

Proceedings of

3RD WORLD CONGRESS ON

MEDICINAL PLANTS AND NATURAL PRODUCTS RESEARCH

OCTOBER 02-03, 2017 KUALA LUMPUR, MALAYSIA



Conference Series

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Keynote Forum (Day 1)



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Gautam Sethi

National University of Singapore, Singapore

STAT3 as a molecular target for cancer prevention and therapy

STATs comprise a family of cytoplasmic transcription factors that transmit signals, mediate intracellular signaling usually generated at cell surface receptors and transmitted to the nucleus. Numerous studies have demonstrated constitutive activation of STAT3 in a wide variety of human tumors, including blood malignancies (leukemias, lymphomas and multiple myeloma) as well as solid tissues (such as head and neck, breast, lung, gastric, hepatocellular and prostate cancers). There is a strong evidence to suggest that aberrant STAT3 signaling promotes development and progression of human cancers by either inhibiting apoptosis or inducing cell proliferation, angiogenesis, invasion and metastasis. However, the development of novel drugs for the targeting STAT3 that is both safe and efficacious remains an important scientific and clinical challenge. We will present the data that shows that novel small molecule inhibitors of STAT3/JAK2 pathway can suppress the expression of genes involved in cancer initiation and promotion both *in vitro* and *in vivo*.

Biography

Gautam Sethi has completed his Postdoctoral training at University of Texas MD Anderson Cancer Center and joined Department of Pharmacology, Yong Loo Lin School of Medicine, National University of Singapore in 2008 as an Assistant Professor and was promoted to Associate Professor in 2015. The focus of his research over the past few years has been to elucidate the mechanism(s) of activation of oncogenic transcription factors such as NF- κ B/STAT3 by carcinogens and inflammatory agents and the identification of novel inhibitors of these proteins for prevention of and therapy for cancer. He has more than 150 scientific publications in high impact factor peer reviewed journals and has several international awards to his credit. He currently serves as an Academic Editor for *PLOS ONE*, Editorial Board Member of *Scientific Reports* and ad-hoc Reviewer for several other international journals.

phcgs@nus.edu.sg

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Mohammad Bagher Rezaee

Research Institute of Forests and Rangelands, Iran

Eco-phytochemistry of important medicinal and aromatic plants of Iran

Medicinal and aromatic plants are offered in a wide variety of products on the world market. Iran, located in Middle East, played a key role in connecting various cultures and civilizations. Ethno-herbal and phytochemical dates back to a long time ago and a number of writings regarding this issue are left by great physicians e.g., Avicenna and Rhazes. Iranian botanists have recognition of around 1450 genera and 8000 species which nearby 2000 species are endemic. Iranian traditional medicine had cited pharmaceutical dosage forms, e.g., powders, syrups, ointment, extracts, powders, mucilages, nectars, etc. In this presentation phytochemical screening of aromatic plants, e.g., *Rosa damascena*, *Thymus* spp., *Anthemis* spp., *Hypercom* spp., are reviewed. Also, the effect of ecological zone of growing, methods of extraction and identify their components are in our project. *Rosa damascena* cultivated in extensive zone of Iran and produce rose water and essential oils out of it. In this research, few samples of essential oil were extracting by different methods, e.g., traditionally, industrial and laboratory scales. Samples of oil were analyzed by GC and GC/MS. The main constituents of oil by traditional, Ghatran Gool Co. were n-nonadecane (33.1%), geraniol (14.6%), n-heneicosane (13.2%). Kashan sample were shown, n-nonadecane (33%), n-heneicosane (18.1%), methyl hexadecane (12.9%). Laboratory essential oils samples were extracted by two hydrodistillation method which are designed by authors in Research Institute of Forests and Rangelands which were named plan-1 and plan-2. The main isolated constituents in plan-1 were geraniol (21.8%), n-nonadecane (21.3%) and citronellol (12%), with yield of (0.015%) and in plan-2 were n-nonadecane (21.8%), geraniol (19.1%) and citronellol (15%) with yield of 0.023%. In other studies, investigated the effect of storage and time on essential oil composition in normal temperature of *Rosa demascena* were down. We used different vessels e.g., glass, color glass and aluminum quality. Main components of primary essential oils were citronellol (33.5%), cis-menth-2-en-1-ol (7.3%) and geraniol (7.2%). Storage in three months in simple glass in refrigerator was better than other methods. Storage of essences in six months of periods of time in simple glass and normal temperature is better than other. In this presentation also shown how variety, ecotype, different part of plants and methods, effected on the essentials oil of other aromatic plants.

Biography

Mohammad Bagher Rezaee has extended his valuable service as a Professor in Department of Medicinal Plants in Research Institute Forests and Rangelands. Currently he is working on extraction and purification of components from medicinal, aromatic and poisonous plants by different methods.

