



5th International Conference and Exhibition on

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Scientific Tracks & Abstracts *Day I*

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Acaricidal efficacy of Essentria® IC-3 and its active ingredients against acaricide resistant and susceptible strains of *Rhipicephalus (Boophilus) microplus*

Nirbhay Kumar Singh, R J Miller, G M Klafke, J A Goolsby and A A Perez de Leon
USDA-ARS, USA

Ticks and tick-borne diseases are a major constraint for the sustainable cattle industry in the tropical and subtropical regions of the world. The developments of resistance to most of the commonly used acaricides lead to an attempt to screen herbal products and their combinations for their possible acaricidal activity to develop an eco-friendly tick control alternative. Essentria® IC-3 insect concentrating on crawling and flying insect pests contains rosemary oil (10%), geraniol (5%) and peppermint oil (2%), and acts on target pests by octopamine blocker technology. Essentria and its active components were evaluated for acaricidal activity against acaricides resistant and susceptible strains of cattle tick, *Rhipicephalus (Boophilus) microplus* by Larval Packet Test (LPT) using 14-21 days old unfed larvae. The efficacy was assessed by measuring percent larval mortality and estimating lethal concentrations at 50% (LC50) and 95% (LC95) with 95% Confidence Limits (CL) using probit analysis. A concentration-dependent mortality response was observed with Essentria and Geraniol whereas; rosemary oil and peppermint oil failed to produce such response against any tick strain. The LC50 and LC95 (95% CL) values of Essentria and Geraniol against deutsch strain were 0.55% (0.55-0.56) and 0.10% (0.98-0.10), and 0.59% (0.58-0.60) and 0.11% (0.10-0.11), respectively. Interestingly, the acaricide resistant strains showed resistance to Essentria with Resistance Factor (RF) of 1.49 (Yucatan) and 2.20 (fipronil resistant), but susceptibility against Geraniol similar to deutsch strain was recorded in resistant strains. We report resistance against herbal acaricide in cattle tick for the first time, possibly due to cross-resistance to fipronil.

Biography

Nirbhay Kumar Singh is working as an Assistant Professor, Department of Veterinary Parasitology, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India. He is currently a Visiting Scientist to USDA-ARS, Cattle Fever Tick Research Laboratory, Edinburg, Texas, USA under the Raman Post-doctoral Fellowship by University Grants Commission, New Delhi. He has contributed significantly in detection of acaricide resistance status and its underlying biochemical and molecular mechanisms in cattle tick; and development of herbal acaricide. Besides 34 accession numbers obtained from Genbank, NCBI, he has published 104 research articles in national and international journals, 33 extension articles, authored one book along with 10 laboratory manuals.

nirbhayksingh@yahoo.co.in

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Marquesan (French Polynesia) cosmetopoeia assessment

Phila Raharivelomanana, Xénia Jost, Jean-Luc Ansel, Gaël Lecellier and Jean François Butaud
University of French Polynesia, French Polynesia

Marquesas Islands (French Polynesia), have a strong culture which is still very conspicuous today. Natural fragrance is an important characteristic of Marquesan beauty concern, flowers and fragrant plants being omnipresent in traditional cosmetic preparations. This study, the first specific inquiries on the French Polynesian “cosmetopoeia”, is based on ethnobotanical investigations focusing on traditional cosmetic. Ethnobotanical surveys of Marquesan traditional practitioners were performed in Tahiti and in Nuku Hiva islands. Prior to each interview process, a free and informed consent PIC (Prior Informant Consent) was signed by both interviewer and informant. A semi-directive methodological approach with open-ended questions was performed and allowed to establish a list of cosmetic allegations per target or per use. Survey was based on three standards: application area (hair, body, face), uses (care, protection, hygiene, embellishment and perfume), and ethnobotany. Coconut (*Cocos nucifera*) is the most used species as a traditional cosmetic ingredient. *Ocimum basilicum* (basil) and *Curcuma longa* (turmeric) are the second most important plants. This study allowed to document a list of more than 500 recipes with almost 80 different plant species. For example, for hair care, natural shampoo were mainly constituted of 'ekapuhi plant - shampoo ginger (*Zingiber zerumbet*), and for baby care, daily bath are given with cooked leaves of *Annona muricata* (soursop) or other plants. There is a very close link between traditional cosmetic uses (Cosmetopoeia) and pharmaceutical uses (Pharmacopoeia), but compared to pharmacopoeia, cosmetopoeia involves more native species. It symbolizes the practice of a lively heritage in the Marquesas archipelago.

Biography

Phila Raharivelomanana is a Chemist (PhD-Chemistry) and now is a Full Professor of Chemistry at the University of French Polynesia. She obtained her PhD Diploma in Molecular Chemistry at the University of Nice Sophia-Antipolis (France) in 1992. She has more than 20 years of experience in phytochemical science research. When she joined the UPF in the 1990s, she was one of the pioneer researchers working in phytochemistry of Polynesian plants. Then, she focused on medicinal plant investigation aiming at a better understanding of ethnopharmacological aspects. She is a member of the Editorial Advisory Board of *Natural Product Communications Journal*.

phila.raharivelomanana@upf.pf

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Paeoniae Radix: A characteristic materia medica in Asian countries

Kayoko Shimada Takaura and Kyoko Takahashi
Osaka University, Japan

Paeoniae Radix (Latin name for crude drugs) is defined as the root of *Paeonia lactiflora* Pallas (Peony in English and Shakuyaku in Japanese) in the Japanese Pharmacopoeia. It is one of the most popular herbal medicines and mainly used as sedative, antispasmodic and astringent in Kampo Medicine (Traditional Japanese Medicine) and Traditional Chinese Medicine. Especially in Kampo medicine, herbal medicines are used as prescriptions, the mixture of several kinds of crude drugs. We focused on one of *Paeoniae Radix* containing Kampo prescription, Tokishakuyakusan (TS), which is frequently used for improvement of blood circulation. We prepared two kinds of TS containing two different kinds of *Paeoniae Radix*; one is selectively bred strain in Japan for medicinal use and another is Western cultivar. Both of those prescriptions were effective for anemia patients (n=12) as shown by the improvement of several hematological parameters, but those effects were statistically different. We focused on iron, but there were no differences in its content of both prescriptions. We also investigated the state of the iron by analyzing Mössbauer spectra and found the differences in the spectra. In this investigation, we used the traditional form of TS which are composed by the directly powdered crude drugs. We suggested the efficacy of TS for anemia and the relation between the quality of *Paeoniae Radix* and the clinical effects of the prescription.

