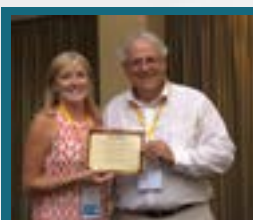23rd Euro-Global Summit on
**Toxicology and Applied Pharmacology**

18th International Conference on
**Metabolomics & Systems Biology**

**March 09-10, 2022**

**WEBINAR**

# Scientific Tracks & Abstracts

**23rd Euro-Global Summit on**
**Toxicology and Applied Pharmacology**

**18th International Conference on**
**Metabolomics & Systems Biology**

**March 09-10, 2022**

**WEBINAR**

# Genotoxic and mutagenic evaluation of graphene oxide

**Angeles. Jos\*, Oscar Cebadero-Dominguez, C Medrano-Padial, M Puerto** and **A M Cameán**
University of Seville, Spain

G raphene oxide (GO) is a graphene derivative used in many different fields. Compared with other carbon materials, GO could provide advantages for biomedical applications. But any potential use will depend on its safety, and genotoxicity and mutagenicity aspects play a key role in any toxicological evaluation.

Thus, the aim of this work was to explore the genotoxicity of GO by the Micronucleus (MN) test (OECD 487) and the Comet assay. Mutagenicity was evaluated using the Mouse lymphoma assay (MLA, OECD 490). A lymphoma cell line (L5178Y Tk+/-) was used for MN and MLA and the human colorectal adenocarcinoma cell line (Caco-2) for the comet assay.  250 µg/mL GO was used as the highest concentration based on previous cytotoxicity studies. Regarding the MN test, GO did not increase the number of binucleated cells at any concentration assayed. No DNA damage was observed in Caco-2 cells treated with GO after 24h and 48h. For MLA, there was no mutagenic effect after both exposure times at any concentration assayed. We can conclude that GO is neither genotoxic nor mutagenic at the conditions tested, but further toxicological tests are required.

**Recent Publications**

1.  O. Cebadero et al., (2022). In vitro toxity evaluation of graphene  oxide and reduced graphene oxide on Caco-2 cells. Toxicology  reports.

2.  S. More et al., "Guidance on risk assessment of nanomaterials to be applied in the food and feed chain: human and animal health," EFSA Journal, vol. 19, no. 8, 2021.

3.  OECD (2016), Test No. 487: In Vitro Mammalian Cell Micronucleus Test, OECD Guidelines for the Testing of Chemicals, Section 4, OECD Publishing, Paris.

4.  OECD (2015), Test No. 490: In Vitro Mammalian Cell Gene Mutation Tests Using the Thymidine Kinase Gene, OECD Publishing, Paris.

5.  Azqueta A and Dusinska M (2015) The use of the comet assay for the evaluation of the genotoxicity of nanomaterials. Front. Genet. 6:239.

# 23rd Euro-Global Summit on
## Toxicology and Applied Pharmacology
# 18th International Conference on
## Metabolomics & Systems Biology

**March 09-10, 2022**

**WEBINAR**

## Biography

Ángeles Jos is PhD in Pharmacy at the University of Sevilla. She is Full Professor of Toxicology in the Department of Nutrition and Bromatology, Toxicology and Medicine of this university. Her research focuses on different fields of Toxicology, such as the evaluation of food safety and toxicity of different substances (nanomaterials, food additives, or toxins).

23rd Euro-Global Summit on
## Toxicology and Applied Pharmacology
March 09-10, 2022