Mb.rezaee@gmail.com

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Saad Tayyab

University of Malaya, Malaysia

Transport of natural bioactive compounds in human blood circulation

Statement of the Problem: Several bioactive constituents of medicinal plants have been shown to possess various therapeutic properties, such as anticancer, antimicrobial, antiviral, anti-inflammatory, hepatoprotective, antioxidant, antinociceptive, antidermatophytic and immunostimulatory activities. Pharmacokinetic and pharmacodynamic properties of a therapeutic compound may be greatly influenced by its binding to the transport proteins in human blood circulation. The purpose of this study was to characterize the interaction of three pharmacologically active phytochemicals from the Zingiberaceae family, namely, Flavokawain B (FB), Pinostrobin S (PS) and 6-Shogaol (6S) with the major transport protein, Human Serum Albumin (HSA) of human blood circulation.

Methodology: Spectroscopic techniques such as fluorescence and circular dichroism along with molecular docking were used to study the binding characteristics of flavonoid-HSA interaction, identification of the binding site and the effect of binding on protein structure and stability.

Findings: These ligands were found to form a complex with the protein through moderate binding affinity as the values of the binding constants were found to fall in the range of 10^4 - 10^5 M⁻¹. The complexes were supposed to be stabilized by hydrophobic and Van der Waals forces along with hydrogen bonds. Binding of these compounds to HSA increased protein's thermal stability but produced microenvironmental alterations around protein fluorophores. Whereas FB and PS exhibited binding preference towards site I, 6S was demonstrated to bind both sites I and II, as revealed by competitive drug displacement results and molecular docking analysis.

Conclusion & Significance: Binding characteristics of these compounds were for the most part similar and comparable to many other phytochemicals. Investigations on the binding of such therapeutic compounds to HSA are of importance in understanding chemo-biological interactions in clinical research and drug design. These results may be helpful in predicting the pharmacokinetic profiles of FB, PS and 6S as well as other structurally similar molecules.

Biography

Saad Tayyab has completed his PhD in 1987. Presently he is working as a Professor of Biochemistry in the University of Malaya, Malaysia. He is having 34 years of research experience in the field of biochemistry. He has published 1 book and more than 115 research papers in various national and international journals. He is serving as an Editorial Board Member and Reviewer of national and international journals.

saadtayyab2004@um.edu.my
saadtayyab2004@yahoo.com

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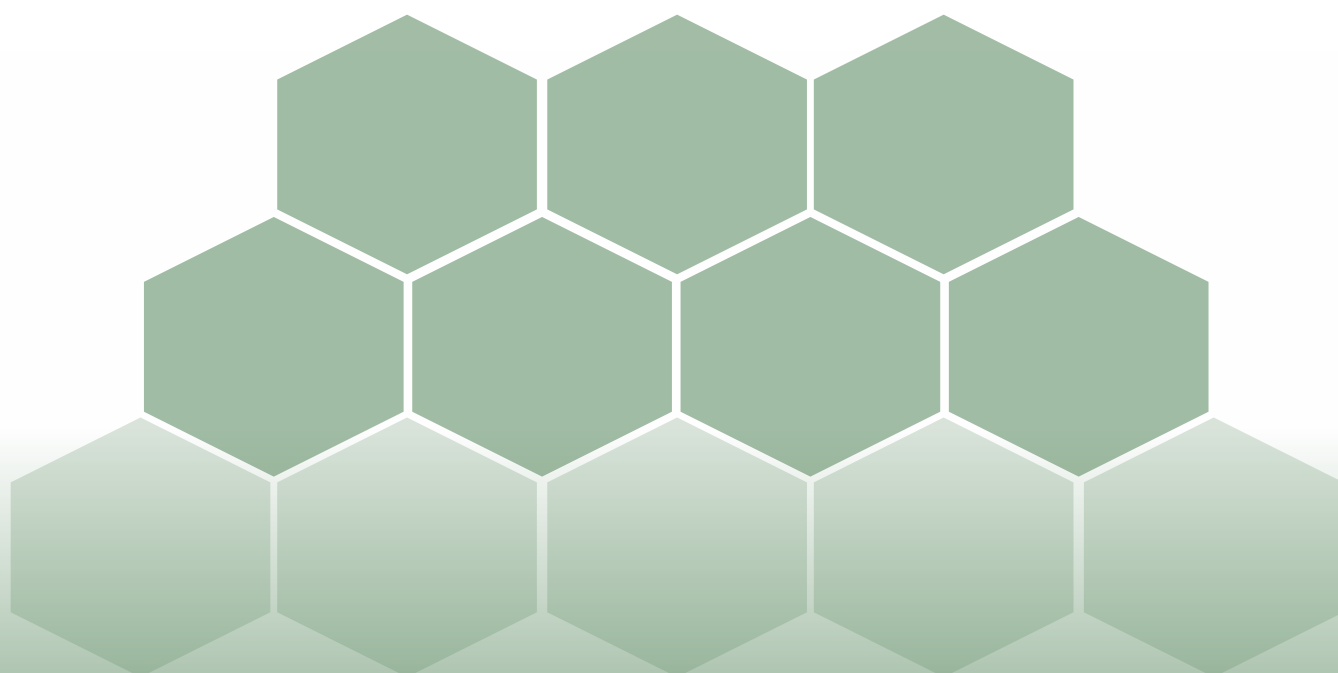
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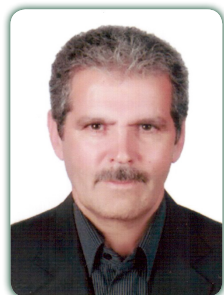
Keynote Forum (Day 2)