Biography

Kayoko Shimada Takaura has completed her PhD from Osaka University and then studied as a Post-doctoral Researcher at School of Medicine in University of South Alabama, AL, USA for 1 year. She is now a Specially Appointed Assistant Professor in the Laboratory of Applied Pharmacognosy, Graduate School of Pharmaceutical Sciences, Osaka University. She has published 5 papers as a first author in journals.

kayokost@phs.osaka-u.ac.jp

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Anti-acne effects of purified bee venom in human

Sang Mi Han

National Institute of Agricultural Science, South Korea

Acne vulgaris is a chronic dermatologic disease with four factors involved in the development of lesions. Treatments need to address as many of these underlying factors as possible in order to reduce acne lesions. As such Purified Bee Venom (PBVTM) serum is an attractive therapeutic option for acne, but little data exists on the efficacy of this treatment strategy. In this prospective, non-comparative study, 30 subjects having mild to moderate acne vulgaris were enrolled and treated with PBVTM serum twice daily for a period of 6 weeks. Clinical evaluation of lesions by expert visual grading and image analysis were made at weeks 0 (baseline), 3 and 6. The average visual acne grade of all volunteers significantly improved with the PBVTM serum treatment at weeks 3 ($p < 0.05$) and 6 ($p < 0.001$), when compared with the baseline grade at week 0. In addition, there was a mean percent improvement of 8.6% and 52.3% in acne grade observed after 3 and 6 weeks of PBVTM serum use, with 20% and 77% of the subjects showing improvement, respectively, when compared with baseline. Moreover, the subjects showed improvement in open comedones, closed comedones, papules, pustules and nodules after 3 and 6 weeks of PBVTM serum use. Six (6) weeks of treatment with PBVTM serum was found to be effective in the treatment of mild to moderate acne vulgaris, with no incidence of serious side effects or irritation

Biography

Sang Mi Han has completed her PhD from Kyungbook National University and Post-doctoral studies from Kyemyung University School of Medicine. She is the Director of Bee Products Application Laboratory. She has published more than 100 papers in reputed journals and has been serving as an Editorial Board Member of repute.

sangmih@korea.kr

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Antitumor effects of Nujiangexathone A, a novel compound from *Garcinia nujiangensis*, by down regulation of hnRNPK protein

Zhang Li

Shanghai University of Traditional Chinese Medicine, China

Cervical cancer is among the most frequently diagnosed cancers in females worldwide. Nujiangexathone A (NJXA), a novel compound from *Garcinia nujiangensis*, has been shown to have anti-cancer potential. In this study, the anti-tumor effects and the underlying mechanisms of NJXA action were investigated. Our results suggested that NJXA reduced the viability of HeLa and SiHa cells in a concentration- and time-dependent manner and induced G₀/G₁ cell cycle arrest in cells by down-regulating cyclins B1, E1, and A and cyclin-dependent kinases 2, 4 and 6, while selectively restoring p27. Two-dimensional gel electrophoresis and mass spectrometry revealed that heterogeneous nuclear ribonucleoprotein K (hnRNPK) was among the most affected proteins upon NJXA treatment. hnRNPK is closely linked to the cell cycle and is highly expressed in several tumors. Our study showed that NJXA reduced the expression of hnRNPK and induced cell cycle arrest through the c-Myc-cyclin/Cdk-Rb-E2F1 pathway. Moreover, *in vivo* results showed that the i.p. injection of NJXA significantly inhibited tumor growth on day 16 in a nude mouse xenograft model, and NJXA induced no apparent toxicity. Our study suggests that NJXA carries out anti-tumor functions by strongly suppressing the hnRNPK expression that is specifically associated with cell cycle arrest. In conclusion, NJXA is a potential anti-cancer drug candidate, especially for treating cancers with abnormally high hnRNPK expression.

Biography

Zhang Li has completed her PhD in 2013 from The Hong Kong University of Science and Technology. She is a Lecturer in School of Pharmacy in Shanghai University of TCM. She has published more than 20 papers in reputed journals.

zhangli1003ecpu@126.com

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Antimicrobial, antioxidant and cytotoxic activities of propolis from Brazilian stingless bees

