Video Presentation

EnviPharm 2019





International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Ana Maria Buga, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Current stage and future perspective of nanoparticle for drug delivery in Brain Disorders

Ana Maria Buga
University of Medicine and Pharmacy of Craiova, Romania

Central nervous system (CNS) is a highly selective environment that can prevent the access of many molecules at this level. This property is crucial for the integrity and function of CNS in normal condition but can be detrimental for brain lesion therapy. Brain-blood barrier (BBB) is a key structure involved in CNS selectivity that allows passing only very small molecule or fat-soluble molecule without transporter mechanisms. With ageing population neurological disorders are the leading cause of disability worldwide. Despite of new promising tools, there are no effective therapeutic strategies and many of neurological diseases are still untreatable.

In the last decade many strategies were performed in order to increase the permeability of BBB for drugs or cells at the brain lesion site, but many of these failed to be effective. Current work is focused to design nanoparticle that can incorporate a specific molecule or cells in order to increase BBB permeability and to achieve therapeutic concentration at lesion site.

However further investigation of safety and toxicity is needed in order to achieve successful translation from animal model to clinical application.

Speaker Biography

Ana Maria Buga is currently working in University of Medicine and Pharmacy of Craiova in Romania. She won a prize for the best PhD Thesis, Medical Faculties of Greifswald, Germany. She is a Board Member of the National Neuroscience Society, affiliated FENS - IBRO, Eastern Europe. Her research of interest is identification of molecular and cellular mechanisms leading to failure of axonal regeneration after a brain injury in aged animals. She is an expertise on aged animal models of cerebral ischemia, genomic and proteomic analysis, immunohistochemistry.

e: anabuga07@gmail.com

Notes:

Lorena De Medina-Salas et al., J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Importance of the use of environmental indicators in the water pre-treatment process of a case study in Veracruz, Mexico

Lorena De Medina-Salas, Mario Rafael Giraldi Díaz and **Eduardo Castillo González**
Universidad Veracruzana, Mexico

Environmental indicators are necessary to enable decision making to be easier for organizations and provide a reliable basis of environmental information for the continuous improvement of different processes. Regarding the quality of water for human consumption, its characteristics can favor both the prevention and the transmission of disease-causing agents. Due to the importance of controlling this process, this research analyzed the operation indicators (turbidity, residual chlorine and pH) of the water pre-treatment process in a locality in the state of Veracruz, Mexico, using statistical process control through control of means and ranges. Environmental indicators' behavior led to the knowledge that this process is affected by the quality of the water; this is variable especially, in the rainy season, when there is more turbidity due to the dragging of sediments towards the supply source, in addition to the existence of a relationship between the increase in the turbidity of raw water and the dosage of disinfectant used. Through a strict control placed on the incoming water, environmental indicators could be improved upon, which would favor the next step in its potabilization contributing to compliance of the current national regulations. Therefore, it is concluded that with the support of this statistical tool, corrective actions can be established to ensure water quality standards for human consumption.

Speaker Biography

Lorena De Medina Salas completed her PhD at age 29 at Pacific Western University, USA. She is a professor and researcher in the waste management area of the Environmental Engineering Program at Facultad de Ciencias Químicas, Universidad Veracruzana in Mexico, with 15 years of experience. She has published more than 30 papers and has been serving as a scientific reviewer for reputed journals.

Mario Rafael Giraldi Díaz earned a doctorate (PhD) in Environmental Engineering at the Polytechnic University of Catalonia, Spain. He was granted with two postdoctoral research fellowship. He has more than ten years of experience in the scientific-field of industrial ecology, he has several international publications and theses directions in this field. He has professional experience in the industry and government agencies, currently he is full professor and researcher of environmental engineering at the Faculty of Chemical Sciences of the Universidad Veracruzana, Mexico.

