

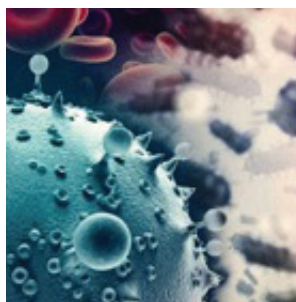
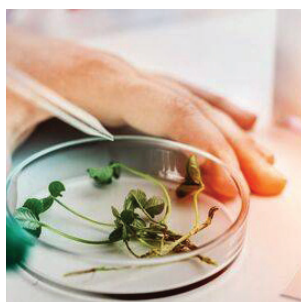
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# Scientific Tracks & Sessions

## November 04, 2019

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### ***Toxicology 2019***



2<sup>nd</sup> World Congress on  
**TOXICOLOGY AND APPLIED PHARMACOLOGY**  
November 04-05, 2019 | Prague, Czech Republic

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## Put your Toxicology where your mouth is

**Amy Reisinger**

SteelFusion Clinical Toxicology Laboratory, USA

A relatively overlooked aspect of forensic science is the utilization of oral cavity fluid in a forensic diagnosis. Although traditional specimens, blood and urine, are routinely evaluated for forensic toxicology testing, fluid from the oral cavity has not previously been investigated as a matrix in postmortem cases. Our laboratory developed and validated qualitative and quantitative analytical methods for determining 47 medicinal and illicit drugs in oral fluids. The developed methods analyze oral fluid samples utilizing liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS) analyses; the results were directly compared to traditional matrices collected from the same postmortem subjects. Within minutes of a drug entering the bloodstream, drugs can be detected in oral fluid. Studies have demonstrated oral cavity fluid retains trace amounts of drugs and their ensuing metabolites and it is an unanticipated, plausible alternative matrix in the rapid detection and quantification of prescription and illicit drugs (including alcohol). SteelFusion Clinical Toxicology Laboratory, LLC's unique oral cavity fluid testing capabilities supports key stakeholders by providing an economical, less time consuming, safe and non-invasive collection method, while maintaining chain-of-custody procedures which allows for cases to be closed more

rapidly. Types of cases performed in decedents utilizing oral cavity fluid have been drug overdoses deaths; embalmed decedents; multiple blunt force trauma; drownings; burn victims; suicides; decompositions (up to 19 days); still-born deaths; and methamphetamine explosions.

### Biography

Amy Reisinger studied Biology/Pre-Medicine at The University of North Carolina in Wilmington, North Carolina and completed postgraduate studies in the Cardiovascular Perfusion Program at Duquesne University in Pittsburgh, Pennsylvania. She became a Research Scientist at GlaxoSmithKline, Research Triangle Park, North Carolina, where she provided regulatory support to the pharmaceutical industry. Based on her knowledge of toxicology and pathology and understanding the logistics of performing clinical studies in accordance with Good Laboratory Practices (GLPs), she served as a Study Director/Monitor at Bristol-Myers Squibb Company in Mt. Vernon, Indiana for GLP and non-GLP toxicology studies. SteelFusion Clinical Toxicology Laboratory, LLC, was established in 2014 by Amy J. Reisinger as a women-owned and operated toxicology laboratory specializing in clinical and forensic toxicology services. She has been serving as the President and CEO of the laboratory since its inception. She has published multiple publications; with her most recent in The Journal of Analytical Toxicology.

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## Indoor environment quality indicators in Co-Op supermarkets in Kuwait

**Azel Almutairi**

Kuwait university, Kuwait

In this paper, the indoor quality indicators were investigated in a Co-Operative (Co-Op) supermarket in Kuwait by both subjective and objective evaluations. A questionnaire with Likert scale basis was conducted to reflect the customers and workers health environment satisfaction. Measurements were carried out to examine the parameters that determine the air and acoustic pollution inside the Co-Op supermarket. The perceived air quality (PAQ) was calculated, and indoor air quality index

(IAQ) was investigated. Three pollutants, carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), and formaldehyde (HCHO) were studied. The CO<sub>2</sub> concentration was notably high.

### Biography

Azel Almutairi is a professor of Environmental Science at Kuwait University. Graduated from University of Kansas. His research interest is Environmental pollution, recycling, water pollution, renewable energy.

