PHARMACOLOGY & TOXICOLOGY
MARCH 18-19, 2023
DUBAI, UAE

UNITED RESEARCH FORUM
(CONNECT WITH RESEARCH WORLD)

4TH INTERNATIONAL CONFERENCE ON

PHARMACOLOGY & TOXICOLOGY

MARCH 15-16, 2023

CROWNE PLAZA DUBAI - DEIRA, UAE

ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON
PHARMACOLOGY & TOXICOLOGY
MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Prof. Dr.-Ing. Frank Rogener

University of Applied Sciences, Institute of Chemical Process Engineering and Plant Design, Betzdorfer Str. 2, D-50679 Cologne, Germany

Climate protection and energy efficiency in the production of pharmaceutical grade water

Water is one of the most frequently used raw materials in the pharmaceutical industry. It serves for the production of pharmaceutical ingredients, intermediates and final products. Furthermore, water is required for the purification and preparation of reagents. Due to the importance of clean water as a product component or in production use, the quality requirements are particularly high. Pharmacopeias describe the official standards, which assure quality control of pharmaceutical products – including water -during their life cycle. Accordingly, the production of water for pharmaceutical use is mainly based on multi-stage distillation (MSD) and membrane processes, especially reverse osmosis (RO). These processes are characterized by a relatively high energy demand. In 2015, the total global emissions of the pharma sector was about 52 megatonnes of CO2, this was significantly higher than the CO2 emissions generated by the automotive sector in the same year. Thus, efforts must be made at all stages of production of pharmaceuticals to reduce the emission of climate-active gases. Membrane distillation (MD) could be an energy-efficient alternative process to the classical water preparation methods, as it offers advantages in terms of energy demand and energy supply. The paper will stress the preparation of pharmaceutical-grade water from tap water in a one-step process using a pilot scale MD plant. The performance of two different module designs and the selection of optimum process parameters will be discussed.

Keywords: PW, WFI, IX, RO, distillation, energy demand

Biography:

Prof. Dr.-Ing. Frank Rögener, Since 2014 Frank Rögener has been working as Professor of Fluid Process Engineering at Cologne University of Applied Sciences (TH Köln). His focus is on thermal process technology, including membrane and water/wastewater technology. He studied chemical engineering at TU Clausthal, Germany. In 2000 he received his doctorate from the University of Saarland on the application of membrane processes. For more than 20 years, Dr. Rögener has been involved in the development of energy- and resource-efficient processes, especially in the food industry, chemical industry and metal finishing industry.

doi.org/10.51219/URForum.2023.Frank-Rögener

ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON
PHARMACOLOGY & TOXICOLOGY
MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Dr. Mostafa Darwish

Mohamed S. Abdel-Bakky[a,b], Abdulmajeed Alqasoumi[c], Waleed M. Altowayan[c], Elham Amin[d,e], **Mostafa A. Darwish[f]**

[a]*Department of Pharmacology and Toxicology, College of Pharmacy, Qassim University, Buraydah 52471, KSA*
[b]*Department of Pharmacology and Toxicology, Faculty of Pharmacy, Al-Azhar University, Cairo 11884, Egypt*
[c]*Department of Pharmacy Practice, College of Pharmacy, Qassim University, Buraydah 52471, Saudi Arabia*
[d]*Department of Pharmacognosy, Faculty of Pharmacy, Beni-Suef University, Beni-Suef 62514, Egypt*
[e]*Department of Medicinal Chemistry and Pharmacognosy, College of Pharmacy, Qassim University, Buraydah 52471, KSA*
[f]*Department of Pharmacology and Toxicology, Faculty of Pharmacy, Nahda University, Beni-Suef 11787, Egypt.*

Role of chemotactic chemokine CXCL16, ADAM10 and ADAM17 in T-cells recruitment to the pancreatic B-cells and initiation of Type 1 diabetes mellitus in Mice: Modulatory action of Simvastatin

Background:

T cell trafficking into pancreatic islets drives the immunological response in type 1 diabetes mellitus (T1DM). It is unknown how A Disintigrin And Metalloproteinase 10 (ADAM10) and 17 (ADAM17) affect the migration of pancreatic T cells into the pancreatic islets during T1DM.

Objective:

The purpose of this study was to examine how ADAM10 and ADAM17 contribute to the development of T1DM and the potential protective effects of simvastatin (SIM) in T1DM caused by STZ.

Methods: Balb/c mice were divided into four groups of ten each. Control group received buffer while SIM group received 50 mg/kg, i.p daily for 12 days. STZ (55 mg/kg, i.p.) was administered to the diabetic group for 5 consecutive days. The SIM + STZ group was given STZ (55 mg/kg, i.p.) for 5 days straight and SIM (30 mg/kg, i.p.) every day for 12 days. Evaluation for pancreatic CXCL16, pancreatic ADAM10, nuclear factor-kB, and pancreatic T-cell expression was performed as well as biochemical, inflammatory, and apoptotic markers.

Results:

The STZ group showed a significant rise in biochemical, inflammatory, and apoptotic parameters as well as membrane-bound ADAM10, ADAM17, CXCL16, nuclear factor-kB (NF- kB), and infiltrating T-cell expression in the pancreatic islets. The biochemical and inflammatory parameters of SIM therapy in the presence of STZ were significantly improved. In addition, the expression of CXCL16, ADAM10, ADAM17, NF-B, T-cell migration, and apoptosis in the pancreatic islets were reduced as well.

Conclusion:

The work results shed the light on ADAM10 and ADAM17 role in promoting pancreatic b-cell death in T1DM. SIM improved STZ-induced changes in T1DM in mice. Therefore, CXCL16 and ADAM10/ADAM17 may serve as novel therapeutic targets for T1DM.