Eduardo Castillo González is a Civil Engineer with professional certification, master's degree in Environmental Engineering and doctorate (PhD) in Education. He is a full-time professor at the Faculty of Chemical Sciences of the Universidad Veracruzana. He has published more than 30 papers and belongs to the National System of Researchers in Mexico. He is currently the Principal of the Faculty of Civil Engineering in the Xalapa region of the Universidad Veracruzana.

e: loredms@hotmail.com
e: mgiraldi@uv.mx
e: educastillo@uv.mx

Notes:

allied academies

e-Poster

EnviPharm 2019





International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Mihai-Andrei Iordache, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Safety and efficacy of current emerging systemic therapies in Melanoma associated Tumours

Mihai-Andrei Iordache
University of Medicine and Pharmacy, Romania

Melanoma tumours dissemination is the most frequent complication of skin cancer. New advances of technologies provide new tools for understanding and limit dissemination of malignant cells, but only limited studies was focused on brain metastases. One of the major obstacle in brain tumor prevention associated with malign melanoma is the genetic heterogenity of the malignant cell. These cells display a key molecular supportive changes and targeting these changes we can develop safe and efficient strategies. In this study summarize the safety and efficacy of current emerging systemic therapies, especially targeted therapies and immunotherapies, for the treatment of central nervous system tumors, focusing on melanoma. The aim is to create a complete image regarding the therapeutic options available in order to imlement personalized treatment for these patients.

Speaker Biography

Mihai-Andrei Iordache was born on November 19, 1944. He received the M.S. and Ph.D. degrees in Electrical Engineering from the Politehnica University of Bucharest, Romania, in 1967 and 1977, respectively. From 1993 he is a Full Professor in the Electrical Department, Politehnica University of Bucharest, where he is working in the Electrical Engineering Fundamentals, Circuit Theory – methods, computing techniques, algorithms, optimization techniques, parameter estimations, and software tools for analysis and simulation, Graph Theory, Wireless Power Transfer Systems, and Topological Analysis. He is the author or coauthor of more than 300 journal papers (two of them published in Analog Integrated Circuits and Signal Processing, and in International Journal of Bifurcation and Chaos) and 30 books and monographs. From 1997 he is Doctoral Advisor at the Politehnica University of Bucharest. He was the recipient of the 2000 Romanian Academy Award and of the 2004 Romania Engineering Association. He is an IEEE member.

e: mihai.andrei.iordache@gmail.com

Notes:

Smita Jain, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Neuroprotective effects of BVSJ-05/06 compounds on Scopolamine Induced Amnesia in experimental rodents

Smita Jain
Banasthali Vidyapith, India

Alzheimer's disease (AD) is a chronic neurodegenerative disorder that leads to disturbances of cognitive functions. Present study was designed to evaluate the neuroprotective effect of (In-silico derived) BVSJ-05/06 compounds in scopolamine-induced alzheimer albino rats. BVSJ -05 (2.5mg/Kg and 5mg/Kg), BVSJ-06 (5mg/Kg and 10mg/Kg) was orally administered for 7 successive days. Alzheimer was induced at the end of the treatment period by a single injection of scopolamine (0.3 mg/kg; i.p.). Anti-Alzheimer activity was evaluated in radial arm maze assay, water morris maze assay, cross gap assay and olfactory recognition assay in albino rats. In addition, certain inflammatory and oxidative stress markers as well as histopathologic studies were performed. Pre-treatment of with BVSJ-05/06 showed a significant reduction in reference and working memory, transfer latency with elevation in recognition frequency in respective cognition model radial arm maze assay, water morris maze assay, cross gap assay and olfactory recognition assay. Biochemical markers such as elevation of superoxide dismutase, reduced glutathione and catalase with reduction of AchE level were observed and histopathological study of hippocampus region in rat brain revealed the reversal of neuronal damage in the treatment group ($P < 0.05$) when compared to scopolamine-treated control group. In conclusion, BVSJ-05/06 has demonstrated promising anti-alzheimer like effects and requires in-depth screening to ascertain exact mode of action.