Edson Lucas dos Santos

Federal University of Grande Dourados, Brazil

Propolis is a resinous substance produced by bees through the mixture of jaw secretions and the exudate collected from plant materials. This resin is used in the construction, maintenance, and asepsis of the nest. There are records that ancient civilizations, such as the Incas, Greeks, Egyptians, and Romans, used propolis for its therapeutic properties. Propolis from stingless bees *Melipona orbigny* (manduri-de-Mato-Grosso) and *Tetragonisca fiebrigi* (Jataí or abelha-ouro) found in Brazil are used in folk medicine by their nutritional and therapeutic properties. Propolis from stingless bees are well known for its biologic properties; however, few studies have demonstrated these effects. Therefore, this study aimed to investigate the chemical composition and antimicrobial, antioxidant and cytotoxic activities of propolis from the stingless bee *Melipona orbigny* and *Tetragonisca fiebrigi* found in Mato Grosso do Sul, Brazil. The chemical composition of the Ethanol Extracts of Propolis (EEPs) these species of bees indicated the presence of aromatic acids, phenolic compounds, alcohols, terpenes and sugars. The EEPs were active against American Type Culture Collection (ATCC) and hospital strains of bacteria and fungi. The EEPs showed antioxidant activity by scavenging free radicals and inhibiting hemolysis and lipid peroxidation in human erythrocytes incubated with an oxidizing agent. Additionally, EEPs promoted cytotoxic activity and primarily necrotic death in K562 erythroleukemia cells. Taken together, these results indicate that propolis from *Melipona orbigny* and *Tetragonisca fiebrigi* have therapeutic potential for the treatment and/or prevention of diseases related to microorganism activity, oxidative stress and tumor cell proliferation.

Biography

Edson Lucas dos Santos has completed his PhD in 2004 from Federal University of São Paulo and Postdoctoral studies from Federal University of São Paulo, São Paulo, Brazil and Max-Delbrueck Center for Molecular Medicine, Berlin, Germany. He is an Associate Professor at School of Environmental and Biological Science, Federal University of Grande Dourados, Dourados, MS, Brazil and Leader of the research group on Biotechnology and Bioprospecting applied to metabolism. He has published more than 40 papers in reputed journals studying metabolic syndrome, cytotoxicity, antitumor action and prospection of bioactive molecules of natural and synthetic origin.

edsonsantosphd@gmail.com

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Screening study on the anti-angiogenic effects of Traditional Chinese Medicine – Part I: Heat-clearing and detoxicating TCM

Xiang Tu

Chengdu University of Traditional Chinese Medicine, China

Heat-clearing and detoxicating TCM is the most frequently used category in the treatment of cancerous tumors, but lacks sufficient validation studies. The present research (in our series of studies) aims to explore the anti-angiogenic effects of TCM; so we begin with heat-clearing and detoxicating TCM. Six typical heat-clearing and detoxicating TCM (Philippine Violet Herb, Wild Chrysanthemum, Heartleaf Houlttuynia Herb, Chinese Lobelia Herb, Spreading Hedyotis Herband Uni- flower Swisscentaury Root) were decocted, concentrated, sieved and desiccated to attain the water extract. This study utilized the vascular organism research model for Fli1a-EGFP zebrafish, which were raised and maintained under standard conditions. 22h post-fertilization (hpf) embryos were distributed into 12-well plates for a treatment period of 26h. The TCM water extracts which were diluted in 0.1% Dimethylsulfoxide (DMSO), were added to each well at a concentration of 200 µg/ml. The positive control was 5 µg/ml PTK787 (vatalanib) and the vehicle control was 0.1% DMSO. At 48hpf larvae were tricaine anesthetized and imaged. To demonstrate if TCM shows angiogenesis defects, ten larvae were randomly chosen to conduct a quantitative assay. Quantitative real-time PCR was conducted to dissect the mechanisms involved by analyzing the contributions of signaling pathways and molecules concerning angiogenesis, with a total of ten genes examined. All 30 larvae treated with Wild Chrysanthemum, Uniflower Swisscentaury Root and PTK787 showed angiogenesis defects. Embryos treated with Wild Chrysanthemum and Uniflower Swisscentaury Root showed a lower number of complete Intersegmental Vessels (ISVs) and there was statistically significant differences between TCM and the vehicle control. Wild Chrysanthemum and Uniflower Swisscentaury Root have a higher inhibition rate and the statistical difference between TCM and the vehicle control was significant. Compared with vehicle controls, Wild Chrysanthemum could significantly modulate the relative mRNA expression of all ten genes. Whereas, Uniflower Swisscentaury Root could significantly regulate the relative mRNA expression of seven genes, it did not show a significant impact on the remaining three genes. The present research demonstrates that Wild Chrysanthemum and Uniflower Swisscentaury Root have anti-angiogenic effects in zebrafish and that they could regulate both proangiogenic mechanisms and negative angiogenesis regulators. Their anti-angiogenic effects result from effects on negative regulators overriding their effects on proangiogenic mechanisms. The results provide new insights into their clinical application and therapeutic potential for the management of angiogenesis-dependent diseases such as cancer.

Biography

Xiang Tu is graduated from Chengdu University of Traditional Chinese Medicine (TCM) and earned his Doctor degree of TCM in 2010. He is currently working as a Doctor in the teaching hospital of Chengdu University of TCM. He is very good at Traditional Chinese Medicinal herbal therapy and has been In Charge of the Chinese National TCM Clinical Research Base since 2010. He became Head of the department of TCM pharmacology in the hospital. He has published a number of original articles or expert reviews and his recent research interests are in TCM for diabetes, diabetic complications, metabolic syndrome and cancer, etc.

tuxiang2005@163.com

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Gjumrakch Aliev

GALLY International Biomedical Research Consulting LLC, USA

Pharmacology and ethnopharmacology: Recent challenge and missing links

Biography

Gjumrakch Aliev, MD, PhD is the President of "GALLY" International Biomedical Research Institute Inc., San Antonio, Texas, USA. He also holds appointment with the University of Atlanta, Atlanta, Georgia, USA as a Professor of Cardiovascular, Neuropathology, Gerontology, Health Science and Healthcare Administration, and Leading Researcher in the Institute of Physiologically Active Compounds, Russian Academy of Sciences, Chernogolovka, Moscow Region, Russia. He received his MD in 1982, from the Baku Medical University (former USSR) with *cum laude*. Then, he accomplished his PhD in Cardiovascular Diseases from the prestigious Russian Academy of the Medical Sciences, Moscow, Russia in 1988 with *cum laude*. He received Post-doctoral Training with Professor G. Burnstock in the University College of the London. He authored and coauthored more than 500 publications in the fields of neurodegenerative diseases research (Alzheimer disease), as well as cardio- and cerebrovascular disease, cancer and electron microscopy. He is an outstanding Teacher, Scholar and a Renowned Scientist in the area of cellular molecular physiology, and cardiovascular and neurodegeneration-mediated pathologies and drug development including Alzheimer's disease. He is nationally and internationally reputed in his area.