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### The connection between Food Toxicology and Lifestyle disorders – A literature review

**Manisha Mehta**

Fitness First India Pvt Ltd, India

**A**round 39% of the adult world population is overweight and 13 % are obese (WHO). One of the major reasons for this (As per Harvard Researchers) is certain food toxins responsible for increasing “craveability” of junk food. Another study suggests the presence of certain chemical obesogens which disrupt the leptin and ghrelin (appetite hormones) also affect the size of adipocytes. Prevalence of polycystic ovarian syndrome is claimed to be varying between 6-10% in various studies including the major ones from National institute of Health (NIN), Rotterdam and Androgen excess society. Thyroid on the other hand is affecting 10% of the population (as per a study conducted in 8 major cities of India) The sedentary lifestyle, convenience foods & improper cooking practices though are to be blamed for the increasing prevalence of all lifestyle disorders but at the same time the increasing exposure to environmental toxins including microbiological, natural food toxins, polymer leaching and its residues including phthalates and bisphenols and the biological magnification of the pesticides across the food chain are all the more responsible for the hormonal imbalances

caused by the chemicals mimicking the hormones in the natural biochemical processes hence causing the lifestyle disorders. The purpose of this presentation is to compile and highlight the most common toxins affecting the nutritional status of the masses, their common sources and mode of action. The presentation also puts light on the solution-based approach (including the importance of an Anti-inflammatory diet) and steps which can be taken to rectify the fundamentals which are going wrong.

#### Biography

Manisha Mehta has her expertise in weight, fat, muscle management and Sports Nutrition. Her keen interest in food and the way it affects life has driven her extensive studies in the subjects of Food technology, Packaging Technology and Nutrition along with Food Service management systems. The foundation of this presentation is based on the years of experience she has gained while studying as well as successful counselling of hundreds of clients with issues varying from weight management to lifestyle disorders and food intolerances in different settings including hospitals and health centers.

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## Quantitation of oxidative stress, problems and perspectives

**Dov Lichtenberg**

Tel Aviv University, Israel

Oxidative stress (OS), caused by access reactive oxygen species (ROS) is commonly blamed for being involved in the pathogenesis of many diseases. Yet, many (but not all) intervention epidemiologic studies of the possible benefits of antioxidant supplementation yielded disappointing results, attributed to the important physiological role of ROS. The prevailing, reasonable but questionable hypothesis is that high-risk groups would benefit most from antioxidant interventions. This yielded the "identify and treat" approach, based on the assumption that determination of OS can enable identification of people in risk of oxidative damages, thus Improve patient management decisions and patient outcome. The major problems with this approach are (i) the lack of a universal criterion for OS and the lack of correlations between the OS, as evaluated on the basis of results obtained with different biomarkers (ii) the different potency of different antioxidants and its dependence on the type of OS and (iii) the validity of the paradigm that the effect of antioxidants increases with the OS, as evaluated by different methods. We think that even if we disregard these three problems, as

long as we do not know the pathophysiological meaning of the different types of OS, the search for improved methods of quantifying OS is of limited applied value, namely OS is not a diagnostic tool. This conclusion is strongly supported by the finding that lists of the people with the highest 10% OS according to different biomarkers exhibit only small overlapping. Studies of the association of the steady state concentrations of biomarkers do not help identifying people under OS.

### Biography

Dov Lichtenberg did his BS, MS and PhD in Chemistry at Hebrew University of Jerusalem, Post Doc in Chemical Biophysics, Caltech (1972-1974), Lecturer, Hebrew University (1974-1979), Visiting Professor, University of Virginia (1979-1981), Professor, Tel Aviv University (1981-2011) Previous Dean of Medicine (2002-2006). Professor Emeritus (2011-present). Present Topics: Solubilization and reconstitution of membranes, Oxidative stress and Antioxidants, Admission to Medical schools. He has over 200 publications that have been cited over 200 times, and his publication H-index is 41 and has been serving as an editorial board member of reputed Journals.

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### Chemical constituents of donkey dung (Anbarnasara): Questioning the recent claims concerning Therapeutic effects

**Atefeh Hajiagha Bozorgi**

Alborz University of Medical Sciences, Iran

**Background:** Various animal excrements have been used as a medicine for the treatment of different diseases in the past. Today, people still use some of these excrements, especially female donkey dung (Anbarnasara,) by smelling the smoke of burnt dung for some ailments like sinusitis and bronchitis. Recently, some studies have focused on the therapeutic activities of Anbarnasara but no one has studied the active ingredients of it.

**Objective:** The aim of this study was to identify the chemical constituents and antibacterial activities of Anbarnasara and its smoke.

