of carcinogenicity data will be discussed, including considerations of the context of use of the test compound. This will be followed by an examination of the future of the ICH S1 regulatory paradigm and an update to the status of the proposed changes to the S1 Guidelines by ICH’s Expert Working Group. In the final presentation, there will be analysis of the impact of positive carcinogenicity results on ongoing trials, approvals, prescribing information and post marketing events, with 2 or 3 case studies.
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| 09:00-16:00 | **RISK21: A Practical Framework for Risk Assessment in the 21st Century**  
- Organized by the British Society of Toxicology -  
Michelle Embry\textsuperscript{1}, Alan Boobis\textsuperscript{2}, Angelo Moretto\textsuperscript{3}  
\textsuperscript{1}ILSI Health and Environmental Sciences Institute, \textsuperscript{2}Imperial College London, \textsuperscript{3}University of Milan |

In 2007, a report on Toxicity Testing in the 21st Century (“TT21C”) by the United States National Research Council laid out a vision to leverage scientific advances to make toxicity testing faster, less expensive, more relevant to human exposures, and less reliant on animal testing.

To complement the global effort to fulfill this vision, in 2009, the International Life Sciences Institute (ILSI) Health and Environmental Sciences Institute (HESI), launched its multi-partite, Risk Assessment in the 21st Century (RISK21) Project. RISK21 is a tiered evaluation strategy which emphasizes a problem formulation-based, exposure-driven approach to risk assessment. A key component is the RISK21 Matrix, a freely available electronic tool, which enables the visualization of the intersection of exposure and toxicity data, and facilitates risk communication beyond those with technical expertise. The end result is a systematic and transparent approach to risk-based decision making.

The objective of this course is to teach the risk assessment approach developed by the RISK21 to emerging and established scientists. The specific goals are 1) Communicate the overarching principles of the RISK21 approach; 2) Provide an introduction to the roadmap and visualization matrix; and 3) Conduct hands-on case studies using the visualization matrix.
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<th>Time</th>
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<tr>
<td>09:00-16:00</td>
<td><strong>Water Security: Integrating Lessons Learned for Water Quality and Sustainability</strong></td>
<td><strong>Ellaine Faustman</strong></td>
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Institute for Risk Analysis and Risk Communication, Department of Environmental and Occupational Health Sciences, University of Washington

The purpose of the course is to provide a common risk-based framework for issues of water pollution and water quality. It uses WHO documents to present the issues from the global problems of ensuring water quality. Risk management examples are presented by the course faculty and are linked to the basic toxicology and illustrations of how toxicology informs this topic. We will also choose a set of abstracts from those submitted to the CTDC to have regional fellows and junior scientists from around the world share their experiences on water quality. These case studies are discussed by the group during the one-day course workshop. This course framework provides a context for issues of water security but illustrates issues faced by the local and international developing countries and communities. This course will follow the successful approach used in Brazil and Mexico at other IU-TOX-ICSU sponsored congresses and will have the recently published book chapter (Cambridge Press series) for context for these discussions.
Health-Based Limits for Toxicological Risk Assessment: Setting Acceptable Daily Limits for Pharmaceutical and Chemical Safety
- Organized by the American College of Toxicology -

Patricia Weideman¹, Andrew Maier², Brad Stanard³, and Robert Sussman⁴
¹Sakari Consultants LLC, Stratham NH USA, ²University of Cincinnati, Cincinnati OH USA, ³Medimmune, Gaithersburg MD USA, ⁴SafeBridge Consultants Inc., New York, NY USA

Health-based exposure limits (HBELs) have been used for many years to assure safety or assess risks from potential adverse health-related effects arising from exposures to xenobiotics. Acceptable Daily Exposure (ADE) and Permitted Daily Exposure (PDE) are terms referencing assessments that can be considered as the bases for a variety of health-based assessments associated with the development and manufacture of industrial chemicals and pharmaceuticals. ADEs/PDEs have similar overall intent and definition as other HBELs and have increasing regulatory implications. As an example, the transition to the use of HBELs (i.e. ADEs) to protect product quality of pharmaceuticals has gained industry and regulatory interest. HBELs rely on robust hazard assessments that can be used as the basis for subsequent risk assessments, such as occupational exposure limits (OELs) and the derivation of limits for cleaning validation processes and control of cross-contamination. Default approaches for limit-setting (e.g. 10 ppm) have not been based on current health-based risk assessment methods. In contrast to the default approaches, derivation of ADEs and subsequent limits includes the use of robust datasets. Although the datasets for pharmaceuticals are generally more complete than those for chemical manufacturing, many aspects of the evolving methods in deriving HBELs for either industrial chemicals or pharmaceuticals are the same with application of appropriate adjustment factors to better inform hazard and risk decisions. The use of ADEs is a step toward better informed science- and health risk-based decisions. Methods used to derive ADEs are complex and are not harmonized among various regulatory constituencies and practitioners.
## OPENING LECTURE: State of Science and Profession of Toxicology on the African Continent: Lessons Learned from Challenges, Advancements, and Future Developments

**Mary Gulumian**  
1National Institute for Occupational Health (NIOH), P O Box 4788, Johannesburg 2000, South Africa, 2Haematology and Molecular Medicine Department, School of Pathology, University of the Witwatersrand

Progress in social, political and economic developments experienced by countries within the African continent have also produced challenges in addressing adverse impacts on human health and the environment. The unambiguous role played by toxicologists in developed countries in addressing similar challenges is a foregone conclusion. As yet, reliance on toxicologists in addressing these very challenges may not be the norm in different African countries. The reasons being multi factorial: toxicology is a neglected profession where it is simply not part of the education curriculum, misconception on the recognition of toxicology as a separate scientific discipline, and finally lack of understanding of the role and functions of a toxicologist where the stress should be more on prediction and prevention through risk assessment rather than on a mere confirmation of toxicity.  
The establishment of number of toxicological societies in different African countries has helped in addressing some of these challenges. In developed countries risk assessment has grown to a sufficient stature to assess hazard, estimate risk as well as offer rational safe management of these risks. The toxicological societies within these African countries have taken this approach seriously and have embarked in number of training opportunities as well as post graduate courses on the topic. They have also enabled toxicology to be recognised as a profession but most importantly, have succeeded in changing the perception on the role and functions of toxicologists in addressing human health and the environment.
PLENARY LECTURE: Introduction to the Concept of “Signal Toxicity”
Jun Kanno
\(^1\)Japan Bioassay Research Center, Japan Organization of Occupational Health and Safety; \(^2\)Division of Cellular and Molecular Toxicology, National Institute of Health Sciences.

The “Silent Spring” by Rachel Carson (1962) had established the basis for, and the “Our Stolen Future” by Theo Colbone, Dianne Dumanoski and John Peterson Myers (1996) had coined the concept of “Endocrine Disrupting Chemicals” with its mechanistic plausibility to all living organisms. And it took some time to realize that the plausibility is backed by the paradigm of receptor-mediated toxicity or in other words “signal toxicity”. In classical toxicology, a toxic substance reaches the target molecule and induces malfunction. Such targets are enzymes, lipid membranes, DNA, and other components in the cell. In case of signal toxicity, a chemical binds to a receptor. After that, the chemical itself is not important. The signal from the receptor initiates a cascade of molecular events that leads to various changes in the cells and organs. When the signal is abnormal in terms of quality, intensity and timing, the signal will induce adverse effects to cells and organs. The target would be not only endocrine system including reproductive, but also immune, and neuronal systems. The dose-response characteristics and the dose-range will depend on the signaling system of concern. If the signaling system is used for organogenesis and its functional maturation, there would be a critical period in developmental phase that the disturbance of such signals may leave irreversible changes to the organ.

Here, experiments to illustrate the “early exposure – late effect” at a so-called “low dose range” and related project on transcriptomics will be presented for further discussion on this matter.
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| 10:00-12:00 | **Advances in Molecular Metal Toxicology**  
**Chair: Yoshito Kumagai**  
*Faculty of Medicine, University of Tsukuba, Japan* |
|         | **Metabolism, Toxicity and Anticancer Activities of Arsenicals**  
*Hua Narenmandura*  
*School of Medicine and Public Health, Zhejiang University, China* |
|         | **Metal Toxicity and Toxicolipidomics**  
*Shuntaro Hara*  
*Division of Health Chemistry, Department of Healthcare and Regulatory Sciences, School of Pharmacy, Showa University, Tokyo, Japan* |
|         | **NAD+ Supplementation Attenuates Methylmercury Dopaminergic and Mitochondrial Toxicity in Caenorhabditis elegans**  
*Michael Aschner*  
*Albert Einstein College of Medicine, Bronx, USA* |
|         | **Activation of Redox Signal Transduction Pathways Mediated by Electrophilic Metals**  
*Yoshito Kumagai*  
*Environmental Biology laboratory, Faculty of Medicine, University of Tsukuba, Japan* |
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<tr>
<td>10:00-12:00</td>
<td>Development in Methodologies to Address Mixture Risk Assessment</td>
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<td><strong>Chair: Alan Boobis</strong></td>
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<td>Imperial College London, UK</td>
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<td><strong>Human Health Protection from Combined Exposure to Multiple Chemicals in the Global Context</strong></td>
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<td><em>Alan R Boobis</em></td>
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<td>Department of Medicine, Imperial College London, London W12 0NN, UK</td>
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<td><strong>Opportunities for Grouping/Read-across in the Risk Assessment of Combined Exposures to Multiple Chemicals</strong></td>
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<td><em>Andrea-Nicole Richarz, Andrew Worth, Stephanie Bopp</em></td>
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<td>European Commission Joint Research Centre, Directorate for Health, Consumers and Reference Materials, Ispra (VA), Italy</td>
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<td><strong>Chemical Mixtures in Food – What Tools and Test Strategies will the EUROMIX Project Deliver?</strong></td>
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<td><em>Jacob van Klaveren</em></td>
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<td>RIVM National Institute for Public Health and the Environment</td>
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<td><strong>Utility of AOPs for Mixture Safety Assessments</strong></td>
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<td><em>Angelo Moretto</em></td>
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<td>Department of Biomedical and Clinical Sciences, Università degli Studi di Milano, and ICPS at ASST-Fatebenefratelli-Sacco, Milano, Italy</td>
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<td><strong>Exposure-Driven Cumulative Risk Assessment in Practice</strong></td>
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<td><em>Tina Mehta</em></td>
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<td>Toxicology and Risk Assessment Leader, Human Health Assessment, Dow AgroSciences, UK</td>
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| 10:00-12:00  | **Antimicrobial Coatings in Healthcare Settings: Efficiency Versus Safety**  
**Chair: Anne Kahru¹,², Co-Chair: Angela Ivask ¹**  
¹National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, 12618 Tallinn, Estonia, ²Estonian Academy of Sciences, Kohtu 6, 10130 Tallinn, Estonia |

| 10:00-12:00  | **Antimicrobial Coatings in Healthcare: Possible Benefits and Need for Internationally Coordinated Research**  
**Francy Crijns¹, Rinaldo van Meel¹, Olaf Brouwers¹, Jim Odekerken¹, Patrick van de Poel², Minna Keinänen-Toivola², Gabrielle Tuijthof²**  
¹Zuyd University of Applied Sciences, Faculty of Bèta Sciences and Technology, P.O. Box 550, 6400 AN Heerlen, The Netherlands |

| 10:00-12:00  | **Design and Evaluation of Efficient and Safe Antimicrobial Coatings: Connections with the Industry**  
**Paride Mantecca¹, Kaja Kasemets¹,², Ehud Banin³, Ilana Perelsthein⁴, Aharon Gedanken⁴**  
¹Department of Earth and Environmental Sciences, Research Centre POLARIS, University of Milano-Bicocca, 1 Piazza della Scienza, Milan, Italy |

| 10:00-12:00  | **Can Antimicrobial Coatings Promote Development of Resistant Microorganisms?**  
**Kaja Kasemets¹, Angela Ivask¹, Siiri Kõljalg²**  
¹Laboratory of Environmental Toxicology, National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, Tallinn 12618, Estonia |

| 10:00-12:00  | **Can Antimicrobial Coatings Pose Risk to the Environment?**  
**Anne Kahru¹,² Kaja Kasemets¹, Merja Ahonen³**  
¹Laboratory of Environmental Toxicology, National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, Tallinn 12618, Estonia |

| 10:00-12:00  | **Safe-by-design Approach for Development and Use of Antimicrobial Coatings**  
**Ivana Vinković Vrček¹, Angela Ivask²**  
¹Institute for Medical Research and Occupational Health, Ksaverska cesta 2, Zagreb, Croatia |
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<td>10:00-12:00</td>
<td>Short Communications Session</td>
<td><strong>Antioxidant Potentials of Cedrelopsis grevei Leave Extract against Chlorpyrifos Induced Oxidative Stress in Kidney of Male Rats</strong>&lt;br&gt;<strong>Tarek Heikal</strong>&lt;br&gt;Narcotics, Ergogenics and Poisons Dept, Medical Research Division, National research Centre (NRC), Cairo, Egypt</td>
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<td><strong>Pesticide Mixtures Induced Hepato-renal Dysfunction and Oxidative Stress in Pregnant Mice and Their Pups: The Role of Antioxidants</strong>&lt;br&gt;<strong>Sameeh Mansour, Marwa Gad</strong>&lt;br&gt;Environmental Toxicology Research Unit (ETRU), Pesticide Chemistry Department, National Research Centre, Dokki, Giza, Cairo, Egypt</td>
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<td><strong>The Distinct Properties of Natural and GM Cry Insecticidal Proteins</strong>&lt;br&gt;<strong>Latham1 J.R.; Love2 M.; &amp; Hilbeck3 A.</strong>&lt;br&gt;1The Bioscience Resource Project, Ithaca, NY, USA</td>
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<td>OECD Country’s Research Productivity on Nanotoxicity Research: a Bibliometric Analysis&lt;br&gt;<strong>Mahmoud Abudayyak</strong>&lt;br&gt;Department of Pharmaceutical Toxicology, Faculty of Pharmacy, karadeniz technical University, Trabzon, Turkey</td>
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<td><strong>Effects of Subtle Chemical Changes on Drug-induced Liver Toxicity: A Structure-toxicity Relationship Study on Non-steroidal Anti-inflammatory Drugs</strong>&lt;br&gt;<strong>Yi Yun Pan, Han Kiat Ho</strong>&lt;br&gt;Department of Pharmacy, National University of Singapore.</td>
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<td><strong>Levels of Heavy Metals and Ochratoxin A in Medicinal Plants Commercialized in Turkey</strong>&lt;br&gt;<strong>Hakan Ozden</strong>&lt;br&gt;Division of Botany, Department of Biology, Faculty of Science, Istanbul University, 34134, Suleymaniye, Istanbul, Turkey</td>
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| 12:00-13:00 | **ROUND TABLE: Promoting Undergraduate Toxicology Education and Career Opportunities for Students in Developing Countries**  
  **Chairs:** Blase Billack\(^1\), Petar Bulat\(^2\)  
  \(^1\)St. John's University, New York, USA; \(^2\)University of Belgrade, Belgrade, Serbia  
  **Panelists:** Nursen Basaran\(^3\), Claudio Colosio\(^4\), Emanuela Corsini\(^4\), Elaine Faustman\(^5\), Mary Gulumian\(^6\), Anne Kahru\(^7\)  
  \(^3\)Hacettepe University, Turkey; \(^4\)University of Milan, Italy; \(^5\)University of Washington, USA; \(^6\)University of the Witwatersrand, South Africa; \(^7\)National Institute of Chemical Physics and Biophysics, Estonia |