Speaker Biography

Smita Jain has completed Diploma in MEDICAL IMAGE PROCESSING from Banasthali Vidyapith University. She did Advance Diploma in MEDICAL IMAGE PROCESSING from Banasthali Vidyapith University. She got a Certificate in STASTICAL SOFTWARE from Banasthali Vidyapith. She has received gold medal in her master's research project by Vice Chancellor of Oxford University.

e: smitajain1994@gmail.com

Notes:

Divya Sharma, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

A survey on Water-borne Diseases in rural areas of Banasthali, Rajasthan (India)

Divya Sharma
Banasthali Vidyapith, India

Incidences of water-borne diseases particularly gastrointestinal issues is increasing tremendously in developed and developing countries due to inadequate sanitation, poor hygiene and consumption of contaminated. A questionnaire survey was conducted on rural individuals and nearest health care centers to assess the prevalence of water-borne diseases among rural areas of Banasthali, Rajasthan, India. Local peoples were also queried on water-related issues like source of water, mode of water storage, quality of water and other related issues.

Obtained reports revealed that 42-45% people suffer from gastrointestinal issues and undergone treatment in primary health care centers for recovery. In all, 10-14% mortality has been accountable to water borne infections. Individuals of all ages get infected by contaminated water but infants, females and geriatrics were found most susceptible. 85-90% villagers use cotton cloth for filtration of contaminated water for drinking purposes. Villagers frequently suffered from variety of water-borne infectious due to poor sanitation and drainage facilities, unhygienic condition and absence of waste water disposal system etc. In conclusion, a positive correlation was achieved between incidences of water borne infections and poor hygiene and poverty related factors.

Speaker Biography

Divya Sharma completed her UGT in BANASTHALI VIDYAPEETH, BANASTHALI RAJASTHAN, INDIA and teaching to b. pharma (microbiology) students. She is working as a JRF, under the project of "Centre of excellence in water and energy" under frontier areas of science and technology (fast) scheme, mhrd, New Delhi, India. She has published papers in journal of chemical science and environmental toxicology and pharmacology.

e: divyashrm094@gmail.com

Notes:

Kanika Verma, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Validation of ethnomedicinal potential of Bergenia leaves for antioxidant and Anti-Haemorrhoidal activities and quantification of Tannin by HPTLC

Kanika Verma
Banasthali Vidyapith, India

Ethnopharmacological relevance: *Bergenia ciliata* (Haw.) Sternb, *Bergenia ligulata* (Royle) Engl. and *Bergenia stracheyi* (Hook.F. and Thomson) Engl. are one of the most widely used plants in various traditional system including "Ayurveda and Unani".

Aim of the study: The aim of the study was to assess protective role of ethanolic extract of Berginia leaves in oxidative stress and haemorrhoids and to quantify bioactive constituent from leaves.

Speaker Biography

Kanika Verma is a gold- medalist in M. Pharm (Pharmacology) is pursuing her PhD from Banasthali Vidyapith, Rajasthan under supervision of Swapnil Sharma. Her key area of research is cardiovascular and neuro sciences. She has written a chapter in book 'Green and Sustainable Advanced Materials'. She has published a research and review article in international journals of high repute.

e: kanikaverma2704@gmail.com

Notes:

Ritika Gururani, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Studies on Anti-Depressant activity of *Spathodea campanulata* in rodents

Ritika Gururani
Banasthali Vidyapith, India

Background and Aim: *Spathodea campanulata (S. campanulata)* (family: Bignoniaceae) is a flowering tree and is native to Africa and Southern Asia. Traditionally, *S. campanulata* is useful in treatment of fever, malaria, diabetes, skin disease, filaria, gonorrhea, epilepsy and mental disorders.

Experimental Procedure: The current study investigated antidepressant activity of ethyl acetate and methanol extracts of *S. campanulata* flowers using two models viz. forced swim test and tail suspension test. Methanol extract of *S. campanulata* exhibited impressive antidepressant activity in both the models and was further evaluated in lithium induced head twitches and open field test models. Further, a flavonoid was isolated from the methanol extract by column chromatography and characterized by different spectroscopic techniques. Depression is primarily associated with deficiency of monoamines in different regions of brain, therefore an attempt was also made to examine possible mode of antidepressant action of isolated flavonoid by determination of monoamines and their metabolites levels in the different regions of mice brain.