Keywords: Diabetes mellitus type 1, CXCL16, ADAM10, ADAM17, Simvastatin.

Biography:

Mostafa Darwish, has his expertise in molecular pharmacology regarding mechanisms of cisplatin nephrotoxicity and the influence of drugs or substrates on transporting system like OCT2 in tubules on cisplatin excretion from his master work. In addition, he studied the role of chemokines in initiation as well as development of diabetes mellitus in his Ph.D. He studied the role of the chemotactic chemokine CXCL16 and its processing enzymes ADAM 10 and ADAM17 in pancreas of diabetic mice. He has a very good experience in animal modeling and molecular imaging techniques like immunofluorescence and western blotting.

doi.org/10.51219/URForum.2023.Mostafa-Darwish ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON
PHARMACOLOGY & TOXICOLOGY
MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Chuan-jiang Wang

Chuan-jiang Wang, Xi Chen (Co-Author's)

Department of Critical Care Medicine, The First Affiliated Hospital of Chongqing Medical University, Chongqing, China

Protective Role of Metrnl in Host Immunity Defense during Sepsis by Promoting Macrophage Recruitment and Modulating Treg/Th17 Immune Cell Balance

Background:

Metrnl is a new kind of adipokine, which is also known as meteorin-like because it is homologous to the neurotrophic factor meteorin (Metrn). Although the expression and function of Metrnl have been extensively studied, research on its role in sepsis has remained largely limited.

Methods:

The present work analyzed the levels of Metrnl and cytokines in the circulation among septic adult patients. Clinical information was obtained from such patients, including sofa score, procalcitonin count, and so on. We constructed a sepsis model in Metrnl-deficient or normal wild-type mice using cecal ligation and perforation to study its functions in bacterial burden, survival, cytokine/chemokine generation, peritoneal lavage fluid neutrophils, macrophage and lymphocyte recruitment, and Treg/Th17 immune cell balance after CLP- induced sepsis.

Results:

The expression of Metrnl was remarkably elevated in the early phase of sepsis clinically. Its serum content in patients dying of sepsis slightly decreased relative to that in survivors. Metrnl could be a potential therapeutic target for sepsis. A low-lethality non-severe sepsis (NSS) model was constructed, which suggested that Metrnl insufficiency elevated the death rate and reduced bacterial clearance during sepsis. For Metrnl-deficient mice, impaired sepsis immunity defense might be related to decreased macrophage recruitment and Treg/Th17 lymphocyte imbalance. Recombinant Metrnl administered to Metrnl-deficient mice abolished the immunity defense impairment following NSS while protecting the high-lethality severe sepsis (SS) model in wild-type (WT) mice.

Conclusions:

The present proof-of-concept work suggests that Metrnl-mediated recruitment of macrophages significantly affects sepsis defense in the host and modulates the Treg/Th17 immune cell balance. Findings in this work shed more light on the development of host-directed treatments that can be used to manipulate host immunity to treat sepsis.

Keywords: Sepsis, Metrnl, Treg/Th17 lymphocytes, Macrophage

Biography:

Wang Chuanjiang, the attending physician, graduated from the Department of Clinical Medicine of Chongqing Medical University. My main research direction is sepsis,
ARDS and multiple organ dysfunction syndrome caused by sepsis. The research results have been published in the international infection journals such as Mediators Inflamm, J Immunol Res, Shock, Mol Immunol, Inflammation, etc., and served as the reviewer of international infection journals such as EUROPEAN JOURNAL OF PHARMACOLOGY, BMC Pharmaceutical Medicine, and Journal of Inflammation Research.

doi.org/10.51219/URForum.2023.Chuan-Jiang-Wang ISBN-978-1-7393132-6-5

Sajedeh Tehraninejad

Sajedeh Tehrani Nejad [a], Rahmatollah Rahimi [a]*, Sadegh Rostamnia [b]*, Mahboubeh Rabbani [a]

[a]*Chemistry department, Iran University of Science and Technology, 13114-16846, Tehran, Iran*
[b]*Iran University of Science and Technology, PO Box 13114-16846, Tehran, Iran.*

Cytotoxic Effect of Zn(Ii)-Porphyrin-Based Muldulated Nanostructure on Breast Cancer Cells, Hek-1, And L929 Normalcells

In recent years, cancer disease led patients to become increasingly susceptible multiple drug resistance (MDR) through cancer therapies. Metalloporphyrin complexes are critical macromolecules that self-assembled and applied in various cancer therapy methods. In this study Zinc (II) porphyrin-based molecules, ZnTPP (zinc(II)tetrakis(4-phenyl)porphyrin), were synthesized and self-assembled during acid-base neutralization. Then, by a photochemical method the copper nanoparticles were decorated on ZnTPP nanoparticles to produce ZnTPP/Cu nanocomposite. Utilizing the polyacrylic acid as a modulator led to achieve the spherical morphology of nanocomposite. The products were identified by UV-Vis, PXRD, FT-IR, and FE-SEM analysis. The cytotoxic effect of synthesized samples was evaluated on breast cancer cells by (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay. As well to investigate the favorable biocompatibility of synthesized nanocomposites for normal cells, their cytotoxicity was evaluated on HEK-1 an L929 normal cells. As a result, the synthesized nanocomposites demonstrated the sever cytotoxic effect on breast cancer cell. Moreover, the nanocomposites have more cytotoxic effect on L929 normal cells compared with HEK-1 normal cells.

Keywords: Zinc (II) porphyrin; Nanocomposite; Photochemical synthesis, Cytotoxicity; Breast cancer.