aliev03@gmail.com
cobalt55@gallyinternational.com

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Sang Mi Han

National Institute of Agricultural Science, South Korea

Recent research trends for bee venom in South Korea

Heat-clearing and detoxicating TCM is the most frequently used category in the treatment of cancerous tumors, but lacks Bee Venom (BV) from honeybee (*Apis mellifera* L.) has long been used as a complementary medicine to treat an array of conditions including rheumatoid arthritis, back pain, cancerous tumors and skin disorders. Pure BV is generally obtained by electric stunning using a BV collector without harm to the honeybees, removing impurities from the collected BV and lyophilizing the final product in South Korea. The obtained BV is possibly sufficient for the quantitative and qualitative analysis. We study that BV collected from the honeybee has a number of potential medicinal properties. In recent years, BV used in the cosmetic industry as an antiwrinkle agent improves skin wrinkles. Topical application of cosmetics containing purified BV has been reported to be effective in the treatment of humans with acne vulgaris. Another study conducted has reported that BV has a potential anti-bacterial effect against inflammatory skin disease. We report that BV has antibacterial and synergistic activities with ampicillin or penicillin against MRSA strains. We also studied that the determination of irritant effects on skin and eyes is an important initial step in the assessment and evaluation of the safety of a substance. In this regard, it has been demonstrated that BV does not induce skin sensitization in guinea pigs, and has no dermal or ocular irritation potential in New Zealand white rabbits. We determined the phototoxicity and photosensitivity of BV in guinea pigs to ensure that its topical dermatologic use does not damage the skin. Another study, has reported that BV treatment has interesting features for practical application in livestock production. BV is potentiating an immune response to the normal environmental, social and nutritional challenges that the newly weaned young pigs and calves encounter. BV supplementation via drinking water showed significant effects on overall performance of broilers during the early stage of life. The results of our study are promising and may contribute to the use of natural products as drugs.

Biography

Sang Mi Han has completed her PhD at the age of 28 years from Kyungbook National University and postdoctoral studies from Kyemyung University School of Medicine. She is the director of Bee products application laboratory. She has published more than 100 papers in reputed journals and has been serving as an editorial board member of repute.

sangmih@korea.kr

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Citrus oil and Dead Sea magnesium salts as antibacterial and anti-inflammatory agents

Boaz Mizrahi

Technion-Israel Institute of Technology, Israel

The antibacterial and anti-inflammatory properties of Dead Sea Magnesium Chloride ($MgCl_2$), citrus oil and their combination were investigated in this study. This combination is frequently used in several cultures to treat several gum diseases including periodontitis and mouth sores. Citrus oil is composed of monoterpenes, in particular D-limonene, which is known to inhibit growth of bacteria, fungi, and certain parasites. Inhibition of *porphyromonas gingivalis in vitro* was used to evaluate the antibacterial effect of a mixture of Dead Sea magnesium chloride and citrus oil and of each of the components. A subcutaneous chamber model in mice was used to assess the anti-inflammatory effect of the mixture and the individual components. Leukocyte migration, Tumor Necrosis Factor-Alpha (TNF- α) secretion, and interleukin (IL)-10 secretion were determined. Hydrocortisone was used as a positive control. Citrus oil had an antibacterial effect with a Minimal Inhibitory Concentration (MIC) of 1 mg/ml, whereas $MgCl_2$ at concentrations up to 10 mg/ml did not exhibit any antibacterial activity. However, a mixture of 10 mg/ml $MgCl_2$ and 0.25 mg/ml citrus oil dramatically increased inhibition of bacterial growth. The combination of $MgCl_2$ and the citrus oil resulted in lower levels of TNF- α , and leukocyte migration while maintaining the levels of IL-10 compared to the control. These findings suggest that a mixture of citrus oil and $MgCl_2$ could be used as a natural antibacterial and anti-inflammatory agent.

Biography

Boaz Mizrahi has more than 10 years of experience in Biotechnology and Pharmaceuticals, and he is the author of more than 20 scientific publications in this field. Boaz gained his PhD degree in the group of Prof. Avi Domb at the Hebrew University, where he acquired first-hand experience in the engineering and synthesis of materials for medical uses. He joined the Robert Langer Lab at MIT and the Daniel Kohane lab at Harvard Medical School. His research interest is focused on understanding and mimicking principles that nature uses and on designing functional materials based on these concepts. He is the Co-inventor of 12 patents, 3 of which were licensed.

bmizrahi@technion.ac.il

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Alternative strategies for drug delivery to the brain: Recent challenges

Gjumrakch Aliev

GALLY International Biomedical Research Consulting LLC, USA

According to statistical reports by well-known authentic centers such as Centre for Disease Control and Prevention as well as the National Centre for Health, Alzheimer's Disease (AD) has surpassed cardiovascular, diabetes and cancer as a leading cause of death. AD, the most common form of dementia, is an exasperating health disorder characterized by a progressive decline in cognitive function. One of the biggest problems and challenges for the development of new drugs and treatment strategies against different types of cancer and AD is the crossing of target drugs to the blood brain barrier. The use of nanoparticles in drug delivery therapy holds much promise in targeting remote tissues, and as a result many studies have attempted to study the ultrastructural localization of nanoparticles in various tissues. However, there are currently no *in vivo* studies demonstrating the ultrastructural distribution of nanoparticles in the brain. The aim of this study was to address how intraperitoneal injection of silver nanoparticles in the brain leads to leaking on the inter-endothelial contact and luminal plasma membrane, thus elucidating the possibility of penetrating into the most affected areas in the cancer and Alzheimer brain (vascular endothelium, perivascular, neuronal and glial cells). Our results show that the silver nanoparticles reached the brain and were found in hippocampal areas, indicating that they can be conjugated and used to deliver the drugs into the cell cytoplasm of the damaged brain cells. The present study can be useful for the development of novel drug delivering therapy and useful in understanding the delivery, distribution and effects of silver nanoparticles in cancer and AD brain tissue at cellular and subcellular level.