18th International Conference on
## Metabolomics & Systems Biology
WEBINAR

# *In vitro* studies on the genotoxicity of reduced graphene oxide

**Oskar Cebadero-Dominguez\*, C Medrano-Padial, M Puerto, A M Cameán** and **Angeles Jos**
University of Seville, Spain

The interest in graphene derivatives, as reduced graphene oxide (rGO), has increased as they possess unique physical and chemical properties for applications in different fields. However, exposure to graphene materials could be a risk for human health. Thus, the European Food Safety Authority in its guidance on risk assessment of nanomaterials to be applied in the food and feed chain, recommends to perform genotoxicity and mutagenicity studies to assure the safety of materials. The aim of this work is to define the potential in vitro genotoxic and mutagenic effects of rGO on a human colorectal adenocarcinoma cell line (Caco-2) and L5178Y Tk+/− mouse lymphoma cells. For this purpose, a battery of different in vitro assays was used: micronucleus test (MN), mouse lymphoma assay (MLA), and comet assay. L5178Y Tk+/− cells were used for MN and MLA. Cells were exposed at different rGO concentrations (0-250 µg/mL) for 24h in the MN test and for 4-24h in MLA. In the comet assay, Caco-2 cells were exposed to EC50 (176.3 ± 7.56 µg/mL), EC50/2 and EC50/4 for 24h and 48h. The test concentrations were based on previous cytotoxicity studies. No genotoxic effects were observed in the MN and comet assays at any concentration tested. Nevertheless, rGO caused statistical differences in the mutant frequency on L5178Y Tk+/− cells from 125 µg/mL after 4h of exposure. In conclusion, our results evidence mutagenic effects of rGO I. Therefore, furtherstudies are necessary before its potential commercial application. Acknowledgement: Project US-1259106 cofunded by Programa Operativo FEDER 2014-2020 and Consejería de Economía, Conocimiento, Empresas y Universidad de la Junta de Andalucía. And project P18-RT-1993 (PAIDI-2020, Junta de Andalucía). Biology Services of CITIUS are acknowledged for technical assistance.

## Recent Publications

1. O. Cebadero et al., (2022). In vitro toxicity evaluation of graphene oxide and reduced graphene oxide on Caco-2 cells. Toxicology reports.

2. S. More et al., "Guidance on risk assessment of nanomaterials to be applied in the food and feed chain: human and animal health," EFSA Journal, vol. 19, no. 8, 2021.

3. OECD (2016), Test No. 487: In Vitro Mammalian Cell Micronucleus Test, OECD Guidelines for the Testing of Chemicals, Section 4, OECD Publishing, Paris.

4. OECD (2015), Test No. 490: In Vitro Mammalian Cell Gene Mutation Tests Using the Thymidine Kinase Gene, OECD Publishing, Paris.

5. Azqueta A and Dusinska M (2015) The use of the comet assay for the evaluation of the genotoxicity of nanomaterials. Front. Genet. 6:239.

**23rd Euro-Global Summit on**

**Toxicology and Applied Pharmacology**

**18th International Conference on**

**Metabolomics & Systems Biology**

**March 09-10, 2022**

**WEBINAR**

## Biography

Óscar Cebadero is graduated in Biology at University of Salamanca with postgraduate studies in Physiology and Neuroscience at the University of Sevilla. At present, he is PhDI student in the Department of Nutrition and Bromatology, Toxicology, and Legal Medicine at the University of Sevilla. Their studies are based on the development and toxicological evaluation of graphene derivatives for their potential use as food contact materials.

23rd Euro-Global Summit on
**Toxicology and Applied Pharmacology**

18th International Conference on
**Metabolomics & Systems Biology**

**March 09-10, 2022**

**WEBINAR**

## Estimation of Pb and Cd in the whole blood by ICP-OES technique: A comparison of microwave digestion and simple dilution method

**Hatem Ahmed** and **Almohammed**
Naif Arab University for Security Sciences, Saudi Arabia

Abstract (300 word limit) Forensic investigations necessitate the quick identification and quantification of toxic substances to begin adequate treatment for trace metal toxicity. As a result, finding precise and time-effective digestive methods for identifying toxic substances in biological samples of a person suspected of poisoning is critical. In the present study, a comparison between the microwave digestion and simple dilution method of blood samples and their detection by induction coupled optical emission spectroscopy ICP-OES was carried out. Twenty-three human whole blood samples were collected from fully consented volunteers in EDTA-blood tubes. Whole blood samples were prepared using HNO3:H2O2 for microwave digestion and HNO3:H2O2, Triton X100, and N-butanol for the simple dilution method. Validation of the method was executed by determining accuracy and precision. Method sensitivity was assessed by determining limits of detection (LOD) and quantification (LOQ). Our results showed a significant difference in the recovery ratios in favor of lead (Pd) and cadmium (Cd) between simple dilution and microwave digestion techniques. This study indicated that microwave digestion may be a better choice than the simple dilution technique in terms of recovery and accuracy whereas simple dilution was both cost and time-effective for the isolation, identification, and quantification of toxic metals in cases of poisoning.

### Recent Publications

1. Ahmed, H. A. M., Al Saad Mohammed Ali, M. N., & Janjua, M. A. H. H. (2019). Determination of Lead, Cadmium and, Mercury in Some Medicinal Plants and their User's Urine Samples. Eurasian Journal of Analytical Chemistry, 14(1), 157-164.

2. Ahmed, H. A. M. (2020). Biochemical and Haematological Parameters Among Gas Station Employees.

3. Ahmed, H. A. M., & Alsohaibani, G. H. (2020). Analysis of toxic heavy metals in liquid versus dried blood samples. International Journal of Environmental Analytical Chemistry, 1-8.