We invite all conference participants, especially undergraduate students from developing countries who are majoring in science and science advisors of such students, as well as other interested researchers and toxicologists, to actively participate the Round Table. The aims of this discussion are to increase awareness about career choices and opportunities in toxicology and to increase interest and motivate undergraduate students to pursue graduate biomedical education pertinent to toxicology. Attendees will hear from toxicology leaders from both developed and developing nations, who will not only provide personal perspectives but also describe education programs in toxicology in their home countries as well as related educational initiatives to promote the science of toxicology which are being put forth by large toxicology societies such as SOT and EUROTOX. At the conclusion of the formal Round Table presentation, and to foster interactive dialog, the panelists will meet with small groups composed of students and graduate student mentors. The Panel will also describe potential career opportunities after the PhD in toxicology across different employment sectors (academia, government, and industry).
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<td>12:00-14:00</td>
<td>BUSINESS MEETING: WHO Chemical Risk Assessment Network Meeting</td>
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<td>13:00-14:00</td>
<td>Lunch Break, Exhibition and Poster Viewing</td>
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<td>GURU LUNCH: Prof. Claudio Colosio, Dr. Hanan Ghantous</td>
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| 14:00-16:00 | **Applicability and Limitation of Non Animal Testing in Safety Assessment**  
  *Chair: Emanuela Corsini*, Co-Chair: Emanuela Testai  
  1Università degli Studi di Milano, Milan, Italy, 2Istituto Superiore di Sanità, Rome, Italy |
|        | **Think-exposure-first! Industry Perspective on Predictive Tools for Exposure-based Safety Assessment**  
  *Marco Corvaro*  
  ‘Dow Agrosciences, UK’ |
|        | **Regulatory Use of Non Animal Models: the Present and the Future Challenges**  
  *Emanuela Testai*  
  Istituto Superiore di Sanità, Rome, Italy |
|        | **Applicability of Non-animal Based Tools for Food and Feed Safety Assessment**  
  *Jean-Lou Dorne*  
  EFSA, Italy |
|        | **History of a Success: Contact Hypersensitivity**  
  *Emanuela Corsini*  
  ESP, Università degli Studi di Milano, Italy |
|        | **Future of Non Animal models: 3D Models and Human on a Chip**  
  *Thomas Hartung*  
  CAAT, Baltimore, USA |
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| 14:00-16:00| **Environmental Pollution and Toxic Outcomes: Doses, Molecular Biomarkers, and Associations**  
*Chair:* Hilmi Orhan¹*, Co-chair:* Ali Esat Karakaya²  
¹Ege University, Faculty of Pharmacy, İzmir, Turkey, ²Retired, Gazi University, Faculty of Pharmacy, Ankara, Turkey |
|            | **Kidney, Breast and Stomach Cancers in Relation to Internal Concentrations of Persistent Organic Pollutants, DNA Damage Markers and Related Polymorphisms**  
Hilmi Orhan¹, Sinan Süzen², Rasih Kocagöz¹, İlgen Onat¹, Merve Demirbütgen², Burak Turna³, Koray Atilla⁴, Levent Yeniy⁵, Banu Sarsik³, Osman Zekioğlu⁵, Murat Özdemir³  
¹Ege University, Faculty of Pharmacy |
|            | **Drugs and their Metabolites as Environmental Pollutants**  
Momir Mikov¹,³, Svetlana Golocorbin-Kon²  
¹School of Pharmacy, Faculty of Medicine, University of Banja Luka, Bosnia and Herzegovina |
|            | **Neurodegenerative and Neurodevelopment Disorders Linked to Chemicals: What are the Underlying Mechanisms?**  
Antonio F. Hernández¹, Fernando Gil¹, Beatriz González-Alzaga²,³, Clemente Aguilar-Garduño³, Marina Lacasaña²,³,⁴  
¹University of Granada School of Medicine |
|            | **Cadmium Modulation of Immune Defense and Susceptibility to Inflammatory Diseases: Insight from Animal Models**  
Milena Kataranovski¹,²  
¹Department of Physiology and Biochemistry, Faculty of Biology, University of Belgrade, Studentski trg 16, 11000 Belgrade, Serbia, ²Department of Ecology, Institute for Biological Research “Sinisa Stankovic”, University of Belgrade, Despota Stefana Boulevard 142, 10000 Belgrade, Serbia |
|            | **Environmental Lead Exposure in Children: a Problem of Developing Countries?**  
Petar Bulat¹,², Stefan Mandić-Rajčević³, Zorica Bulat⁴, Vesna Matović⁴  
¹University of Belgrade, Faculty of Medicine, Belgrade, Serbia, ²Serbian Institute for Occupational Health “Dr Dragomir Karajović” Department of Toxicology, Belgrade, Serbia |
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| 14:00-16:00 | **Arachnids: Fallacies, Clinical Manifestations, Differential Diagnosis and Management of Spider Bite and Scorpion Sting**  
*Chair: Bruno Megarbane¹, Co-Chair: Cherylynn Wium²*  
¹Department of Medical and Toxicological Critical Care, Lariboisière Hospital, Paris-Diderot University, INSERM UMRS-1144, Paris, France, ²Division of Clinical Pharmacology, Stellenbosch University, Cape Town, South Africa |
|        | **Antivenom to Treat Scorpion Sting: Is it Useful?**  
Bruno Mégarbane  
Department Medical & Toxicological Critical Care, Paris-Diderot University, Paris, France |
|        | **Spider Bite in Southern Africa**  
Cherylynn Wium, Gert Muller  
Division of Clinical Pharmacology, Stellenbosch University, Cape Town, South Africa |
|        | **Spider Bites in Southern Africa: A Poison Centre Experience**  
Arina du Plessis, Helmuth Reuter  
Division of Clinical Pharmacology, Stellenbosch University, Cape Town, South Africa |
|        | **Scorpion Sting in Southern Africa: The Zimbabwean Experience**  
Dexter Tagwireyi, Louis Gadaga,  
Drug and Toxicology Information Service, University of Zimbabwe, Harare, Zimbabwe |
|        | **Scorpion Stings in Morocco**  
Naima Rhalem, Rhizlane El Oufir, Ilham Semlali,  
Rachida Soulzaymani-Bencheikh  
Poison Control and Pharmacovigilance Centre of Morocco, Rabat, Morocco |
<p>| Time     | Session                                    | Title                                                                 | Authors                                                                                           | Institution/Location                                      |
|----------|--------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 14:00-16:00 | <strong>Short Communications Session</strong>           | The Reference Value for Biomonitoring in Chemicals Risk Area in Thailand | Nalinee Sripaung, Ph.D.                                                                           | Bureau of Occupational and Environmental Diseases, DDC, Ministry of Public Health, Thailand |
|          |                                            | The Use of Selected Marine Organisms in Nanoecotoxicology: Experiments on Mussels, Sea Urchins and Crabs | Petra Burić¹, Maja Levak¹, Lorena Perić², Ines Kovačić³, Dijana Pavičić-Hamer¹, Daniel Mark Lyons¹ | Laboratory for Marine Nanotechnology and Biotechnology, Center for Marine Research, Ruđer Bošković Institute, Rovinj, Croatia |
|          |                                            | Acute Poisoning in Children in Azerbaijan                             | Ismayil Afandiyev                                                                                   | Azerbaijan Medical University, Azerbaijan, Baku            |
|          |                                            | Impact of Pesticide Residues in Feed on Animal Health                  | Anne Schmitt, Katrin Franke, Lars Niemann                                                           | German Federal Institute of Risk Assessment (BfR), Berlin   |
|          |                                            | Investigation of the Cytotoxicity of Medical Devices on Cell Cultures of Laboratory Animals | Maryna Anisovich, Nastassia Ahamava, Svetlana Petrova                                               | Republican unitary enterprise «Scientific practical centre of hygiene» |
|          |                                            | Toxic Effects of Bisphenol Analogues: Are Alternatives Safe?           | Sheikh Raisuddin¹ Shikha Sharma¹, and Jasim Khan¹                                                  | Department of Medical Elementology &amp; Toxicology, Jamia Hamdard (Hamdard University), New Delhi 110062, India |
|          |                                            | Occupational Exposure Modeling of Pesticides: State of the Art and Challenges for their Implementation in Developing Countries | Wells Utembe¹, Mary Gulumian¹²                                                                      | Toxicology Department, National Institute for Occupational Health, South Africa |</p>
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<tr>
<td>16:30-20:00</td>
<td>Belgrade City Tour and Networking Stroll (15 min)</td>
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<td>Toxicology History Room/Exhibition Visit</td>
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<td>21:00-00:00</td>
<td>Free Night Out in Belgrade</td>
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PLENARY LECTURE: The Search for Safe Replacements for Endocrine Disrupting Chemicals  
Barbara Hales  
Department of Pharmacology & Therapeutics

Some of the diverse synthetic chemicals associated with our modern lifestyle have unintended adverse influences on human health, affecting hormone production or action, and thus acting as endocrine disrupting chemicals (EDCs). Polybrominated diphenyl ether (PBDE) flame retardants, phthalate plasticizers, and bisphenol A (BPA), an epoxy resin ingredient, are EDCs. Studies with animals and cells have provided evidence for associations between PBDE exposures and adverse outcomes. Human studies demonstrate that PBDE exposures are associated with adverse effects on neurobehavior and an increase in cryptorchidism. Phthalates have well documented anti-androgenic effects while BPA exposure is associated with estrogenic activity. Many governments have restricted the uses of these chemicals due to their adverse effects, creating a “market gap”. We are now discovering that chemicals introduced as replacements may not be safer than the “legacy” substances. BPA analogues, with similar chemistry, may have similar or greater toxicity than BPA. Organophosphates are “emerging” as the “new” flame retardants; using cell and limb bud cultures we have shown that some of these chemicals have effects similar to or greater than PBDEs. In collaboration with colleagues in Chemical Engineering we have identified novel “green” alternative plasticizers with a promising profile. Improvements in our assessment of alternatives are needed to ensure that strategies to identify replacements that are safer and have a reduced environmental impact will be embedded in society in the future.

Supported by the CIHR Institutes of Human Development, Child and Youth Health and of Population and Public Health. BFH and BR are James McGill Professors.
10:00-12:00

**The Significance of Drug/Xenobiotic Metabolizing Enzyme Polymorphisms in Cancer/Diseases**
*Chairs: Mumtaz Iscan¹, Ann K. Daly²*
¹Department of Toxicology, Faculty of Pharmacy, Ankara University, Tandogan, Ankara, Turkey, ²Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK

**Role of GST Polymorphisms in Malignant and Non-malignant Diseases of the Kidney**
*Tatjana Simic*
Institute of Medical and Clinical Biochemistry, Faculty of Medicine, University of Belgrade, Belgrade, Serbia

**Relevance of CYP Polymorphisms to Cancer Susceptibility**
*Ann K. Daly*
Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK

**Pharmacogenetics of Drug Response in Parkinson’s Disease**
*Ivana Novakovic, Eleonora Dzoljic, Milena Jankovic, Ana Marjanovic, Marija Brankovic, Natasa Dragasevic, Vladimir Kostic*
Clinic of Neurology, Faculty of Medicine, University of Belgrade, Belgrade, Serbia

**Association of Drug/Xenobiotic Metabolizing Enzyme Polymorphisms with Treatment Outcome of Advanced Non-small Cell Lung Cancer Patients with Platinum-based Chemotherapy**
*Mumtaz Iscan*
Department of Toxicology, Faculty of Pharmacy, Ankara University, Tandogan, Ankara, Turkey
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<td>10:00-12:00</td>
<td><strong>Evaluation of Safety Profile of Herbal Products</strong>&lt;br&gt;Chair: Ahmet Aydın¹, Co-Chair: Nan Mei²&lt;br&gt;¹Department of Toxicology, Faculty of Pharmacy, Yeditepe University, Turkey; ²Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, U.S. Food and Drug Administration (FDA), United States.</td>
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<td><strong>Safety Evaluation of Herbal Products from the View Point of Regulations</strong>&lt;br&gt;Ahmet Aydın&lt;br&gt;Department of Toxicology, Faculty of Pharmacy, Yeditepe University, Turkey</td>
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<td><strong>Toxicological Endpoints of Herbal Product-Drug Interactions</strong>&lt;br&gt;Nurşen Başaran¹, Merve Bacanlı¹, A. Ahmet Başaran²&lt;br&gt;¹Hacettepe University Faculty of Pharmacy Department of Pharmaceutical Toxicology 06100, Ankara, Turkey</td>
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<td><strong>Risk Assessment of Genotoxic Compounds in Herbal Drugs from TTC to Innovative Approaches</strong>&lt;br&gt;Heidi Foth&lt;br&gt;Martin Luther University Halle Saale, Germany</td>
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<td><strong>Mechanistic Study of Goldenseal-Associated Genotoxicity</strong>&lt;br&gt;Nan Mei¹, Si Chen², Lei Guo²&lt;br&gt;¹Division of Genetic and Molecular Toxicology</td>
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| 10:00-12:00 | **Product Stewardship and Regulatory Toxicology in the Oil and Gas Industry**  
**Chair: Salmaan Inayat-Hussain**  
Petroliam Nasional Berhad (PETRONAS) Malaysia |

| Product Stewardship and Regulatory Toxicology in the Oil and Gas Industry  
**Salmaan H Inayat-Hussain**  
Petroliam Nasional Berhad (PETRONAS), Kuala Lumpur, Malaysia |

| Regulatory Challenges and Opportunities in the Developing Countries for Petroleum Substances  
**Derek D. Swick**  
American Petroleum Institute, Washington, DC, USA |

| Integrated Approaches for Testing and Assessment of Chemicals for Regulatory Decision-making  
**Bob Diderich**  
Organisation for Economic Cooperation and Development |

| A Concawe Perspective on Alternatives to Animal Testing under Regulatory Programmes  
**Hans Ketelslegers**  
European Petroleum Refiners Association - Concawe division, Brussels, Belgium |