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Mohammad Bagher Rezaee

Research Institute of Forests and Rangelands, Iran

Study of variation of essential oil content and chemical composition of *Anthemis wiedemanniana* Fisch, et Mey., at different phenological stages and natural habitats in West Azerbaijan (Iran)

The genus *Anthemis* L., is the second largest in the Asteraceae family consists of more than 210 species. In this research, 5 populations of *Anthemis wiedemanniana* Fisch, et Mey., from 3 bioclimatic in West Azerbaijan at three phenological stages including vegetative, flowering and fruiting stages were harvested. Essential oil of aerial parts was extracted by water - distillation method (Clevenger apparatus) and was analyzed by GC and GC/MS. The results showed that the highest oil content was obtained from Ghiz Galeh of Miandoab region at three phenological stages that were 0.7, 0.88 and 0.75%, respectively. The lowest amount of essential oil content was obtained from Razhan region that were 0.43, 0.55 and 0.50%, respectively. Also, analysis of results showed that plant essential oils have active ingredients of different quality and quantity at various growth stages and different habitats and accordingly will have different pharmaceutical uses.

Biography

Mohammad Bagher Rezaee has extended his valuable service as a Professor in Department of Medicinal Plants in Research Institute Forests and Rangelands. Currently he is working on extraction and purification of components from medicinal, aromatic and poisonous plants by different methods.

Mb.rezaee@gmail.com**Notes:**

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M Oliur Rahman

University of Dhaka, Bangladesh

Biological activities of essential oil and extracts from *Mikania cordata* (Burm.f.) Robinson: An analgesic, anti-inflammatory and antipyretic evaluation

Mikania cordata (Burm. f.) Robinson belonging to the family Asteraceae is a twining herb, characterized by its cordate leaves, capitulum inflorescence, white flowers, narrowly oblong cypsela type of fruits and white pappus. The species has long been used in folk medicine in Bangladesh to treat cuts, wounds and dengue fever. The present study aimed at evaluating the analgesic, anti-inflammatory and antipyretic potential of the essential oil (12.5, 25 and 50 mg/kg) and two extracts, viz., chloroform and ethyl acetate (200, 400, 800 mg/kg), from aerial parts of *Mikania cordata*. The essential oil of *M. cordata* showed potent analgesic effect (47.33% writhing inhibition and up to 95.86% elongation of reaction time at 50 mg/kg body weight dose) in both models (acetic acid induced writhings and hot plate reaction time in mice), suggesting peripheral and central actions. In addition, the essential oil produced dose dependent anti-inflammatory effect (the 50 mg/kg b.w. showed highest 72.80% edema inhibition at 4 hours, respectively). The chloroform extracts and ethyl acetate extracts possessed moderate inhibitory activity on acetic acid induced writhings (up to 29.33% and 16.65% inhibition, respectively at the dose 800 mg/kg b.w.) and hot plate thermal stimulation in rats (up to 79.18%, and 42.37% elongation of reaction time, respectively at the dose 800 mg/kg b.w.) as well as carrageenan-induced hind paw edema in rats (up to 34.31% and 15.27% of edema inhibition, respectively at dose 800 mg/kg b.w.). Moreover, the essential oil and chloroform extract displayed an excellent antipyretic effect in yeast-induced hyperthermic rats, whereas the ethyl acetate extract had no antipyretic activity. Results of the present study confirmed the traditional use of *M. cordata* for the treatment of pain, inflammations and fever, claiming that the essential oil as well as the leaf extracts of the species has potent analgesic, anti-inflammatory and antipyretic properties and calls for further investigation to determine the active phytoconstituents.

Biography

M Oliur Rahman is currently working as a Professor at the Department of Botany, University of Dhaka, Bangladesh. He has received his PhD from Hiroshima University, Japan. Previously, he has served for Bangladesh National Herbarium as Senior Scientific Officer. His research interests focus on plant taxonomy, biodiversity, molecular phylogenetics and medicinal plants. His research also concentrates on bioprospecting and investigation of the biological activities of medicinal plants including anti-cancerous and anti-diabetic plants of Bangladesh. He has over 70 publications in different peer reviewed prestigious international and national journals including some books. He currently serves as an Editor for Bangladesh Journal of Plant Taxonomy, member of several professional organizations and Reviewer for several national and international journals.

prof.oliurrahman@gmail.com

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