4. Ahmed, A. S., Aldubayan, M. A., Ahmed, H. A., Refaat, A. M., Alsalloumi, A. S., Almasuood, R. A., & Elgharabawy, R. M. (2021). Impact of smoking on heavy metal contamination and DNA fragmentation. Environmental Science and Pollution Research, 28(11), 13931-13941.

5. Almowalad, R. A., Emara, H., Ahmed, H., & Ibrahim, S. F. (2019). Assessment of blood pregabalin stability at different postmortem durations. The Saudi Journal of Forensic Medicine and Sciences, 2(2), 28.

23rd Euro-Global Summit on

**Toxicology and Applied Pharmacology**

18th International Conference on

**Metabolomics & Systems Biology**

**March 09-10, 2022**

**WEBINAR**

## Biography

Dr. Hatem Abdel Moneim Ahmed has field experience in the field of forensic sciences, with experience that spanned nearly 20 years, before joining the academic work as an associate professor at Naif Arab University for Security Sciences in 2012. He practiced writing reports on cases of poisoning, drug addiction, murder, suicide, and drug trafficking by working in the Forensic Medicine Authority - Egypt. He practiced fieldwork in raising antiquities at the crime scene resulting from some crimes. He taught drug and poisonous analysis for master's and higher diploma students and supervised a number of master's theses in the field of drug and toxicology analysis. He organized and participated in local and international courses, conferences, and workshops in the field of toxicology and drug analysis, and he has many refereed scientific research published in many reputable international journals

23rd Euro-Global Summit on
**Toxicology and Applied Pharmacology**

18th International Conference on
**Metabolomics & Systems Biology**

**March 09-10, 2022**

**WEBINAR**

# Comparative study of methods for determining temperature fields in a homogeneous bar

**Pagdame Tiebekabe**
University of Kara, Kara-Togo

In this article, we make a comparative study of the different methods of studying the temperature propagation fields in a homogeneous bar. This study will show the most effective method. Several comparison parameters are taken into account. We compare the following methods: Finite element method, Finite-difference method (Picard iterative schematic, Euler method based on Taylor series, Runge Kutta method : 2nd, 3rd and 4th order, Crank-Nicolson schematic and Duffort-Frankel) and finite-volume method.

## Biography

Pagdame Tiebekabe is a brilliant mathematician and specialist of number theory. He is also interested in research in chemistry and physics as demonstrated by his publications which range from fluid mechanics to Diophantine equations. At first sight, these areas have no connection. He has participated in more than 25 Conferences in several countries. He has published more than 15 papers in important journals.

23rd Euro-Global Summit on
## Toxicology and Applied Pharmacology
18th International Conference on
## Metabolomics & Systems Biology

**March 09-10, 2022**

**WEBINAR**

## Metabolomics

**Anil Batta**

MM Institute of Medical Science and Research, India

Metabolomics is the systematic identification and quantitation of all metabolites in a given organism or biological sample. The enhanced resolution provided by nuclear magnetic resonance (NMR) spectroscopy and mass spectrometry (MS), along with powerful chemometric software, allows the simultaneous determination and comparison of thousands of chemical entities, which has lead to an expansion of small molecule biochemistry studies in bacteria, plants, and mammals. Continued development of these analytical platforms will accelerate the widespread use of metabolomics and allow further integration of small molecules into systems biology. Here, recent studies using metabolomics in xenobiotic metabolism and genetically modified mice are highlighted.

## Biography

Anil Batta is presently professor & Head with senior consultant in Govt. Medical College, Amritsar. He did his M.B.B.S. and M.D. in Medical Biochemistry from Govt. Medical College, Patiala in 1984 and 1991, respectively. His research interest is mainly in clinical application especially cancer and drug de-addiction. He has supervised more than 30 M.D., M.Sc. and Doctorate researches and published more than 150 international research papers. He is the chief editor of America's Journal of Biochemistry. He is also working as advisor to the editorial board of International Journal of Biological and Medical Research. He has been deputed member Editorial Board of numerous International & National Medical Journals of Biochemistry. He has also been attached as technical advisor to various national and international conferences in Biochemistry. He has been attached as hi-tech endocrinal, genetics and automated labs of Baba Farid Univ. of Health Sciences, Faridkot. He has chaired various sessions in the Biochemistry meets. He has been designated as member Editorial Board of various in US and other European Courtiers. He is also involved in various research projects at Govt. Medical, Amritsar. He has done superspecialization in Drug-de-addiction from PGIMER, Chandigarh.