Biography:

Sajedeh Tehraninejad, I am PhD candidate in inorganic chemistry filed and work in the Prof. Rahmatollah Rahimi (rahimi_rah@iust.ac.ir) laboratory in Iran university of science and technology. I am expert in the synthesis of porphyrins and nanomaterials. I research and work on antibacterial and anticancer nanocomposites.

doi.org/10.51219/URForum.2023.Sajedeh-Tehraninejad ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON
PHARMACOLOGY & TOXICOLOGY
MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Kim Outhoff

Outhoff K, Hurrell T, Greeff O

University of Pretoria, Pretoria, South Africa

Aspirin's potential in Her-2 positive breast cancer management

Background:

Human epidermal growth factor receptor type 2 (Her-2) positive breast cancer is aggressive and relatively difficult to treat with standard chemotherapy. Trastuzumab targets Her-2 receptors, inducing the regression of these breast cancer cells. Its use may be tempered by resistance and cardiotoxicity. The aim was to determine if aspirin has potential to complement trastuzumab's antiproliferative effects in vitro and attenuate its cardiotoxic effects in-vivo.

Methodology:

Experiments were conducted in human breast adenocarcinoma cell lines that either over-express Her-2 receptors (SK-Br-3) or have physiologically normal Her-2 receptor levels (MCF-7). Cultured cells were exposed to aspirin or trastuzumab, or a combination of these agents before conducting MTT quantitative cell enumeration and fluorometric caspase-3 assays. Apoptosis / necrosis, cell cycle analysis and relative surface Her-2 expression were assessed flow cytometrically. Low dose aspirin was then administered by gastric gavage to trastuzumab-exposed Balb/C mice at a dose of 1 mg/kg over a 17-day period. Cardiac function was determined by both conventional and speckle tracking echocardiography at baseline and Day 18, and was compared to mice treated with trastuzumab only.

Results:

Trastuzumab decreased the cell viability of SK-Br-3 cells by G1 cell cycle arrest and this was associated with a decline in cell surface Her-2 receptor density. Aspirin's anti-proliferative effects in these cells were significantly greater than trastuzumab's and was also associated with G1 arrest. The addition of low dose aspirin preserved cardiac function, resulting in significant differences in both strain and strain rate at the end of treatment compared to trastuzumab-only treated mice.

Conclusion:

Aspirin may complement trastuzumab in the management of Her-2 positive breast cancer.

Keywords: Aspirin, trastuzumab, Her-2 positive breast cancer, cardiotoxicity, SK-Br-3, Balb/C mice

Biography:

Kim Outhoff, Associate Professor with a medical degree from the University of Cape Town, and a doctorate in Pharmacology from the University of Pretoria

doi.org/10.51219/URForum.2023.Kim-Outhoff ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON

PHARMACOLOGY & TOXICOLOGY

MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Dennis Zulu

Dennis Zulu[1], Pieter Meyer[2], Kim Outhoff[1]

[1]Department of Pharmacology, University of Pretoria, Pretoria, South Africa
[2]Department of Immunology, University of Pretoria, Pretoria, South Africa

Drug and patient factors contributing to mortality among patients in decentralised MDR-TB Units in the Zululand Health District

Background:

Despite advances in multi-drug resistant tuberculosis (MDR-TB) management, mortality remains unacceptably high in South Africa. This may in part be due to HIV driving severe disease. However, other patient characteristics and toxic effects of pharmacological therapies may add to the high death rates.

Purpose:

There was therefore a need to establish if certain patient and drug factors increase mortality risk in MDR-TB patients. Methods: After receiving ethics approval, a retrospective cohort study was conducted in decentralised MDR-TB units in Zululand, South Africa. MDR-TB patients who died while receiving medication were compared to patients who were cured in terms of age, sex, HIV status, co-morbidities, nutritional status, electrolyte abnormalities, renal impairment and hepatic dysfunction. Results:

A total of 615 MDR-TB patients comprising 54.31% males and 45.69% females, met the study inclusion criteria. Most (83.4%) of the participants successfully completed treatment (i.e. were cured), while 16.6% died. Mortality risk factors included the elderly, female sex, low body mass index and inadequate nutrition (low albumin and anaemia), hepatis B infection, chronic obstructive airway disease, cardiovascular disease and renal failure. Five anti-TB drugs showed significant associations with mortality.

Conclusion:

Adverse drug reactions associated with standard MDR-TB drugs could potentially be mitigated by tweaking dosing regimens. Supplementing nutrition and optimising treatment of chronic diseases could also improve survival.

Keywords: Multi-drug resistant tuberculosis, mortality predictors, anti-tuberculosis drugs, adverse drug reactions, decentralised TB units

doi.org/10.51219/URForum.2023.Dennis-Zulu

ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON

PHARMACOLOGY & TOXICOLOGY

MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Dr. S. Sugin Lal Jabaris

Sugin Lal Jabaris S[1], Divya Sankaramourthy[1], Wilson E[2], Venkataraman Krishnamurthy[1], Bhavani K[1], Manoj A[1] and Sivanandham E

[1] *Department of Pharmacology, Siddha Central Research Institute, Central Council for Research in Siddha, Ministry of Ayush, Govt. of India, Anna Govt. Hospital Campus, Chennai-600 106, Tamil Nadu, India*
[2] *Central Council for Research in Siddha, Ministry of Ayush, Govt. of India, Chennai - 600 047, Tamil Nadu, India*

CARDIOPROTECTIVE EFFICACY OF SWASA KUDORI - A SIDDHA FORMULATION AGAINST ISOPROTERENOL-INDUCED MYOCARDIAL INFARCTION IN RATS