| Management of Reproductive Toxic Chemicals in the Oil and Gas Industry  
**Masao Fukumura¹, A Muiz Aziz¹, Linda Roberts², Salmaan H. Inayat-Hussain¹**  
¹Petroliam National Berhad (PETRONAS) Malaysia |
<table>
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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Chair: Maja Peraica</th>
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<tr>
<td>10:00-12:00</td>
<td><strong>Short Communications Session</strong></td>
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<td>**Effects of BPA on Global DNA Methylation and Global Histone 3 Lysine</td>
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<td>Modifications in SH-SY5Y Cells: An Epigenetic Mechanism Linking the Regulation</td>
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<td>of Chromatin Modifying Genes</td>
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<td>Mine Senyildiz1, Ecem Fatma Karaman1, Serap Sancar Baş2, Pelin Arda Pirincci2,</td>
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<td>Sibel Ozden1</td>
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<td>1Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Istanbul</td>
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<td>University, 34116-Beyazit, Istanbul, Turkey.</td>
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<td>**Endocrine Disrupting Activity in Sewage Sludge: Screening Method and</td>
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<td>Cost-effective Strategy for Detoxification</td>
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<td>Dânia E. C. Mazzo1,2, Andrea Misovic2, Maria A. Marin-Morales3, Mary Rosa</td>
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<td>R. Marchi1, Jörg Oehlmann2</td>
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<td>1Department of Analytical Chemistry, Institute of Chemistry, UNESP - Univ</td>
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<td>Estadual Paulista, Araraquara, SP, Brazil</td>
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<td>**Toxicological Assessment of Aqueous Leaf Extract of Bryophyllum pinnatum</td>
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<td>on Body and Organ Weights, and Haematologic Parameters in Rodents</td>
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<td>Omoniyi Yemitan1, Akinsuyo Akinsegun2, Sunday Olayemi3,4</td>
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<td>1Department of Pharmacology, Therapeutics &amp; Toxicology, Lagos State University</td>
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<td>College of Medicine, Ikeja, Lagos, Nigeria</td>
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<td>**Evaluation of Manganese, Copper, Zinc and Selenium Levels in Patients with</td>
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<td>Primary Epithelial Ovarian Cancer</td>
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<td>Aydan Cagliyan1, Doruk Cevdi Katlan2, Zafer Selçuk Tuncer3, Kunter Yüce3</td>
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<td>1Hacettepe University, Faculty of Pharmacy, Department of Toxicology, Ankara</td>
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<td>**Incidence of Enrofloxacin its Primary Metabolite and Chlortetracycline</td>
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<td>Residues in Eggs and Broiler Meat from Tamilnadu, India</td>
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<td>Ghadevaru Sarathchandra</td>
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<td>Pharmacovigilance Laboratory for Animal Feed and Food Safety, Centre For</td>
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<td>Animal Health Studies, TANUVAS</td>
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<td>**Combined Effects of BEA and ENB on Jurkat T-cells at the Transcriptomic</td>
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<td>Lara Manye, Laura Escrivá, María José Ruiz, Manuel Alonso</td>
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<td>Laboratory of Food Chemistry and Toxicology, Faculty of Pharmacy, University</td>
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<td>of Valencia, Spain</td>
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Friday, April 20, 2018 Aristotle Hall
**ROUND TABLE: Women in Toxicology in Developing Countries**  
*Chairs: Tao Wang\(^1\), Nursen Basaran\(^2\)*  
\(^1\)Achaogen, Inc, USA; \(^2\)Hacettepe University, Turkey

| Panelists: Nursen Basaran\(^2\), Silvia Berlang de Moraes Barros\(^3\), Hanan Ghantous\(^3\), Mary Gulumian\(^5\), Anne Kahru\(^6\), Vesna Matovic\(^7\)  
\(^1\)Achaogen, Inc, USA; \(^2\)Hacettepe University, Turkey; \(^3\)University of Witwatersrand, South Africa; \(^4\)Food and Drug Administration, USA; \(^5\)University of Sao Paulo; \(^6\)National Institute of Chemical Physics and Biophysics, Estonia; \(^7\)University of Belgrade, Serbia

Although the global share of women in research has been increased for the last decades, women are still remain underrepresented in many areas of science including toxicology not only in developing countries but also in many developed regions. It is actually difficult for women to get a good position in research. Gender differences in researchers are even more pronounced in some developed countries such as UK, Japan and Canada compared to some developing countries. According to the report of Elsevier (1) in 12 comparator countries and regions over 20 years, in developed countries, the percentage of women in science and research in the area of Pharmacology & Toxicology and Pharmaceutics and also in the implementation of policies and legislation are still lower than men. But compared to other areas, a relatively high portion of women among researchers in Pharmacology & Toxicology and Pharmaceutics has been observed. The data about the situation of women in toxicology research in developing countries is not clear but it seems that female representation is still lagging behind in scientific bodies. The push for gender equality in developed and in developing countries is not easy and seems to need time. The panel is aimed to describe the situation of women researchers in toxicology in some developing countries and also to increase and foster the awareness of power of women in the areas of toxicology.

| 13:00-14:00 | Lunch Break, Exhibition and Poster Viewing |
| 14:00-15:00 | **PLENARY LECTURE: From Pre-marketing Studies and Authorization Dossiers to New Prospects for Pesticide Risk Assessment in Rural Enterprises**  
**Claudio Colosio**  
Department of Health Sciences of the University of Milan and International Centre for Rural Health of the S. Paolo Hospital, Italy |
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<td>The role of pesticides in the modern society has been strengthened by the need for higher yield in food production and the ongoing battle against vector borne diseases in public health. Nevertheless, the toxicity of these chemicals is not fully specific to target organisms, thus posing a potential health threat to humans. In this frame, risk assessment and management are fundamental. In the occupational settings, variability of meteorological conditions, use of different concentrations of variable mixtures, and significant variations in the application times and modalities make this task very complicated, making necessary proposing novel approaches for conducting “in field“ preventive activities. The amount of information collected during the process of authorization of a new active ingredient is unique, with a size similar of the one available for human drugs. Therefore, a possible way forward for risk assessment is represented by a better exploitation in the post-marketing phase of the data used for the registration process, combined with the data collected in real-life field studies usable for refining and validate the risk hypothesis generated through modelling. In particular, parameters such as Acceptable Operator Exposure Level (AOEL), acute reference dose (ArD) as well data regarding skin absorption, metabolism and relevant metabolites in animals can find use in the conduction of risk assessment activities in agricultural enterprises, through the creation of new tools for exposure and risk assessment. Such tool are usable even without conducting complicated and expensive measures, and therefore are adequate for the needs of small and medium sized agricultural enterprises.</td>
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Exposure and Risk Assessment of Pesticide Use in Agriculture: Approaches, Tools, and Advances  
*Chair: Claudio Colosio*, *Co-Chair: Aristidis Tsatsakis*  
1Department of Health Sciences of the University of Milan and International Centre for Rural Health of the S. Paolo Hospital, Italy, 2Medical School, Division Morphology, University of Crete, Greece

From Regulation to Risk Assessment: Outlining the Process of Regulatory Exposure and Risk Assessment and the Practical Use of Limit Values  
*Martin F. Wilks*  
Swiss Centre for Applied Human Toxicology, University of Basel, Switzerland

Introduction to Pesticide Exposure Monitoring, Practical Guidance, and Perspectives  
*Claudio Colosio, Stefan Mandić-Rajčević, Federico Maria Rubino*  
Department of Health Sciences of the University of Milan and International Centre for Rural Health of the S. Paolo Hospital, Italy

The Need for Biological Monitoring in Agriculture and New Promising Methods  
*Ioanna Katsikantami, Athanasios Alegakis, Manolis Tzatzarakis, Elena Vakonaki, Aristidis M. Tsatsakis*  
Center of Toxicology Science and Research, Medical School, University of Crete, GR-71003, Heraklion, Crete, Greece.

Duration of Skin Exposure: a Neglected Variable in Absorbed Dose Assessment  
*Stefan Mandić-Rajčević, Federico Maria Rubino, Claudio Colosio*  
Department of Health Sciences of the University of Milan and International Centre for Rural Health of the S. Paolo Hospital, Italy

Integrating Epidemiology Along with other Lines of Scientific Evidence into Pesticide Risk Assessment  
*Antonio F. Hernández*  
Department of Legal Medicine and Toxicology, University of Granada, School of Medicine, Avenida de la Investigación, 11, 18016- Granada, Spain.

Oxime Efficacy in Acute Organophosphate Poisoning: Challenges and Perspectives  
*Biljana Antonijević, Evica Antonijević*  
University of Belgrade-Faculty of Pharmacy, Department of Toxicology “Akademik Danilo Soldatovic”, Serbia
<table>
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<tr>
<th>Time</th>
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| 15:00-17:00 | **Incorporating Information on Chemical Mixtures into Chemical Risk Assessments**  
**Chair:** Richard Brown¹, **Co-Chair:** Mykola Prodanchuk²  
¹World Health Organization HQ, Switzerland, ²LI Medved Research Centre of Preventive Toxicology, Ukraine |
|          | **Tools Available and Developing for the Risk Assessment of Mixtures of Chemicals in Indoor Air**  
Irina Zastenskaya, Dorota Jarosinska, Elizabet Paunovic  
WHO Regional Office for Europe, WHO European Centre for Environment and Health |
|          | **Assessment and Management of Chemical Mixtures in Source and Drinking Water**  
M.E. (Bette) Meek  
McLaughlin Centre for Risk Science, University of Ottawa, Canada |
|          | **Sharing Data on Chemicals in Different Environmental Matrices and Humans – How Data from Chemical Monitoring Programmes Can Be Easily Discovered, Accessed and Retrieved (the European Commission’s IPCHEM Platform)**  
Stylianos Kephalopoulos¹, Silvia Dalla Costa¹  
¹European Commission, DG Joint Research Centre |
|          | **Development of National Chemical Registers and Using Information on Chemical Mixtures to Prioritize Chemicals for Risk Assessment. Use of In Silico and Testing Methods**  
Mykola Prodanchuk, Serhii Kolesnyk, Oleksandr Kravchuk, Petro Zhminko, Olena Ryabuha  
L.I. Medved’s Research Center of Preventive Toxicology, Food and Chemical Safety, Ministry of Health of Ukraine |
|          | **Assessing Possible Interactions in Chemical Mixtures: Case Study on Cadmium and Polychlorinated Biphenyls**  
Aleksandra Buha, Vesna Matovic  
Department of Toxicology "Akademik Danilo Sodatović", University of Belgrade-Faculty of Pharmacy, Serbia |
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| 15:00-17:00| **Substances of Abuse: Global Trends, Prevention and Management**  
|            | Chairs: Slavica Vučinić¹, Hans Maurer²  
|            | ¹National Poison Control Centre MMA, Medical faculty University of Defense, Belgrade, Serbia,  
|            | ²University of Saarland, Homburg, Germany, advisor to the U.S. Federal Bureau of Investigation,  |
|            | **Analytical Strategy for Effective Clinical Toxicology Services**  
|            | Hans H. Maurer  
|            | Department of Experimental and Clinical Toxicology, Saarland University, D-66421 Homburg (Saar), Germany  |
|            | **The Role of the National Poison Control Centre in the Early Warning System on New Psychoactive Substances**  
|            | Slavica Vučinić  
|            | National Poison Control Centre, MMA, Medical Faculty, University of Defense, Crnotravska 17, Belgrade, Serbia  |
|            | **The EU Early Warning System – 20 Years of Monitoring New Psychoactive Substances in Europe**  
|            | Rita Jorge, Ana Gallegos  
|            | EMCDDA, Lisbon, Portugal  |
|            | **Alternative Biological Samples for Determination of Psychoactive Substances**  
|            | Snežana Djordjević  
|            | National Poison Control Center, Military Medical Academy, Medical Faculty, University of Defence Belgrade, Serbia  |
|            | **Drugs of Abuse: Trends in Croatia**  
|            | Irena Brčić Karačonji, Andreja Jurić, Nataša Brajenović  
|            | Analytical Toxicology and Mineral Metabolism Unit, Institute for Medical Research and Occupational Health, Zagreb, Croatia  |
Friday, April 20, 2018  

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<th>Time</th>
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<tr>
<td>15:00-17:00</td>
<td><strong>MATTEK WORKSHOP</strong></td>
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<td><strong>In Vitro Reconstructed 3D Models for the Safety Assessment of Cosmetics, Chemicals, Drugs and Medical Devices</strong></td>
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<td>MatTek In Vitro Life Science Laboratories (IVLSL) is happy to invite you to the workshop organized at the occasion of CTDC10 congress. The workshop will provide an overview of the use of in vitro 3D reconstructed tissue models in toxicology and pharmacology. The programme includes three state of the art presentations on the use of reconstructed skin, eye and small intestine as well as practical demonstration of the technology and discussion. Participants will learn about implementation of the reconstructed tissue models into the safety assessment of cosmetics, chemicals, drugs and medical devices. Validation and implementation of this novel technology into the regulatory toxicology and use in the testing strategies will also be discussed. The target audience includes experimental biologists, pharmacologists and toxicologists, life sciences researchers and students at all levels of expertise.</td>
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<td>17:00-17:15</td>
<td><strong>Coffee BREAK</strong></td>
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<td>17:15-19:15</td>
<td>From Assessment of Internal Exposure to Chemicals to Action to Prevent Adverse Health Impacts: the Role of Human Biomonitoring</td>
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<td>Chair: Dorota Jarosinska</td>
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<td>WHO Regional Office for Europe, WHO European Centre for Environment and Health</td>
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<td>Harmonization of Approaches to Human Biomonitoring: Benefits and Challenges</td>
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<td>Irina Zastenskaya, Dorota Jarosinska, Elizabet Paunovic</td>
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<td>WHO Regional Office for Europe, WHO European Centre for Environment and Health</td>
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<td>Towards Expanding the HBM in Europe – the European Human Biomonitoring Initiative HBM4EU</td>
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<td>Argelia Castaño¹, on behalf of the HBM4EU Initiative²</td>
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<td>Application of a Harmonized Approach to HBM: Insights from a Multi-country Project on Mercury</td>
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<td>Irina Ilchenko², Tatiana Boyarskaya¹, Kamila Timoshenko¹, Sergey Lyapunov², Olga Okina²</td>
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<td>¹I.M. Sechenov Moscow State Medical University (Sechenov University)</td>
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<td>Role of HBM in Managing Contaminated Sites: Exposure to Lead Close to Antimony and Lead Mining and Metal-processing Complex in Serbia</td>
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<td>Branislava Matic¹, Dragana Jovanović², Igor Dragičević²</td>
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<td>¹Institute of Public Health of Serbia, Belgrade, Serbia</td>
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17:15-19:15

**Biomarkers in Chronic Degenerative Diseases and Risk Assessment**

*Chair: Patrizia Hrelia, Co-chair: Sabrina Angelini*

Department of Pharmacy and Biotechnology, University of Bologna, Italy

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**COPD Risk Evaluation Through the Exposome, Genetic Traits and Enzymatic Activities**

_Sabrina Angelini¹, Francesca Maffei², Silvana Hrelia², Patrizia Hrelia¹_

¹Department of Pharmacy and Biotechnology, University of Bologna, Bologna, Italy; ²Department for Life Quality Studies, University of Bologna, Rimini, Italy.