23$^{rd}$ Euro-Global Summit on
## Toxicology and Applied Pharmacology
18$^{th}$ International Conference on
## Metabolomics & Systems Biology

**March 09-10, 2022**

**WEBINAR**

# Geometry of ah receptor' ligand binding site studied with idiotypic and anti-idiotopic monoclonal antibodies to 2,3,7,8-tcdd.

**Ilya B Tsyrlov**
Icahn School of Medicine, USA

An original approach was developed consisting of the development of monoclonal antibodies (Mab) against the most potent xenobiotic 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). The TCDD was adducted by the adipine fragment synthesized with the carrier protein. The Mab obtained allow to increase significantly a sensitivity of immunochemical quantitative analysis of TCDD amount in biological tissues, especially by using a time-resolved fluorimetry of the complex of the Mab with europium or another lanthanum element. That made possible to avoid very laborious and expensive HPLC/double mass spectrometry analysis of bio-concentrations of TCDD, which usually linked to TCDD ability to trans-activate key genes related to chronic inflammation and other toxic effects. The biological effects of TCDD can be defined strictly due to this ligand extremely strong binding to the its own Ah receptor, a mediator of all TCCD-activated transcriptional pathways. Therefore, the anti-ligand Mab obtained could be used for semi-quantitate assessment of TCDD-Ah receptor interactions (see the scheme). Selection of an antibody that binds to the idiotope outside the antigen binding site of the drug results in an antibody that can be used to detect both free and bound drug in the sample o Anti-idiotypic antibody o Detects total ligand (TCDD), free, partially bound, fully bound Moreover, the anti-TCDD Mab might serve a suitable immunogen to elicit anti-anti-ligand Mab via the idiotypic network. Whether the anti-idiotypic Mab binding to the Ah receptor to be completely inhibited by the ligand (TCDD), that might give an approach to more précised investigation of geometry and function of the Ah receptor binding site(s).

## Biography

Ilya B. Tsyrlov is a professor at Icahn School of Medicine, USA. he has attended so many inetrnational conferences.

23rd Euro-Global Summit on
**Toxicology and Applied Pharmacology**

18th International Conference on
**Metabolomics & Systems Biology**

**March 09-10, 2022**

**WEBINAR**

# Prediction of environmental indicators in land levelling using artificial intelligence techniques

**Isham Alzoub**
School of Surveying Geospatial Engineering, Syria

The aim of this work was to determine best linear model Adaptive Neuro-Fuzzy Inference System (ANFIS) and Sensitivity Analysis in order to predict the energy consumption for land leveling. In this research effects of various soil properties such as Embankment Volume, Soil Compressibility Factor, Specific Gravity, Moisture Content, Slope, Sand Percent, and Soil Swelling Index in energy consumption were investigated. The study was consisted of 90 samples were collected from 3 different regions. The grid size was set 20 m in 20 m (20*20) from a farmland in Karaj province of Iran. The values of RMSE and R2 derived by ICA-ANN model were, to Labor Energy (0.0146 and 0.9987), Fuel energy (0.0322 and 0.9975), Total Machinery Cost (0.0248 and 0.9963), Total Machinery Energy (0.0161 and 0.9987) respectively, while these parameters for multivariate regression model were, to Labor Energy (0.1394 and 0.9008), Fuel energy (0.1514 and 0.8913), Total Machinery Cost (TMC) (0.1492 and 0.9128), Total Machinery Energy (0.1378 and 0.9103).Respectively, while these parameters for ANN model were, to Labor Energy (0.0159 and 0.9990), Fuel energy (0.0206 and 0.9983), Total Machinery Cost (0.0287 and 0.9966), Total Machinery Energy (0.0157 and 0.9990) respectively, while these parameters for Sensitivity analysis model were, to Labor Energy (0.1899 and 0.8631), Fuel energy (0.8562 and 0.0206), Total Machinery Cost (0.1946 and 0.8581), Total Machinery Energy (0.1892 and 0.8437) respectively, respectively, while these parameters for ANFIS model were, to Labor Energy (0.0159 and 0.9990), Fuel energy (0.0206 and 0.9983), Total Machinery Cost (0.0287 and 0.9966), Total Machinery Energy (0.0157 and 0.9990) respectively, Results showed that ICA_ANN with seven neurons in hidden layer had better. According to the results of Sensitivity Analysis, only three parameters; Density, Soil Compressibility Factor and, Embankment Volume Index had significant effect on fuel consumption. According to the results of regression, only three parameters; Slope, Cut-Fill Volume (V) and, Soil Swelling Index (SSI) had significant effect on energy consumption. Using adaptive neuro-fuzzy inference system for prediction of labor energy, fuel energy, total machinery cost, and total machinery energy can be successfully demonstrated.

## Biography

Alzoubi has completed his PhD at the age of 40 years Tehran University and postdoctoral studies from Tehran University School of Surveying Geospatial Engineering-Department of Surveying and Geomatics Engineering. He is the director at the Directorate of Engineering and Transportation, a premier service organization. He has published more than 15 papers in reputed journals and has been serving as an editorial board member of repute. He Opening and studying the financial offers and the organization of the fundamental record, supervising the efficiency of electrical generators at Nseeb border center, and Supervising the efficiency of agricultural machinery at the ministry of agriculture

# Research work on antimicrobial activity of honey against specific microbes

**Sher Ali**
Hazara University, Pakistan

The study was carried out in Hazara University, Mansehra, Pakistan in 2011 on the antimicrobial activity of honey against specific microbes which include like E. coli, Salmonella, Staphylococcus aureus, Enterococcus faecalis and Candida albican. During the study the 37 honey samples were collected from different district of Hazara division and Malakand division like Mansehra Swat and Dir were selected for the samples collection. For the samples collection process 170 indoor and outdoor patients were visited. The microorganisms were isolated from the various samples collected from the patients having the confirmed infection which were further processed in the microbiology laboratory by using nutrient agar incubated on 37 oC for 24 hours. During the research work agar well plate technique were used to examine the maximum zone of inhibition on Muller Hinton agar against all the specified organisms. Result showed that E. coli showed 66 mm, Salmonella Typhi 62 mm, Enterococcus faecalis 60 mm, Candida albican 50 mm and Staphylococcus aureus 38 mm. From the study it is concluded that honey is used against different diseases and infections like wound infection, diarrhea, dehydration, paralysis, enterococcus faecalis, chest infection, jaundice, tuberculosis and Urinary tract infections.

## Biography

Sher Ali completed his BSc in Microbiology from the Faculty of Health Sciences, Hazara University, Mansehra, Pakistan in 2011. After completion of his degree, he has joined the SRSP (Sarhad Rural Support Program) as a Health Promotion and Research Officer and working till date.

23rd Euro-Global Summit on
## Toxicology and Applied Pharmacology

18th International Conference on
## Metabolomics & Systems Biology

**March 09-10, 2022**

**WEBINAR**

# Studies of neuroscientific discoveries can constrain and guide models of human behaviour based on the mechanisms underlying the therapeutic effects of neuromodulation in neurological and neuropsychiatric conditions using modelling and functional imaging techniques

**Xianfang YUE, Duncan ET Shepherd** and **Daniel Espino**
University of Birmingham, UK

For metabolic syndrome and many other health issues, the brain plays a central role in controlling metabolic physiology in that it integrates information from other metabolic organs, sends regulatory projections and orchestrates the whole-body function for devastating diseases such as cardiovascular diseases, stroke and cancers. Emerging neurology studies suggest that brain dysfunction in sensing various internal cues or processing external cues may have profound effects on metabolic and other physiological functions. This research explores the brain-FSI-skull interfacing and modelling, dynamic brain mapping to optimization through identifying individualized biomarkers of disease, mechanisms underlying the therapeutic effects of neuromodulation in neurological and neuropsychiatric conditions using modelling and functional imaging techniques, closed loop control, and intracranial interventions that optimize current therapies in existing patient populations, implement new approaches and techniques, explore new targets, and define new disease populations. We also speculate key issues that need to be addressed on how to reveal relevant brain dysfunction that underlines the development of these disorders and diseases in order to develop new treatment strategies against these health problems. So as to decide the molecular signaling pathways through which the brain and the gastrointestinal system communicate to govern energy homeostasis, combined with emerging insights on the molecular mechanisms underlying successful surgery, gives reason to be optimistic that novel precision medicines that mimic, enhance, and/or modulate gut-brain signaling can have unprecedented potential for stopping various pandemics.

## Biography

Xianfang YUE has completed her PhD at 2007 year from University of Science and Technology Beijing and postdoctoral studies from University of Birmingham. She is an Associate Professor at the University of Science and Technology Beijing, China. She has a combination of education and work experience to more than 10 years and achieved a high level of research and teaching, including publishing 4 books, publishing over 40 papers, awarded 3 national patents of invention and being awarded second prize of the Provincial Science and Technology Progress. She has a wide experience of project management skills to successfully complete research projects.