**Materials and Methods:** Female donkey dungs were collected from Shahreza in May 2017. The substance was burnt and the smoke was led to a beaker of methanol by a distillation apparatus. Then, the methanolic extract was dried via a rotary evaporator. Antibacterial activity of the smoke and also the total methanolic extract of Anbarnasara were tested on *Staphylococcus aureus* and *Escherichia coli* via well diffusion method. Chemical constituents were analyzed through gas chromatography-mass spectrometry (GC-MS).

**Results:** The results showed that Anbarnasara and its smoke have a very weak antibacterial activity. Regarding chemical constituents, both total methanolic extract and

smoke extract predominantly contained toluene, xylene, and dibutyl phthalate.

**Conclusion:** Previous studies showed xylene as one of the major components of the smoke of Anbarnasara. These articles also reported the presence of some plant-based compounds such as glyoxal, syringol, and limonene in the smoke. The presence of these compounds is probably due to the donkeys' diet. In our study, the presence of dibutyl phthalate, an industrial plasticizer, among the components is probably due to environmental factors. These evidences suggested that Anbarnasara is under the influence of environmental factors like vegetation and pollutions and therefore, should be used as a medicine with caution. Recent claims regarding the antibacterial, cytotoxic, and wound healing activities of Anbarnasara should be considered independent of these environmental factors.

#### Biography

Atefeh Hajiagha Bozorgi has completed PharmD from Tabriz university and her PhD from Shahid Beheshti university, Tehran, Iran. She is an assistant professor in Alborz university now and teaches medicinal chemistry courses for pharmacy students. She also manages hospital and educational pharmacies.

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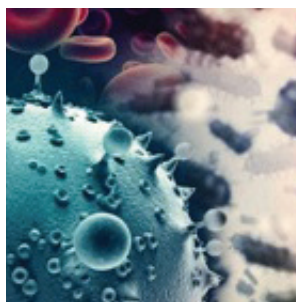
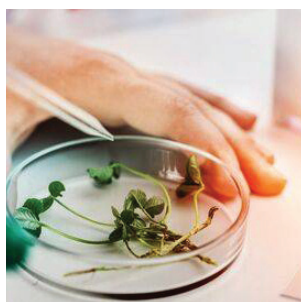
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# Workshop

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## Medical Toxicology: Eye/Skin chemical contamination and decontamination

Laurence Mathieu<sup>1</sup>, Norbert F Schrage<sup>2</sup>, Alan H Hall<sup>3</sup>

<sup>1</sup>Laboratoire Prevor, France

<sup>2</sup>Aachen Centre for Technology Transfer in Ophthalmology, Germany

<sup>3</sup>Colorado School of Public Health, USA

Chemical eye/skin splashes remain a significant clinical problem worldwide. Traditionally, potable water has been recommended for decontamination of chemical splashes. A number of other decontamination solutions such as normal saline and various buffered solution have also been recommended. More recent experimental and clinical studies and clinical experience have demonstrated the better efficacy of active Amphoteric Decontamination solutions. This workshop will present these data.

The Workshop presentations will demonstrate that active Amphoteric Eye/Skin decontamination solutions are more efficacious than other decontamination solutions.

### Biography

Laurence Mathieu is a chemical engineer (ECM) and has a PhD in organic chemistry and catalysis. She is the Head manager of "Scientific Action Group" Department at PREVOR Laboratory.

Norbert Schrage lives in Germany, Aachen, Head of the Dept. of Ophthalmology of the City Hospital Merheim of Cologne. He is a Medical doctor since 1989 and Ophthalmologist since 1996. He is also Specialist in anterior segment and posterior segment surgery (FOCUS recommended Specialist since 2008). He founded in 1997 the Aachen Center of Technology Transfer (ACTO e.V.) being a research unit in cooperation with the university of Aachen.

Alan H Hall is a board-certified Medical Toxicologist at Toxicology Consulting and Medical Translating Services, Azle and Springtown, Texas, USA. He is also a Clinical Assistant Professor, Colorado School of Public Health, University of Colorado-Denver, Denver, Colorado, USA.

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## Berberine as multi-targets therapeutic weapon against Alzheimer's disease

**Doaa A Ghareeb**

Alexandria University, Egypt

It is well known that berberine has several biological activities like antioxidants, anti-inflammatory, antidiabetic, antilipidemic and antitumor properties. Unfortunately, this compound does not use as drug because it has low bioavailability moreover, the plant that contains this compound is not cultivated in Egypt. The aim of this study was to understand the function of berberine as a treatment for Alzheimer. To achieve this aim, the anti-Alzheimer/ anticancer effect of this compound at *in silico*, *in vitro* and *in vivo* level through targeting several pathways implicated in disorder incidence and progression was investigated. Moreover, two approaches in medical biotechnology field were used to resolve berberine problems which are Biocatalysis and nano-formulations. In conclusion, berberine loaded nanoparticle is good candidate to treat Alzheimer through targeting several pathways with no-toxic effect and high therapeutic index.

### Biography

Doaa A Ghareeb is the professor of clinical biochemistry at Faculty of Science, Alexandria University. She is the Acting Dean of Pharmaceutical and Fermentation Industries Development Centre, City of Scientific Research and Technological Applications and the Manger of Biological Screening and Preclinical Trial Lab, Department of Biochemistry, Faculty of Science, Alexandria University. She is a member of National committee of Women in Science, Academy of Scientific Research and Technology, Egypt. She is the co-founder and director of Drug Preclinical Studies Center of Excellency. She is among the founding members of Egyptian Association for Cancer Research. Her h-index is 14 and published about 66 articles in peer-reviewed journals and attended more than 80 national and international workshops and conferences in different medical biotechnology field. She supervised more than 60 Master and PhD students from Egypt, and other countries and has been serving as an editorial board member of reputed Journals.

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**Mechanistic *in vitro* Anti-Lung Cancer study of *Ceratonia siliqua* (Egyptian Carob) extract**

**Marwa El-Zeftawy**

The New Valley University, Egypt


Lung cancer (LC) is ranking the most predominant cancer-related death worldwide. Tobacco smoking and environmental pollution with radiation and heavy metals are considered the well-established contributing factors of LC. Defect in the antioxidant system and inflammation are two connected pathophysiological processes. The complexity problem of LC is late diagnostic stage and limited therapeutic options. Therefore, identification of effective treatment is required to eliminate the rate of deaths. Herbal medicine nowadays takes vast challenge as it has minimum undesirable effects. *Ceratonia siliqua* (CS) is one of the well-known Mediterranean plants which cultivated all over the year and it is characterized by its cheap price and palatable taste. The main aim of the current study is to determine the phytoconstituent via HPLC technique and *in vitro* evaluation of antioxidant and anti-inflammatory potentials of the CS aqueous extract. Also, the anticancer effect of CS extract was assessed using A549 cells. The extract showed high phenolic content and significant antioxidant, anti-inflammatory and

anticancer effects. These findings could have important impact in the LC treatment and could play a decisive role in LC therapeutics.

**Biography**

Marwa El-Zeftawy has completed her PhD at age of 32 years from Alexandria University, Egypt. She is a Lecturer of Biochemistry, Biochemistry Department, Faculty of Veterinary Medicine, The New Valley University, Egypt. She is the Principle Investigator of "Molecular and cellular mechanistic activities of *Ceratonia siliqua* (Egyptian carob) in stabilizing histone deacetylation and activating adult neurogenesis", STDF funded project, 2019. She was a Scholarship Student, Comparative Pathobiology Department, Faculty of Veterinary Medicine, Purdue University, West Lafayette, Indiana, USA (20 April 2015 till 10 July 2015). She has 2 international publications that have been cited 14 times, and her publication H-index is 2 and she has been serving as a reviewer member of some journals. She is member in The Egyptian Association for Cancer Research, (2015, till Now). She was participating in INTEL BASEF 2015 District fairs in Alexandria, judgment.

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## **Protective effect of Ginseng against Cisplatin-induced Neurotoxicity and Cognitive decline in rats**

**Hend Mohamed Hussien**

Pharos University, Egypt

**N**eurological disturbance is one of the most common serious effect of cisplatin chemotherapy that triggers memory impairment and cognitive disability. The present study aimed to investigate cisplatin-induced neurotoxicity and behavior abnormality in male rats and explore the neuroprotective effect of ginseng extract via tracking its effect on the oxidative stress/inflammatory pathway. Cognitive decline was induced in rats by intraperitoneal dose of cisplatin (4 mg/kg BW/ week) for three months. Cisplatin induced behavior dysfunction in Morris water maze task. In addition, it disrupted the antioxidant biomarkers (TBARS, NO, GST, GPX, CAT and SOD), neuroinflammatory molecules (TNF-  $\alpha$ , IL-6, IL-12, IL-1 $\beta$  and COXII), neurotransmitters (ACh, AChE, MAO, NE, DA and 5-HT), apoptotic (caspase-3, P53 and Bax) and dementia markers (amyloid- $\beta$ 40 and

amyloid- $\beta$  42). Co-treatment with ginseng extract (100 mg/kg BW/day) successfully ameliorated the cognitive behaviors and presented a good protective agent against neurological damage. Histopathological and histochemical study proved the neuroprotective effect of ginseng. Our data support the neuro-beneficial effect against several neurological disorders via its anti-inflammatory/antioxidant pathway.

### **Biography**

Hend Mohamed Hussien has completed her PhD in biochemistry from Alexandria university, Egypt. She is a professor of biochemistry, pharmacology and therapeutics department, faculty of pharmacy and drug manufacturing, Pharos University, Alexandria, Egypt.

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### Cinnamon in Anti-Cancer Armamentarium: A molecular approach

**Anindita Chakraborty**

UGC-DAE Consortium for Scientific Research, India

Radiation therapy is a mainstay treatment for many types of cancer, although it is still a large challenge to enhance radiation damage to tumor tissues and reduce side effects to healthy tissues. Radiosensitizers are promising agents that enhance injury to tumor tissue by accelerating DNA damage and producing free radicals. In this regard various phyto-components are being tested to be used in modulating radiation induced stress in the tumor cells. The polyphenolic compounds from plant sources are known to act as antioxidants in protecting cells from oxidative stress and can also exhibit prooxidant activity, which contributes to therapeutic functions attributed to flavonoids. This biphasic behavior of these compounds depends on concentration and free-radical source. Recent attention has been focused on employing such natural substances in combination therapy wherein administration of two or more substances with other treatment modalities like radiation or chemotherapy are being used to sensitize the cancer cells toward treatment. Further, such combinations may reinforce the drug effective concentration, intensify the combined effect of both administered therapeutics, exert cytotoxic effects specifically on tumor cells or may also reduce the development of resistance of the cancer cells by targeting multiple signaling pathways. In this perspective, our group initiated a program to probe into the efficacy of some selected active components of cinnamon, a frequently used spice in Asian countries, as a positive modulator of radiation induced damaging effects on tumour cells. Cinnamon as a whole and /or its active components exhibited significant antineoplastic activity in different types of cancer. Presently we are working to elicit the molecular mechanisms of action of cinnamon and its components on oncogenic regulators and related pathways. The anti-carcinogenic potential of cinnamon varies with the type of cancer and also depends on the administered active compound individually or in combination with some chemical or even extract of

whole cinnamon. Presently, the in-vitro experimental program reflected ethyl cinnamate (EC) to exert potent radio sensitizing effects on radioresistant hepatocellular carcinoma cells (HepG2). A combination of EC and gamma-radiation showed increased ROS generation and mitochondrial membrane depolarization. Similar effects have been observed in phosphatidylserine externalization studies, where this combination showed potent apoptotic effects in hepatocellular carcinoma cells. These outstanding properties of this spice necessitate its incorporation in pharmaceuticals and/ nutraceuticals to explore possibilities of formulation of novel drug for treatment and prevention strategy of cancer.

#### Biography

Anindita Chakraborty, a Gold Medalist from University of Calcutta and an awardee of prestigious national scholarships and fellowships has completed her PhD from Jadavpur University, India. She is the Scientist-in-Charge of Stress Biology Division of Kolkata Centre of UGC-DAE Consortium for Scientific Research and has been working on cellular stress and molecular mechanisms of stress response. Her focus is to probe into effects of different stress factors on cellular dynamics with special reference to oxidative stress and cell signalling cascades. Her research unravels the link between failure to maintain homeostasis, cellular aberration and organismal pathologies, through study of signal transduction, cell cycle regulation, apoptosis, mitochondrial and/or nuclear DNA damage and genomic instability. She is also working on non-target effects of ionizing radiation highlighting cell signalling molecules and pathways involved in radiation induced bystander effects, aiming towards selective sensitization of tumour cells. Her contribution in the field of Trace element Sciences through studying role of trace elements in metabolomics to probe into elemental homeostasis and interaction of macro/micro elements with biological functions also deserves mention. She visited Australia, South America, China and several countries of Europe as invited speaker in International Conferences and delivered more than 20 seminar lectures and National and international conferences. She has over 120 publications with 1,166 Citations and has been serving as a reviewer for many reputed Journals.

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