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**hCOMET Network: Results of the First Statistical Analysis and New Findings in the Buccal Micronucleus Assay, as Biomarkers in Human Biomonitoring and Early Disease Detection**

_Mirta Milić¹, Stefano Bonassi²³, Emilio Rojas⁴, Claudia Bolognesi⁵, hCOMET Consortium⁵_

¹Institute for Medical Research and Occupational Health, Mutagenesis Unit, Croatia

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**Genotoxicity Biomarkers in the Clinical and Environmental Molecular Epidemiology Studies for Children**

_Gonca Çakmak_

Gazi University, Faculty of Pharmacy, Department of Toxicology, Ankara, Turkey

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**Role of Oxidants and Antioxidants in Degenerative Diseases Development: *in vitro* Models**

_Ksenija Durgo, Ana Huđek, Ana Belsčak-Cvitanović, Arijana Bušić, Draženka Komes, Višnja Bačun-Družina_

Faculty of Food Technology and Biotechnology, University of Zagreb, Croatia
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| 17:15-19:15  | **Modified Mycotoxins – An Emerging Risk in Food Safety**  
*Chair: Angela Mally*  
*Department of Toxicology, University of Würzburg, Germany*  
**Application of Human Biomonitoring to Assess Human Exposure to Mycotoxins and their Modified Forms**  
*Michele Solfrizzo, Lucia Gambacorta*  
*Institute of Sciences of Food Production (ISPA), National Research Council of Italy (CNR), Via Amendola 122/O, 70126 Bari, Italy*  
**In Vitro and in Vivo Toxicity of Modified Fusarium Mycotoxins: Current Status and Knowledge Gaps**  
*Angela Mally*  
*Department of Toxicology, University of Würzburg, Germany*  
**Current Approaches to Health Risk Assessment of Modified Mycotoxins in Food and Feed**  
*Nicole Lorenz¹, Sven Dänicke², Lutz Edler³, Christoph Gottschalk⁴, Eva Lassek⁵, Doris Marko⁶, Michael Rychlik⁷, Angela Mally⁸*  
¹Federal Institute for Risk Assessment (BfR), Max-Dohrn-Str. 8-10, D-10589 Berlin, Germany |
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<td>08:00-08:30</td>
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| 08:30-09:30| PLENARY LECTURE: Communications in the Area of Toxicology: a Challenging Task?  
Lucia de Luca  
European Food Safety Authority |
| 09:30-09:45| Coffee BREAK                         |
### PARALLEL SESSIONS

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| 09:45-11:45 | **Influence of Endocrine-Disrupting Chemicals (EDCs) on Development and Reproduction**  
Chair: Djuro Macut¹, Co-chair: George Mastorakos²  
¹Clinic of Endocrinology, Diabetes and Metabolic Diseases, Faculty of Medicine, University of Belgrade, Belgrade, Serbia, ²Endocrine Unit, ARETAIEION hospital, Athens Faculty of Medicine, National and Kapodistrian University of Athens, Athens, Greece |
|           | **EDCs: an Introduction**  
Djuro Macut  
Clinic of Endocrinology, Diabetes and Metabolic Diseases, Faculty of Medicine, University of Belgrade, Belgrade, Serbia |
|           | **EDCs: Assessing the Risks of Exposure to Environmental Chemicals and Pharmaceuticals**  
Rod Mitchell¹²  
¹MRC Centre for Reproductive Health, Queens Medical Research Institute, ²Department of Diabetes and Endocrinology, Royal Hospital for Sick Children, Edinburgh, UK |
|           | **Endocrine Disruption and Male Gonadal Function**  
George Mastorakos  
Endocrine Unit, ARETAIEION hospital, Athens Faculty of Medicine, National and Kapodistrian University of Athens, Athens, Greece |
|           | **Influence of Phthalates and Bisphenol A on Fertility in Woman**  
Milica Medic Stojanoska  
University of Novi Sad, Faculty of Medicine, Clinical Center of Vojvodina, Novi Sad, Serbia |
|           | **Exploring EDCs and the Mechanisms by Which They Adversely Affect Reproduction**  
Hande Gurer-Orhan  
Department of Toxicology, Faculty of Pharmacy, Ege University, Izmir, Turkey |
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| 09:45-11:45 | **Emerging and Known Natural Toxins: Environmental Fate and Human Risk**  
Chair: Emanuela Testai  
Istituto Superiore di Sanità - Environment and Health Department, Rome, Italy |
|         | **The Booming Field of Botulinum Neurotoxins**  
Marco Pirazzini, Ornella Rossetto, and Cesare Montecucco  
Department of Biomedical Sciences, University of Padova, Via Ugo Bassi 58/B, Padova, Italy |
|         | **Cyclic Imines Phycotoxins: Pharmacological Characterization, Biodistribution, Musculo-skeletal Effect and Detection of these Emergent Families of Neurotoxic Agents**  
Denis Servent, Sophie Creuzet, Carole Malgorn, Vincent Dive, Armen Zakarian, Romulo Aràoz, Jordi Molgó  
1Service d’Ingénierie Moléculaire des Protéines (SIMOPRO), CEA, Université Paris-Saclay, F-91191 Gif sur Yvette, France |
|         | **Toxic Effects of Co-exposure to Mycotoxins**  
Maja Peraica  
Institute for Medical Research and Occupational Health, 10000 Zagreb, Ksaverska c.2, Croatia |
|         | **Human Health Risks Associated to Cyanotoxins Exposure**  
Emanuela Testai  
Istituto Superiore di Sanità - Environment and Health Department, Rome, Italy |
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| 09:45-11:45  | Toxicity of Respirable Particulate Matter in Ambient Air                                                                             | Chair: M. Jovašević-Stojanović¹, Co-chair: P. Mantecca²  
              |                                                                                                                                       | ¹Vinča Institute of Nuclear Sciences, University of Belgrade, Serbia, ²University of Milano-Bicocca, Department of Earth and Environmental Sciences, Research Center POLARIS, Milan, Italy |
|              | Comparative Toxicity of Airborne Fine and Ultrafine Particles from Different Regions and Emission Sources                             | P. Mantecca¹, S.K. Hassan², A. A. El-Abssawy², W. H. Shetaya², A. El-Mekawy², E. F. Mohamed², A. M. F. Mohammed², R. Bengalli¹, S. Marchetti¹, A. Zerboni¹, E. Longhin¹, M. Camatini¹  
              |                                                                                                                                       | ¹University of Milano-Bicocca, Department of Earth and Environmental Sciences, Research Center POLARIS, Milan, Italy |
|              | The Influence of Metal Components on the Health Effects of Ambient Particulate Matter                                                | Jasmina Jović-Stošić¹, Dragan Alavantić², Milena Jovašević-Stojanović²  
              |                                                                                                                                       | ¹National Poison Control Centre, Military Medical Academy, Belgrade |
|              | (Bio)monitoring of Polycyclic Aromatic Hydrocarbons                                                                                | Simone Morais  
              |                                                                                                                                       | REQUIMTE-LAQV, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, R. Dr. António Bernardino de Almeida 431, 4200-072 Porto, Portugal |
|              | Toxicity of Indoor and Outdoor Respirable Particulate Matter in Schools/Kindergartens                                               | M. Jovašević-Stojanović³, A. Filipović², M. Živković¹, M. Jovanović¹, I. Lazović¹, M. Davidović³, R. Kovačević³  
              |                                                                                                                                       | ¹Vinča Institute of Nuclear Sciences, University of Belgrade, Serbia |
|              | Development of an Assay to Assess Genotoxicity by Particulate Matter Extract                                                         | Alexandros Priftis¹, Konstantinos Papikinos¹, Marina Koukoulanaki¹, Efthalia Kerasioti¹, Dimitrios Stagos¹, Konstantinos Konstantinopoulos², Demetrios Spandidos³, Marianthi Kermenidou⁴, Spyros Karakitsios⁴, Dimosthenis Sarigiannis⁴, Arisitidis Tsatsakis⁶, Demetrios Kouretas¹  
<pre><code>          |                                                                                                                                       | ¹Department of Biochemistry and Biotechnology, University of Thessaly, Larissa 41500, Greece |
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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenter(s)</th>
<th>Institution(s)</th>
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<td>11:45-14:15</td>
<td>PLENARY WORKSHOP: Toxicology Data and Online Tools: Availability, Search Strategies, Open Data, and Reproducibility</td>
<td>Chair: Philip Wexler&lt;br&gt;National Library of Medicine</td>
<td>The US National Library of Medicine’s TOXNET System and Other Toxicology Information Resources&lt;br&gt;Philip Wexler&lt;br&gt;National Library of Medicine&lt;br&gt;&lt;br&gt;eChemPortal - The Global Portal to Information on Chemical Substances&lt;br&gt;Sally de Marcellus, Bob Diderich&lt;br&gt;Organisation for Economic Co-operation and Development (OECD)&lt;br&gt;&lt;br&gt;How to Find Reliable Online Information Regarding Chemical Exposure at Work?&lt;br&gt;Gert van der Laan¹,²,³, Pieter van Broekhuizen⁴, Frank van Dijk¹,³,⁴,⁵&lt;br&gt;¹Free University of Amsterdam Medical Centre (VUMC), The Netherlands, ²International Centre for Rural Health, University of Milano, Italy, ³Foundation for Learning and Developing Occupational Health (LDOH)&lt;br&gt;&lt;br&gt;The Importance of Open Data in Toxicological Research and Publishing&lt;br&gt;Petar Bulat¹,², Zorica Bulat³, Stefan Mandić-Rajčević⁴&lt;br&gt;¹University of Belgrade-Faculty of Medicine, Belgrade Serbia, ²Serbian Institute of Occupational Health, Belgrade Serbia&lt;br&gt;&lt;br&gt;Improving the Quality of Toxicological Research Findings Using Modern Principles of Reproducible Research&lt;br&gt;Stefan Mandić-Rajčević, Federico Maria Rubino, Claudio Colosio&lt;br&gt;Department of Health Sciences of the University of Milan and International Centre for Rural Health of the San Paolo Hospital, Via San Vigilio 43, 20142 Milan, Italy</td>
</tr>
</tbody>
</table>
### ROUND TABLE: Toxicology for Health in the United Nations Sustainable Development Goals

**Chairs Richard Brown¹, Dorota Jarosinska²**  
1World Health Organization HQ, Switzerland, 2WHO Regional Office for Europe, WHO European Centre for Environment and Health, Germany

**Panelists:** Sameeh Mansour¹, Salmaan H. Inayat-Hussain², Claudio Colosio³, Cherylynn Wium⁴, Arina du Plessis⁴, Bob Diderich⁵, Emanuela Corsini⁶  
1National Research Centre, Egypt, 2Petronas, Malaysia, 3International Centre for Rural Health, Italy, ¹Tygerberg Poison Information Centre, South Africa, 5Environment Directorate, Organisation for Economic Co-operation and Development (OECD), 6International Union of Toxicology (IUTOX)

In 2015, countries in the United Nations adopted a set of goals for the next 15 years, which are the backbone of the 2030 Sustainable Development agenda. These Sustainable Development Goals (SDGs) include several targets, which directly relate to chemicals and health, including targets on reducing health impacts of hazardous chemicals and poisoning (target 3.9), sound management of chemicals through the life-cycle (12.4) and chemicals in water (6.3). In addition to the targets specific for chemicals, toxicology can also contribute towards achieving other SDGs, such as the goals relating to food production, working conditions, innovation (environmentally sound technologies) and waste management in cities.

This Round Table discussion will feature different perspectives on how toxicology can contribute to the wider SDG agenda. The Round Table participants will bring together views of different sectors and stakeholders. They will represent academia, industry (petrochemical sector), occupational health (agricultural sector), a poisons centre, an international organization and a professional society.

The Round Table aims to frame developments in toxicology, such as those presented in the Congress, in the wider context of contributing to the Sustainable Development agenda.

### 14:15-15:00

**Closing Ceremony**
1. **Air Pollution in Novi Sad (Serbia) – Long-term Level of Benzene (2011-2017)**
   
   Ljilja Torović¹,², Stanka Bobić², Milan Jovanović², Maja Ćirković², Nataša Dragić¹,², Emil Živadinović², Sanja Bijelović¹,²
   
   ¹Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia, ²Institute of Public Health of Vojvodina, Novi Sad, Serbia

2. **Comparison of Methods for Determination of Sulphur Dioxide Concentrations in Ambient Air**
   
   Nenad Petrović
   
   Public Health Department in Cuprija, Serbia

3. **Inflammatory Response Modulation of Human Airway 3D-model Depending on the PM’s Chemical Composition**
   
   Khaled Boukerma, Emeline Seurat, Sophie Achard
   
   Université Paris Descartes, Faculté de Pharmacie de Paris, EA 4064 “Impact des pollutions sur la santé”, Paris, France

4. **Development of an Alternative Method to Evaluate In Vitro Skin Sensitisation Potency of Chemicals**
   
   A. Buzzella¹,², R. Vicini², G. Mazzini¹,³, C. Angelinetta², O. Pastoris¹
   
   ¹Department of Biology and Biotechnology ‘L. Spallanzani’, University of Pavia, Pavia (Italy), ²Bio Basic Europe S.r.l., Pavia, (Italy), ³Institute of Molecular Genetics (IGM-CNR)

5. **An Innovative Approach for Evaluating the Safety of Cosmetic Products Through a Combination of in vitro and in vivo Methods**
   
   Riccardo Vicini¹, Alice Buzzella¹,², Giuliano Mazzini³, Claudio Angelinetta¹, Eliana Regola¹, Fernando Bianchi², Ornella Pastoris²
   
   ¹Bio Basic Europe S.r.l., Milan, Italy; ²Dpt. of Biology and Biotechnologies, University of Pavia, Italy; ³Institute of Molecular Genetics, CNR, Pavia, Italy
6. Development of a Full-thickness 3D Autologous Skin Equivalent Model to Determine Immunogenicity of Therapeutics
Asif S. Tulah, Shaheda S. Ahmed, Anne M. Dickinson
Alcyomics Ltd, Newcastle upon Tyne, United Kingdom

7. Ecotoxicity Assessment of Waste Hazard Using Clutches of the Mollusk Lymnaea stagnalis
Boris Olga, Ilyukova Irina, Shevtsova Svetlana
Republican unitary enterprise «Scientific and practical centre of hygiene», Minsk, Belarus

ANALYTICS IN TOXICOLOGY

Tatjana Ćebović¹, Vesna Kilibarda², Snežana Đorđević³
¹Faculty of Medicine Novi Sad, Clinical centre of Vojvodina, Novi Sad, Serbia; ²Military Medical Academy, Poison Control Centre, Belgrade, Serbia

9. Determination of Carbamazepine Concentration in Serum – Comparison of Methods
Milanka Ljubenovic¹, Vladan Cosic¹, Jasna Lalic¹, Svetlana Stojiljkovic¹, Maja Vujovic², Biljana Milosavljević², Bojan Ljubenovic³
¹Centre of medical biochemistry, Clinical Centre Nis, Serbia, ²Laboratory of toxicology, Institute of Forensic Medicine, Nis, Serbia, ³Faculty of medicine, University of Nis, Serbia