Speaker Biography

Ritika Gururani has completed M.Pharm with thesis titled: "Assessment of anti-diabetic and hypolipidemic activity of selected compounds in albino rats" from Banasthali University, Rajasthan, India with 74% marks and stood second in order of merit in the year of 2017. Her area of interest is Research and Development in the field of pre-clinical pharmacology and molecular biology. She has published a research paper "Discovery of Novel Soluble Epoxide Hydrolase Inhibitors as Potent Vasodilators" in scientific reports.

e: gururaniritika@gmail.com

Notes:

Saraswati Patel, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Evaluation of analgesic and anti-inflammatory potential of SPBV-02 in rodents

Saraswati Patel
Banasthali Vidyapith, India

The aim of the present study was to evaluate anti-inflammatory and analgesic potential of SPBV-02 (In-silico derived) using robust rodent models. The anti-inflammatory activity of SPBV-02 was investigated using carrageenan-induced paw edema and acetic acid induced vascular permeability in rats. Further, analgesic potential of SPBV-02 was screened using acetic acid induced writhing, eddy's hot plate induced algesia, tail immersion induced algesia and formalin test in rats. The results of present investigation revealed that oral administration of SPBV-02 (0.1mg/kg and 0.2mg/kg, orally) in carrageenan induced paw edema and acetic acid induced vascular permeability in rats produced a significant reduction in paw edema and dye extravasation in peritoneal fluid respectively in a dose dependent manner. Similarly, a prominent reduction in number of writhing and paw licking was also observed in acetic acid induced writhing and formalin test in rats. Moreover, SPBV-02 also exhibited a marked reduction in paw withdrawal latency in eddy's hot plate induced algesia and tail withdrawal latency in tail immersion induced algesia in rats in a dose dependent manner. In acetic acid induced pleurisy model, antioxidant studies revealed reduction in concentration of proteins and nitric oxide with marked elevation of superoxide dismutase and reduced glutathione enzymes in lung. Histopathology study of lung clearly indicated protective roles of SPBV-02 in acetic acid induced pleurisy model.

The results concluded that SPBV-02 has remarkable anti-inflammatory and analgesic potential. Yet advanced studies are needed to elucidate the possible mechanism of action of test compounds.

Speaker Biography

Saraswati Patel is currently working as a Ph.D scholar in Banasthali Vidyapith, India. Her area of interest are Metabolic diseases and their management and Molecular genetics. She has attended Fifteen days training programme on animal handling, models of pharmacological screening and instrumentation from Pinnacle Biomedical Research Institute (PBRI), Bhopal, India during 26th Dec, 2014 to and 7th Jan, 2015.

e: saraswatipatel27392@gmail.com

Notes:

Asagba Samuel Ogheneovo, J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

The effect of Environmental Pollution on some biochemical parameters in earthworms *(Esienia Fetida Andrei)*