Biography

Gjumrakch Aliev, MD, PhD is President of "GALLY" International Biomedical Research Institute Inc., San Antonio, Texas, USA. He also holds appointment with the University of Atlanta, Atlanta, Georgia, USA as a Professor of Cardiovascular, Neuropathology, Gerontology, Health Science and Healthcare Administration, and Leading Researcher in the Institute of Physiologically Active Compounds, Russian Academy of Sciences, Chernogolovka, Moscow Region, Russia. He received his MD in 1982, from the Baku Medical University (former USSR) with cum laude. Then, he accomplished his PhD in Cardiovascular Diseases from the prestigious Russian Academy of the Medical Sciences, Moscow, Russia in 1988 with cum laude. He received Post-doctoral Training with Professor G. Burnstock in the University College of the London. He authored and coauthored more than 500 publications in the fields of neurodegenerative diseases research (Alzheimer's disease), as well as cardio- and cerebrovascular disease, cancer and electron microscopy. He is an outstanding Teacher, Scholar and a Renowned Scientist in the area of cellular molecular physiology, and cardiovascular and neurodegeneration-mediated pathologies and drug development including Alzheimer's disease. He is nationally and internationally reputed in his area.

aliev03@gmail.com
cobalt55@gallyinternational.com

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Green synthesis and characterization of natural cosmetics from underutilized tropical seeds

Olubunmi Atolani^{1,2}, E T Olabiyi¹, A A Issa¹, H T Azeez¹, S O Ibrahim¹, M F Zubair¹, O S Oguntoye¹, E G Onoja², O O Kayode², O Adeniyi², C B Adeosun² and G A Olatunji¹¹University of Ilorin, Nigeria²Redeemer's University, Nigeria

The maintenance of beautiful skin and hair is the desire of many people all over the world, thus, the application of safe and appropriate cosmetic products is inevitable. An innovative green synthetic route was adopted for the direct characterization of some conventional and non-conventional tropical seeds which include *Sebal causarium*, *Cola gigantea*, *Blighia sapida*, *Cordia sebestena*, *Daniellia oliveri*, *Elaeis guineensis*, *Citrus aurantifolia*, *Citrus paradise*, *Vitellaria paradoxa*, *Citrullus vulgaris*, *Momordica charantia*, *Delonix regia*, *Moringa oleifera*, *Kigelia africana* and *Prosopis africana*. The lipid, fatty acid methyl and butyl/isobutyl esters obtained via multistep and direct methyl/butylation were characterized using Fourier transform infrared spectroscopy and gas chromatography-mass spectrometry. The principle of green chemistry was further adopted for the preparation of natural antiseptic soaps, which were fully plant-based, biodegradable and free of all artificial antibiotics, colorings, fragrance and preservatives. *Ocimum basilicum* served as source of fragrance as well as antiseptic agent. Physicochemical parameters which include color, acid value, free fatty acid values, percentage yield, non-fatty matter, saponification values, hardness, pH, color and foaming ability of the oils and saponified products were determined as applicable. The *in vitro* antimicrobial, antioxidant, anti-inflammatory and membrane stabilization activities of the oils and cosmetic products were determined using standard procedures. *Daniellia oliveri* oil contains 57% linolelaidic acid as the major fatty acid, while oleic acid (46%) and lauric acid (44%) were the most prominent in *Vitellaria paradoxa* and *Elaeis guineensis*, respectively. Linoeladic acid was the most predominant in *Citrullus vulgaris*, *Delonix regia* and *Prosopis africana*. The natural cosmetics production was highly cost effective compared to commercial products.

Biography

O Atolani is a distinguished Medicinal Chemist with numerous scientific peer-reviewed publications. He is the Deputy Principal Investigator for the cosmetic research group and Principal Researcher in other groups at the University of Ilorin, Ilorin, Nigeria. He completed a Post-doctoral research study in Chemoinformatics for Drug Development in 2016 at a German Institute in Berlin. He is an Editor and Reviewer to a peer-reviewed journal and also an Editor of a reputable scientific journal.

atolani.o@unilorin.edu.ng
tolanvent@yahoo.com

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Identification and quantification of polyphenols in *Sorghum bicolor* (L) Moench leaves extract using reverse-phase HPLC-DAD