10. The Analysis on Physicochemical Parameters to Evaluate the Water Quality of Wellspring at Mountain Kukavica Exploited for Drinking
Tomislav Tosti¹, Bojan Nikolic², Radoslav Daljevic³, Katarina Karljikovic Rajic²
¹University of Belgrade Faculty of Chemistry-Department of Analytical Chemistry, ²University of Belgrade Faculty of Pharmacy-Department of Analytical Chemistry, ³Institute of general and physical chemistry, Belgrade, Republic of Serbia

Tanja Živković Semren, Irena Brčić Karačonji, Andreja Jurić, Blanka Tariba Lovaković, Nataša Brajenović, Alica Pizent
Analytical Toxicology and Mineral Metabolism Unit, Institute for Medical Research and Occupational Health, Zagreb, Croatia
12. Identification of Synthetic Cannabinoid MMB CHMICA in “Spice-like” Herbal Mixture: Update of the Serbian Situation for the October 2017
Vera Lukić1, Ružica Micić2*, Tatjana Verbić3, Anja Jokić2
1Institute of Forensic Medicine, Faculty of Medicine, University of Belgrade, 2Faculty of Science and Mathematics, University of Priština, Kosovska Mitrovica, 3Faculty of Chemistry, University of Belgrade, Belgrade

13. Ion Chromatography for the Determination of Chlorites in Drinking Water
Vesna Milutinović, Sežana Vukčević
Institute of Public Health, Belgrade, Bulevar despota Stefana 54a, 11000 Belgrade, Serbia

Gordana Brajković1, Snežana Đorđević1,2, Jasmina Jović-Stošić1,2, Vesna Kilibarda1,2, Zorica Brajković3, Snežana Bojović1, Slavica Vučinić1,2
1National Poison Control Centre, Military Medical Academy, Belgrade, Serbia, 2Medical Faculty, Military Medical Academy, Ministry of Defence, 3School of Medicine University of Belgrade, Belgrade, Serbia

BIOMONITORING AND BIOMARKERS

15. Distribution of Environmental Lead in Brown Bear Body Compartments
Maja Lazarus1, Tatjana Orct1, Slaven Reljić2, Jasna Jurasović1, Đuro Huber2
1Analytical Toxicology and Mineral Metabolism Unit, Institute for Medical Research and Occupational Health, 2Department of Biology, Faculty of Veterinary Medicine, University of Zagreb, Zagreb, Croatia

16. Ten Years of Human Biomonitoring of Environmental Chemicals in Canada
Julie Yome, Annie St-Amand
Healthy Environments and Consumer Safety Branch, Health Canada. 269 Laurier Ave. W, Ottawa, Ontario, Canada, K1A 0K9

17. Mercury in Hares (Lepus europaeus Pallas) Collected in the Vicinity of the Natural Gas Treatment Plant in Northern Croatia During the Last Ten Years
Andreja Prevendar Crnić, Emil Srebočan
Department of Pharmacology and Toxicology, Faculty of Veterinary Medicine, University of Zagreb, Zagreb, Croatia
18. Can Measurement of Arsenic Concentration be Comparable in Human Buccal Cells, Hair Samples and Urine Samples and Correlate with DNA Damage Assessment with Micronucleus Buccal Cytome Assay?

Simone Brauer¹, Walter Goessler¹, Mirta Milić², Vatroslav Šerić³, Marija Milić³, Ivan Pavičić⁵, Ana Marija Marjanović Ćermak⁶, Stefano Bonassi⁶,⁷, Višnja Oreščanin⁸, Ivana Vinković Vrček⁹

¹Institute for Chemistry, University of Graz, Graz, Austria, ²Mutagenesis Unit, Institute for Medical Research and Occupational Health, Zagreb, Croatia, ³Department of Clinical Laboratory Diagnostics, Osijek University Hospital, Osijek, Croatia, ⁴Faculty of Medicine, University of Osijek, Osijek, Croatia, ⁵Radiation Dosimetry and Radiobiology Unit, Institute for Medical Research and Occupational Health, Zagreb, Croatia, ⁶Unit of Clinical and Molecular Epidemiology, IRCCS San Raffaele Pisana, Rome, Italy, ⁷Department of Human Sciences and Quality of Life Promotion, San Raffaele University, Rome, Italy, ⁸ORESCANIN Ltd., Zagreb, Croatia, ⁹Analytical Toxicology and Mineral Metabolism Unit, Institute for Medical Research and Occupational Health, Zagreb, Croatia

19. Defining the Pesticide Exposome: Characterizing Longitudinal Seasonal and Occupational Trends of Pesticides in House Dust

Breana Bennett¹,², Tomomi Workman¹,², Marissa Smith¹,², William C. Griffith¹,², Beti Thompson³, Elaine M. Faustman¹,²

¹Department of Environmental and Occupational Health Sciences, School of Public Health, University of Washington, Seattle, Washington, USA, ²Institute for Risk Analysis and Risk Communication, University of Washington, Seattle, Washington, USA, ³Public Health Sciences, Fred Hutchinson Cancer Research Center, Seattle, Washington, USA

20. The First National Biomonitoring Study of Environmental Metals

Anita Cvetkovska¹, Biljana Manevska², Fljamure Zekiri-Keka³, Irena Bojadzieva⁴, Elisaveta Stikova⁵

¹,²,³,⁴Public Health Institute of the Republic of Macedonia, ⁵Public Health Institute of the Republic of Macedonia, Medical Faculty, University Sts. Cyril and Methodius

21. Urinary 8-hydroxyl-2′-deoxyguanosine (8-OhdG) Levels of Electronic Cigarette (e-cigarette) Users

Göksel Koç Morgil¹, Awat Abdullah Ali², İsmet Çok³, Onur Kenan UlutAŞ², Edibe Nuruz Bozkurt¹, Yıldırım Cesaretli¹

¹Ministry of Health, General Directorate of Public Health, Department of Consumer Safety and Public Health Laboratories, Toxicology Laboratory, Sihhiye, Ankara, Turkey, ²Gazi University, Faculty of Pharmacy, Department of Toxicology, 06330, Hipodrom, Ankara, Turkey
22. Urinary Excretion of Aflatoxin M1: A Survey

Raul Ortiz-Martinez¹, Ma. Carolina de Luna-Lopez¹, Arturo G. Valdivia-Flores², Teodulo Quezada-Tristan²
1Department of Animal Science. Agricultural Science Center. UAA, 2Department of Veterinary Clinic. Agricultural Science Center, UAA

23. Antigenotoxic Effects of Cinnamic Acid in Diabetic Rats

Hatice Gül Anlar¹, Merve Bacanlı², Tuğbagül Çal¹,³, Sevtap Aydın², Nuray Arı⁴, Ülkü Ündeğer Bucurgat², Arif Ahmet Başaran⁵, Ayşe Nurşen Başaran²
1Bülent Ecevit University Faculty of Pharmacy Department of Pharmaceutical Toxicology 67600 Zonguldak, Turkey, 2Hacettepe University Faculty of Pharmacy Department of Pharmaceutical Toxicology 06100 Ankara, Turkey, 3Karadeniz Technical University Faculty of Pharmacy Department of Pharmaceutical Toxicology 61080 Trabzon, Turkey, 4Ankara University Faculty of Pharmacy Department of Pharmacology 06100 Ankara, Turkey, 5Hacettepe University Faculty of Pharmacy Department of Pharmacognosy 06100 Ankara, Turkey

24. Estrogen Receptor Antagonists as a Target for Treatment of Estrogen-Induced Carcinogenesis

Elif Ince¹, Alev Tascioglu¹, Ozlem Oztürk-Ceylan², Sibel Suzen², Hande Gurer-Orhan¹
1Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Ege University, Izmir, Turkey, 2Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Ankara University, Ankara, Turkey

25. Oxidative Stress and DNA Damage Caused by Helicobacter Pylori in Human Gastric Adenocarcinoma Cells

Didem Oral¹, Gizem Ozkemahlı¹,², Unzile Sur¹,³, Belma Kocer-Gumusel¹, Pınar Erkekoglu¹
¹Hacettepe University, Faculty of Pharmacy, Department of Toxicology, 06100 Ankara, Turkey, ²Erzincan University, Faculty of Pharmacy, Department of Toxicology, Erzincan, Turkey, ³Atatürk University, Faculty of Pharmacy, Department of Toxicology, Erzurum, Turkey

26. Role of Circadian Regulated Gene Expression in Mutagenesis and Carcinogenesis

Helmut Zarbl, Howard Kipen, Mingzhu Fang
Environmental and Occupational Health Sciences Institute. Rutgers University. Piscataway, New Jersey, U.S.A. 08854
27. Severe Benzodiazepine Poisoning in Elderly – A Case Report

Natasa Perkovic Vukcevic¹, Gordana Vukovic Ercegovic¹, Vesna Mijatovic², Olivera Potrebic¹, Snezana R Jankovic³, Zivanovic Dragan¹, Jasmina Jovic Stosic¹

¹National Poison Control Centre, Military Medical Academy, Belgrade, Serbia, ²Department of Pharmacology, Toxicology and Clinical Pharmacology, Faculty of Medicine, University of Novi Sad, Serbia, ³Institute for Scientific Information, Military Medical Academy, Belgrade, Serbia

28. Society Transition and Trends of Acute Poisonings in Republic of Macedonia

Niko Bekjarovski, Daniela Chaparoska, Zhanina Perevska, Natasha Simonovska, Irena Jurukov, Aleksandra Babulovska

University clinic for toxicology, University campus “Mother Theresa” Skopje, Macedonia

29. Molecular Dynamics Simulation of Novel, Dual-binding AchE Inhibitors

Ilija N. Cvjetić¹, Aleksandra R. Božić², Aleksandar D. Marinković², Milica M. Karanac³, Tamara Vujatović⁴, Maja D. Vitorović-Todorović⁵

¹Innovation Center of the Faculty of Chemistry, University of Belgrade, Serbia; ²Faculty of Technology and Metallurgy, University of Belgrade, Serbia; ³Innovation Center of the Faculty of Technology and Metallurgy, University of Belgrade, Serbia; ⁴University of Belgrade, Faculty of Chemistry, Serbia; ⁵Military – Technical Institute, Belgrade, Serbia

30. A Systems Biology Approach to Discovery the Mechanism of Regulation of Repetitive Prophylaxis of Stable Iodide on Sodium/Iodide Symporter (NIS)

David P.A. Cohen¹, Dalila Lebsir¹, Karine Tack¹, Marc Benderitter², Maâmar Souidi³

¹Institut de Radioprotection et de Sûreté Nucléaire (IRSN), PSE-Santé/SESANE/LRTOX, 92262 Fontenay-aux-Roses, France, ²Institut de Radioprotection et de Sûreté Nucléaire (IRSN), PSE-Santé/SESAME, 92262 Fontenay-aux-Roses, France

31. In Silico Methods to Predict the Toxicity of Mixtures: Current Status and Future Directions

Mark Cronin, Steve Enoch, James Firman, Judith Madden, Samuel Belfield

School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Byrom Street, Liverpool L3 3AF, England
32. **Phthalates (diethylhexyl phthalate (DEHP) and dibutyl phthalate (DBP)) and Obesity: a Toxicogenomics Approach**
   *Katarina Baralić¹, Dragica Jorgovanović¹, Danyel Jennen², Danijela Đukić-Ćosić¹*
   ¹Department of Toxicology “Academic Danilo Soldatović”, University of Belgrade – Faculty of Pharmacy, Serbia, ²Department of Toxicogenomics, Maastricht University, The Netherlands

33. **Effect of Low Oral Cadmium Exposure During Pregnancy on Steroid Hormones in Mother Rats and Female Offsprings**
   *Anja Mikolić, Martina Piasek, Tatjana Orct, Antonija Sulimanec Grgec, Ljerka Prester, Jasna Jurasović*
   Institute for Medical Research and Occupational Health, Zagreb, Croatia

34. **Determination of Phthalates in Toys**
   *Marija Stanković, Ana Stanisavljev, Anka Cvetković, Nenad Vuković*
   Institute for Public Health, Bulevar Despota Stefana 54a, Belgrade

35. **Do Biflavonoid Constituents of St. John’s Wort Have Endocrine Modulating Effects?**
   *Alev Tascioglu, Senem Ozcan Sezer, Duysal Uslu, Elif Ince, Hande Gurer-Orhan*
   Ege University, Faculty of Pharmacy, Pharmaceutical Toxicology Department, Izmir/Turkey

36. **Current Status of Public Awareness About Endocrine Disrupting Chemicals in Slovenia**
   *Lucija Kolar¹,² Igor Muršec²*
   ¹Complementarium, Institute for Environmental Technologies and Research of Nature (CMP Lopata), Lopata 60, SI-3000 Celje, Slovenia, ²Environmental Protection College, Trg mladosti 7, SI-3320 Velenje, Slovenia

37. **Teratogenic and Embryotoxic Effects of Diisononyl Phthalate**
   *Hrynchak Vitali, Sychik Sergei, Il’yukova Irina*
   Republican unitary enterprise «Scientific practical centre of hygiene», Academic 8, Minsk, Belarus

38. **In vitro Estimation of Bisphenol S Toxicity**
   *Maja Milanović¹, Dragana Četojević-Simini², Nataša Milošević¹, Milica Medić Stojanoska², Nataša Milić³*
   ¹University of Novi Sad, Faculty of Medicine, Department of Pharmacy, Novi Sad, Serbia, ²University of Novi Sad, Faculty of Medicine, Experimental Oncology Department, Oncology Institute of Vojvodina, Sremska Kamenica, Serbia, ³University of Novi Sad, Faculty of Medicine, Clinic for Endocrinology, Diabetes and Metabolic Diseases, Clinical Center of Vojvodina, Novi Sad, Serbia
39. Levels of Bisphenol-A in Thermal Paper Receipts from Serbia and Greece
Milan Milenković1,2, Tatjana Nedeljković1, Zorica Blagojević1
1Institute of Public Health of Serbia “Dr Milan Jovanović Batut”, 2University of Belgrade-
Faculty of Pharmacy

40. Changes in the Oocyte Integrity and Bone Marrow Induced by
3-Methylcholanthrene and Prevented by α-Naphthoflavone
Rhon-Calderón EA1, Galarza RA1,2, Zurita S1, Faletti AG1,2
1Universidad de Buenos Aires, Consejo Nacional de Investigaciones Científicas y Técnicas
(CONICET), Centros de Estudios Farmacológicos y Botánicos (CEFYBO), Facultad de
Medicina, Buenos Aires-Argentina, 2Universidad de Buenos Aires, Facultad de Medicina,
Dto. De Toxicología y Farmacología, Buenos Aires-Argentina

41. Resveratrol Inhibits Ovary Cells Proliferation Induced by Low Doses of
Polychlorinated Biphenyls
Marina Miletić, Teuta Murati, Sanja Marđetko, Ivana Kmetić
Laboratory for Toxicology, Faculty of Food Technology and Biotechnology, University of
Zagreb, Pierotti St 6, 10000 Zagreb, Croatia