Inflammation and oxidative stress are major contributing factors for cardiovascular disorders triggering atherosclerosis, endothelial dysfunction, and ischemic heart disease. The inherent phytochemicals in traditional medicines offers a novel approach to treat heart diseases. Noteworthily, the Siddha system of medicine offers a holistic approach towards preventive, promotive and curative therapy for varied ailments. However, all medicines have adverse effects, and indigenous medicines are no exception. A meticulous scientific approach focusing on the safety and efficacy of Siddha medicines in particular is essential. This study presents the safety and cardioprotective effect of Swasa Kudori, a polyherbal Siddha formulation containing Calotropis gigantea Linn. and Piper nigrum Linn. The safety of the drug was tested following OECD 408 guidelines. For testing the cardioprotective effect, Isoproterenol induced myocardial ischemia, a well-established model was used. In the study, animals in different groups were pre-treated orally with 4 different doses of Swasa Kudori and the standard Vitamin C (40 mg/ kg) for 14 days. Myocardial infarction was induced with intraperitoneal administration of Isoproterenol. No marked changes were observed during clinical observations such as mortality, morbidity, behavioural deficits, biochemical and haematological parameters when Swasa Kudori was administered repeatedly for 90 days upto a dose of 1000mg/kg b.wt indicating its safety. Moreover, in the cardioprotective study, rats treated with Swasa Kudori exhibited remarkable improvement in a dose-dependent manner with lowered levels of CK-MB and LDH exhibiting its efficacy. In addition, TTC staining of hearts authenticated these findings with the reduction in infarct size and necrosis in treatment groups. Altogether, data obtained in this study corroborated the cardio-protective efficacy of traditionally used Siddha formulation Swasa Kudori wherein these effects are attributable to their anti-oxidant potentials.

Keywords: Ayush, Complimentary & Integrative Medicine, Siddha Medicine, Cardiotonic, Calotropis gigantea Linn., Piper nigrum Linn.

Biography:

Dr. S. Sugin Lal Jabaris, Principal Investigator (Sanction Order No: 390/2020-21; IMR Project, CCRS), Research Officer (Pharmacology), Department of Pharmacology, Siddha Central Research Institute, Central Council for Research in Siddha, Ministry of Ayush, Govt. of India, Anna Govt. Hospital Campus, Chennai-600 106, Tamil Nadu, India. He has completed Master of Pharmacy from The Tamil Nadu Dr. M.G.R Medical University, and PhD from Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India. He has authored or co-authored more than 20 research/review publications in peer-reviewed indexed journals.

doi.org/10.51219/URForum.2023.Sugin-Lal-Jabaris
ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON

PHARMACOLOGY & TOXICOLOGY

MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Neelam Pawar

Department of Pharmaceutical Sciences, Chaudhary Bansilal University, Bhiwani, Haryana

Non-Pressurized Topical Spray of Antimicrobial and Antifungal Drug

The current research goal is to create a design, development and evaluation of non-pressurized topical spray of antimicrobial and antifungal drug for skin disease. Various concentration ranges of Miconazole (4.0, 6.0, 8.0, 10.0, and 12.0 µg/ml) were evaluated in ethanol, and the mean percent accuracy was found to be 103, 100.16, 100.25, 99.80, 98.83 percentage while investigated at max 246 nm, and for Neomycin concentration ranges of 10, 20, 30, 40, 50 µg/ml were examined at max 224 nm, and the mean percent accuracy was found 100.2, 99.9, 100.23, 99.45, 100.24 percent. Miconazole and Neomycin had LODs of 0.28 µg/ml and 0.59 µg/ml, respectively. The LOQ of Miconazole and Neomycin, which were observed to be 1.493 µg/ml and 0.7385 µg/ml, respectively. Drug content for F4, F8, F13 and F20 formulation was calculated, it shows 100%, 101%, 101% and 99%. Average extractable weight of formulation F4 was 99.17 ml, formulation F8 was 99.40 ml, formulation F13 was 99.82 ml and F20 was 99.73 ml. F13 generated uniform, smooth, spherical, and well formed nanoparticles, according to TEM examination. There was no agglomeration between the particles, showing that they were separate entities. In-vitro Miconazole and neomycin was found to be 95.31% which is very good and more than marketed formulation. In-vitro release of Miconazole nitrate powder in aerosol spray form, 2% Miconazole nitrate powder were found to be 60.36% in 300 minutes. In-vitro release of Cutaneous Spray, Suspention Neomycin 1.172 % were found to be 50.85% in 300 minutes. It was found that the compositions F13 is perfectly suitable for application by spraying from a pump spray container. The Cytotoxicity study was assessed on HACAT cells for 24 hours at a concentration of 6.25 microlitre per ml, 12.5 microlitre per ml, 0.465 microlitre per ml, 0.411 microlitre per ml, 0.364 microlitre per ml and 0.34 to microlitre per ml. Percentage of inhibition was found to be less than 50% which shows the concentration of non prescribed topical Nano spray was non toxic and showed no significant Cytotoxicity. Non-pressurized spray system when sprayed on topical site forms a stable, breathable film, preferably over a fixed surface area.

Keywords: Miconazole, Neomycin, Non-pressurized Topical Spray, Microbiological Evaluation, Gas Chromatography Mass Spectrophotometer Analysis, Cytotoxicity Activity.