F B Borokini

Rufus Giwa Polytechnic, Nigeria

Plants are used traditionally, as medicine due to their antioxidant activity which is due to their ability to form secondary metabolites which are used to restore health and play important role in treatment of many diseases. The use of the plants, plant extracts and isolated bioactive compounds from natural sources has been a lead that provided the foundation to modern medicine. In Nigeria, extracts from the leaves of *S. bicolor* is commonly used in traditional medicine for treatment of ailments and as blood supplement. The phytochemicals screening of the aqueous, methanol and ethanol extracts of the *Sorghum bicolor* showed the presence of some bioactive compounds. The aqueous extract indicated flavonoids and terpenoids and absence of alkaloid, saponin, tannin, steroid, anthraquinone and phlobatannin. However, saponin, tannin, flavonoid and terpenoid were found in the methanol extract while alkaloid, steroid, anthraquinone and phlobatanin were absent. The flavonoids and phenolic acids contained in the extract were investigated using Reverse-Phase HPLC-DAD and the concentrations of the identified phenolic compounds in mg/g were: Gallic acid (13.54 ± 0.02), catechin (9.29 ± 0.01), chlorogenic acid (13.48 ± 0.01), caffeic acid (52.17 ± 0.03), ellagic acid (32.64 ± 0.02), rutin (41.28 ± 0.01), isoquercitrin (16.71 ± 0.02), quercitrin (83.52 ± 0.03) quercetin (70.49 ± 0.01) and kaempferol (71.16 ± 0.01). The result in this study shows that the extract is rich in polyphenols with antioxidant potential and may validate the traditional medicinal use of the *S. bicolor* leaves extract.

Biography

F B Borokini is a Chemistry Lecturer and Researcher with over 16 years of postgraduate teaching and research experience in both secondary and tertiary institutions in Nigeria. She currently teaches Chemistry in the Science Laboratory Technology Department, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria. She had her Master of Technology in Analytical Chemistry and PhD in Food Chemistry from the Federal University of Technology, Akure, Ondo State, Nigeria. She has served as the Departmental Course Adviser and the Faculty of Applied Science Representative in her institution. She is very resourceful and has some scientific publications in reputable journals.

borokinif59@yahoo.com

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Phila Raharivelomanana

University of French Polynesia, France

Cosmetopoeia

Traditional uses of plants include two main fields: Pharmacopoeia for medicinal regards and cosmetopoeia for cosmetic concerns. Cosmetopoeia refers to popular use of plants for traditional cosmetics and body care that have always existed in many countries and cultures over the world, but this concept is still very poorly documented as written reports. If traditional knowledge concerning pharmacopoeia are ethnobotanically advanced and studied, those regarding formal cosmetopoeia are yet less known and concerns very few investigations and stored data. A risk of traditional knowledge loss of so often orally transmitted data may occur if not recorded. Unlike pharmacopoeia which deals on traditional medicine, using of plants, cosmetopoeia concerns the compilation of plants and their traditional uses for bodycare and well-being or beauty regards related to a region by the local population (as its cultural heritage). Cosmetopoeia concept cares about traditional cosmetic and dermocosmetic uses of natural products and should be investigated by a multidisciplinary approach integrating complementary fields such as: Biodiversity, ethnobotany, ethnocosmetology, traditional knowledge, ABS (Access to genetic resources and Benefit Sharing), world heritage, phytochemistry, biological activities, bioassays and natural products valuation and so on. Focus on cosmetopoeia concept will launch discussions about renewing interests of plants of the past for future valuations namely as biosourcing ingredient for cosmeceuticals and will inspire innovative ways for sustainable development of different countries and cultures over the world.

Biography

Phila Raharivelomanana is a Chemist (PhD-Chemistry). Currently she is a Professor of Chemistry at the University of French Polynesia. She obtained her PhD Diploma in Molecular Chemistry at the University of Nice Sophia-Antipolis (France) in 1992. She has more than 20 years of experience in phytochemical science research. When she joined the UPF in the 1990s, she was one of the pioneer researchers working in phytochemistry of polynesian plants. Then, she focused to medicinal plant investigation aiming at a better understanding of ethnopharmacological aspects. She is a Member of the Editorial Advisory Board of *Natural Product Communications journal*.

phila.raharivelomanana@upf.pf

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Kayoko Shimada-Takaura

Osaka University, Japan

Preservation of medical inheritances: Application of ancient wisdom

Traditional Japanese medicine (Kampo medicine) has originated from Traditional Chinese Medicine and developed independently adjusting their theory and medicinal resources to Japanese climate and culture. Our studies focus on the medical inheritances, which reflect on ancient wisdom and aims, preserving those inheritances for future generations and analyzing the experience or wisdom underlying those legacies and applying it to present medical practice. We introduce two of our projects.

Morino-Kyuyakuen Garden: Morino-Kyuyakuen Garden (Nara prefecture) is a private botanical garden, which was founded for the domestic herbal cultivation in the Edo period's Kyoho era (1716-1736). Tosuke and Michisada Saikaku (1690-1767) are the founders of the garden (Matsuyama Honzo Herbal (1750-68)). It contains 1003 colored illustrated entries including animals as well as plants; they are based on the close observation and the knowledge of medicinal materials, so they also provide us the clues to imagine the medical practice in these days. The documents left by him and his offspring show us their enthusiasm and trial for cultivation of domestic herbal medicine production.

Koan Ogata's Medicine Chest: Koan Ogata (1810-63), the Director of Tekijuku, was a Physician who contributed much to the medical profession with Western knowledge in late Edo period. Osaka University has inherited his various cultural heritages. Two medicine chests were his belongings. The first medicine chest, which was used during his late middle ages, contained various crude drugs. Liquid medicine in the form of bottles was left in the second one, which he has used in his last years. We archived the present condition of those medicine chests as digital pictures and analyzed the contents non-destructively. Koan had also studied Kampo medicine, so knowing his strategy for treatment would suggest the way to present Western-Eastern combined medicine.

Biography

Kayoko Shimada-Takaura has completed her PhD from Osaka University and then worked as a Postdoctoral Researcher at School of Medicine in University of South Alabama (AL, USA) for one year. She is now specially appointed Assistant Professor in the Laboratory of Applied Pharmacognosy, Graduate School of Pharmaceutical Sciences, Osaka University. She has published five papers as a first author in journals.

kayokost@phs.osaka-u.ac.jp

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Scientific evaluation of the use of traditional medicine in rural communities in Uganda

Blaise Mazimpaka

Eden Healer Ltd, Uganda

Traditional medicine has been practiced globally for centuries. In Uganda and the entire sub Saharan Africa in general, a significant number of people seek help on traditional healers mostly, because of its affordability and in cases of presumed failure of modern medicine. There are several compounds with great medical interest and more are to be discovered. Currently, the scientific community has increased its search in compounds responsible for therapeutic effects. Although there are several methods to detect every single compound available in the crude extract as well as its possible biological effect, the cause effect trend can never be determined. One of the reasons being that, the compound of interest, which is taken as a crude extract in the traditional medicine could be in conjugation with other compounds, and therefore, that might have synergistic or additive effects. Some of the challenges of traditional medicine include the lack of proper diagnostic system as well as dosage prescription. In addition, some plants and plant derived products are being used as generics to cure more than one disease. For example, plants such as *Iboza riperia*, *Vernonia mygdalina* and *Leonotis neptotifolia* are frequently used and well renown in central and Southern Africa and can be used to cure headaches, chest pain and even malaria. The purpose of this paper is to create a correlation between indigenous knowledge and belief systems in local communities in regards to the use of traditional medicine as well their met interest in increasing technological outlets as a competitive fashion to the modern medicine. This is mainly true to the rural communities who still consider modern medicine as an alien method of healing.

Biography

Blaise Mazimpaka is a graduate student from Cavendish University, Kampala, Uganda. His research area includes the use of indigenous plants in the pharmaceutical industry. He works closely with different traditional healers in the region to get accurate information on the use of different plants and herbs in traditional medicine. Also he has a great interest in the protection of the environment as well as the preservation of indigenous knowledge.

maziblaise@gmail.com

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Evaluation of *in vivo* wound healing activity of methanol extract of *Achyranthes aspera* L.

Abraham Fikru Mechesso

Kyungpook National University, South Korea

The leaves of *Achyranthes aspera* L. has been used traditionally for the treatment of wound in various parts of Ethiopia. However, the plant has not been explored scientifically for its wound healing activity. Therefore, this study was designed to investigate the wound healing activity of methanol extract of *Achyranthes aspera* L. leaves. Incision and excision wounds were inflicted on albino rats of either sex, under diethyl ether anesthesia. Group I served as positive control and was treated with 1% silver sulphadiazine, group II, III, IV treated with simple ointment containing 2.5%, 5% and 10% (w/w) methanol extract of the leaves of *Achyranthes aspera* L., respectively, whereas group V served as negative control and was treated with simple ointment. All the animals were treated topically once a day. Wound healing potential was assessed with excision and incision wound model. Excision wound model was used to assess the change in percentage contraction of wound, epithelization time, DNA content and histological features whereas rats inflicted with the incision wounds were used to determine breaking strength. Based on the results of percentage wound contraction, the DNA content and epithelization time, all groups of rats treated with the extract showed significant ($P < 0.05$) wound healing activity compared to group of rats treated with simple ointment (negative control) group. The difference in breaking strength was, however, significant ($p < 0.05$) only for the 5% and 10% extract of *Achyranthes aspera* (w/w) ointment treated groups. Histological evaluation showed well organized epidermal layer, increased number of fibrocytes, remarkable degree of neovascularization and epithelization which was comparable to the standard on the 21st day after treatment; especially in the 5% and 10% (w/w) extract treated group. The present study provides a scientific rationale for the traditional use of the leaf extracts of *Achyranthes aspera* L. in the treatment of wound.

Biography

Abraham Fikru Mechesso has completed his MSc from the Addis Ababa University. He is an Assistant Professor at the Hawassa University, Ethiopia and a PhD Fellow at the Kyungpook National University, Republic of Korea, working on pharmacokinetics and medicinal plant researches. He has published more than 7 papers in reputed journals.

abrahamfikru@yahoo.com

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Herba Siegesbeckiae inhibits production of inflammatory mediators in lipopolysaccharide-stimulated RAW264.7 and THP-1 cells

Hui Guo

Hong Kong Baptist University, PR China

Herba Siegesbeckiae (HS, Xi Xian Cao in Chinese), a Chinese Medicinal Herb, is commonly used by Chinese Medicine doctors to treat joint inflammatory disorders such as arthritis and rheumatoid arthritis. Toll-like receptor 4 (TLR-4) is widely recognized as an essential element in the triggering of innate immunity and in initiating a cascade of pro-inflammatory events. However, the role of TLR-4 in anti-inflammatory effect of HS is not fully understood. This study aims to provide justification for clinical application of HS in treating inflammatory disorders by delineating the effects of HS in the Toll-like receptor 4 (TLR4) signaling cascades. In this study, HS was extracted using 50% ethanol. We observed that HS reduced the secretion of various pro-inflammatory cytokines, chemokines and the respective mRNA expression regulated by the three transcription factors AP-1, NF- κ B and IRF3. In addition, HS could also inhibit the secretion and mRNA expression of inflammatory mediators stimulated by MPLAs, a specific TLR-4 activator. Phosphorylation and nuclear protein levels of AP-1, NF- κ B and IRF3 were decreased by HS treatment. Moreover, HS inhibited the activation/phosphorylation of MAPKs, I κ B- α , IKK α / β , TAK1, TBK1, IRAK-1 and IRAK-4 signaling pathways. We also found that HS blocked the activation of TLR-4 signaling pathways by inhibiting LPS-TLR4 binding. Taken together, HS inhibits the production of inflammatory mediators through suppression of IRAK1/TAK1 and TBK1/IRF3 signaling pathways, and the binding of LPS to TLR-4 on macrophages.

Biography

Hui Guo is currently pursuing a PhD in Molecular Pharmacology and targets of herbal medicines at School of Chinese Medicine, Hong Kong Baptist University.

guohui2008no.1@163.com

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Anti-oxidant activity and phytochemical screening of aqueous, methanolic and ethyl acetate extracts from three Kenyan *Ruellia* species viz. *Ruellia prostrata*, *Ruellia lineari-bracteolata* and *Ruellia bignoniiflora*Christine Ong'ayo Wangia¹, Orwa J A², Muregi F W¹, Kareru P G³, Cheruiyot K¹ and Kibet J²¹Jomo Kenyatta University of Agriculture and Technology, Kenya²Kenya Medical Research Institute, Kenya³Mount Kenya University, Kenya

The objective of this study was to determine the qualitative phytochemical constituents and anti-oxidant activity of crude extracts from whole plant parts of Kenyan *Ruellia* species viz. *Ruellia Prostrata* (RPM), *Ruellia Bignoniiflora* (RBK) and *Ruellia Lineari-Bracteolata* (RLB). Kenyan *Ruellia* (Acanthaceae family) species are perennial creepers with widespread medicinal uses including analgesic and anti-inflammatory activity. Sequential extraction by cold maceration was done using petroleum ether, chloroform, ethyl acetate and methanol. Aqueous extraction was done by boiling. The phytochemical screening tests were based on visual observation of color change and precipitate formation. Antioxidant activity was performed based on the ability of the aqueous, methanol and ethyl acetate extracts to scavenge the free radicals produced by 2,2-Diphenyl-1- Picryl Hydrazyl (DPPH). Ascorbic acid was used as a reference standard. The tests were evaluated at eight concentrations (3.9, 7.8, 15.6, 31.3, 62.5, 125, 250 and 500 ug/ml). The antioxidant activity of plant extracts and ascorbic acid increased with increase in concentration. Methanolic extract exhibited a higher antioxidant activity with IC₅₀ values in (ug/ml) of 2.87 (RLB), 20.58 (RPM) and 24.44 (RBK). Aqueous extracts revealed IC₅₀ values of 7.23 (RLB), 51.92 (RPM) and 66.42 (RBK). The ethyl acetate extract showed a lower activity with IC₅₀ values of 22.26 (RPM), 29.33 (RLB) and 237.17 (RBK). Ascorbic acid standard exhibited a comparable activity with IC₅₀ value of 2.11 ug/ml. Phytochemical analysis revealed the presence of terpenoids, saponins, flavonoids, tannins and cardiac glycosides. Flavonoids and tannins are a major group of compounds that act as primary antioxidants. The presence of these compounds could attribute to their potent antioxidant activity.

Biography

Christine Ong'ayo Wangia is a Senior Lecturer in the Department of Pharmacology, Jomo Kenyatta University of Agriculture and Technology, Kenya. She completed her Bachelor of Pharmacy degree from the University of Nairobi, Kenya and a Master's degree in Drug Assay at Department of Pharmacology, All India Institute of Medical Sciences, New Delhi. She is currently pursuing her PhD in Medicinal Phytochemistry at the Jomo Kenyatta University of Agriculture and Technology. She has presented her research findings in both local and international conference like 4th Annual Conference on Medicinal Plants and Herbal Products, Rockville, USA from 6th September to 8th September 2012.

cwangia@jkuat.ac.ke

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Traditional herbals in treatment of cancer: A clinical research review

Ogbonna Shadrach Chidubem

All Saints University School of Medicine, Dominica

Plants have been used for medicinal purposes long before recorded history. Indigenous cultures like, African and Native Americans use herbs in their healing rituals, while others developed traditional medical systems in which herbal therapies were used. Medicinal herbals and their derived phytochemicals have gained increased recognition with regards to their use in cancer treatments. The fact that these herbs are natural, and could be absorbed naturally by the human body, with possible less toxic effect, gives credence to researches concerning their use in treatment of cancers. Clinical studies have reported beneficial effects of herbal medicines on the survival, quality of life of cancer patients, and on their immune systems, when these herbal medicines were used together with conventional medicine. This study reviewed some past clinical studies which looked into the use of herbal medicines for different cancer cases and the effect of herbal therapy against cancer cells. Literature is rich and evidences abound of the extent of the use of natural herbs for the treatment of cancers in countries like China, India, Nigeria and United States of America. This review documented the efficacy of such intervention and the probable improvement in the quality of life in these countries. Clear comparison of results in relation to success achieved, side effects and level of toxicity between orthodox medicine and herbal medicine were reviewed. Major research effort to understand the effect of these herbs in the treatment of cancer has been by randomized controlled trials. This study reviewed some recent studies on the mechanism of action of these herbs in certain cancer cells. It also reviewed the potential application of derived phytochemicals in development of cell-based cancer vaccine, safety of herbal anticancer compounds and chemo-preventive herbal compounds whose mechanism, biological response, and anticancer elements were studied.

Biography

Ogbonna Shadrach Chidubem earned his Bachelor of Science degree in Biochemistry from the University of Jos, Nigeria. After his BSc in Biochemistry, he had a five year High School teaching experience in Chemistry from 2009 to 2014. He was not only involved in the academic teaching, but served in the administration, during which he was the Head of Department of Science. He has taught with the Ejeme Senior Secondary School Delta State as a Member of the National Youth Service Corps 2009-2010, and was recognized by the Delta State Government for his contribution in HIV/AIDS awareness and voluntary testing among teenagers. He also taught with the Word of Faith Group of Schools Delta State Nigeria (2011-2012) and Cornerstone International School, Delta State, Nigeria (2012-2014) and was awarded Best Teacher with the CIS 2012 and has since then maintained a high level of performance with the said school before leaving the country to commence his medical career. He is currently a student of All Saints University School of Medicine in Commonwealth of Dominica.

sheddysmusicbox@gmail.com

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