42. Biochemical Disturbances in Testes of Albino Rats with Metabolic Syndrome
Induced in Prepubertal Age and Metformin Treatment
Oleksandr Tkachenko, Ganna Shayakhmetova, Alla Voronina, Valentina Kovalenko
SI “Institute of Pharmacology & Toxicology of NAMS of Ukraine”, Kiev

43. Multi-element Profile of Wines from Fruska Gora (Vojvodina)
Danijela Lukić1, Milan Jovanović1, Ivana Beara2, Ljilja Torović1,3
1Institute of Public Health of Vojvodina, Novi Sad, Serbia, 2Department of Chemistry,
Biochemistry and Environmental Protection, University of Novi Sad Faculty of Sciences, Novi Sad,
Serbia, 3Department of Pharmacy, University of Novi Sad Faculty of Medicine, Novi Sad, Serbia

44. Investigation of Toxic Metals, Nitrate and Nitrite in the Commercial Packed
Drinking Water in Mashhad, Northeastern Iran
Seyed Reza Mousavi, Mahdi Balali Mood, Sam Elmi, Mahmood Sadeghi, Monavar
Afzalaghaee, Bamdad Riahi Zanjani
Medical Toxicology Research Centre, Mashhad University of Medical Sciences,
Mashhad, Iran
45. Food Additives in Food Intended for Children in the Republic of Srpska Market
   Ljubica Bojanić1,2, Miodrag Marjanović1, Mirjana Đermanović1,2, Zorica Jusupović1, Janja Bojanić1,2
   1Public Health Institute of Republic of Srpska, 2Medical Faculty, University of Banja Luka

46. Dietary Exposure to Mycotoxins Through Ready-to-eat Food Consumption
   Guillermina Font1, Dionisia Carballo2, Emilia Ferrer1, Houda Berrada1
   1Laboratory of Food Chemistry and Toxicology, Faculty of Pharmacy, University of Valencia, Spain, 2Faculty of Agricultural Science, National University of Asunción, Paraguay

47. Investigation of the Relative Hepatotoxic and Genotoxic Potency of Selected Pyrrolizidine Alkaloids
   Lan Gao, Lukas Rutz, Karl-Heinz Merz, Dieter Schrenk
   Food Chemistry and Toxicology, University of Kaiserslautern, 67663 Kaiserslautern, Germany

48. Human Intervention Trial with Strawberry Tree (Arbutus unedo L.) Honey:
   Impact on DNA Stability and Haematological Parameters
   Andreja Jurič1, Marin Mladinić2, Davor Želježić1, Marija Pezer3, Mirjana Turkalj1, Karlo Jurica5, Nevenka Kopjar1, Irena Brčić Karačonji1
   1Institute for Medical Research and Occupational Health, Zagreb, Croatia, 2Xellia Ltd, Zagreb, Croatia, 3Genos Ltd, Zagreb, Croatia, 4Srebrnjak Children's Hospital, Zagreb, Croatia, 5Ministry of the Interior, Zagreb, Croatia

49. Monitoring of Metals and Metalloids in Samples of Plastic Food Packaging
   During 2013-2017
   Ž. Ljubičić1, B. Antonijević2, N. Zec Petković1
   1Institute of Public Health Sremska Mitrovica, Sremska Mitrovica, Serbia, 2Department of Toxicology “Akademik Danilo Soldatovic”, Faculty of Pharmacy, University of Belgrade, Serbia

50. Safety Assessment of the Extracts of Overground Part of Hedychium Coronarium Koenig in SD rats
   Ling-Shan Tse1, Po-Lin Liao1, Jiunn-Wang Liao2, Jaw-Jou Kang2, Yu-Wen Cheng1*
   1School of Pharmacy, College of Pharmacy, Taipei Medical University, Taipei, Taiwan, R.O.C, 2School of Pharmaceutical Science, National Tang Ming University, Taipei, Taiwan, R.O.C, 3Graduate Institute of Veterinary Pathobiology, National Chung Hsing University, Taichung, Taiwan, R.O.C
**GENERAL TOXICOLOGY**

51. Carbamate Derivatives of Short-acting Bronchodilator Albuterol Inhibits Human Acetylcholinesterase and Butyrylcholinesterase
   
   *Anita Bosak*, *Anamarija Knežević*, *Katarina Zlatić*, *Robert Kerep*, *Zrinka Kovarik*
   
   1Institute for Medical Research and Occupational Health, Zagreb, 2Ruđer Bošković Institute, Zagreb

52. Exposure to Exhaust Gas and Changes in Liver Functions, Biomarkers of Oxidative Stress and Heavy Metals in Automobile Workers
   
   *Augusta Nsonwu-Anyanwu*, *Sunday Offor*, *Edmund Egbe*, *Chinyere Usoro*
   
   1Department of Medical Laboratory Science, University of Calabar, Cross River State, Nigeria

53. Mutagenicity Study of Generic Insecticides Lambda Cyhalothrin in the Mammalian In Vivo Micronucleus Test
   
   *Tetiana Tkachuk*, *Mykola Prodanchuk*, *Nadiiya Nedopytanska*, *Oleksandr Kravchuk*, *Volodymyr Bubalo*, *Oleksander Tkachuk*, *Olena Zubko*, *Olena Kostik*
   
   L. I. Medved’s Research Center of Preventive Toxicology, Food and Chemical Safety MH, Kiev, Ukraine

54. Isolation and Characterization, Anticarcinogenic and Apoptotic Effects of Humic Acid
   
   *Ayse Demir Aktas*, *Sultan Mehtap Buyuker*, *Derya Ozsavci*, *Ozlem Bingol Ozakpinar*
   
   1Department of Biochemistry, School of Pharmacy, Marmara University, Istanbul, Turkey, 2Department of Pharmacy Services, Vocational School of Health Service, Uskudar University, Turkey

**HERBAL PRODUCTS**

55. Effect of Myrtenal on Social Behavior and Memory of Rats
   
   *Stela Dragomanova*, *Radoslav Klisurov*, *Marieta Georgieva*, *Maria Lazarova*, *Christophor Dishovsky*, *Reni Kalfin*, *Lyubka Tancheva*
   
   1Institute of Neurobiology, Bulgarian Academy of Sciences, Acad. Georgi Bonchev Str., Block 23, Sofia 1113, Bulgaria; 2Medical University of Varna, 55 Marin Drinov Str., Varna 9002, Bulgaria; 3Medical University of Sofia, 2 Zdrave str, Sofia 1000, Bulgaria; 4Weston Visiting Professor of Weizmann Institute of Science, Israel
**Ana Valenta Šobot, Jelena Filipović Tričković, Dunja Drakulić**  
Vinča Institute of Nuclear Sciences, University of Belgrade, Mike Petrovica Alasa 12-14, 11001 Belgrade, Serbia

57. Effects of Commercially Available Dietary Supplement Based on Soybean Extract (*Glycine max. L.*) on Hepatic and Renal Function and Clinically Relevant Interactions with Conventional Drugs  
**Jelena Hogervorst¹, Aleksandar Rašković², Milan Ubavić², Ana Tomas², Bojana Gaćeša¹, Vladan Borčić², Nebojša Stilinović²**  
¹Department of Pharmacy, Faculty of Medicine, University of Novi Sad, ²Department of Pharmacology, toxicology and clinical pharmacology, Faculty of Medicine, University of Novi Sad

58. Protective Effect of Ellagic Acid on 6-Hydroxydopamine Hemistriatal Intoxication  
**Andrey Popatanasov¹, Lyubka Tancheva¹, Maria Lazarova¹, Stela Dragomanova¹, Albena Aleksandrova¹, Elina Tsvetanova¹, Almira Georgieva¹, Reni Kalfin¹**  
¹Institute of Neurobiology, Bulgarian Academy of Sciences, ²Faculty of Pharmacy, Department of Pharmacology, Toxicology and Pharmacotherapy, Medical University of Varna

59. Oral Acute Toxicity of Candlenut Seeds (*Aleurites moluccana*) in Rats  
**Dennis Olivares¹, Nicolás Cáceres¹, Maria Fernanda Cavieres¹**  
¹Facultad de Farmacia, Universidad de Valparaíso, Valparaíso, Chile

60. Does Ursolic Acid Protect The Kidneys of Diabetic Rats from the Oxidative Stress?  
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**Bojana Petrović¹, Vesna Matović², Predrag Vukomanović¹, Veljko Todorović³**

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**Aleksandar Vidaković¹, Bojana Petrović², Predrag Vukomanović², Milica Nikolić³, Slavoljub Jović³, Veljko Todorović⁴**

¹Serbian Institute of Occupational Health “Dr Dragomir Karajović”, ²Medical Sanitary School of Applied Sciences “Visan”, Belgrade, Serbia, ³Faculty of Veterinary Medicine University of Belgrade, Serbia, ⁴Military Medical Academy

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**Vesna Matović¹, Bojana Petrović², Predrag Vukomanović²**

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**Kate Balm², Linda Curling², Catharina du Plessis¹, Carine Marks¹, Farahnaz Mohamed², Cindy Stephen², Cherylynn Wium¹**

¹TPIC, Division Clinical Pharmacology, Stellenbosch University, Cape Town, South Africa ²RXHPIC, Department of Paediatrics and Child Health, Red Cross War Memorial Children’s Hospital, Cape Town, South Africa

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**Dragan Joksović¹, Vesna Matović², Bojana Petrović³, Predrag Vukomanovic³, Slavoljub Jović⁴, Milica Nikolić⁴, Saša Ivanović⁴**

¹Military Medical Academy, ²Faculty of Pharmacy, University of Belgrade, ³Medical Sanitary School of Applied Sciences “Visan”, Belgrade, Serbia, ⁴Faculty of Veterinary Medicine University of Belgrade, Serbia
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70. Paracelsus - the Founder of Toxicology Science
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1Department of Toxicology “Academic Danilo Soldatović”, University of Belgrade-Faculty of Pharmacy, 2Institute of Neurotoxicology & Neurological Disorders, Washington

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1Department of Toxicology “Academic Danilo Soldatović”, University of Belgrade-Faculty of Pharmacy, 2National Library of Medicine, Washington

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National Poison Control Centre, Military Medical Academy, Belgrade, Serbia

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1Medical Sanitary School of Applied Sciences, “Visan”, Belgrade, Serbia

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1Institute of Public health, Medical Faculty, Sts. Cyril and Methodius University, 2POPs Unit, MOEPP Macedonia, 3MANEKO Solutions, 4Institute of Chemistry, Faculty of Science, Sts. Cyril and Methodius University

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¹National Institute of Public Health, ²Administration of the republic of Slovenia for food safety, veterinary and plant protection

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*Shaheda Ahmed², Louis Bibby¹, Anne Dickinson¹²*  
¹Institute of Cellular Medicine, Newcastle University, Framlington Place, Newcastle upon Tyne, United Kingdom NE2 4HH, ²Alcyomics LTD, Bulman House, Regent Centre, Gosforth, Newcastle upon Tyne, United Kingdom, NE3 3LSC

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*Carolina Campos Estrada¹², Benjamin Riquelme¹, Maria Fernanda Cavieres¹²*  
¹Escuela de Química y Farmacia, Facultad de Farmacia, Universidad de Valparaíso, Valparaiso, Chile, ²Centro de Investigación Farmacopea Chilena, Universidad de Valparaíso, Valparaiso, Chile

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¹Department of Immunology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran, ²Shefa Neuroscience Research Center, Khatam Al-Anbia Hospital, Tehran, Iran
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¹Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Istanbul University, 34116-Beyazit, Istanbul, Turkey

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¹Department of Pharmaceutical Toxicology, Faculty of Pharmacy, University of Hacettepe, 06100, Ankara, Turkey

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Sevtap Aydınl¹, Merve Becit¹, Arif Ahmet Başaran², Nursen Başaran¹  
¹Department of Pharmaceutical Toxicology, Faculty of Pharmacy, University of Hacettepe, 06100, Ankara, Turkey, ²Department of Pharmacognosy, Faculty of Pharmacy, University of Hacettepe, 06100, Ankara, Turkey

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¹Laboratory for Molecular Ecotoxicology, Division for Marine and Environmental Research, Ruđer Bošković Institute, Bijenička cesta 54, Zagreb, Croatia

98. **Biological Responses to Hybrid Fe-Si Nanoparticles in Caco2 Cells**  
Mihaela Balas¹, Florian Dumitrache², Madalina Andreea Badea¹, Andreea Luminita Radulescu¹, Claudiu Fleaca², Claudiu Locovei², Eugenia Vasile²,³, Anca Dinischiotu¹  
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¹Laboratory of Environmental Toxicology, National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, Tallinn 12618, Estonia
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102. Oxidative Stress and Antioxidative Defense Parameters in Female Workers Exposed to Volatile Organic Compounds
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103. Influence of Hypothyroidism on Testicular Mitochondrial Oxidative Stress by Activating the p38MAPK and JNK Signaling Pathways in Rats
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104. Influence of Chelation Therapy on Oxidative Stress Parameters in Occupationally Lead Exposed Workers
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2 Marmara University, School of Medicine, Department of Emergency, Istanbul, Turkey

106. Lead Levels in the Food and its Biological Derivatives in Turkey A Meta-Analysis Study

Ezgi Talo1, Neslihan Şahin1, Sinan Karacabey 1,2, Ahmet Aydin1

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2 Marmara University, School of Medicine, Department of Emergency, Istanbul, Turkey

107. Selected Effects of in ovo Aluminium Exposure on Developing Nile Crocodiles

J. Christoff Truter1, Johannes H van Wyk2, Natalia Garcia-Reyero Vinas3, Jan G Myburgh4, Anna-Maria Botha1

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108. Evidence of Immunomodulatory Properties of Cadmium; is Oxidative Stress Involved

Milena Anđelković1,2, Dragana Javorac2, Katarina Baralić2, Evica Antonijević2, Aleksandra Buha Đorđević2, Vesna Matović2, Zorica Bulat2

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109. Heavy Metals Blood Level in Tobacco Smokers

Aleksandra Repić1,2, Zorica Bulat2, Vesna Matović2

1 Serbian Institute for Occupational Health “Dr Dragomir Karajović”, Belgrade, Serbia,
2 University of Belgrade – Faculty of Pharmacy, Department of Toxicology “Akademik Danilo Soldatović”, Belgrade, Serbia

110. Reduction of PARK2 Expression among Smelting Workers Exposed to Manganese (Mn)

Wei Zheng1, Ximin Fan2, Wendy Jiang1, and Qiyuan Fan2,3

1 School of Health Sciences, Purdue University, West Lafayette, IN, United States; 2 School of Public Health, Zunyi Medical College, Zunyi, Guizhou, China; 3 Department of Health Management, Zunyi Medical and Pharmaceutical College, Zunyi, Guizhou, China
111. Measurement of Arsenic, Arsenic Species and Other Elements in Urine, Drinking Water and Hair Samples- Screening of the Situation in Eastern Croatia