Asagba Samuel Ogheneovo
Delta State University, Nigeria

The effect of environmental pollution on the activities of aldehyde oxidase (AO), superoxide dismutase (SOD), catalase (CAT) and levels of ascorbic acid (AA) and lipid peroxidation (LPO) in earthworms *(Esienia fetida Andrei)*, was studied in three highly polluted locations (Refinery road, Okere market and PTI round-about) in Warri, an Industrial town in the Niger-Delta region of Nigeria, relative to Abraka, a less industrialized town in the same region, which was used as a control study point. The Mean ± SD values of AO activities (µmole benzoate / ml) were 0.011 ± 0.0012 for Refinery road, 0.0080 ± 0.002 for Okere market area, 0.0058 ± 0.0013 for PTI round-about area and 0.0022 ± 0.00009 for Abraka study location. The results obtained for SOD activity (Units / g wet tissue) were 24.00 ± 3.80 for Refinery road, 12.00 ± 2.80 for Okere market, 16.00 ± 4.62 for PTI round-about and 5.60 ± 2.50 in Abraka town. For CAT activities (K min-1), the Mean ± SD values were 0.98 ± 0.0134 for Refinery road, 1.08 ± 0.061 for Okere market, 0.95 ± 0.018 for PTI round-about and 0.93 ± 0.0125 for Abraka. AA concentrations in earthworms from Refinery road, Okere market, PTI round-about and Abraka were 0.175 ± 0.0172, 0.118 ± 0.0148, 0.109 ± 0.014 and 0.072 ± 0.0040 mg / ml respectively. The values for LPO (µmole / ml) for Refinery road, Okere market, PTI roundabout and Abraka were also 5.83 ± 0.46, 4.04 ± 0.58, 4.25 ± 0.48 and 2.09 ± 0.43 respectively. After statistical analysis, the foregoing results indicate that the levels of AO, SOD, AA and LPO but not CAT were significantly higher in Warri area relative to Abraka. The results obtained suggest that elevation of these parameters in earthworms can be used as bioindicator of pollution.

Speaker Biography

Asagba Samuel Ogheneovo is a Nigerian by birth. He is an alumnus of the University of Benin, Nigeria, where he obtained his B.Sc. and PhD degrees in Biochemistry. He obtained his M.Sc. degree in the same subject from the University of Lagos, Lagos Nigeria. He is highly interested in academic research, which informed his decision to pick up an academic position with Delta State University in 1994 where he has remained till date. He has been a Professor of Biochemistry, since October, 2010 and his current research interest is in Molecular aspects of heavy metal toxicity.

e: asagbabch@yahoo.com

Notes:

Accepted Abstracts

EnviPharm 2019





International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Discovery: Reduction in photosynthesis correlation to carbon dioxide increase

Dave White CH E
Climate Change Truth Inc, USA

Carbon emissions correlate to 363 ppm and are not the cause of the Atmospheric CO2 rise since 1957. This is why the minimum residence time has increased to 500 years. The correct cause is deforestation of the Amazon Rain-Forest (0.99). Since 1950, the Amazon Rain forest has been deforested. An average of 12 million hectare per year. This deforestation causes a minimum of 30% of the biomass burned. The burning of the biomass is adding billion of tons of carbon dioxide to the atmosphere. The carbon dioxide has overwhelmed the rain forest and caused massive decay. The rain forest has now become and oxygen sink and carbon dioxide producer. To solve these issues the deforestation and burning needs to stop. Then after 10 years, the burning can continue 10% a year for 10 years. This will heal the amazon and bring down atmospheric carbon dioxide quickly. However minus 860 million hectares.

e: research@cctruth.org

Notes:

allied academies

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Computational integration of Human genetic data to evaluate AOP- specific susceptibility

Holly M Mortensen
National Health and Environmental Effects Research Laboratory, USA

There is a need for approaches to define human variability and susceptibility in response to environmental chemical exposure. Direct estimation of the genetic contribution to variability in susceptibility to environmental chemicals is only possible in special cases where there is an observed association between exposure and effect (e.g. genotype and phenotype information). The availability of genetic data sources makes it possible to indirectly estimate the relative contribution of genetic variability to differential human susceptibility. We developed a computational workflow that integrates genetic and toxicological resources. This approach implements the Adverse Outcome Pathway (AOP) framework in order to integrate molecular targets associated with AOPs with functional genomic annotations and population allele frequencies. Resources include the EPA internal Adverse Outcome Database (AOP-DB), and publicly available resources, such as the AOP-wiki, Ensembl genomic annotations, expression Quantitative Trait loci identified by the GTEx consortium, and 1000 Genomes Project. With this information it is possible to formulate predictions of genetic susceptibility built upon established toxicological and genetic knowledge that are specific to an adverse outcome.