Biography:

Neelam Pawar, She has pursing Phd from Baba Masth Nath University, Rohtak, Haryana. Since 2013 She has 9 years professional experience of teaching & research in different Institute, Industries, and University. Presently she is working as Assistance Professor in Chaudhary Bansilal Universitiy, Bhiwani, Haryana. She has published many good quality review and research article in various journals. She has guided 18 students of M. Pharm.

doi.org/10.51219/URForum.2023.Neelam-Pawar ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON

PHARMACOLOGY & TOXICOLOGY

MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Emtiaz Ahmed

Emtiaz Ahmed[a], Mostafa Kamal Masud[a], Richard Lobb[a], Md. Shahriar A. Hossain[a, d], Andreas Möller[c], Yusuke Yamauchi[a, e*], Abu Ali Ibn Sina[a*], and Matt Trau[a, b**]

[a]Centre for Personalised Nanomedicine, Australian Institute for Bioengineering and Nanotechnology (AIBN), Corner College and Cooper Roads (Bldg 75), The University of Queensland, Brisbane QLD 4072, Australia.
[b]School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane QLD 4072, Australia.
[c]Tumour Microenvironment Laboratory, QIMR Berghofer Medical Research Institute, Herston, Queensland 4006, Australia
[d]School of Mechanical and Mining Engineering, Faculty of Engineering, Architecture and Information Technology (EAIT), The University of Queensland, Brisbane, QLD 4072, Australia
[e]School of Chemical Engineering, Faculty of Engineering, Architecture and Information Technology (EAIT), The University of Queensland, Brisbane, QLD 4072, Australia

A mesoporous gold-based single CTC analysis platform to investigate immune checkpoint protein heterogeneity in lung cancer

Immune checkpoint proteins (ICPs) play a major role in patient's immune response against cancer. Tumour cells usually express the checkpoint proteins to communicate with immune cells as a process of escaping the immune response. Identification of the major role-playing ICPs expressed on circulating tumour cells (CTC) could therefore be critical in cancer diagnosis and therapy monitoring. However, low abundance and heterogeneity in CTCs make it extremely challenging to map CTC proteins, e.g. ICPs. In this study, we develop a single circulating tumour cell analysis platform to investigate the immune checkpoint protein heterogeneity in the lung cancer model. The platform combines a nanostructured mesoporous gold surface to capture the CTCs and a Surface-enhanced Raman scattering (SERS) readout to identify and monitor the expression of key ICP proteins (PD-L1, B7H4, CD276, CD80) in lung cancer CTCs during therapy. The mesoporous 3D gold nanostructures enable increased antibody loading on-chip and enhanced SERS signal which is key to our single CTC capture, and accurate analysis of ICPs in CTCs with high sensitivity. Our lung cancer cell line model (HCC827) and clinical sample data showed that our method can detect a single CTC and aanalyzethe expression of four lung cancer-associated ICPs on individual cell surfaces during treatment. We found that the expression of ICPs in CTCs is highly heterogeneous in both pre-treated and treated samples isolated from lung cancer patient blood. We believe these findings will help clinicians in selecting the accurate therapy for patients.

Keywords: circulating tumor cell (CTC), mesoporous gold, immune checkpoint proteins, cancer heterogeneity, liquid biopsy.

Biography:

Emtiaz Ahmed, is a final-year PhD student at the University of Queensland's Australian Institute for Bioengineering & Nanotechnology (AIBN). His research goal is to apply nanotechnology and sequencing-based approaches to reveal the epigenetic and genetic signatures of cancer. Besides, he is focusing on developing a mesoporous gold-based single CTC analysis platform to investigate immune checkpoint protein heterogeneity in lung cancer which might help clinicians in selecting the accurate immunotherapy for cancer patients.

doi.org/10.51219/URForum.2023.Emtiaz-Ahmed ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON
PHARMACOLOGY & TOXICOLOGY
MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Hafiz Muhammad Asif

University College of Conventional Medicine, Islamia university of Bahawalpur, Pakistan

Synthesis, Characterization and Evaluation of Anti-arthritic potential of curcumin loaded chitosan nanoparticles.

Background:

Curcumin is a versatile phytomolecule derived from Curcuma longa's dried rhizome, which have a lot of biological activities and have hydrophobic property.

Objectives:

The current study was conducted to fabricate, characterize and optimize Curcumin loaded chitosan and STPP Nanoparticles and improved bioavailability.

Methods:

Curcumin loaded Chitosan and STPP Nanoparticles were fabricated employing Ionic gelation method. Four formulations were developed based on the selected variable like STPP concentration, chitosan concentration, Rotations per minute, temperature and pH of chitosan solution. Nanoparticles were characterized for morphology, drug-polymer compatibility, percentage yield, mean particle size, encapsulation efficiency, release behavior, anti-inflammatory and antiarthritic activity.

Results:

FTIR spectroscopic analysis established the stable character of Curcumin in nanoparticles and produced sharp characteristic peaks representing at 3519cm-1 of O-H group, C-OH bending at 1366cm-1 and bending vibration of –CH bond of alkene group at peaks 728cm-1 and 950cm-1. Maximum percentage yield was found to be 60%. Encapsulation efficiency of Nanoparticles ranged from 30.2 µm to 76.7µm and 78.8 to 96.2% respectively. Curcumin release from optimized formulation was maintained in vitro up to 24 hours following first order release kinetics and non-fickian transport mechanism. 600 microgram per ml of Curcumin shows 52% anti-inflammatory activity by membrane stabilization method which is less than standard drug result whereas 71% antiarthritic activity by protein denaturation method which is equivalent to standard drug (Dicloran).

Conclusion:

The study concluded that Curcumin loaded Chitosan and STPP Nanoparticles can be formulated successfully by Ionic gelation method, which increased Curcumin absorption leading to reduced dosing rate and improved patient compliance.