Walter Goessler1, Simone Brauer1, Mirta Milić2, Vatroslav Šerić3,4, Marija Milić3,4, Ivan Pavičić5, Ana Marija Marjanović Ćermak5, Stefano Bonassi6,7, Višnja Oreščanin8, Ivana Vinković Vrček9

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112. The Influence of pH on the Removal of As³⁺ from Aqueous Solutions with Acid-activated Clay Modified with Sodium Carboxymethyl Cellulose

Vojkan Miljković1, Milan Jokanović1, Maja Vujović1, Maja Stanković2, Aleksandra Pavlović2

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113. Manganese-induced Brain Mitochondrial Dysfunction is Associated with Impaired Motor Functions in Rats: Protection with Nutrient Metal Mixture Supplementation

Chand Basha Davuljigari1, Katari Sudheer2, Umamaheswari Amineni2, Sreenivasulu Reddy Motireddy1, Rajarami Reddy Gottipolu1

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114. The Removal of Ni²⁺ and Cd²⁺ -ions onto Synthetic Mineral Based Composite Functionalized by Polyethylenimine

Nina N. Obradović1, Jelena D. Rusmirović2, Darko A. Kosanović1, Maja B. Đolić2, Ana L. Popović2, Vladimir B. Pavlović2, Aleksandar D. Marinković3

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115. Oleic Acid Double Coated Iron Oxide Nanoparticles as New Relevant Biocompatible Nanoparticles with a Particular Mechanism of Activity
Elena-Alina Moacă¹, Dorina Coricovac¹, Cristina Dehelean¹, Cornelia Păcurariu²
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116. Effects of Silver Nanoparticles on Neurodevelopment Using C57BL/6 and A/J Primary 3D Organotypic Mouse Midbrain Cultures
Brittany A. Weldon¹,² and Julie JuYoung Park¹,², Sungwoo Hong¹,², Tomomi Workman¹,², Russell Dills², Ji Hyun Lee², William C. Griffith¹,², Terrance J. Kavanagh², and Elaine M. Faustman¹,²
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117. Impact of Sample Preparation of MWCNT for Developmental Toxicity by Intratracheal Instillation
Akihiko Hirose ¹, Motoko Hojo ², Norihiro Kobayashi ¹
¹National Institute of Health Sciences, ²Tokyo Metropolitan Institute of Public Health

118. Demonstration of the Uptake of Gold Nanoparticles Using CytoViva Technology and Transmission Electron Microscopy
Melissa Vetten¹,², Mary Gulumian¹,²
¹National Institute for Occupational Health, South Africa, ²University of the Witwatersrand, South Africa

119. Interference of Gold Nanoparticles (AuNPs) in Molecular Biology Assay Systems
Natasha Sanabria¹, Mary Gulumian¹,²
¹National institute for Occupational Health, ²University of the Witwatersrand, Johannesburg South Africa

120. Antitumoral Activity of MTX-II, a Basic Myotoxic Phospholipases A2, Isolated from Bothrops asper Snake Venom from Panama
Aristides Quintero¹,², Sulamita S. Setúbal ³,⁴, Leonardo A. Calderón³,⁴, Rodrigo G. Stábeli³,⁴, Juliana P. Zuliani³,⁴, Andreimar M. Soares³,⁴
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121. Development and Application of Method for Analysis of Ochratoxin A in Grapes
Bojana Špirović Trifunović¹, Ljilja Torović³, Vojislava Bursić⁴ Dragica Brkić¹, Sanja Lazić⁴, Gorica Vuković¹,²
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122. The First Report on Ochratoxin A Concentrations in the Kidneys of the European Brown Bear (Ursus arctos L.)
Dubravka Rašić¹, Maja Lazarus², Đuro Huber³, Slaven Reljić³ and Maja Peraica¹
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123. Correlation Between Na+/K+ ATPase Isoforms and the In Vitro Cells Sensitivity to the Algal Toxin Palytoxin
Marco Pelin, Valentina Brovedani, Chiara Florio, Silvio Sosa, Aurelia Tubaro
Dept. of Life Sciences, University of Trieste, 34127 Trieste, Italy

124. Devil’s Trumpet: Beautiful danger
Marko Antunović, Jelena Džudovć¹, Zorica Bulat², Snežana Đorđević¹, Vesna Matović², Vesna Kilibarda¹
¹National Poison Control Centre, Military Medical Academy, Belgrade, ²Faculty of Pharmacy, University of Belgrade
125. CAR-mediated Expression of CYP2B1 in Primary Rat Hepatocytes After Isolation by Means of EDTA Perfusion

Marc Wollenweber¹, Dunja Dimitrijevic¹, Bennard van Ravenzwaay², Dieter Schrenk³

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²BASF SE, Experimental Toxicology and Ecology, Ludwigshafen am Rhein, Germany

126. Lessons Learned: Altertox Academy Hands-On Trainings in Non Animal Testing

Ilija Prachkovski, Francois Busquet

Altertox Academy

127. New In Vitro Toxicity Pathway-based Bioassays for Toxicity Screening of Chemicals

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128. Effect of Metformin on Doxorubicin Induced Cytotoxicity in Hep2 and Hepg2 Cells

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²Hacettepe University, Faculty of Medicine, Department of Pediatrics, Division of Hematology-Bone Marrow Transplantation Unit, Ankara, Turkey
130. The Effect of Thiamine on Activity of Enzymes (with a special emphasis on MAPK) in the Brain of Japanese Quails Treated with Chlorpyrifos
Dejana Ćupić Miladinović, Sunčica Borozan, Sanja Peković, Sanja Dacić, Danijela Đukić-Ćosić, Vitomir Ćupić, Saša Ivanović
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131. Evaluation of Biocidal Products Enquiries to the Austrian Poisons Information Centre 2015
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132. Place of Oximes in the Management of Acute Poisoning with Cholinesterase Inhibitors: Experience of the Pharmacology Toxicology Department of University Hospital of Oran
Haciba Rezk-kallah, Bilel Chefirat, Sameh Benzerga, Anissa Zergui
1Department of Pharmacology Toxicology, University Hospital of Oran, Algeria, 2Department of Pharmacy, Faculty of Medicine, University of Oran 1, Algeria, 3Environmental Health Research Laboratory, University of Oran 1, Algeria

133. S-metolachlor: Acute and Subacute Effects on Common Carp (Cyprinus carpio L.)
Božidar Rašković, Vesna Poleksić, Gorica Vuković, Dejana Ćupić-Miladinović, Gavrilo Božić, Zoran Marković, Dragica Brkić
1Faculty of Agriculture, University of Belgrade, Belgrade, Serbia, 2Institute of Public Health Belgrade, Belgrade, Serbia, 3Faculty of Veterinary Medicine, University of Belgrade, Belgrade, Serbia

134. Post-exposure Treatment with the Oxime RS194B Rapidly Reactivates Brain Acetylcholinesterase Activity in Mice Exposed to Sarin and VX
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Vedran Mužinić, Davor Želježić
Institute for Medical Research and Occupational Health, Mutagenesis Unit, Zagreb, Croatia

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Milan Jokanović
Faculty of Medicine, University of Nish, Nish, Serbia

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Barbara Nieradko-Iwanick, Andrzej Borzęcki
Chair and Department of Hygiene, Medical University of Lublin

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Seyed Hadi Mousavi1,2, Vafa Baradaran Rahimi2, Vahid Reza Askari2
1Medical Toxicology Research Center, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; 2Department of Pharmacology and Pharmacological Research Center of Medicinal Plant, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

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Popel Alina, Vasilyeva Marina, Yurkevich Elena
Republican Unitary Enterprise «Scientific-Practical Centre of Hygiene», Belarus

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Maja Vujovic1,2, Biljana Milosavljevic2, Jovana Simić2
1University of Niš, Faculty of Medicine, Department of Pharmacy, Toxicology, Serbia, 2Institute of Forensic Medicine Niš, Toxicology Laboratory, Serbia
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Lazar Grahovac¹, Danijela-Đukić Ćosić², Vera Lukić³, Snežana Đorđević⁴, Biljana Antonijević⁵, Marijana Ćurčić²

¹University of Belgrade-Faculty of Pharmacy, PhD student, modul Toxicology, Belgrade, Serbia, ²University of Belgrade-Faculty of Pharmacy, Department of toxicology “Akademik Danilo Soldatović”, Belgrade, Serbia, ³University of Belgrade, Institute of Forensic Medicine “Milovan Milovanovic”, Belgrade, Serbia, ⁴National Poison Control Center, Military Medical Academy, Belgrade, Serbia

142. Can Passive Inhalation of Cannabis Smoke Affect Someone’s Driving Abilities?

Ljubiša Božić, Saša Bovan

Department of theory, sociology and philosophy of law, Faculty of Law, University of Belgrade

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Dragana Stojkov, Branislava Zdrale, Kristina Denic, Vera Lukic

Institute of Forensic Medicine, Faculty of Medicine, University of Belgrade

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Ahmad Ghorbani¹, Gholamreza Nasri², Alireza Fazel³, Mohammad Jafar Golalipour¹, Hossein Haghir²⁴, Hamid Sadeghian⁵, Majid Mojarrad⁴, Mahmoud Hosseinv⁶, Shokouh Shahrokhi Sabzevar⁴, Farimah Beheshti⁷

¹Pharmacological Research Center of Medicinal Plants, Mashhad University of Medical Sciences, Mashhad, Iran; ²Department of Anatomy and Cellular Biology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran; ³Gorgan Congenital Malformations Research Center, Golestan University of Medical Sciences, Gorgan, Iran; ⁴Medical Genetics Research Center, Mashhad University of Medical Sciences, Mashhad, Iran; ⁵Department of Laboratory Sciences, School of Paramedical Sciences, Mashhad University of Medical Sciences, Mashhad, Iran; ⁶Division of Neurocognitive Sciences, Psychiatry and Behavioral Sciences Research Center, Mashhad University of Medical Sciences, Mashhad, Iran; ⁷Department of Basic Science and Neuroscience Research Center, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran

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Branislava Zdrale, Dragana Stojkov, Kristina Denic, Vera Lukic

Institute of Forensic Medicine, Faculty of Medicine, University of Belgrade
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   Ivona Vidić Štrac, Nino Dimitrov, Buga Kovačić, Rina Oliver Grbavec, Bernarda Damianić
   Croatian Institute of Public Health

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   Turgay Celik1, Wells Utembe2, Mary Gulumian2,3
   1School of Computer Science and Applied Mathematics, University of the Witwatersrand, Johannesburg, South Africa, 2Department of Toxicology at the South African National Institute for Occupational Health, South Africa, 3School of Pathology, University of the Witwatersrand, South Africa

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   Aleksandra Buha1, Vesna Milovanovic2, Sasa Jankovic3, Zorica Bulat1, Biljana Antonijevic1, Vesna Matovic1
   1Department of Toxicology “Akademik Danilo Soldatović”, University of Belgrade-Faculty of Pharmacy, Serbia, 2University Children’s Hospital, Belgrade, Serbia, 3Institute of Meat Hygiene and Technology, Belgrade, Serbia

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   Milena Anđelković1,2, Simona Tatović2, Danijela Đukić-Ćosić2, Aleksandra Buha Đorđević2, Vesna Matović2, Zorica Bulat2
   1Health Center Kosovska Mitrovica, 2University of Belgrade – Faculty of Pharmacy, Department of Toxicology “Akademik Danilo Soldatović”

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   Ege Arzuk, Hilmi Orhan
   Ege University, Faculty of Pharmacy, Pharmaceutical Toxicology Department, 35100 Izmir, Turkey
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Hae-Miru Lee, Kyung-Chul Choi

Laboratory of Biochemistry and Immunology, College of Veterinary Medicine, Chungbuk National University, Cheongju, Chungbuk, Republic of Korea

152. Harmful Effects of the Misuse of Diclofenac in the Geriatric Population

Bojana Petrović, Predrag Vukomanović, Saša Ivanović

1 Medical Sanitary School of Applied Sciences “Visan”, Belgrade, Serbia, 3 Faculty of Veterinary Medicine University of Belgrade, Serbia

153. Bile Acid Potentiates Apoptosis of Human Breast Adenocarcinoma Cells Induced by Doxorubicin

Bojan Stanimirović, Karmen Stankov, Nebojša Pavlović, Maja Đanić, G. Bogdanović, Vesna Kojić, Momir Mikov

1 Faculty of Medicine, University of Novi Sad, Novi Sad, Vojvodina, Serbia, 2 Oncology Institute of Vojvodina, Sremska Kamenica, Vojvodina, Serbia

154. Current Issues of Reglamentation of Air Pollution in the Production of Cytotoxic Drugs

Vasilkevich Vadzim, Pavel Liapioshka

Republican unitary enterprise “Scientific Practical Centre of Hygiene”

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Kristina Denic, Branislava Zdrale, Dragana Stojkov, Slobodan Nikolic, Vera Lukic

Institute of Forensic Medicine, Faculty of Medicine, University of Belgrade

156. In Vitro Evaluation of Hepatotoxicity by Amiodarone in Micropatterned Cocultured Hepatocytes (HepatoPac) using Liver-specific Biomarkers

Zsuzsanna Nereda, Roelof de Wilde, Zsuzsanna Gáborik

SOLVO Biotechnology, Budaörs, Hungary

157. Possible Interactions Between Metformin and Cisplatin

A. Zeynep Ünal, Suna Sabuncuoğlu, Kaya FA

1 Hacettepe University, Faculty of Pharmacy, Department of Toxicology, Ankara, Turkey, 2 Hacettepe University, Faculty of Medicine, Department of Pediatrics, Division of Hematology-Bone Marrow Transplantation Unit, Ankara, Turkey
158. Manifestations of Chronic Inhalation Toxicity of Zoledronic Acid  
Yury Sobal, Pavel Liapioshka  
Republican unitary enterprise “Scientific Practical Centre of Hygiene”

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Atefeh Aminian¹,², Shiva Javadi¹, Reza Rahimian¹, Ahmad Reza Dehpour¹, Fahimeh Asadi Amoli³, Payman Moghadas¹, Shahram E. Mehr¹  
¹Department of Pharmacology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran, ²Department of Pharmacology, School of Medicine, Arak University of Medical Sciences, Arak, Iran, ³Department of Pathology, Tehran University of Medical Sciences, Tehran, Iran

160. Hydrocortisone Reduces Vesication by Mechlorethamine In Vivo  
Hemanta C Rao Tumu, Benedette Cuffari, Blase Billack  
Department of Pharmaceutical Sciences, St. John’s University, Jamaica, NY, United States

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Alena Drazdova, Siarhey Sychik, Girina Veranika, Emelianova Olga, Buraya Valiantsina, Firago Anna  
Republican Scientific-Practical Centre of Hygiene, Minsk, Republic of Belarus

162. Features of the Biological Effect of Multicomponent Mixtures Containing Styren  
Bogdanov Ruslan, Bondarenko Ludmila  
Republican unitary enterprise «Scientific Practical Center of Hygiene», Minsk, Belarus

163. Mixture of Cadmium and Decabrominated Diphenyl Ether: Target Tissue Doses and Hepatotoxicity in 28 days Exposed Wistar Rats  
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¹University of Belgrade-Faculty of Pharmacy, Department of toxicology “Akademik Danilo Soldatović”, Belgrade, Serbia, ²Institute of Meat Hygiene and technology, Belgrade, Serbia, ³Clinical Center of Serbia, Laboratory for Medical Biochemistry, Belgrade, Serbia, ⁴Biochemistry Laboratory, Pediatrics Clinic, Belgrade, Serbia, ⁵National Poison Control Center, Military Medical Academy, Belgrade, Serbia
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Abudayyak Mahmoud1,2, Boran Tugce1, Oztas Ezgi1, Tükel Rumeysa1, Özhan Gül1
1Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Istanbul University,
2Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Karadeniz Technical
University

165. A Systematic Review of Assessment Approaches in Pharmacoeconomic
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Eren Ozcaqlı, Ebru Aksan
Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Istanbul University,
Beyazit, 34116, Istanbul, Turkey

166. Cyanide Poisoning Associated with Domestic Violence. A Case Report
Maja Vujović1, Stevan Todorović2, Ivan Stojanović2, Aleksandra Antović2
1University of Nis, Faculty of Medicine, Department of Pharmacy, Toxicology, Serbia,
2University of Nis, Faculty of Medicine, Institute of Forensic Medicine, Serbia

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Dragica Jorgovanović1, Katarina Baralić1, Danyel Jennen2, Danijela Đukić-Ćosić1
1Department of Toxicology “Academic Danilo Soldatović”, University of Belgrade –
Faculty of Pharmacy, Serbia 2Department of Toxicogenomics, Mastricht University, The
Nederlands

168. An Overview of Exposure to Cosmetics/Personal Care Products in Children: the
Experience of the Institute for Mather and Child Healthcare “Dr Vukan Ćupić”,
Belgrade, Serbia
Snežana Ristić1, Vesna Matović2, Danijela Đukić-Ćosić2
1Institute for Mather and Child Healthcare “Dr Vukan Ćupić”, Belgrade, Serbia
2Department of Toxicology “Academic Danilo Soldatović”, University of Belgrade –
Faculty of Pharmacy, Serbia

169. The Assessment of Potential Toxic Chemicals Present in Water From Springs
And Wells In Gorobilje, Zlatibor District
Tomislav Tosti1, Katarina Karljiković-Rajić2, Nikola Horvacki1
1Faculty of Chemistry University of Belgrade, 2Faculty of Pharmacy University of
Belgrade
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Tom Widger
Durham University, Department of Anthropology, University of Durham, South Road, Durham, DH1 3LE, United Kingdom

171. Macrolides – Monitoring in Surface Water by LC-ESI-MS/MS and In Silico Prediction of ADMET Parameters Relevant to Ecotoxicity

Milena Jadrijević-Mladar Takač¹, Irena Žuntar¹, Adela Krivohlavek², Tin Takač³
¹Faculty of Pharmacy and Biochemistry, University of Zagreb, A. Kovačića 1, Zagreb, Croatia, ²Andrija Stampar Teaching Institute of Public Health, Mirogojska 16, Zagreb, Croatia, ³Faculty of Chemical Engineering and Technology, University of Zagreb, Marulićev trg 19, Zagreb, Croatia

172. Possible Radical Scavenging and Antioxidant Activities of New Class Norcantharimide Derivatives

Gözde Girgin¹, Saziye Sezin Palabiyik², Suna Sabuncuoglu¹, Ayse Tan³, Özlem Gündogdu³, Nurhan Kishali³, Yunus Kara³, Terken Baydar¹
¹Department of Toxicology, Faculty of Pharmacy, Hacettepe University, Ankara, ²Department of Toxicology, Faculty of Pharmacy, Ataturk University, Erzurum, ³Department of Chemistry, Faculty of Science, Ataturk University, Erzurum, ⁴Department of Chemistry, Faculty of Science, Mus Alparslan University Mus, Turkey


Julijana Tadić¹, Marina Mihaiovć¹, Mića Jovanović²
¹Innovation Center of Faculty of Technology and Metallurgy Ltd. in Belgrade, ²Faculty of Technology and Metallurgy University in Belgrade
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INTERNATIONAL VALIDATIONS AND PROJECTS

EpiDerm™
ECVAM Skin Corrosion, Validated Assay - OECD TG 431
ECVAM Skin Irritation, Validated Assay - OECD TG 439
ECVAM Pre-Validated and ICH Accepted Phototoxicity Assay
Cosmetics Europe Validation Project on Genotoxicity Assays
German Skin Penetration Validation Study for Surfactants and Formulations
Irritation Potency of Extracts from Medical Devices Study (ISO 10933-10)

EpiOcular™
ECVAM Cosmetics Europe Eye Irritation, Validated Assay - OECD TG 492
US EPA Accepted for Antimicrobial Products with Cleaning Claims (AMCPs)
COLGATE/IVS Eye Irritation Validation Study
Con4Eye Project on Eye Irritation Testing Strategies

EpiVaginal™
NIH Funded HIV Research
CONRAD Microbicides Study

TISSUE MODELS AVAILABLE FROM SLOVAKIA AND USA

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Skin Corrosion, Skin Irritation, Phototoxicity, Genotoxicity
Micronucleus and Comet assay, Medical devices, Skin
Inflammation, Skin metabolism, Radiation Damage, Percutaneous Absorption …

EpiOcular™
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E-mail: mkandar@mattek.com
Web: www.mattek.com
MatTek In Vitro Life Science Laboratories

**EpiOcular™ - Reconstructed Human 3D Cornea-like Model**

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCL-200</td>
<td>Basic kit, Ocular tissue 0.6 cm²</td>
<td>24 tissues</td>
</tr>
<tr>
<td>OCL-212</td>
<td>Basic kit, Ocular tissue 0.6 cm²</td>
<td>12 tissues</td>
</tr>
</tbody>
</table>

**EpiOcular Eye Irritation Test, OECD TG 492**

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<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>OCL-200-EIT</td>
<td>EpiOcular Eye Irritation Test, OECD TG 492</td>
<td>24 tissues</td>
</tr>
<tr>
<td>OCL-212-EIT</td>
<td>EpiOcular Eye Irritation Test, OECD TG 492</td>
<td>12 tissues</td>
</tr>
</tbody>
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**EpiOcular™ - Reconstructed Human 3D Cornea-like Model**

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<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>OCL-200-PRF</td>
<td>OCL-200, phenol red-free 24 tissues</td>
<td>24 tissues</td>
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<tr>
<td>OCL-200-HCF</td>
<td>OCL-200, hydrocortisone-free 24 tissues</td>
<td>24 tissues</td>
</tr>
<tr>
<td>OCL-200-PFRF</td>
<td>OCL-200, phenol red-free 24 tissues</td>
<td>24 tissues</td>
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**Custom Tissues**

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<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>OCL-200-EACH</td>
<td>Ocular tissue OCL-200, minimum order is 6 tissues</td>
<td>1 tissue</td>
</tr>
<tr>
<td>OCL-200-FRZN-EA</td>
<td>OCL-200 frozen, non-viable EpiOcular tissue</td>
<td>1 tissue</td>
</tr>
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**EpiDerm™ - Reconstructed Human 3D Epidermis Model**

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<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>EPI-200</td>
<td>Basic kit, Epidermis 0.6 cm²</td>
<td>24 tissues</td>
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<tr>
<td>EPI-218</td>
<td>Basic kit, Epidermis 0.6 cm²</td>
<td>18 tissues</td>
</tr>
<tr>
<td>EPI-212</td>
<td>Basic kit, Epidermis 0.6 cm²</td>
<td>12 tissues</td>
</tr>
<tr>
<td>EPI-201</td>
<td>Normal human 3D underdeveloped Epidermis, 0.6 cm²</td>
<td>24 tissues</td>
</tr>
<tr>
<td>EPI-201-12</td>
<td>Normal human 3D underdeveloped Epidermis, 0.6 cm²</td>
<td>12 tissues</td>
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**EpiDerm Eye Irritation Test, OECD TG 492**

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<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>EPI-200-SIT</td>
<td>EpiDerm Skin Irritation Test kit, OECD TG 439</td>
<td>24 tissues</td>
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<tr>
<td>EPI-200-SCH</td>
<td>EpiDerm Skin Corrosion Test kit, OECD TG 431</td>
<td>24 tissues</td>
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<tr>
<td>EPI-200-PHO</td>
<td>EpiDerm Phototoxicity Test kit, Pre-validated</td>
<td>24 tissues</td>
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<tr>
<td>EPI-200-MNA</td>
<td>EpiDerm Micronucleus Test Pre-validated</td>
<td>24 tissues</td>
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<tr>
<td>EPI-212-SCT</td>
<td>EpiDerm Skin Corrosion Test kit, OECD TG 431</td>
<td>12 tissues</td>
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<tr>
<td>EPI-212-SIT</td>
<td>EpiDerm Skin Irritation Test kit, OECD TG 439</td>
<td>12 tissues</td>
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**Custom Kits**

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<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>EPI-200-ABF</td>
<td>EPI-200, antibiotic-free</td>
<td>24 tissues</td>
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<tr>
<td>EPI-200-AFF</td>
<td>EPI-200, anti-fungal-free</td>
<td>24 tissues</td>
</tr>
<tr>
<td>EPI-200-HCF</td>
<td>EPI-200, hydrocortisone-free</td>
<td>24 tissues</td>
</tr>
<tr>
<td>EPI-200-PFRF</td>
<td>EPI-200, phenol red-free</td>
<td>24 tissues</td>
</tr>
<tr>
<td>EPI-212-ABF</td>
<td>EPI-212, antibiotic-free</td>
<td>12 tissues</td>
</tr>
<tr>
<td>EPI-212-AFF</td>
<td>EPI-212, anti-fungal-free</td>
<td>12 tissues</td>
</tr>
<tr>
<td>EPI-212-HCF</td>
<td>EPI-212, hydrocortisone-free</td>
<td>12 tissues</td>
</tr>
<tr>
<td>EPI-212-PFRF</td>
<td>EPI-212, phenol red-free</td>
<td>12 tissues</td>
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**Single Tissues**

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>EPI-200-EACH</td>
<td>EPI-200, minimum amount to order is 6 tissues</td>
<td>1 tissue</td>
</tr>
<tr>
<td>EPI-200-FRZN-EA</td>
<td>EPI-200 frozen, non-viable EpiDerm tissue</td>
<td>1 tissue</td>
</tr>
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</table>

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**EpiIntestinal™ - Normal human 3D Small Intestinal Epithelium**

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
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<tbody>
<tr>
<td>SMI-100-MM</td>
<td>Normal human 3D Small Intestinal Epithelium, 0.6 cm²</td>
<td>24 tissues</td>
</tr>
<tr>
<td>SMI-100-MM-HCF</td>
<td>Maintenance Medium, hydrocortisone-free</td>
<td>24 tissues</td>
</tr>
<tr>
<td>SMI-100-MM-ABF</td>
<td>Maintenance Medium, antibiotic-free</td>
<td>24 tissues</td>
</tr>
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**Basic Culture Media**

<table>
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<th>Description</th>
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<tr>
<td>SMI-100-MM</td>
<td>Maintenance Medium (Equivalent to SMI-100-ASY)</td>
<td>250 ml</td>
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<tr>
<td>SMI-100-MM-HCF</td>
<td>Maintenance Medium, hydrocortisone-free</td>
<td>250 ml</td>
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<tr>
<td>SMI-100-MM-ABF</td>
<td>Maintenance Medium, antibiotic-free</td>
<td>250 ml</td>
</tr>
</tbody>
</table>

**Custom Products**

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI-100-FT-MM-100</td>
<td>Normal human 3D Small Intestinal Full Thickness Tissue</td>
<td>100 ml</td>
</tr>
<tr>
<td>SMI-100-FT-MM-200</td>
<td>Normal human 3D Small Intestinal Full Thickness Tissue</td>
<td>200 ml</td>
</tr>
</tbody>
</table>

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**Related Products and Support**

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
<th>Unit size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI-HIS</td>
<td>Histology slide of one tissue (H&amp;E staining)</td>
<td>1 Slide</td>
</tr>
<tr>
<td>SMI-PHO</td>
<td>Digital photos of one histology slide (3 magnifications)</td>
<td>1 Photo</td>
</tr>
<tr>
<td>SMI-TC-TRI-0.3%</td>
<td>Triton X-100, 0.3% (positive control)</td>
<td>10 ml</td>
</tr>
</tbody>
</table>

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**Dedicated training sessions in our European facility**

**OECD Series 400**

<table>
<thead>
<tr>
<th>Training Description</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>EpiDerm Skin Corrosion Test, OECD TG 431</td>
<td>4 days</td>
</tr>
<tr>
<td>EpiDerm Skin Irritation Test, OECD TG 439</td>
<td>4 days</td>
</tr>
<tr>
<td>EpiOcular Eye Irritation Test, OECD TG 492</td>
<td>3 days</td>
</tr>
</tbody>
</table>

**Other Assays**

<table>
<thead>
<tr>
<th>Training Description</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>EpiDerm ET-50 Benchmarking old/new/competitors’ products, assessment of possible skin irritation in long term exposure (excellent for leave-on products such as creams, lotions, and other cosmetics)</td>
<td>3 days</td>
</tr>
<tr>
<td>EpiDerm Phototoxicity, ECVM Pre-validated, ICH accepted Phototoxic potential of a chemicals with and without additional exposure to a non-toxic dose of UVA and visible light</td>
<td>4 days</td>
</tr>
<tr>
<td>EpiDerm Medical Device, ISO 10993-10 Prediction / classification of the skin irritation potential of medical device extracts</td>
<td>4 days</td>
</tr>
<tr>
<td>EpiOcular ET-50 Neat Method Testing of undiluted materials, US EPA accepted for antimicrobial cleaning products</td>
<td>3 days</td>
</tr>
<tr>
<td>EpiOcular ET-50 Dilution Method Testing of water soluble materials with specific gravity more than 0.95</td>
<td>3 days</td>
</tr>
<tr>
<td>EpiOcular ET-50 Sub-Draize Method Testing of undiluted materials with very low irritation potential recommended for cosmetic products and medical devices materials</td>
<td>3 days</td>
</tr>
<tr>
<td>EpiDerm – Release of Skin Inflammation Markers (IL1-alpha)</td>
<td>1 day</td>
</tr>
</tbody>
</table>

---

**ATTENTION !**

MatTek IVLSL distributes since 2017 Glass Bottom Dishes and Multi-well plates on the European market.

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• za ublažavanje nervne napetosti
• za vitalnost i opšte zdravlje organizma
• za dopunu jednoličnoj, restriktivnoj i vegetarijanskoj ishrani

svako dobro