The computational workflow was developed in R and built around the Ensembl database interfaces (REST API and biomaRt R package). It downloads, integrates, and analyzes the available data sources when an AOP is given as input. Data is processed in four steps: 1. Genetic identities of AOP key events are extracted from the AOP-DB; 2. Nearby regulatory annotations are downloaded from the Ensembl regulatory build; 3. GTEx Expression quantitative trait loci are imported for AOP-relevant tissue types; and 4. Allele and haplotype frequency information is retrieved from the 1000 Genomes Project stage 3 dataset. The analysis provides an estimate of the degree of genetic variation at functionally relevant loci. With ongoing AOP development, this automated workflow will allow rapid assessment of outcome specific human genetic susceptibility. This abstract does not reflect EPA Policy.

e: mortensen.holly@epa.gov

Notes:

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Earth diseases and exploding stars

William Sokeland
Spacecraft and Turbine Engines, USA

The Supernova and Nova Impact Theory, SNIT, has purposed that pandemic diseases occur on Earth due to exploding star debris streams impacting our planet. A number of cases involving this phenomenon has been mentioned in papers by the author on internet. New information concerning the SNIT has become available as new papers were published. The new information that was learned is used in these results involving average velocity of debris streams between exploding star remnants and Earth.

e: wpsokeland@yahoo.com

Notes:

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Can we tame Glucocorticoids? Blood tyrosine as a new laboratory test

Irma Th Rass
Academy of Sciences, Russia

Glucocorticoid (GC) preparations are used in medicine for about 70 years as the most powerful anti-inflammatory drugs also possessing immunosuppressive, anti-allergic and antitoxic properties. However, application of these unique preparations is associated with nearly inevitable serious adverse effects and a difficulty of their withdrawal. It is very important that the adverse effects are caused not by toxic action of GC preparations but by their hormonal nature. Glucocorticoid hormones directly or indirectly control virtually all metabolic and physiological processes in the body. However, for these virtually omnipresent and vitally important hormones there is no representative specific index of action similar to blood content of glucose for insulin. The present paper considers specific features of tyrosine metabolism that allows us to consider changes in blood tyrosine content as manifestation of regulatory action of GCs. Changes in blood tyrosine content were compared with using GC preparations in two typical cases: in systemic lupus erythematosus and in congenital adrenal virilizing dysfunction in children. Blood tyrosine behaviour was also considered in rats after adrenalectomy and on injecting them with hydrocortisone. Based on these observations, it is proposed to use blood content of tyrosine as a laboratory test for reasonable prescribing GC preparations and monitoring their dose. Blood tyrosine behavior in comparison with adrenocortical response is also considered in influenza.

e: irma2@kmail.ru

Notes:

allied academies

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Anti-allergic cromones exert its mechanism of pharmacological actions by inducing the release of Annexin A1

Sinniah A
University of Malaya, Malaysia

Anti-allergic cromones are well recognised as 'mast cell stabilizers' which prevent mast cell degranulation upon stimulation. Many studies have also reported that disodium cromoglycate and nedocromil, which are exemplars of cromones, can influence the other facets of inflammatory cascade including inactivation of polymorphonuclear leukocytes, inhibition of cytokine and eicosanoid release and chloride channel blockade. However, the exact mechanism underlying these effects remained a conundrum until recently. Our work now points to a mechanism involving the endogenous anti-inflammatory protein, Annexin (Anx) A1. The synthesis and secretion of this protein is regulated by glucocorticoids and mediates their action in many models of acute and chronic inflammation. We have therefore investigated the possibility that cromones control mast cell homeostasis and degranulation by promoting the release of Anx-A1 (abundant in mast cells). Cultured cord blood derived mast cells (CDMCs) and bone marrow-derived murine mast cells (BMDMCs) from wild type or Anx-A1-/- mice were pre-treated with nedocromil (0.5-10nM) for 5 min prior to 10 min stimulation with compound 48/80 (10µg/ml) to trigger degranulation. PKC activation is crucial for Anx-A1 externalization in CDMCs and nedocromil-induced Anx-A1 phosphorylation/externalisation was blocked by the PKC inhibitor Gö-6983 (10µM). Pre-treatment with nedocromil significantly ($p<0.05$) inhibited the release of histamine, PGD2, tryptase and β-hexosaminidase, however the drug was inactive in the presence of anti-Anx-A1 neutralising antibodys. The prospect that FPR2, the receptor for Anx-A1, might be involved in the acute actions of nedocromil was tested using the FPR2 antagonist (10µM) or in BMDMCs from fpr2/3-/- mice. Nedocromil was then unable to prevent PGD2 release in either model. However its action on histamine release does not seem to exclusively depend on FPR2, hence might involve another member of the FPR family. These findings indicate a novel paradigm by which Anx-A1 mediates the pharmacological actions of cromones as inhibitors of mast cell degranulation.