Keywords: Curcumin nanoparticles, Chitosan, STPP, Ionic gelation, Anti-arthritic.

doi.org/10.51219/URForum.2023.Hafiz-Muhammad-Asif ISBN-978-1-7393132-6-5

Dr. Kiumars Bahmani

University College of Conventional Medicine, Islamia university of Bahawalpur, Pakistan

Methotrexate as a safe immunosuppressive agent during the COVID-19 pandemic

During the ongoing COVID-19 pandemic, immunocompromised patients are at a higher risk of severe infection, since the immune system has an important role in defeating this disease. This study compares the severity of COVID-19 in patients taking methotrexate with the severity of their family members' illness as patients with normal immune system function. A total of 35 participants, including 14 patients taking methotrexate and 21 patients with normal immune function, entered this study, and the indicators of COVID-19 severity were compared between these two groups. The case group, who were on methotrexate therapy, had significantly less severe COVID-19 based on their symptoms, including fever (p=0.000) and cough and dyspnea (p=0.01) as well as in terms of COVID-19 severity indicators such as pulmonary involvement (p=0.001), ferritin level (p=0.001), white blood cell count (p=0.008) and CRP level (p=0.006), compared to the control group. There was a significant correlation between taking methotrexate and lower severity in COVID-19 disease. The present findings demonstrated that methotrexate does not predispose patients to severe COVID-19; on the contrary, patients taking methotrexate may experience a milder disease, possibly due to their reduced severe inflammatory reactions as a result of inhibited TNFα, lowered IL6, and increased T regulatory cells. According to these findings, methotrexate appears to be a suitable treatment option for patients who need immunosuppressive medications during the COVID-19 pandemic.

Keywords: Methotrexate, COVID-19, Immunocompromised

doi.org/10.51219/URForum.2023.Kiumars-Bahmani

ISBN-978-1-7393132-6-5

Tafere Mulaw

Fasika Argaw, Assefa Belay

Evaluation of the Diuretic Activity of 80% Methanol Extract and Solvent Fractions of Rumex nepalensis (Polygonacea) Leaves in Mice

Introduction:

Rumex nepalensis (Polygonacea) has long been used to treat a variety of conditions, including urinary retention and as a diuretic. The purpose of this study was to assess the diuretic activity of the 80% methanol extract and solvent fractions of R. nepalensis leaves since this claim had not been verified scientifically.

Objective:

To evaluate the diuretic activity of 80% methanol extract and solvent fractions of Rumex nepalensis (polygonacea) leaves in mice

Methodology:

The coarsely powdered leaves of Rumex nepalensis was extracted by a cold maceration technique using 80% methanol. To obtain the n-hexane, ethyl acetate, and residual aqueous fractions, a portion of the extract was fractionated depending on the polarity index of solvents. To investigate the diuretic activity of the plant, mice were divided into fifteen groups. The negative control groups received either distilled water or 2% tween 80, the positive control group received furosemide (10 mg/kg), and the test groups were administered the 80% methanol extract or solvent fractions at the doses of 100, 200, and 400 mg/kg by the oral route. The urine volume, urine pH, and urine electrolytes were determined and compared with the positive and negative control groups.

Results:

The 80% methanol extract, ethyl acetate, and the residual aqueous fractions induced significant diuresis from the second hour to the end of the fifth hour period at the doses of 200 mg/kg and 400 mg/kg ($P<0.001$) compared to the negative controls. Mice administered with the 80% methanol extract, ethyl acetate, and the residual aqueous fractions displayed significant ($P<0.001$) excretion of sodium, potassium and chloride ions compared to the negative controls. Significant change was also noted in the pH of urine samples of the extract administered group as compared to the negative control. The phytochemical determination of the plant revealed the presence of alkaloids, anthraquinones, flavonoids, glycosides, phenolic compounds, saponins, tannins, and triterpenoids.

Conclusion:

The 80% methanol extract, ethyl acetate, and the residual aqueous fractions displayed a significant diuretic activity, and confirmed the traditional use of R. nepalensis.

Keywords: Diuretic activity, Kaliures, Natriuresis and Rumex nepalens

doi.org/10.51219/URForum.2023.Tafere-Mulaw ISBN-978-1-7393132-6-5

Zoa Bindzi Joseph Bertin Alexis

Alexis Zoa and Yuantong Tian (Co-Author's) Ganzhou Cancer Precision Medical Engineering Center / Gannan Medical University, Ganzhou, China

[a]*Chemistry department, Iran University of Science and Technology, 13114-16846, Tehran, Iran*
[b]*Iran University of Science and Technology, PO Box 13114-16846, Tehran, Iran.*

The Role of Short Peptides in Tumor Angiogenesis

Because tumor angiogenesis is one of the most prominent mechanisms driving tumor development and progression , anti-angiogenesis is a potential novel anticancer therapy. But more and more studies found conventional antiangiogenic drugs used alone are clinically ineffective in treating advanced solid tumor because of reasons such as indirectly directed against tumor growth , not specific to cancer cells and so forth. With the increasing understanding of short peptides in tumor angiogenesis , the application prospect of short peptides in anti-angiogenesis has attracted attention gradually. This review will help to better understanding short peptides in the inhibition of tumor angiogenesis.

Keywords: Angiogenesis; Cytotoxicity; Growth factors; Short peptides; Tumor

Biography:

Zoa Bindzi Joseph Bertin Alexis, Very good knowledge in clinical, experimental and molecular pharmacology. Passionate about research, bio-informatics and everything related to therapeutics.

doi.org/10.51219/URForum.2023.Zoa-Bindzi-Joseph-Bertin-Alexis ISBN-978-1-7393132-6-5

Alaa E. Alsaleh

Alaa E. Alsaleh, Ali R. Astaraei*, Hojat Emami, Amir Lakzian

Department of Soil Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Iran

The Impact of mercuric toxicity in saline soil on growth and some of enzymes in Turnip (Brassica rapa L.)

Heavy metals are a major environmental problem and have many concerns as carcinogenesis, non-degradability and biological accumulation. Major part of these metals are absorbed by plants and leads to inactivation of some enzymes, decreased protein production and disrupting variety of reactions and many cellular functions and growth and development stages. Different species of plants facing various environmental stresses, show thereby different physiological responses. Mercury (Hg) is a heavy metal causing oxidative stress in plants. Saline soil in pots were treated with three levels of Hg (0, 75 and 150 mg/l) by using mercuric chloride salt 10 days after planting (plants at three leaf stage). The experiment was conducted as factorial in a completely randomized design with three replications. 60 days after planting, leaf samples were collected and investigated for photosynthetic pigments, soluble sugars, activity of peroxidase and catalase enzymes and chlorophylls a and b and carotenoids, soluble sugars in plant. Plants were harvested 70 days after sowing, and root and shoot fresh and dry weights and mercury concentration in root and shoot of turnip (Brassica rape L.) were determined. The results showed that the maximum concentration of mercury occurred in roots followed by shoots. Soluble sugars in shoot were increased significantly, leaf chlorophyll a, b and total chlorophyll contentsin75 and 150 mg/l mercury treatments were significantly reduced compared to control. Carotenoid content and activity of catalase and also peroxidase activity in leaf with mercury levels of 75 and 150 mg/l treatments decreased significantly compared to control. But dry weight of shoots and roots were decreased with increasing mercury levels compared to control.

Keywords: Mercuric toxicity, photosynthetic pigments, peroxidase, Turnip.

doi.org/10.51219/URForum.2023.Alaa0-E-Alsaleh ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON
PHARMACOLOGY & TOXICOLOGY
MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Dr. Rajesh Vikram Vagiri

Phatudi MGM[1], Mahwiliri LM[1], Mbombi XG[1], Tshikororo HR[1], **Vagiri RV[1]*** & Nlooto M[1]

[1]Department of Pharmacy, School of Health Care Sciences, School of Health Sciences, University of Limpopo, South Africa

Evaluating the Knowledge of Adverse Drug Reaction Reporting Among Final Year Health Sciences Students at the University of Limpopo, South Africa

Adverse drug reactions (ADRs) are one of the leading causes of death in the world. The ADRs contribute substantially to patient morbidity and hospitalisation in South Africa. This study aimed to evaluate the knowledge of ADR reporting among final year health sciences students in the Faculty of Health Sciences (FHS) at the University of Limpopo. This study was descriptive, quantitative and cross-sectional in nature using stratified sampling method to determine the sample (n=126). Data were collected using researcher administered questionnaire from final year students of Human Nutrition and Dietetics, Nursing, Optometry, Pharmacy and Medicine. Data were analysed using SPSS v28.0. Descriptive statistics were expressed as frequencies and percentages and Chi-square test was used to determine the association between various FHS disciplines and understanding of their role in reporting ADRs, importance of reporting ADRs and readiness and preparedness of reporting ADRs. Significance for this study was set at $P \leq 0.05$. More than three quarters of the FHS students understand their role in reporting adverse drug reactions (79.3%) and know the importance of reporting (78.7%). However, less than half (42.8%) of the participants reported their preparedness and readiness to report ADRs. Significant differences ($P<0.05$) in reporting between various disciplines of FHS were observed with various aspects of understanding their role in reporting ADRs, importance of reporting ADRs, and readiness and preparedness of reporting of ADRs. The study results revealed that pharmacy students had a better understanding of their role in reporting ADRs, felt it was important to report ADRs and were well prepared to report ADRs. This study findings clearly demonstrated the need for integration of pharmacovigilance activities in all the curriculums of FHS.

Keywords: adverse drug reactions, pharmacovigilance, knowledge, reporting

Biography:

Dr Rajesh Vagiri, is a senior lecturer at Department of Pharmacy lecturing pharmacology and pharmaceutical care to fourth year pharmacy students. He is a honorary research fellow at the University of Kwazulu-Natal.He worked as a manager pharmaceutical services, Department of Health for 13 years prior accepting his current position at University of Limpopo. He is currently supervising three (3) PhD students and four (4) master's students from various universities in South Africa. His areas of interest are HIV/AIDS, mental health and pharmacovigilance. He has published five (5) peer-reviewed articles and presented at various national and international conferences.

doi.org/10.51219/URForum.2023.Rajesh-Vikram-Vagiri

ISBN-978-1-7393132-6-5

4TH INTERNATIONAL CONFERENCE ON

PHARMACOLOGY & TOXICOLOGY

MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)

Swetha kannan

Gulf Medical University, Dubai, United Arab Emirates

ECG findings and clinical presentations of myocardial ischemia reported among patients with cardiac metastasis from lung malignancies: A Narrative Review

Cardiac tumours are substantially infrequent. However, metastasis to the heart from a primary cancer elsewhere in the body is reported often. In addition to its poor prognosis, the diagnosis of a cardiac metastasis is considered tough to establish. Primary lung cancers contribute to the maximum of cardiac metastasis cases. Owing to its predominantly clinically silent nature, myocardial metastasis isn't usually detected until autopsy. This narrative review aims at highlighting the ECG findings that are seen among patients with myocardial metastasis resulting from lung cancer. It also analyses the clinical presentations associated with cardiac metastasis. Although ECG findings are not standard means of diagnosis, characteristic changes were reported, which might suggest further investigations for the same. The studies reported in this review were collected from the databases that include PubMed, Science direct, Hindawi, ResearchGate and AHA journals in the period of 1980-2022. The keywords used for searching in the databases included ECG, cardiac metastasis, lung cancer. Articles focusing on lung cancer specifically was included, and studies reporting findings associated with other forms of cancer were excluded. A majority of case reports was used for this review. Literature review showed that ECG findings in a patient with cardiac metastasis imitated that of myocardial infarction. This review article encourages health researchers to decipher and justify the findings reported and develop a quicker strategic outline for diagnosis. It also aims to educate the healthcare professionals on the early detection of myocardial metastasis with the study of the preliminary ECG picture, thereby ensuring a better prognosis.

doi.org/10.51219/URForum.2023.Swetha-kannan ISBN-978-1-7393132-6-5

Upcoming Conferences 2023 in Rome, Italy

During JUNE, 2023

ROME MARRIOTT PARK HOTEL

Name of the Conference	Dates	Contact Details	Scan Me
AI, Data Science and Robotics	**June 26-27, 2023**	**Kiran Parker** +44-786-881-0819	
Oncology and Cancer Research	**June 29-30, 2023**	**Mary Jane** +44-736-205-0636	
Neuroscience and Mental Disorders	**June 29-30, 2023**	**James Thomas** +44-789-707-3184	

Name of the Conference	Website Links
Journal of Artificial Intelligence, Machine Learning and Data Science	**https://urfpublishers.com/journal/artificial-intelligence**
Journal of Integrated Health	**https://urfpublishers.com/journal/artificial-intelligence**
Journal of Advanced Biomedical Engineering	**https://urfpublishers.com/journal/biomedical**
Journal of Advanced Materials and Nano Research	**https://urfpublishers.com/journal/advanced-materials**
Medical & Clinical Case Reports Journal	**https://urfpublishers.com/journal/case-reports**

#Let's Meet IN Rome, Italy

Rome Marriott Park Hotel, Italy

JUNE 2023

26-27

ROME, ITALY

International Conference on

AI, Data Science & Robotics

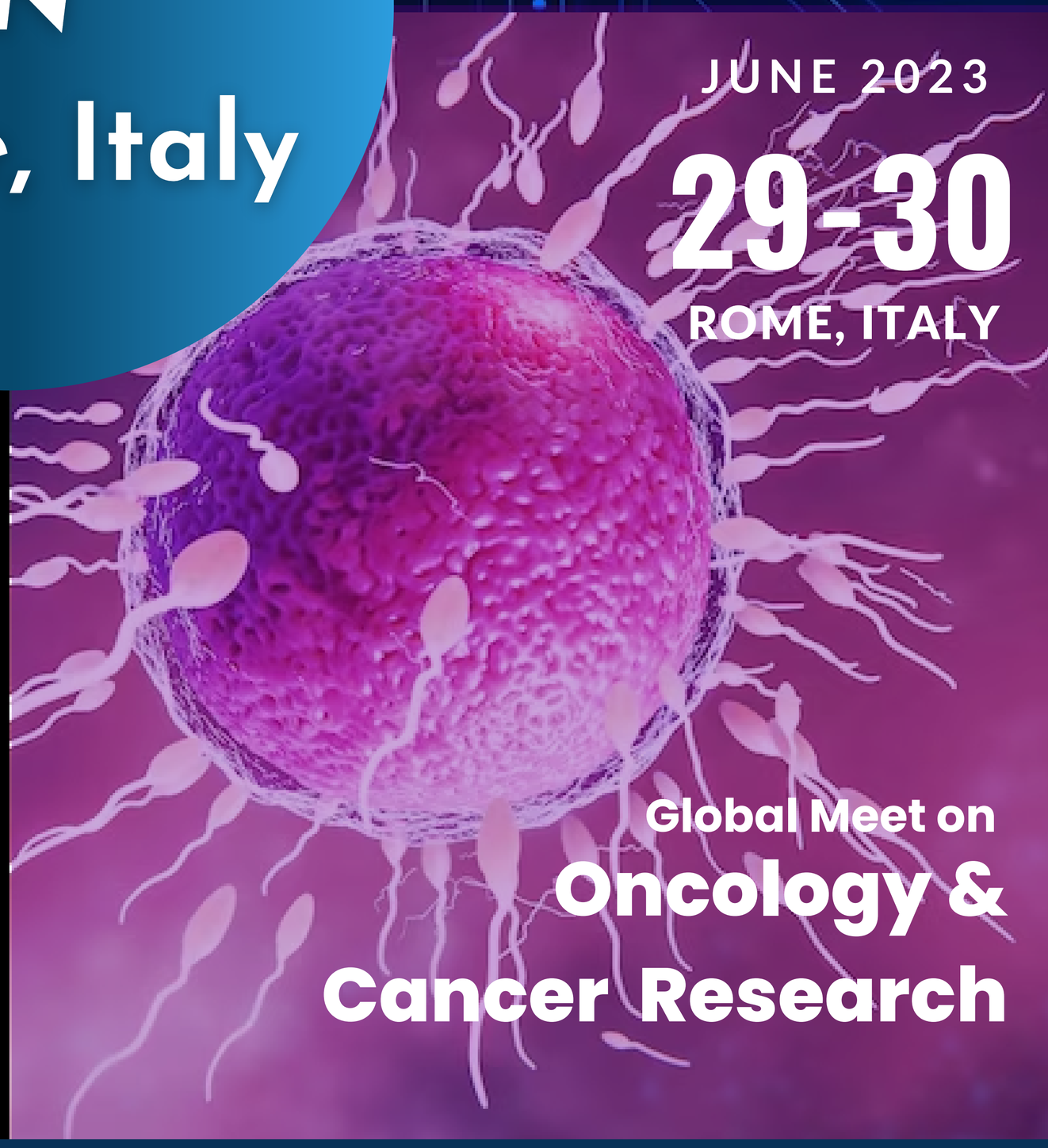
JUNE 2023

29-30

ROME, ITALY

International Conference on

Neuro Science & Mental Disorder



JUNE 2023

29-30

ROME, ITALY

Global Meet on

Oncology & Cancer Research

For all Conference Enquires regarding Abstract Submission, Registration :

Mr. John Surendran

International Scientific Coordinator / Business Development Manager

+44-744-880-8243 johnsurendra@urforum.org www.unitedresearchforum.com