e: ajantha.sinniah@um.edu.my

Notes:

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Computational chemistry strategies for Bioremediation

Leal DHS
Federal University of Espirito Santo, Brazil

Bioremediation can be defined as the field of knowledge related to the use of microorganisms consortia and processes for the degradation and detoxification of environmental contaminants. As examples of the potential of bioremediation, we mention the use of enzymes such as DFPase and OpdA, respectively found in the squid Loligo vulgaris and in the bacterium Agrobacterium radiobacter, which have been studied due to their performances in the degradation of organophosphorus compounds (used as agricultural defensive agents and chemical warfare agents). Computational Chemistry, in turn, is an important branch of Chemistry that uses computational methods to understand and predict the behavior of molecular systems. Since 2016, the Computational Chemistry Group from the Federal University of Lavras (UFLA, Brazil) has been contributing to the field of bioremediation through research papers focusing on the enzymatic degradation of warfare agents and pesticides. By means of a brief summary of the state-of-the-art of these two fields of knowledge, we intend to present some contributions from our group to the field of bioremediation and to present some possible trends for the future of this field based on possible molecular targets and on the literature available so far.

e: daniel.leal@ufes.br

Notes:

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

allied academies

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Reducing toxicity by designing bio-inspired Nanomaterials

Monica Neagu
University of Bucharest, Romania

Above and beyond the nanoparticles that arise in the environment, in nanomedicine, the toxicity displayed by nanomaterials is a major concern. While developing new nano-carriers and nano-drugs that have shown their medical applications, research has witnessed new areas of toxicity inflicted upon humans. Penetrating this domain, the search has begun for finding the best option to overcome the known toxicity of nanomaterials. In this view, a new domain has been recently raising, the area of bio-inspired nanomaterials. Nature has inspired nanomedicine to use materials that reproduce the complexity of biomolecules mimicking the functional characteristics. Resembling nature, various types of functional nanosystems are explored. Thus, the area is very broad, namely carbohydrates can be tailored to develop nano-sensors, then peptides and proteins can be designed in specific transporters of drugs through cells overcoming toxicity and drug-resistance. The most recent bio-inspired endeavor is designing entire synthetic viruses and bacteria that are the perfect drug and active biomolecules carriers. The main groups of biomolecules that can be developed in nanomaterials are peptides, these structures having multiple chemical binding capacities to be tailored in larger structures like proteins and/or other biological molecules. Moreover, as nature has planned, these biomolecules can respond to the biological milieu by physiologically altering its structure and function; this property suits very well their applications in nanomedicine. There are several clear applications of bio-inspired nanomaterials like reversing multi-drug resistance in cancer cells. In another medical application, they can act as vaccine delivery systems. Lipid-based particles, micelles, nanostructures of natural or synthetic polymers, and even lipid-polymer hybrid nanoparticles can significantly increase vaccines immunogenicity. These bio-inspired nanomaterials are still an open area that is to be explored in the permanent scientific quest to reduce toxicity while developing the best/efficient therapy accomplishment.

e: neagu.monica@gmail.com

Notes:

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Antidepressant-like effects of HSR extract in a Restraint-Induced Chronic Stress model

Mi Young Lee
Korea Institute of Oriental Medicine, South Korea

Corticosterone signaling is involved in stress and depression, as well as in depression pathophysiology. Using an animal model of restraint stress, we investigated the effects of HSR on depressive-like behaviors and on the expression levels of serotonin, corticosterone, and neurotrophic factors in the brain. The mice were exposed to restraint stress for 2 h per day over a period of 3 weeks and orally treated with HSR (100, 200, or 400 mg/kg/day). Administration of HSR not only reduced the immobility times of the restraint-stressed mice in the forced swimming and tail suspension tests but also significantly increased sucrose preference in the sucrose preference test. HSR also significantly reduced the levels of corticosterone and increased the levels of serotonin in the plasma. The extract also increased the phosphorylation level of cyclic AMP response element-binding (CREB) protein and the expression level of brain-derived neurotrophic factor (BDNF).

e: mylee@kiom.re.kr

Notes:

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Effects of zinc chloride on Zebrafish locomotion, circadian rhythm, social behavior and memory: Correlation between Toxicity and Neurobehavior changes

Sreeja Sarasamma
Chung Yuan Christian University, Taiwan

Zinc is a micronutrient at low level but at high concentrations leads to environmental contamination and causes health problems. The aim of this study was to evaluate the effects of Zinc Chloride ($ZnCl_2$) exposure on cognition and locomotion behavior in adult zebrafish (Danio rerio) and correlate these findings with different tissue accumulation of Zn, overall brain AChE and ROS level, Cortisol and Metallothionine levels in the nervous system. Although low level heavy metal exposure poses a potential risk to the zebrafish larvae, little or no data about the effects of $ZnCl_2$ exposure on zebrafish adult fishes. We therefore, exposed adult zebrafishes for 4 days (0.5,1 and 1.5mg/L) displayed decreases locomotor behavior, such as average speed and time in upper zone and an increase speed of meandering. Interestingly, adult fishes exposed to $ZnCl_2$ for 4 days showed impaired frigid long-term memory in the passive avoidance test. Furthermore, zinc chloride treated fish showed memory deficit, increased ROS and AChE levels and decreased locomotor and swimming activities compared to control. A significantly positive correlation was observed between memory and AChE activity, as well as between locomotion and ROS production. These results indicate that acute exposure to $ZnCl_2$ in adults leads to anxiogenic effects, impaired memory and decrease aggressive behavior that might be associated with damage caused by this metal in the CNS, particularly in the cholinergic system.

e: sreeja0327@gmail.com

Notes:

J Clin Exp Tox, Volume 3
DOI: 10.4066/2630-4570-C1-006

International Conference on

Environmental Toxicology and Pharmacology

February 21-22, 2019 | Paris, France

Metabolomics: A novel tool of Precision Medicine

Dimitris Tsoukalas
President of the European Institute of Nutritional Medicine, Greece

Dramatic changes of the environment in the last decades have resulted in nutrient poor food and excessive intake of heavy metals and toxins through air, drinking water and dietary habits. Non-communicable diseases (NCD) which are responsible for almost 70% of global deaths are mainly caused by modifiable risk factors. These include behavioral and metabolic risk factors such as unhealthy diet, tobacco smoke and alcohol. Epigenetic factors have high attributable risks of 80% for most NCD. Precision medicine integrates the individual variability in genes, environment, and lifestyle of each person for the prevention and treatment of disease. Metabolomics, the quantitative and comprehensive evaluation of metabolites, has emerged as a novel and powerful tool in precision medicine. As one of the "omics" technologies, metabolomics has attracted increasing attention for its potency in identifying unique biomarkers. Metabolites provide a detailed overview of cellular function. Analysis of metabolites gives a precise data of nutritional deficiencies, metabolic imbalances, environmental toxins, microbiome condition, and uncovers underlying genetic predispositions that can be modified through diet, lifestyle, supplements or medications. Gas chromatography/ Mass spectrometry methodology has allowed the detection of low quantity molecules in minimum amount of biofluid samples. Critical signs of systemic dysfunction at the molecular level are revealed years before clinical symptoms appear. Thus, through the assessment of the overall health status, early detection of a disease and intervention to restore these deficiencies is feasible.

e: dr.tsoukalas@gmail.com

Notes: