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2nd Asian Conference on Science, Technology & Medicine

March 20-22, 2018

CONFERENCE PROCEEDING

ACSTM-2018

Proceedings of

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Proceeding of Asian Conference on Science, Technology & Medicine 2018

Health Challenges of Modern Life and Controlling with Life Style/Dietary Modifications and Functional Foods

Anwar ul Hassan Gilani
Distinguished National Professor, Aga Khan University Medical College, Karachi, Pakistan

Anwar ul Hassan Gilani LiveDNA : 92.93

ABSTRACT

Despite the advancement in the pharmaceutical medicine, overall disease burden is not reduced. While there is a progress in reducing mortality due to infectious diseases, there is increasing global trend of morbidity and mortality due to non-communicable diseases or obesity related chronic diseases. In fact, obesity is now considered a global epidemic and growing cause of many chronic diseases including hypertension, atherosclerosis, diabetes, osteoarthritis, low back pain, menstrual disorders, impotence and urinary, respiratory, psychological and stomach disorders and some forms of cancer, yet few people are aware that being obese increases the risk of developing the diseases, most of which are not best cured with pharmaceutical medicines. Unfortunately, pharmaceutical pills not only fail to provide complete cure in most of such cases, (provides symptomatic relief) and requires life-long use of multiple drugs which are not only expensive and beyond the reach of a common man but also results in multiple side-effects and people are now turning back to nature. Obesity is not merely the overweight rather accumulation of fat on abdomen (central obesity) is the main risk factor, which has a multi-factorial etiology including genetics, metabolic, environmental, behavior and lifestyle components; hence it offers a therapeutic challenge which demands coordinated efforts targeting proper nutrition, changes in eating behavior, regular physical activity along with developing skills to relax, as there is hardly any pharmaceutical available to control obesity effectively and cure obesity related chronic diseases. It is not only important what we eat but equally important is that what, how and when we eat. Now there is sufficient scientific evidence that a diet based on natural foods rich in fiber, complex carbohydrates (cereals), fruits and vegetables, olives, fish and fat source of omega-3 fatty acids along with life style characterized by mental peace and more physical activity helps to control obesity and restore physiological functions. Similarly, some knowledge on the value of caloric restriction and medicinal value of herbs and foods, such as, nuts, ginger, garlic, onion, turmeric, cinnamon, fish, olives, flaxseeds, Blackseeds, green-tea, lemon and honey along with some knowledge on the individual variation in responding to different measures helps to maintain good health.

Dr. Anwar ul Hassan Gilani is currently working as Distinguished National Professor, Aga Khan University Medical College, Karachi, Pakistan. Prof. Gilani's career is that of a distinguished Pharmacologist, combining novel discoveries and distinctive mentor ship roles and sound record of academic leadership.

Green Chemicals for Control of Plant Diseases and Escalating Crop Yield and Quality

Mohamed A. Elwakil
Department of Plant Pathology, Mansoura University, Egypt

Mohamed A. Elwakil LiveDNA : 20.587

ABSTRACT

Soaking seeds of edible crops and vegetables before sawing in low concentrations of a designated formulation combining four green chemicals (hydroquinone+citric acid+boric acid+nickel chloride), enhanced the systemic acquired resistance in plants against a number of devastating diseases and thrived both quantity and quality of the yield. This treatment led to a reduction in heavy metals accumulated in the plants as a result of successive irrigation with water contaminated with industrial and municipal wasts. Seed treatment of wheat with the designated formulation produced grains free from cadmium, mercury and lead. The loose smut disease of wheat and barley was inhibited. Scaling up the crop yield and quality was also obtained: wheat (30%), peanut (50%), potato (30%), sugar beet (30%), table beet (90%), cotton (50%) and cucumber (100%). This work has socio-economic and health impact improving the availability of food by substantial amplification of their production to ensure sustainable incomes and reduce the famine occurred in several parts of the world. However, international companies of a strategic vision may be encouraged to invest in this trend to produce higher yield, better quality with less cost.

Dr. Mohamed A. Elwakil is an Emeritus Professor of Plant Pathology at Mansoura University, Egypt. Since 30 years his research focus on the use of green chemicals for contoroling plant diseases to produce higher yield and quality product.

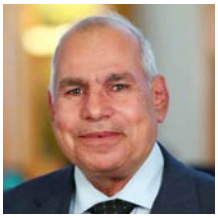
Emerging and Re-Emerging MYSV and PVYntn Infections in the Middle East

Aboul-Ata Elnady Aboul-Ata
Plant Pathology Research Institute, Egypt

Aboul-Ata Elnady Aboul-Ata LiveDNA : 20.406

ABSTRACT

Aphid- and Seed-Born Potato Virus Y NTN (PVYntn) is the Most Affecting Severely Causal Virus for Potato Cultivations globaly in the Middle East and Asia. It is one of Quarantine-Prevented Diseases and it Causes Potato-Tuber Cracking. Those tubers are not marketable and it widespread the disease through knifes when cutting tubers. Fifty one thousands and two hundreds of potato tubers were collected from different Egyptian locations i.e. Sharkia, Qualubia, Behaira, Gharbia and Dakahlia. Fifty of cracked potato tubers, out of 51200, were tested using PCR to confirm PVYntn Occurrence. TCAAGGATCCGCAAATGACACAATTGATGCAGG (F Primer) and AGAGAGAATTCATCACATGTTCTTGACTCC (R Primer) were used to Amplify PVYntn CP at 801 bp as band size. Two PVYntn Strains have been isolated and molecularly identified. They were sequenced and submitted to GeneBank under 2 accession numbers i.e. (Potato Virus Y Strain NTN Isolate PVYEG2 Coat Protein Gene, Partial Cds accession GU980964 and Potato Virus Y Strain NTN Coat Protein Gene, Partial Cds accession GU550076). Amplified PVYntn CPs the sequence was analyzed by DNAMAN. It was found that 99% Homology between the previous 2 isolates and other isolates those retrieved in The Gene Bank. Maize Yellow Stripe Virus (MYSV) has several features in common with tenuiviruses, but is transmitted by a Leafhopper, Cicadulina Chinai (Cicadellidae, Hemiptera), Rather than Planthoppers (Delphacidae, Hemiptera). Five MYSV primers were used for Microarray detection (5 Segments: AJ969412, AJ969413, AJ969414, AJ969415, AJ969416), F_206-225, TCTGCCAACGGCGGAGTCCC, R_1145-1126, TTTGTTCTGTCCATGAGAGC, F_183-203, CAAGCCGAATGGTGTACTGA R_817-798, GGACAACAGAGAACAAGCCA, F_256-276, TGAAAGCACAGCTATTGGCA, R_1158-1136, CCTAGAGGTGTTGGTGTTAGCAT, F_182-202, CCATTTGCAACAACTATGGCR_726-707, GTATGGAAGGGAAGCCAACA F_220-240, CATTGACATTGTGCCTGAGC, R_1243-1224, TTGCTCTGATTTGAAGTGGG. Sequence analysis, using those 5 segments aiming at molecular epidemiology. It has shown that three different MYSV strains. One was found on maize and two came from weeds. Epidemic-causing factors could explain wide spread MYSV severity range and emerging infection.



Dr. Aboul-Ata Elnady Aboul-Ata was working as Phytovirologist in ARC, Egypt. He is the President of ArSV (Arab Society for Virology) in 2013 for 3 years. His research interest includes Plant virus epidemiology, Molecular plant virology,Viral protein expression and Plant virus suppression.

Association Between Incidences of Heavy Metals in Plants Irrigated with Contaminated Water and their Incidence in Blood of the Consumers

Mohamed Ahmed M. El-Metwally*, Mohamed A. Elwakil, Ekbal M. Abo-Hashem, Yasser M. Shabana, Ghada El-Kannishy, Ali M. El-Adl, Rokiah Anwar, Eman Fawzy, Narmin Saied and Mostafa Elzyat
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ABSTRACT

Four toxic heavy metals, namely lead (Pb), cadmium (Cd), mercury (Hg) and arsenic (As) known to contaminate the irrigation water in Egypt in some areas. Their incidence in the edible parts of the crops and vegetables as well as in the consumer's blood was assessed. The assessment proved that their incidence in the plants and consumer's blood was above the permissible levels. On the other hand, the degree of association between each of these heavy metals was studied in the form of correlation coefficients (CO) in the plants. Three hundred and four samples of different plants and vegetables collected from three different locations highly contaminated with heavy metals in Egypt were investigated. It was found that the highest degree of correlation was shown between As and Cd (0.61) while, the lowest correlation was shown between Hg and Pb (0.475). For blood analysis, 314 consumers diseased with hepatocellular carcinoma as well as others free from the disease and live in lesser contaminated area were checked. The highest correlation was shown between Cd and Pb (-0.051) while, the lowest was shown between Hg and As (-0.070). However, a fluctuation in the figures was shown in blood (positive or negative). The negative correlation indicates that one of the two elements may reduce the accumulation of the other while the positive correlation indicates that one element may enhance the accumulation of the other (synergism).

Dr. Mohamed Ahmed M. El-Metwally has completed his PhD in Plant Pathology from Mansoura University, Egypt and currently he is working as Professor in Department of Mycology Research, Plant Pathology Research Institute, Agricultural Research Center, Giza, Egypt. His research interests include Plant and Soil Sciences, Mycology, Biological Control, Fungai and Fungal Diseases.

Micro RNA Impact in Cancer Diagnonsis and Therapy

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Mehmet Ozaslan LiveDNA : 90.581

ABSTRACT

Non-coding RNA (ncRNA) is transcribed from primary DNA sequence however not changed over into proteins, that is a functional RNA molecule. Epigenetic related ncRNAs can be grouped into two principal classes; short ncRNAs and long ncRNAs. Three major classes of short non-coding RNAs are microRNAs (miRNAs), short interfering RNAs (siRNAs), and piwi-interacting RNAs (piRNAs). MiRNAs are short 18-24 nucleotides, that functions in RNA silencing and post-transcriptional regulation of gene expression. Through interactions with the mRNA 3'-untranslated region, miRNAs initiate translational controlling and play a significant role in developmental timing. Presently, miRNAs have been determined to play an important roles in several pathological and physiological conditions. Especially, miRNA deregulation in various types of cancer has been extensively researched. Aberrant expression of miRNAs in cancer is correlated to different mechanisms, which include chromosomal aberration, genomic mutation, polymorphism, epigenetic alteration in miRNA biogenesis, which can play a significant role in tumorigenesis. About 50% of human miRNA genes are often situated at fragile sites and genomic sequences involved in tumors and high frequency of genomic changes in miRNA loci was observed in human melanomas, breast and ovarian cancer employing high-resolution array-based genomic hybridization. Revealing and medical usage of miRNA as a new biomarker, is considered to play an important role in reforming biomedical science research, by that means deeply causal factor of diseases detection, diagnosis, and intervention and cancer in special. This review will give a current and a short account on miRNA value in cancer diagnosis and therapy.

Dr. Mehmet Ozaslan is working as a Professor/Dean, Education Faculty, Gaziantep University, Turkey. His main area of interest is in cancer genetics, molecular virology, molecular genetics, microbiology and genetic mutations.

Anti-Cancer-Green Bio Nano Material-Present Status and Future Prospect

Zabta Khan Shinwari
Secretary-General of the Pakistan Academy of Sciences, Islamabad, Pakistan

Zabta Khan Shinwari LiveDNA : 92.91

ABSTRACT

Nanotechnology based interventions have gained tremendous popularity over the past decade because of their wide spread applications. Nanoscaled materials are represented by having at least one dimension between 1-100 nm. Generally, at the nano level, materials exhibit interesting physical, biological, magnetic and optical properties and therefore can be explored for diverse applications. Among various kinds of nanoparticles, the metal or metal based nanoparticles has attracted significant attention. Metal or metal oxide nanoparticles has been increasingly looked as a potential theranostic agent in various diseases such as cancer. Metal or metal oxide nanoparticles can be produced through different kinds of physical or chemical processes however they are accompanied by certain disadvantages like cost and toxicity. To overcome such problems, green chemistry based methods have gained significant attention which are based on the use of biological resources like medicinal plant extracts as scaffold for the biosynthesis of nanoparticles. The interface of medicinal plants and nanotechnology has presented exciting horizons to fabricate material of interest. Various medicinal plants have been successfully used for the biosynthesis of metal and metal oxide nanoparticles at MoSAEL. The aqueous extracts of *Sageretia thea* were used for the biosynthesis of zinc oxide, nickel oxide, iron oxide, cobalt oxide and lead oxide nanoparticles. Other plants which were used for the biosynthesis of various metal oxides are *Callistemon viminalis*, *Tecomastans*, *Fagonia indica* and *Silybummuranium*. In addition, some medicinal plants like *Olax nana*, *Indigofera heterantha*, *Teucrium stocksianum* were explored for the biosynthesis of silver and gold nanoparticles. The as synthesized nanoparticles were charactersized using diverse techniques like XRD (X-ray diffraction), FTIR (Fourier Transformed Infrared Spectroscopy), UV-Vis (Ultraviolet absorption), Raman scattering, EDS (Energy Dispersive X-ray Spectroscopy), SAED (Selected Area Electron Diffraction), HR-TEM (High Resolution Transmission Electron Microscopy), HR-SEM (High Resolution Scanning Electron Microscopy) etc. Among the various application studied are the anticancer, antileishmanial, antioxidant, antibacterial, antifungal, enzyme inhibition (Cholinesterase, Protein kinase etc.). Molecular docking studies of various metal oxide nanoparticles with targeted proteins are also performed. The in silico results correlated the in vitro findings. Among metal oxide nanoparticles, zinc oxide nanoparticles were also investigated for their application in super capacitor which are smart energy storage devices. The fabricated super capacitor remained stable for more than 1000 cycles of charge and discharge and exhibited excellent electrochemical performance. Recently, our work is further extended to the biosynthesis metal and metal oxide nanoparticles from bacteria and fungi isolated from harsh environments.

Dr. Zabta Khan Shinwari is General Secretary of the Pakistan Academy of Sciences and Chair of the Biotechnology Department of the Quaid-i-Azam University of Islamabad. His area of Specialization includes Plant Sciences and Agricultural Biotechnology.

Emerging Antibiotic Resistance-Causes, Concerns and Control Strategies

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Ruchi Tiwari LiveDNA : 91.5226

ABSTRACT

Emergence of antimicrobial resistance (AMR) is a dreadful dream, which was never even imagined during advent of first antibiotic drug. A minimal residual limit of some antibiotics has been established. Antibiotics were discovered as magical bullets, considered as terminator of long period of Pre-antibiotic era of untreatable bacterial infections. As per the Darwin's theory of survival of fittest, microorganisms are under the enormous pressure for their survival in the environment where diverse antimicrobial agents are present. The resultant outcome is expressed in form of antimicrobial resistant strains of bacteria including multi drug resistant (MDR), total drug resistant (TDR), extensively or extremely drug resistant (XDR), pan drug resistant (PDR), methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant enterococci (VRE), (*E. faecium*, *S. aureus*, *C. difficile*, *A. baumannii*, *P. aeruginosa* and *Enterobacteriaceae* spp.) ESKAPE pathogens, amoxicillin-clavulanic acid (AMC) resistant, carbapenemase and aminoglycoside resistant, extended spectrum beta-lactamase (ESBL) and metallo beta-lactamase (MBLs such as NDM-1) producing resistant strains of bacteria. This rapidly growing antibiotic resistance is a worry of global concern. Main causes include indiscriminate usage of antibiotics as growth promoters, under or overdosing with improper schedule, inappropriate use without prescription and prophylactic use instead of therapeutic. To effectively handle this daunting situation now various programs and policies viz., European Antimicrobial Resistance Surveillance Network (EARS-Net), Norwegian Surveillance System for Antimicrobial Drug Resistance (NORM/NORM-VET), National Antimicrobial Resistance Monitoring System (NARMS), Pilot Surveillance Program for Antimicrobial Resistance in Bacteria of Animal Origin, The Japanese Veterinary Antimicrobial Resistance Monitoring System in the Field of Animal Hygiene (JVARM) and many more have been framed and enforced by developed as well as developing countries at regional, national and at international levels. The European Union has initially restricted and later on banned non-essential use of antibiotics from 2006 to be used as antibiotic growth promoters in food animal production to reduce the pooling of resistant genes, because of the gradual increase in the development of resistant strains toward certain antibiotics, residual toxicity in food chain, adverse reactions and side effects. Emerging antibiotic resistance has also prompted the search for alternative antimicrobial agents to prevent and treat diseases in humans and animals. Few of such therapies include phages, enzybiotics, bacteriocins, antimicrobial peptides, probiotics, predatory bacteria, cytokines, avian egg yolk antibodies, toll-like receptors, quorum sensing, maggot debridement therapy, nanotherapy, immunomodulatory agents, herbs and plant extracts/metabolites. Current paper discusses the important aspects of causes involved, related health and environmental concerns, upcoming alternative therapeutic regimens and various strategies planned all over the world to increase the public awareness on rational use of antibiotics through sustainable communication campaigns for the control, constant monitoring and containment of emerging and rapidly spreading antimicrobial resistant (AMR) strains for healthy and infection controlled future.

Dr. Ruchi Tiwari completed her MVSc from IGKV, Raipur, CG, India and from 2011. She is working as an Assistant professor at Veterinary University, Mathura, UP, India. Her area of specialization is Veterinary microbiology and areas of interest include antibiotic resistance, alternative antimicrobial therapies, bacteriophage therapy, diagnosis of bacterial, viral and fungal diseases and vaccinology. She has to her credit more than 320 publications of national and international repute. She is recipient of best young scientist award, best oral and poster presentation award and best paper award.

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Attitude of Employees Towards Monetary and Non-Monetary Rewards and its Impact on Motivation and Turnover

Qadir Khan*, Gul Rukh and Hamid Mehmood Khan
Assistant Director Administration, Women University Swabi, Pakistan

Qadir Khan LiveDNA : 92.23272

ABSTRACT

Rewards are used as a tool for encouragement and inspiration by different organizations in order to increase their employees' performance. This tool serves as a strong element for any organization which increases its strength and hence results in a proficiency in business market. In our study, we have developed a relationship between the company offered rewards and the performance of its employees with a deep insight about how the reward types are linked with the employees' performance. Their motivation level has been focused here along with their turnover in the organization. The study showed that employees who have served for a longer period in a company develop a more specialized skill set which can be highly valuable for the company. Similarly, enthused employees are more likely to stay with the organization and thus provide favorable results. The main focus of the study was on the banking sector. The reward types and the performance enhancement were witnessed eventually. The focal point was to identify the effective mixes in banking sectors. A sample of size 200 was used in two banking organizations, which provided the required results in order to test the specified hypotheses.

Mr. Qadir Khan is working as Assistant Director Administration at Women University Swabi, Pakistan. Currently he is enrolled in PhD program at Priston University Islamabad. His main area of interest is studying the human resource management in different sectors of Pakistan.

Molecular Systematics of Genus *Heliotropium* L. (Heliotropiaceae) from Pakistan

Muhammad Qaiser* and Samina Nurin
Center of Plant Conservation, University of Karachi, Karachi, Pakistan

Muhammad Qaiser LiveDNA : 92.23361

ABSTRACT

Phylogenetic studies of the genus *Heliotropium* L. (Heliotropiaceae) based on molecular and morphological characters, from Pakistan was carried out. Ten species of *Heliotropium* were investigated. Leaf samples were preserved for DNA extraction and genomic DNA was isolated from the preserved leaves by using standard methods. In addition, a new protocol was especially designed to extract total DNA from fresh and herbarium material. Primers were designed for four segments of the chloroplast DNA. rbcL and matK genes, trnS-trnG and psbA-trnH intergenic spacers were amplified from the genomic DNA of *Heliotropium* species. For further confirmation and detailed molecular analysis ITS1, 5.8S gene and ITS2 region was also amplified by using universal primers ITS4 and ITS5. The PCR products were purified sequenced. The sequences were analyzed and then deposited to GenBank. The phylogenetic analysis was carried out using maximum parsimony method with the help of PAUP software. All these trees were also confirmed using Neighbour joining analysis by the same software. Phylogenetic trees of each molecular region were reconstructed separately as well as in combination. Three trees were generated using each molecular segment, a subgenus tree with *Heliotropium* species from Pakistan, a generic tree with *Heliotropium* species from the world and a family tree with the species of the genera of Heliotropiaceae along with *Heliotropium* species. A phylogenetic tree using 65 morphological characters was also reconstructed and compared with the trees based on molecular data. Phylogenetic trees constructed by Maximum parsimony and Neighbour joining analysis clearly showed the occurrence of two distinct clades, representing true *Heliotropium* L. s.str. and the genus *Euploca* Nutt. Respectively. This was also supported by morphological characters. Five species of *Heliotropium* s.l. now fall under the newly recognized genus *Euploca* viz., *Euploca subulata* (DC.) Naurin and Qaiser, *E. cabulica* (Bunge) Naurin and Qaiser, *E. marifolia* (Retz.) Naurin and Qaiser, *E. ovalifolia* (Forssk.) Daine and Hilger and *E. rariflora* (Stocks) Daine and Hilger.

Dr. Muhammad Qaiser is one of the most eminent plant taxonomists. He has served as a Vice-Chancellor of two important universities of Pakistan, University of Karachi and Federal Urdu University, Islamabad. He is a fellow of Pakistan Academy of Sciences and the World Academy of Sciences (TWAS). He is now working as Chief Editor of Pakistan Journal of Botany and Editor of Flora of Pakistan. He has more than 200 research papers published in journals of repute to his credit.

Knowledge and Practices of Type 2 Diabetics Regarding Dietary Restrictions

Nooria Ashfaq, Nida Komal, Rabbi Ali*, Muneeb Khan, Rayshum Jarral, Naima Ejaz and Bushra Sobia
Shalamar Medical and Dental College, Lahore, Pakistan

Rabbi Ali LiveDNA : 92.23274

ABSTRACT

Diabetes has been traditionally divided into insulin dependent (IDDM) and non-insulin dependent (NIDDM). A third form LADA (latent autoimmune diabetes in young) having features of both has emerged. DM is a disorder characterized by fasting and post prandial hyperglycemia resulting from a deficiency of insulin secretion and/or resistance to it. The aim of the study was to assess the practice of diabetic patient towards self-care activities. In this study 180 diabetic patients were selected by simple random selection technique. The participants filled out a structured practice questionnaire. The study included 180 samples, 78 (43.3%) were male and 102 (56.7%) were female. Knowledge about the importance of dietary restrictions showed 167 (92.8%) being aware and 13 (7.2%) unaware. 130 (72.2%) followed a diet plan. We asked the patients about the meals and 41 (22.8%) said carbohydrates, 32 (17.8%) said fats, 61 (33.9%) said proteins and 46 (25.6%) said fibers. The purpose of the study was to assess practice of self-care activities of diabetes mellitus among diabetic patients at Sider, Shalamar Hospital Lahore. The whole study was cost effective, simple and carried out in an acceptable way. The result shows that the diabetic patients had inadequate practice regarding self-care activities of diabetes mellitus.

Dr. Rabbi Ali is currently working as Medical Officer in Sheikh Zayed Hospital, Rahim Yar Khan, Pakistan. She has completed her MBBS from Shalamar Medical and Dental College Lahore. Her research interest includes Medicine, Pathology and Cardiology.

The Changing Paradigm in Publishing in Analytical Sciences over the Decades

Mohammad Rasul Jan
University of Poonch Rawalkot, Pakistan

Mohammad Rasul Jan LiveDNA : 92.23283

ABSTRACT

Analytical chemistry known as the central science play its key role in many discipline of sciences due to its detective role apart from developing the detection tools. About half a century earlier few journals were available and there was no quantitative means of judging the journals. The analytical Chemistry which mainly relied on the analysis of analytes or studying the behavior of analytes moved toward equipment development, detector development, simultaneous analysis and sensor development. The changing pattern in analysis posed new challenges for publishing in scientific journals. The recent trend in material based analytical chemistry has posed serious challenges for scientist working in labs with limited high-tech instruments. The material based analytical chemistry requires expensive instrument like XRD, SEM, TEM just few to mention. This has been further exacerbated by the quantification of journals.

Dr. Muhammad Rasul Jan is a Pakistani chemist in the field of Analytical Chemistry. He served as Vice-Chancellor of University of Malakand from 14 April 2008 till 1 October 2012. He also served as Vice-Chancellor at University of Peshawar and currently he is serving as Vice-Chancellor at The University of Poonch Rawalakot. His research interest involve method development for the determination and decontamination of organic and Inorganic micro pollutants in various compartment of the environment, recycling of waste polystyrene into useful products, Solid Phase Extraction, Synthesis of magnetic nanoparticles and Nano sensors for the detection of protein and antibodies.

GRADE Evidence to Decision (EtD) Frameworks for Adoption, Adaptation and De Novo Development of Trustworthy Recommendations, Experience from Saudi Arabia

Yaser Adi*, Holger J. Schunemann, Wojtek Wierciocha, B. Jan Brozeka and Itziar Etxeandia-Ikobaltzetaa Reem A. Mustafaa
King Faisal Specialist Hospital Research Centre (KFSHRC), Saudi Arabia

Yaser Adi LiveDNA : 44.23229

ABSTRACT

Guideline developers can: (A) Adopt existing recommendations from others; (B) Adapt existing recommendations to their own context; or (C) Create recommendations de novo. Monetary and nonmonetary resources, credibility, maximization of uptake, as well as logical arguments should guide the choice of the approach and processes. To describe a potentially efficient model for guideline production based on adoption, adaptation, and/or de novo development of recommendations utilizing the grading of recommendations assessment, development and evaluation (GRADE) evidence to decision (EtD) Frameworks. We applied the model in a new national guideline program producing 22 practice guidelines. We searched for relevant evidence that informs the direction and strength of a recommendation. We then produced GRADE EtDs for guideline panels to develop recommendations. We produced a total of 80 EtD frameworks in approximately 4 months and 146 EtDs in approximately 6 months in two waves. Use of the EtD frameworks allowed panel members understand judgments of others about the criteria that bear on guideline recommendations and then make their own judgments about those criteria in a systematic approach. This new approach of guideline production combines adoption, adaptation, and, as needed, de novo development of recommendations that can be coined as the "GRADE-ADOLOPMENT". If developers of guidelines follow EtD criteria more widely and make their work publically available, this approach should prove even more useful.

Dr. Yaser Adi is a specialist in Public Health and in Health Technology Assessment; currently he is working as a scientific consultant at King Faisal Specialist Hospital Research Center (KFSHRC). He is also a Senior Research Fellow at the Warwick Medical School providing the evidence for the National Institute for Health and Care excellence(NICE) for some clinical practice guidelines.

Technology Innovation and Innovative Management of Xiluodu Hydropower Station as the Third Largest Hydropower Station in the World

Zhihui Zhang
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ABSTRACT

Xiluodu hydropower station is China's second hydropower station and the third largest one in the world. This hydropower station is a national key project of "Sending electricity from the west to the East" In China. It is located on the Jinsha River at the junction of Sichuan province and Yunnan province in Southwest China. Due to its large scale and high difficulty, such as narrow valleys, high arch dams, huge amount of leakage, multiple units, large caverns and high seismic resistance, It has become one of the most representative hydropower projects in the world. With An installed capacity of 13.86 million kilowatts, It is one of three 300-meter-high UHV dams that have been built in the world. It not only represents the highest level of intelligent dam construction in the world, but also shows a strong technological innovation and innovative management of China's hydropower construction. The project of xiluodu hydropower station is characterized by a number of key technologies that have surpassed the existing experience in the world and its comprehensive technical difficulties are among the highest in the world. In order to solve this problem, the three gorges group set a precedent for the intelligent construction of the UHV dam in China. Based on the needs of life-cycle management, digital dam has built a comprehensive human-computer interaction system, including integrating network, hardware, software, project participants and team of experts. Its functions include concrete construction, temperature control, grouting, gold knot, monitoring, simulation analysis, early warning and control of dam construction, as well as the management of the entire process. With its intelligent building theory and system, xiluodu created a world record of no cracking of temperature caused by pouring concrete 6.8 million cubic meters. The former president of ICOLD (international commission of large dams), Professor Lewis Berger, once commented: "China's innovative technologies have become the world leader in the intelligent construction of massive concrete structures and successfully solved the world problem of no dam without cracking." In addition to its quality and technical excellence, the project also lies in consistently implementing the concept of environment-friendly and sustainable development and focusing on the protection of the well-being of immigrants. The immigrant have been living in the new settlements, moved down from the top of the mountains above 2000 meters high and enjoying more rights for education and self-development. In the view of project management and policy decision-making, hydropower construction is a process of value rebuilding. Instead of delivering a single product, A construction project creates a value-oriented society with social functions and market competitiveness. It is worthy to mention that, China xiluodu hydropower station won the xiluodu's FIDIC award, which is dubbed the nobel prize in the field of international engineering consulting.

Dr. Zhihui Zhang got her PhD in philosophy of science and technology, University of Chinese Academy of Sciences, Beijing in 2010. She is currently one Associate Professor and research fellow in Institute for History of Natural Sciences, Chinese Academy of Sciences. Her research focuses on the history of science and technology in modern China and especially pays her attention to the water resources protection and hydropower station construction in china and other parts of the world.

Molecular Characterization and Comparative Genomic Study in Genes of Progressive Motor Neuron Disease

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ABSTRACT

Motor neuron disease (MND) is a neurodegenerative condition affecting the brain and spinal cord. Patients with Amyotrophic Lateral Sclerosis (ALS) is the most common of the MNDs, Motor neurons control important muscle activity, such as gripping walking speaking swallowing breathing. During this study, linkage/mutational analysis and comparative genomic study was performed of motor neuron disease between humans and horses of Pakistani origin. Linkage analysis was performed for locus/gene *SOD1*, *ALS2* and *SMN1/2* in human patients while direct DNA sequencing was performed for horse gene *SOD1* and *ALS2*. All the three genes (*SOD1*, *ALS2* and *SMN1/2*) are highly involved for causing motor neuron disease in human and the ultimate objective of the study was to identify those genetic variants/mutations responsible for motor neuron disease in humans and horses, a total of 08 human families and 08 affected horses with motor neuron disease were identified from different areas of Pakistan and 5-6 mL blood samples were collected from affected and normal individuals for DNA extraction and estimation. In case of human pedigrees, linkage analysis was performed with the help of three STR markers to find out whether a family was linked to candidate region of the loci (*SOD1*, *ALS2* and *SMN1/2*) and if a family was found to be linked with a locus/gene, subsequently the causative gene responsible for phenotype was sequenced. As a result of linkage analysis, two families (MND01, MND05) were found to be linked with human *ALS2* locus/gene which was ultimately sequenced and two novel mutations (p.Ser65Ala; p.1000del) were identified. In case of affected horses, gene *SOD1* and gene *ALS2* were sequenced by using DNA of affected horses. No sequence variant was found in case of gene *SOD1* in any of the affected horse while one synonymous (c.1230G>A) and two missense sequence variants (c.247G>A, c.914T>G) were identified in horse gene *ALS2*. Although linkage analysis study was performed for locus/gene *SMN* responsible for motor neuron disease in human, no family was found to be lined with locus *SMN*. In addition, a comparative genomic analysis was performed between human and horse gene *SOD1* as well as gene *ALS2* to study the nucleotide similarity and protein sequence similarity.

Dr. Shakeela Daud is working as Assistant Professor in the Department of Biotechnology, Faculty of Life Sciences & Informatics in (BUITEMS) Quetta. She has completed her PhD degree in Molecular Biology and Biotechnology from University of Veterinary and Animal Sciences (UVAS), Lahore. She is author and co-author of more than 20 research articles in international journals including Molecular vision, Forensic Science International, Human Genetics and Clinical Genetics etc.

Synthesis and Characterization of Zirconia/Graphene Oxide Nano Composite

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ABSTRACT

Derivatives of graphene have proved remarkable applications in the various fields of polymer such as nanocomposites, optics, electronics, super capacitors, fuel cells, bioscience etc. The present study was conducted to identify the best fit synthetic module for Zirconia/Graphene Oxide (ZrO2/GO) nanocomposite to facilitate synthesis of new hybrid approaches of graphene 2D sheets. Zirconia (ZrO2), Graphene oxide (GO) and Zirconia/Graphene Oxide (ZrO2/GO) nanocomposite were prepared in laboratory by using effective and affordable methodology with high yield and low impurity. GO sheets were prepared using Hummers Method of synthesis with modified ratio of 1:3. Obtained GO sheet were then exposed to freshly prepared ZrO2 particles to form hybrid complex of high thermal stability and mechanical strength. Obtained powder of ZrO2 and GO were dispersed into 200 mL of water in 1:1 ratio and subjected for sonication for 30min. The synthesized GO/ZrO2 nano composite were harvested at 4000 rev min-1 for 20 min and pellet was washed with 30% methanol. The product obtained was dried under vacuum and stored in cold. Obtained products were analyzed using scanning electron microscope (SEM), X-Ray Diffraction (XRD) and Transmission Electron Microscope (TEM). XRD diffraction pattern clearly demonstrate the formation of ZrO2 as the sharp peak at 2θ=31.12o revealed its monoclinic geometry. SEM revealed it as ball like molecule possessing several tiny nanoparticles bearing rough boundary and seems very strong and tough; results of TEM showed the product was hollow from inside. The SEM images of GO were well exfoliated but at the same time uneven and aggregated. XRD peaks of synthesized GO/ZrO2 nano composite depict that the complex formation was successful since it clearly shown the presence of the peaks of GO as well as the GO/ZrO2 nano composite; which was further confirmed for its structural formation and morphology using SEM. From the present study, it can be concluded that the specific ratio (1:3) may be used for the preparation of GO/ZrO2 nano composite, since it was proved to be an effective and best suitable ratio for adopted synthetic module in the laboratory. The results obtained using XRD, SEM and TEM have confirmed the use of specified ratio for qualitative as well as quantitative synthesis of GO/ZrO2 nano composite.

Ms. Maryam Sayab has recently completed her M.Phil Degree in Chemistry, with thesis on "Synthesis and Characterization of Zirconia-Graphene Oxide Nano composites" from Agriculture University Faisalabad, Pakistan. Her research interest covers Nano-chemistry as well as analytical chemistry. She has attended certified training courses on SEM, TEM, GC-MS and XRD. She is also good at creative writing, editing, proofreading and summary and précis writing.

Polyphenols Improves Antioxidants Status, Intestinal Morphology and Acceptance of Meat in Heat Stressed Broilers

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ABSTRACT

Use of active principles of phytogenic origin is getting huge attention due to their wide spectrum of functions. Polyphenols are secondary plant metabolites which are common compound of human and animal diet. Diet composition affects microbial population in the gut is modulated by the composition of diet. Hence, the response to polyphenols cannot be expected to be the same for different food matrix. In the present study, the supplementary effect of polyphenols on antioxidants activity, intestinal histo-morphology, pigmentation and sensory evaluation in heat stressed broilers fed with different cereal sources. 240 broiler chicks were allocated to six groups and reared for 42 D under hot-humid environment (Temp: 29-36°C; RH: 69-80%). The first group was fed the corn soybean meal diet with no polyphenol supplementation (T1). T2 = T1+50 ppm Extract (PPE), T3 = T1+100 ppm PPE. T4 was fed rice-sorghum-soybean meal based diet with no PPE, T5 = T4+50 ppm and T6 = T4+100 ppm PPE. The per cent inhibition of lipid peroxidation (LPO), glutathione (GSH), superoxide dismutase (SOD) and glutathione s-transferase (GST) activity were neither influenced ($p>0.05$) by PPE supplementation and interaction effect. However, the PPE supplementation showed numerical increase in studied antioxidants activity in corn fed groups. The LPO inhibition and CAT activity was significantly ($p<0.01$) higher in corn fed groups than the rice-sorghum groups. However, the GSH, GST and SOD were not affected by the cereal sources. The activity of GSH, CAT and SOD were significantly ($p<0.01$) increased up on PPE supplementation. The GST and LPO inhibition were remained unaffected by the PPE supplementation. The birds skin and shank colour were significantly ($p<0.05$) altered by the dietary cereal source of choice and also by PPE supplementation. The birds fed with corn as cereal source had higher ($p<0.05$) colour value to than the rice-sorghum fed groups. The supplementation PPE improved the skin and shank colour in both the corn and rice-based diets. The weight of giblet, bursa and abdominal fat (g/kg BW) showed significant ($p<0.05$) difference among the treatment groups due to cereal sources and PPE supplementation. The giblet weight which is the additive weight of liver without gall bladder, heart without pericardium and gizzard without inner layer and contents was significantly ($p<0.05$) higher in T1 than T4, T5 and T6 groups. The bursal weight (g/kg BW) was also significantly higher in T4 than T1, T2 and T6 but T3 and T5 were comparable to T1. The abdominal fat content was significantly ($p<0.05$) higher T3 than T1 and T6. T2, T4 and T5 groups have intermediate position between T1 and T3. The jejunal villi length (VL), villi diameter (VD) and crypt depth (CD) differ significantly ($p<0.05$) among the treatments. The VL was significantly higher in T2, T3, T5 and T6 (supplemented groups) than T1 and T4 (un-supplemented groups). The VD was significantly ($p<0.05$) higher T4 as compared to T1 and T3 whereas other groups had intermediate values. The CD was highest ($p<0.05$) in T5 and lowest in T2 with other groups having comparable values. At 42d, The VL was significantly ($p<0.01$) higher in T2 and T5 as compared to T1. The CD was significantly ($p<0.05$) reduced by PPE supplementation in T2, T3, T5 and T6 fed groups. The meat sensory evaluation revealed a significant ($p<0.05$) difference in colour and overall acceptability among dietary treatments. The colour of meat was significantly ($p<0.05$) higher in T1, T2, T3 as compared to T4, T5 and T6 groups. The supplementation of PPE to rice-sorghum diets (T5 and T6) improved the colour as compared to un-supplemented t4 group. The overall acceptability of meat was significantly ($p<0.05$) higher in T3 than T4, While the others groups have intermediate values between T3 and T4. The other sensory parameters like flavour, juiciness and tenderness were comparable ($p>0.05$) amongst the dietary treatments. It is concluded that supplementation of polyphenols improved the antioxidant activity and welfare of the birds during heat stress.

Dr. Gopi Marappan has completed his Master's in Animal Nutrition. Currently he is working as Scientist in Central Avian Research Institute, India. His areas of interest include Poultry bioenergetics and gut health. He has published over 15 articles in national and international peers. He is also a recipient of awards like Gold Medal, Inspire fellow, best article, presentation, etc.

The Impact of Air Gap Width on the Surfaces the Trombe Wall Contains a Phase Change Material

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ABSTRACT

The objective of the present study is to investigate the effect of the air gap width on the heat Transfer coefficient and temperature distribution on the outer surface of the Trombe wall under actual weather conditions in December 2016. Thermal system consists a trombe wall of a dimension (1.43×0.94×0.1) M Includes 99 PVC Capsules of phase change material (Industrial Wax) of 6.3 cm internal diameter and 9.6 cm length, where the experiments have been conducted by using six widths of the air gap (35, 30, 25, 20, 15 and 10) cm. The results showed that the change of air gap width didn't significantly affect the temperature distribution but unlike nusselt number, it was affected significantly by a change of air gap width.

Dr. Ehsan Fadhil Abbas Holds a BSc in Mechanical Engineering from Mosul University (Iraq) In 1984 and MSc in Mechanical Engineering Department from University of Technology (Iraq) in 1999, in the Field of Thermal Power Plants. His Main Research Interests Include Heat Transfer, Renewable Energy and fluid Mechanics. He has Published more than 18 papers in Peer-Reviewed Journals. He is also a reviewer local journal. Currently, Ehsan is an Assistant Professor in the Refrigeration & Air Conditioning Technical Engineering Department in Kirkuk Technical College, Iraq.

Sexual Harassment and Women with Disability: A Perceptive from Developing World

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ABSTRACT

Women with disabilities face lots of discrimination in society and when this marginalized population is exposed to other risks like violence, emotional, physical and sexual abuse than things becomes even more complicated. Keeping in view the sensitively of the issue present study investigated sexual harassment among women with disabilities. Sexual harassment was measured by using urdu version of sexual harassment experience questionnaire (sheq) translated by Anila (1998) originally developed by Fitzgerald *et al*. (1988). Total 72 women with disabilities participated in the study. The sample consisted of 35 women with physical disability (polio, spinal cord injury, cerebral palsy, muscular dystrophy) while 37 women with visual impairment were included in the study. The results showed that gender harassment and unwanted sexual attention were the most common types of sexual harassment experienced by women with disabilities followed by sexual coercion. The findings further indicated that age was significantly related to sexual harassment and its dimensions and indicated that women in their early and middle adulthood experience more sexual harassment than in their late adulthood. In addition significant differences were found on sexual harassment (gender harassment). Physically handicapped women experienced more sexual harassment than visually impaired women. Additionally, non-working women experienced more sexual harassment as compared to working women with disability. There is a need to create awareness in women with disabilities about sexual harassment and to train them how to overcome this discrimination in order to grow and excel in their environment.

Dr. Nelofar Kiran Rauf has been involved in teaching and supervising research at postgraduate level from last ten years. Her research interests incude developmental psychology, children with disabilities, Autism, educational psychology, health psychology and counseling. She is also actively involved with organizations working with children with disabilities, providing them guidance regarding psychological assessment, counseling and research.

Effect of Diabetes on Pathology of the Lung

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ABSTRACT

The study was aimed at exploring the effect of diabetes on the pathology of the lung. In this study, the diabetic rat model was developed using STZ injection. Post-diabetes induction, the lung was dissected from the animals at 4, -8 and -12 weeks and examined for pathological changes. Our results demonstrated that diabetes induces inflammatory and fibrotic changes in the lung of diabetic rats with previously developed complications such as nephropathy and cataract. These changes were mediated in part through the TGF-β1-activated epithelial-to-mesenchymal transition (EMT) via the activation of both smad-dependent and smad-independent signaling pathways. Additionally, our studies also revealed that glucose restriction promoted the mesenchymal-to-epithelial transition (MET) and substantially reduced the expression levels TGF-β1 and inflammatory, fibrotic and EMT marker genes in cells cultured from the diabetic lung, suggesting that diabetes-induced EMT in the lung was mediated in part through the effects of hyperglycemia. Furthermore, our study also revealed that the elevated Smad7 levels in the initial stage of post-diabetes induction were responsible for the delayed response of the lung unlike in the kidney to the diabetes-induced pathological effects. Taken together, our study provides scientific evidence that diabetes also induces long-term pathological effects in the Lung associated with inflammatory and fibrotic changes.

Dr. Ravindra P. Veeranna has over nine years of post-PhD research and teaching experience in the area of cell biology. He obtained his postdoctoral research training from the National Institutes of Health (NIH), USA and the University of Chicago, USA. He is currently working as an Asst. Prof. Academy of Scientific and Innovative Research (AcSIR) and DBT Ramalingaswami Fellow at CSIR-Central Food Technological Research Institute (CFTRI) Mysuru, India. Dr. Ravindra has published more than 30 internationally peer-reviewed publications including Nature, JBC, PLoS Pathogens etc. and presented his work at many national and international conferences.

Sustainable Extraction of Bioactive Components from Onion through Microwave Assisted Technique

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ABSTRACT

Onion contain various bioactive components especially quercetin that have pharmaceutical importance for being used to cure headache, vomiting and have antioxidant properties. These bioactive compounds are lost during food processing step to enhance the shelf life of food products. Therefore, this study was designed to retain maximum of these components through microwave assisted drying and extraction technique along with enhance shelf life of onion. The onion slices were dried at 400 W for 14 min through indigenously develop microwave based method. In this method, vapors were collected and subsequently analyzed for chemical composition and characteristics to determine the influence of processing parameters. Microwave assisted drying and extraction methods exhibited 100% drying efficiency that was predicted with model. This method did not alter the physio-chemical characteristics of the onion slices compared to traditional drying methods. Later ones influence the textural properties such as cell structure and color. The microscopic examination indicated no cell destruction in onions slice, which was further reinforced by rehydration analysis. While, chemical analysis of collected vapors indicated that no effect on the antioxidant activity of the extract and dried onion slices. The total flavonoids and phenolic contents of dried slices was higher than vapors/extract. Moreover, the extraction yield through microwave was higher than conventional extraction method (alcohol-water). These findings have suggested that microwave based drying and extraction good alternate to traditional drying and extraction methods.

Dr. Muhammad Kashif Iqbal Khan, Ph.D., is an Assistant Professor in Department of Food Engineering- University of Agriculture, Faisalabad, Pakistan. He has experience in the areas of edible coating and microwave based food processing. He has optimized the electrostatic based coating method for food especially fruits and confectionary. University has awarded Gold Medal to acknowledge his efforts for scouting. Besides, he is a certified Halal auditor for Pakistan Halal council. He is an editor of a book entitled "Applied Food Engineering" published by us endowment fund Secretariat, UAF.

Biological Significance of New Copper(II) Complexes of alkyl/aryl/aroyl Substituted Guanidines

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ABSTRACT

A series of alkyl/aryl/aroyl substituted guanidines with the general formula RCONHC (NHR^1/NR^1R^2) (NHR^3/NR^3R^4), where $R^1 = R^2$ or $R^1 \neq R^2$, $R^3 = R^4$ or $R^3 \neq R^4$ and their copper(II) complexes of general formula [$RCONC(NHR^1/NR^1R^2)(NHR^3/NR^3R^4)$ (*k-N,O*)]$_2$Cu(II) have been synthesized and characterized by elemental analysis, FT-IR spectroscopy and single crystal X-ray diffraction technique (XRD). The guanidines were also characterized by multi nuclear (^1H, ^{13}C) NMR spectroscopy. The magnetic susceptibility data reveal that the homolepticcopper (II) complexes are of paramagnetic in nature. Based on the single crystal analysis the guanidine ligands have been stabilized by the intramolecular H-bonds forming a pseudo six membered ring, while the copper (II) complexes constitute a square planar geometry. All the synthesized compounds showed significant antitumor and moderate to good antifungal activities while poor antibacterial activities.

Dr. Amin Badshah currently works at the Department of Chemistry, Quaid-I-Azam University. Dr. Amin does research in Inorganic Chemistry, Organometallic Chemistry and Medicinal Chemistry. Their current project is Working on Synthesis of Bioactive Guanidine based Surfactants and their application as anticancer, antibiotic and as a drug delivery agent.

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Relationship Between Body Dissatisfaction, Depression and Anxiety Among Adults

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ABSTRACT

In light of self-discrepancy theory (SDT) and prevalence of body dissatisfaction in the culture the current correlational survey based research design was aimed to explore the relationship between body dissatisfaction, depression and anxiety among adult males and females. The hypotheses of the study were; A) There is a positive relationship between body dissatisfaction, anxiety and depression B) there will be a significant difference in the level of body dissatisfaction between male and female adults. For these purposes 343 unmarried adults (Male N = 168 and Female N = 175), age ranging from 16-30 years (M = 22.07, SD = 3.07) were recruited through convenience sampling. The body dissatisfaction scale (Tariq and Ijaz, 2015), patient health questionnaire (Williams and Kroenke, 1999), generalized anxiety disorder scale (Spitzer *et al*., 2006) were administered on the participants. The results revealed a significant positive correlation between body dissatisfaction depression (R = 0.27) and anxiety (R = 0.32) but the relationship was weak ($p>0.05$). Additionally, anxiety found to be a positive predictor of body dissatisfaction. There was further a significant difference ($p<0.01$) exhibited in the level of body dissatisfaction in males and females, where females had a higher level of body dissatisfaction as compared to males. The current research has important implication for tanning programs, counselling and psychotherapy.

Ms. Sidra Shoaib is currently working as research Lecturer in Institute of Professional Psychology (IPP), Bahria University, Karachi Campus, Pakistan. She has been teaching in IPP- Bahria University for the last one and half years. She has served in SOUL (Regional Office Peace International Welfare Trust, Isalmabad Pakistan) As a senior Research Officer. She has done M.Phil. (Educational Psychology) from National Institute of Psychology, Quaid-I-Azam University, Islamabad in 2014 and M.A. In psychology from University of Karachi, Pakistan in 2010.

Anti Proliferative Activity of Mesenchymal Stem Cells on Glioblastoma Tumor *in vitro*

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ABSTRACT

Currently, there is not an effective therapy for Glioblastomas, which is attributed to the infiltrative growth of the cancer. This makes complete surgical resection at best unlikely and necessitates that adjunctive therapies must eradicate all residual tumor cells in the brains of affected patients to prevent tumor recurrence. Treatment options of glioblastoma multiforme are limited due to the blood-brain barrier. Temozolomide, the most accepted chemotherapeutic agent that helps prolong the life span of patients, but with known toxicities, also has limited effects due to difficulty crossing the blood brain barrier. In recent years mesenchymal stem cells have gained increased attention because these cells are reported to have a tropism for brain tumors and have been exploited for the delivery of therapeutic genes for anticancer therapy. However, the exact contribution of these cells in the tumor microenvironment remains unknown. In this study, we examined the *in vitro* activities of a combination of Wharton's jelly derived MSCs and Temozolomide as well Whartons jelly derived MSCs alone on glioma tumor cells. The results showed that MSCs were anti proliferative on patient-derived primary glioma cells *in vitro* and the effect was even more elevated in particular to oligodendro glioma cells *in vitro*. It was also observed that the tumor cells resistant to TMZ were effectively inhibited by WJ MSCs alone as well with a combination of TMZ and WJ MSCs. These results indicate that Wharton's jelly derived MSCs themselves have favorable antitumor characteristics that may potentially aid in preventing or controlling GBM progression and recurrence and should be further explored in future glioma therapy.

Dr. Chitra Som R.S. has completed her Ph.D. In Marine Pharmacognosy at Cochin University of Science and Technology (CUSAT), India. She was pursued by interest further by completing a diploma course on Clinical Research. Professional Training in Clinical Research. This training gave her a break to work with one of the best neurosurgery teams in India at Manipal Hospitals, Bengaluru. She is presently employed full-time as an Assistant Professor of biology under Kerala University while also enrolled as a Post Doctoral fellow at Advanced Neurosciences and Allies (ANSA), A stem Cell Research Organization in Bangalore, Handling Clinical and Translational Research.

Behavioural Problems of School Going Children: Exploring the State of Mental Health Issues for Primary Schools in Islamabad, Pakistan

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Raiha Aftab LiveDNA : 92.23329

ABSTRACT

The present study was carried out to assess the type of mental health and behavior problems experienced by the school going children in Pakistan. The study comprised of a questionnaire followed by an explanatory interview with teachers of a primary school in Pakistan. The questionnaire was developed especially for this research. Six primary school teachers were contacted for the purpose. The findings of the research are being compiled. The findings of the research will help to (i) identify and assess options for implementation of an intervention for primary schools in Pakistan, (ii) to decide upon the sustainable and improvable student outcomes that can help students longitudinally, (iii) take decision regarding content area (focus) of the intervention and choose the right intervention, (iv) gain a sense of organizational support and concerns of teachers and (iv) establish feasibility of applicability and cultural specifications that any intervention would need to have, to be deemed relevant to the context of Pakistani classrooms.

Ms. Raiha Aftab is currently working as a lecturer at The National Institute of Psychology, Quaid-I-Azam University Islamabad. Her research interests include health and human well being.

Efficacy and Safety of Natural Products is Influenced by the Presence of Synergistic and/or Side-Effects Neutralizing Combinations

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Anwar ul Hassan Gilani LiveDNA : 92.93

ABSTRACT

There is revival of interest in natural products partly because botanicals are considered safer. Our recent studies revealed presence of calcium channel blockers (CCBs), which exist in nature usually in novel synergistic and/or side effects-neutralzing combinations. We observed the co-existence of CCBs and acetylcholinesterase inhibitors in some plants with therapeutic potential in Alzheimer's disease. Similarly, combination of CCBs with phosphodiesterase inhibitors (PDEIs) or anticholinergics in some plants have the therapeutic potential in spasmodic and asthmatic conditions where the inhibitory effect of CCBs on the heart is likely to offset the cardiac stimulation observed with PDEIs or anticholinergics when used alone. Another such combination was the co-existance of CCBs with cholinergic agonists in herbs traditionally used in hypertension and/ or constipation. While both components are inhibitory in cardiovascular system but with opposing effects in others, thus showing potential of couteracting side effects. The antispasmodic component seen at high dose is likely to offset the abdominal cramps usually observed at high dose of gut stimulants used in constipation. Interesngly, the spasmolytic activity was more evident in hyperactive gut which explains the traditional use of herbs like Ispaghol and Ginger for their dual efficacy in constipation and diarrhoea. A recent translational research revealed that a low-dose combination of Turmeric and Blackseeds resulted in enhanced effiacy in metabolic syndrome. Thus, this presentation provides enough evidence that the safety and efficiacy of natural products is influenced by their interaction at multiple targets sites acting through the presence of synergistic and/or side effects neutralizing combinations.

Dr. Anwar ul Hassan Gilani is currently working as Distinguished National Professor, Aga Khan University Medical College, Karachi, Pakistan. Prof. Gilani's career is that of a distinguished Pharmacologist, combining novel discoveries and distinctive mentorship roles and sound record of academic leadership.

Epstein-Barr Virus in the Pathogenesis of Multiple Sclerosis: Weighing the Evidence

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ABSTRACT

Multiplesclerosis (MS) is a chronic inflammatory disease of the central nervous system in which the body's immune system is abnormally directed towards the myelin sheaths covering the nerve fibers. Destruction of this protective layer leads to a range of symptoms, including loss of balance, poor coordination, vision problems, slurred speech and tremors. It is estimated that approximately 2.5 million people are affected by MS worldwide. What triggers the neuroinflammation and autoimmune destruction of the myelin sheaths, remains unknown. However, it is widely accepted that susceptibility depends on a combination of genetic and environmental factors and their interactions. With little chance of influencing genetic predis position, the importance of modulating environmental risk factors in MS is becoming an area of great interest in the continuing search for ways to either prevent the on-set of MS or to ameliorate the course of the disease once established. There is mounting evidence that Epstein-Barrvirus (EBV), a common herpes virus may be involved in the pathogenesis of MS. A number of studies have shown elevated levels of EBV-specific immune responses in patients with MS and this correlated with disease activity. Furthermore, individuals who are EBV negative have a significantly reduced risk of developing MS. More recently, EBV-infected cells were reported to be present in white matter lesions in MS tissues. However, the link between EBV and MS has not been universally accepted since some studies have failed to find any evidence of EBV in MS brains. Based on our initial study on a small cohort of 10 MS and 11 non-MS cases, we hypothesized that EBV is associated with MS, but its detection depends on the sensitivity and specificity of the techniques used,and the extent and degree to which the tissues are examined. In this keynote seminar, the results from our latest study involving over 1000 samples from MS and non-MS cases are presented and the potential role of EBV in the pathogenesis of MS is discussed.

Dr. Gulfaraz Khan did his undergraduate and postgraduate training in London, followed by postdoctoral training at Tufts University School of Medicine, Boston and then LRF Virus Centre, University of Glasgow. He has held faculty positions in universities in UK, before moving to his current post in UAE. Dr Khan's main research interests are in oncogenic viruses and tumour biology, in particular EBV and its association with human diseases. His secondary interest is public health.

Analysis of Phthalate Esters in two Different Baby Care Products Available in UAE

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ABSTRACT

Phthalates are used as plasticizers in a wide range of products or are added to improve the quality of the products and are known to affect the human health adversely. Various studies have identified the deleterious effect of phthalates like low birth weight, low survival rate and deformity in the genital organs in infants and toddlers. Hence the present study was carried out to identify and quantify the presence of 4 phthalates namely dimethyl phthalate (DMP), dibutyl phthalate (DBP) and diethyl phthalate (DEP), di (2-Ethylhexyl) phthalate (DEHP) in the 2 baby products i.e. baby oils and baby lotions. The influence of different period of storage on the concentration of phthalates was also evaluated. The daily exposure levels and hazard index of each phthalate was also calculated. It was an analytical study where 2 different brands of samples of baby oil and baby lotion each, from the date of manufacturing of 3, 10 and 20 months were collected/stored. The extraction of phthalates from different samples was done with suitable solvents by liquid-liquid partition method and analyzed using HPTLC. The results showed the presence of all 4 phthalates in the samples of baby oils and lotions. All the 4 phthalates were present in the 20 months samples of baby oil, except DBP which was detectable in only 1 sample of 20 months. DEP was detectable even in 3 months old samples of baby oil and its concentration reached to a maximum of 185 µg/mL in 1 of the oil samples. The 3 phthalates (DEP, DMP and DEHP) concentration increased with the storage time. Similarly all the 4 phthalates were found in the 10 and 20 months samples of baby lotions. Their concentration increased with the storage time, though the oil samples were packed in plastic identification code #1 or polyethylene terephthalate (PET) container, while baby lotions were packed in # 2 or high density polyethylene (HDPE) container. Though both these plastic containers are considered safe and ideal for storing beverages, edible oils, water, milk etc, we found an increase in the concentration of phthalates with respect to time of storage. The maximum concentration of dep and DEHP was found 361 µg/ml and 354 µg/ml, respectively. The hazard indices for phthalates estimated for baby oil and baby lotion was found below 1, which denotes that the daily phthalate exposures are within the regulatory limits. The DEHP hazard index levels were found to be highest in oil samples as compared to lotions. It is also important to consider that the exposure to phthalates can occur by not only dermal contact of these baby products, but through other routes also like food intake, inhalation of indoor air, medicines, dust, exposure to plastic toys etc. to name a few. Hence, the study signifies the importance of phthalates concentration in such regularly used products. Further studies with larger sample size, freshly marketed products, different storage period and the type of containers used for storage can present a better picture of phthalate concentration and its migration in products.

Dr. Razia Khanam has completed her Ph.D in Pharmacology and currently she is working as an Associate Professor at Gulf Medical University, Ajman, UAE. Her research interest includes Pharmacology and toxicology.

Applications of Wireless Sensor Networks in Science, Technology and Medicine

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ABSTRACT

A wireless sensor networks (WSN) can generally be described as a network of sensor nodes that exchange data between them in a coordinated manner leading to various high data processing applications in the fields of science, technology and medicine. Among some of the popular applications WSNs are environment control/monitoring, electrical power supply control/monitoring, smart homes/offices, intelligent transportation, traffic management/monitoring, industrial monitoring/processing, irrigation water supply/monitoring, agriculture, military, health monitoring and biomedical. As an example consider how quality of water resources has a direct impact on the daily life of mankind and the sustainable development of society. However, with the rapid development of national industrialization, the current industrial wastewater discharge and improper handling have become very serious, leading to the need for an efficient water quality monitoring and discharge systems. With the development of WSN technology control and monitor of water inlet/outlet systems are facilitated. A relevant application area is in the field of agriculture where WSNs may be deployed to adopt an efficient management strategy called Precision Agriculture (PA) to improve quality and production. Utilizing WSN technology and management tools can lead to a highly effective green agriculture. Using PA leads to provision of adequate nutrients for crops and the wastage of pesticides for the effective control of weeds, pests and diseases. In medicine applications use of WSNs have facilitated several tasks. Portable devices such as heart rate monitors, pulse oximeters, spirometers and blood pressure monitors are essential instruments in intensive care. Traditionally, the sensors for these instruments are attached to the patient by wires; and the patient sequentially becomes bed-bound. In addition, whenever patient needs to be moved, all monitoring device has to be disconnected and then reconnected later. Nowadays, all of these time-consuming jobs could be terminated and patients could be liberated from instrumentation and bed by wireless technology. The wireless devices could communicate with a gateway that connects to the medical center's network and transmits data to health data stores for monitoring, control, or evaluating in real time or offline after storage. With WSNs continuous medical monitoring systems, patients' information such as blood pressure, heart rate and electrocardiogram can be sent instantly to specialized medical centers to store and process properly. Medical emergencies can be detected sooner and proper treatment can be applied timely. Health care effectiveness in several situations is improved significantly with the presence of wireless communication technologies.

Dr. Shakil Akhtar is currently Professor of IT and Computer Science at Clayton State University. Before this he was the IT Department head from July 2007 to December 2008. He was a Professor in the College of Information Technology at UAE University from 2002 to 2007 (Interim Dean 2002-03). During 2000 to 2002, he was a Performance and Simulation Engineer at Lucent Technologies in Naperville, Illinois, where he was responsible for performance analysis and simulation of telecommunications equipment including third generation mobile systems. His prior work experience includes Computer Science/Engineering Departments at Central Michigan University, University of Toledo and King Fahad University of Petroleum and Minerals, Dhahran, Saudi Arabia. His main research interests are Reliability Modeling, Performance Modeling, Cybersecurity, CS/IT Education and Simulation of Computer Networks.

Efficient Synthesis of New Potentially Bioactive Derivatives of Functionalized Benzimidazoles

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ABSTRACT

Benzimidazole is a heterocyclic compound formed from benzene and imidazole ring containing nitrogen, oxygen and sulphur. Its derivatives are remarkably effective compounds as a promising pharmacophore with a privileged structure in medicinal chemistry and hence, played a very important role with plenty of useful therapeutic activities such as analgesic, anti-inflammatory[1], antibacterial[2], antifungal[3], antiviral[4], antitubercular[5], antihelmenthic[6], anticonvulsant[7], anticancer[8], antiulcer[9], angiotension-II receptor antagonists[10], antihypertensive and to fluconazole against *C. albicans*[3]. The considerable biological properties associated with the benzimidazole derivatives prompted us to synthesize new benzimidazole derivatives and studying their applications as bioactive compounds.The present work describes the synthesis of new potentially bioactive derivatives of functionalized benzimidazoles. The 2-substituted methyl benzimidazoles are synthesized smoothly according to the reported method by the reaction of *o*-phenylenediamine with proper carboxylic acid in presence of 4N hydrochloric acid. The target starting material 2-(bromomethyl)-1*H*-benzimidazole undergoes interesting functionalized reactions with some active gradients to afford a series of *N*'-(arylmethylene)acetohydrazide and 2-arylhydrazineylidene-3,5-disubstituted pyrazolyl derivatives. The structure and characteristics of the obtained benzimidazole derivatives is secured by their elemental analysis and spectral data e.g. IR, ^{1}H NMR, ^{13}C NMR and MS. The novel synthesized compounds exhibited remarkable efficiency based on *in vitro* screening of their antioxidant activity, antitumor activity against *Hep G2* cell line human hepatocyte carcinoma and antimicrobial activity against selected pathogenic bacteria *Staphylococcus aureus* (Gram-positive bacteria) and *Escherichia coli* (Gram-negative bacteria) comparing with Tetracycline as standard antibacterial agent.

Mr. Fahad Mostafa Kabli was graduated from the College of Applied Sciences, Umm Al-Qura University, Saudi Arabia (B.Sc. 2009). He is currently working by Chemistry Department, Faculty of Science-Taif University, KSA as a lecturer of practical organic chemistry and chemicallaboratories' supervisor. He started his master thesis in Organic Chemistry under supervision of Prof. Mohamed E Khalifa and Prof. Adil A Gobouri at 2016 in Organic Chemistry (almost done). He is interested in organic synthesis of heterocyclic compounds with potential biological activity.

Impact of Experience of Adverse Life Events on Emotional and Behavioral Problems of Adolescents

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ABSTRACT

Research evidence suggests that cumulative life stresses increase risk for emotional and behavioral problems (Aneshensel, 2015; Jackson and Warren, 2000; Kessler, Gillis-Light, Magee, Kendler and Eaves, 1997). Consistent with the social-causation hypothesis, these studies suggest that social conditions (i.e., stressful life events) influence variability in subsequent developmental problems. With regard to conduct problems or antisocial behavior, some studies have demonstrated a link between specific, serious traumatic events such as child abuse or environmental catastrophes and subsequent behavioral problems (e.g., Stouthamer-Loeber, Loeber, Homish and Wei, 2001; Thornberry, Ireland and Smith, 2001). The present study has been designed to investigate the impact of adverse life events on emotional and social problems of school going children. A sample of 303 (Boys = 139, Girls = 164) age range 12-18 years (M =14.83, SD =1.16) were recruited from Islamabad and Rawalpindi. Only those adolescents who have experienced any stressful event in past 12 months were included in the sample. Adverse life event scale and school social and school children problem scale were administered along with a demographic information sheet. The findings suggested that experiences of adverse life events led to emotional and behavioral problems among adolescents. Children with school related and personal adversities have significantly higher scores on a range of outcomes including educational achievement, behavior, psychological adjustment, self-concept, social competence and long-term health issues. Differences on gender and age were also significant. The findings have implications in cultural and indigenous perspectives.

Dr. Tasnim Rehna, Ph.D in psychology is working as lecturer at Riphah International University Islamabad. Her area of interest is developmental psychopathology and testing and assessment.

Quality Improvement Project: Digitization of the Annals of Saudi Medicine's Past Issues (1981-2008)

Nasser Alsanea, Yaser Adi, Amal Al-Ghammas*, Kimberly A. Cristobal, Janelle Vales-Yasay, Raquel Glorioso-Rivera and Reina Tejano-Berina
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ABSTRACT

Quality improvement project: digitization of the annals of saudi medicine's past issues (1981-2008) Nasser Alsanea, Yaser Adi, Amal Al-Ghammas, Kimberly A. Cristobal, Janelle Vales-yasay, Raquel Glorioso-rivera, Reina Tejano-berina. The annals of saudi medicine (ASM) is a medical journal published bimonthly by the King Faisal Specialist Hospital and Research Centre in Riyadh, Saudi Arabia. ASM publishes scientific reports of clinical interest in English; all submissions are subject to peer review by the editorial board and by reviewers in appropriate specialties. Due to lack of digitization of the back issues of ASM between 1981-2008, accessibility has been hampered. This had a negative effect on the number of citations, online sessions and visitors to the website of the journal. ASM has responded to the demand for digitization in three well-defined phases. Quality improvement project at the publications office, King Faisal Specialist Hospital and Research Centre in Riyadh, Saudi Arabia. Root-cause analysis of the workflow of the website and publication methods was conducted and solution were provided in the following order: first phase: scanning more than 25 volumes (an approximate of 25,000 pages) for issues spanning between 1981-2008. Second phase: digitizing, assigning and converting images, printed text and tables into machine-encoded text by using OCR (optical character recognition). Third phase: registration of the digital object identifier (DOIs) of every published article since the inception of ASM in 1981 under CrossRef, the registration agency of the international DOI foundation. Digitization of the past issues has led to an increase in the number of article views from 399 to 3,492 under PubMed medical database. It also led to a steady growth in the number of online sessions to a total of 90,105. This helped ASM reach its goal to be a journal with international presence, where Saudi Arabia and the united states became the top audience of ASM with an increase in the number of online visitors to 72.2%. ASM has successfully digitized its past issues; meeting the demand of the online world.

Ms. Amal Al-Ghammas works as the Editorial Supervisor of the Scientific Publications Office of King Faisal Specialist Hospital and Research Center where the office handles three medical journal, Annals of Saudi Medicine, Hematology/Oncology and Stem Cell Therapy and International Journal of Pediatrics and Adolescent Medicine. She is a writer, editor and a member of the Council of Science Editors (CSE) and Society For Scholarly Publishing (SSP). She is the first editor at King Faisal Specialist Hospital and Research Centre to be certified in ScholarOne Manuscripts by ScholarOne University Certification Program, Thomson Reuters.

Maintaining Gut Health in Antibiotic Free Era

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ABSTRACT

A healthy and well-functioning gut is the cornerstone for optimum performance and much attention is being paid to maintain intestinal mucosal functions through the dynamic balance between the mucus layer, epithelial cells, microbiota and immune cells in the intestine. The development of gastro-intestinal tract is a major factor determining the rate of gain especially in broilers. Gastrointestinal tract (GI) acts as a selective barrier separating the tissues and luminal environment and is composed of physical, chemical, microbiological and immunological components. The delicate balance of each gut component is important for maintaining health, welfare and enhancing the production. The gastro-intestinal tract is sterile at the time of hatching but the microbes colonize after exposure to the external environment. The colonization includes the attachment of pathogenic organisms to the intestinal mucosa which causes inflammatory reactions. The use of sub-therapeutical level of antibiotics are practiced with great response. Indiscriminate use of antibiotics leads to residuals and resistance. Numerous attempts have being tried to facilitate their development. To maintain gut health numerous dietary additives are being tried worldwide. Probiotics, prebiotics, synbiotics, acidifiers, phytobiotics, enzybiotics, etc. are being used alone or in combination from time to time for betterment of gut health. Probiotics are defined as non-pathogenic micro-organisms that, when ingested, exert a positive influence on host health or physiology. They act by mutual competitive interactions, competition for essential nutrients and the production of antimicrobial factors such as bacteriocins, protect the host from overgrowth with pathogens. Prebiotics are non-digestible feed ingredients that benefit the host by selectively stimulating the growth and activity of one or a limited number of bacteria in the colon. Because of their complex chemical structure, they are neither digested by host enzymes, nor absorbed by upper gastrointestinal tract, hence called as “colonic food”, that serves as substrate for endogenous colonic bacteria. Use of metabolic products of probiotic organisms, now referred as postbiotics is emerging as an alternative. Feed enzymes can make an impact on gut microbial ecology by reducing undigested substrates and anti-nutritive factors and producing oligosaccharides in situ from dietary NSP with potential prebiotic effects. Enzybiotics, also called as lytic enzymes or peptidoglycan hydrolases are enzymes endowed with the capacity to degrade bacterial cell wall and with antibacterial potential. Major group include endolysins (from bacteriophages) and lysins (from various organisms). Antimicrobial peptides (AMPs) are small biological molecules having size less than10 kDa, with a broad-spectrum of activity against microbes. Phytobiotics or plant extracts have been traditionally used as feed additives for antimicrobial, anti-oxidative, anti-inflammatory and anti-parasitic activities. Organic acid treatments with individual acids and/or blends of several acids have been found to produce antimicrobial activities similar to those of antibiotics. A wide variety of antioxidants are added in poultry feed that help the body in building an integrated antioxidant system responsible for a prevention of deteriorating effects of free radicals and products of their metabolism. The viable options for maintaining gut health in antibiotic free era are being discussed.

Dr. Gopi Marappan has completed his Master’s in Animal Nutrition. Currently he is working as Scientist in Central Avian Research Institute, India. His areas of interest include Poultry bioenergetics and gut health. He has published over 15 articles in national and international peers. He is also a recipient of awards like Gold Medal, Inspire fellow, best article, presentation, etc.

Plant Sap, Traditional Approach to Drug Development

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ABSTRACT

Plant is reproducer, formatter and reconstructor of the nature therefore plant and their ingredients are the essential of whole living organisms. Starting from ancient times to the present human has being dealing with plants as food, dressing, protective and eradicative medicine etc. In point of pharmacognostic plants are only certain initiative agent for drug discovery and development. In most recent time, microbial resistance against to antibiotics and difficulties in effectiveness of antipyretics and sedatives are increasing. The new and reliable chemicals and derivatives are taken into consideration much more than ever. Among those plants; Moringa, Plantago major, Henna, Stevia, Ginger, Curcumin, Passiflora are the most famous plants. Traditional usage of plants varies according to geographical locations of the world. Plants have been used against to diarrhea, fever, sleeping and gas problems, digestive, anti-pyretic, anti-helmintic, diuretic, abortive etc. in many health issues. Our experience in plant extraction and assays against to antimicrobial, anticarcinogenic, antiproliferative, DNA protective, antioxidant, genotoxic, apoptotic either *in vivo* (on rats and mice) or *ex vivo* (cell and blood culture) revealed that pharmacognosy is the most important for the future science. In this point of view, our group search on plant extraction to explore any possible candidate to further search on pharmacology.

Dr. Isik Didem Karagoz is an Associate Professor in the Department of Molecular Biology at University of Gaziantep in Turkey. Dr. Karagoz received her PhD. and MSc. degree from Gaziantep University respectively in 2010 and 2006. After her PhD. she worked as an exper researcher at the same institution. Her current research interests are about cancer and nanobiotechnology. She has over twenty refereed publications in the areas of Scopus. At the present time she and her team are working actively in the cell culture and molecular biology laboratories.

Proposed CAM Model for Macro Medicine

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ABSTRACT

This research proposes a novel approach that can be used in modelling "Macro Medicine". Macro Medicine is a form of alternative medicine that describes the physiology of the human body based on three basic organs (أعضاء رئيسه), i.e., the Heart, Liver and Brain, or HLB. The HLB organs have sub-organs, or "slave-systems" associated with them, like the muscles, glands, etc. Additionally, there are four major elements or a'nasir (عناصر) outside the human body, namely: water, earth, fire and air. Each of the four elements has an influence on the human body. Each one has a mizaj (مزاج), or a characteristic, associated with it and the mizaj can be classified as pairs: warm and cold, dry and moist. Similarly, each organ has a mizaj (مزاج), associated with it, as given above. Understanding the human body and keeping it healthy is the main topic of Macro Medicine. The basis of Macro Medicine is to 'identify the mizaj' of the patient (diagnosis) and take steps to modify the mizaj. This will form the process of treatment. Second order differential equations are proposed to model the structure and behavior of the human body under certain conditions. One needs to select an "excitation" (denoted by ξ) and a "response" (denoted bys). It would then become possible to describe a selected sub-system in the human body using a second order differential equation, given below:

$$\frac{d^2\sigma}{dt^2}+\frac{1}{\mathrm{HL}}\frac{\mathrm{d}\sigma}{dt}+\frac{1}{\mathrm{BL}}\sigma=\xi$$

Using the concepts of control theory, we can derive the characteristic equation, given below, from the above second order differential equation:

$$s^2+\frac{s}{\mathrm{HL}}+\frac{1}{\mathrm{BL}}=0$$

The roots of the characteristic equation will determine the type of response. The response will depend only on the values of H, L and B. The numerical values of H, L and B will be determined experimentally for each patient. Expected responses, based on different parameters used in the equation when applied to the human body, are critically damped, under damped or over-damped. As an example, s may be used to represent the blood pressure or blood glucose andξ can represent the food or the medicine intake. The bio-chemicals or akhlat (خلاطا) produced in the body can also be a possible response. Preliminary results corresponding to the data collected are included and discussed. In the next phase, controllers like proportional-integral (PI) or proportional-integral-differential (PID) can be applied to regulate the response by adjusting the excitation.

Dr. Anjum Ali has taught electrical engineering courses in different universities in the USA, KSA and Pakistan and has supervised numerous graduate theses during his 40 years of teaching career. He has over 30 conference/journal publications. He is also the founding editor of the FRJ. His research interests include embedded control systems and computer architecture.

Dynamics of Resilience among Adolescents with Acquired and Continental Disabilities: An Emic Perspective

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ABSTRACT

Education creates opportunities for marginalized communities to escape from hardships of lives. Adolescents with disabilities are still at a severe disadvantage in many part of the world, especially in pakistan. The literature provides very little information about the personal perception and opinion of adolescents with disabilities about their lives. The present study aimed to explore the dynamics of resilience (ability to bounce back) with the emic perspective of adolescents with acquired and conginental disabilities from segregated (special) and integrated (mainstream) schools. Resilience was explored in the form of intrinsic and extrinsic factors. A qualitative research design was opted to study adolescents with disabilities (n = 13) from segregated (n = 9) and integrated (n = 4) schools. Semi structured interviews were used and results was analyzed through interpretive phenomenological analysis (Smith, 2009). Results revealed that all participants were reported the basic characteristics of resilience i.e. recovery, active coping, positive emotionality and social connectedness. Further in-depth analysis indicate that reasons of these dynamics makes differences among participants from acquired and conginental disabilities in segregated and integrated schools i.e. supportive factors in recovery ,problem faced in daily functioning due to disability, reasons for social connectedness, purpose in life and self-reliance. Concluding the findings it is evident that the school environment, teacher's cooperation and peers support is hall mark of difference among these two groups. This support is very important for the personal as well as well as social growth of adolescents with disabilities.

Dr. Rubina Hanif, Ph.D in Psychology has been working as Tenured Associate Professor at National Institute of Psychology, Center of Excellence, Quaid-I-Azam University Islamabad. She worked as post doc research fellow at Goldsmiths, University of London (2007-2008) and as fulbright advance research scholar at University of Houston, USA (2009-2010). She has published around 40 research articles in national and international journals, 7 chapters in edited books and 2 books. She has participated in various national and international conferences. Under her research supervision, around 10 students have completed their Ph.D and more than 40 completed M.Phil. She is interested in educational psychology, testing and Assessment and Social Psychology.

Long Term Prevention of Cardiovascular Adverse Events in Diabetic Rats by Incorporation of Ocimum and Nigella Extracts

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ABSTRACT

In this study, the aim was to investigate the hypolipidemic and hypoglycemic activities for the aqueous plant extract of Ocimumbasilicum and Nigella sativa mixture due to their influence on cardiovascular events through increasing HDL cholesterol levels and lowering LDL-C as well as their potent reduction on blood glucose levels ,after repeated oral administration dose in normal and diabetic rats. The target of this synopsis is to encourage the incorporation of Nigella Sativa and Ocimumbasilicum as a basic constituent of daily diet, at a dose of 100 mg/day for a natural control of full lipid profile (TG, LDL and HDL) in subjects with Dyslipidemia and Diabetes Mellitus in rats. Aiming at a long term reduction in the incidence of occurrence of cardiovascular adverse events in Diabetic patients in future studies.

Dr. Mona Mohammed El-Husseiny Biology-Physiology (Ph.D. Science), now she is a professor of physiology working in Ibn-Sina National College for medical studies, she worked in Cairo University till Jan, 2015 as professor of physiology then she admitted to Ibn-Sina up to now. She is member in Kensington University at Los-Angeles USA as an academic advisor since 1997 up to now. Dr. Mona was graduated from Cairo University. awarded the first position as graduated student with excellent grades, she was interested in teaching and going on for her postgraduate studies, she got her Master degree from Cairo University, while her Ph.D. with the supervision of American and sweedish two examiners.

Studies on MicroRNA Polymorphisms as Genetic Biomarkers for Cancer Risk Determination

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ABSTRACT

Small non-coding 22 nucleotides are a class of MicrorNAs (MiRNAs) which are of endogenous nature. These small nonprotein-coding RNA molecules are single-stranded and are known to regulate a broad range of biological processes specially in cancers. These MiRNAs regulate the expression of about 30% of human genes at post-transcriptional level by sequence-specific binding to several untranslated regions (UTRs) of multiple target messenger RNAs (MRNAs), leading to their degradation or translational suppression [1]. cancer is a disease of the genes rather an outcome of chaotic expression of genes involved in cell dysregulation and influencing apoptosis. We have conducted genetic studies of MiRs (MicroRNAs) SNPs in oral cancers [2,3] and have demonstrated the key role of a few MiRs and their associated risk of oral cancers. Our epidemiological studies have demonstrated the association of SNPs in micrornas with cancer susceptibility. Up and down regulation variations in the level of expression of distinct MiRs have been observed to be associated in the development and progression of cancer. Recent studies have also implicated MiRs in the genesis, progression and prognosis of multiple human malignancies [4], it is therefore concluded that variations in MiRNA expression may promote carcinogenesis by modulating the expression patterns of essential genes involved in tumor growth and progression and supressing the fuctions of tumor suppressor genes. Since most of these MiR genes are found to be located in cancer-related chromosomal regions functioning either as oncogenes or tumor suppressor genes and single nucleotide polymorphisms (SNPs) are the most common form of variation present in the human genome.

Dr. Kaiser Jamil is the Dean and Director School of Life Sciences, Center for Biotechnology and Bioinformatics Jawaharlal Nehru Institute of Advanced Studies (JNIAS) & Emeritus Research Scientist and Head, Genetics Department, Bhagwan Mahavir Medical Research Centre, Dr. Mrs. Kaiser Jamil, A renowned Biotechnologist; had the opportunity to work in the country's foremost CSIR labs like CSIR-IICT and CSIR-CCMB, which gave her an exposure to professional scientific environment. Her areas of interest are Cancer Biology, Genetics, Pharmacogenomics, Diabetes and Molecular Biology her passion: "Human Dimensions: A vision for sharing, learning and transforming".

Antibiotic use in Infants: A Cross-Sectional Survey Assessing the Knowledge, Attitudes and Practices of Health Professionals

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ABSTRACT

Antibiotics are natural or synthetic substances which are used to prevent or treat bacterial infec- 1 tions. They exert their antibacterial actions either by killing bacteria or stopping them from repro- 2 ducing and spreading. According to modern medicine antibiotics should not be prescribed for every bacterial infection but for those which; (i) are unlikely to resolve without antibiotics (ii) could take too long to clear without treatment (iii) could infect others unless treated (iv) carry a risk of more serious 1 complications. Antibiotics should be selected very abstract: introduction: antibiotic use has become very common in the asian countries due to which the community is at risk for producing adverse effects and resistance. Various researches have proved the malprescription of antibiotic. Therefore there is a need to assess the knowledge, attitudes and practices of health professionals working in the community regarding the use of antibiotics. To evaluate and compare the knowledge, attitudes and practices of health professionals towards the use of antibiotic in infants. In this cross-sectional study a total of 250 health professionals were approached, among which 210 responded and filled the questionnaire. Data after collection was divided and analyzed on the basis of three categories: (i) based on overall response of the health professionals (ii) based on area of practice of the prescribers (in city and remote) and (iii) based on qualification of the prescribers (specialists, postgraduate residents, general physician and allied health staff). The results of the present study shown that knowledge, attitudes and practices of the health professionals of city area regarding the prescription of antibiotics in infants was better as compared to the prescribers of remote area with significant difference of 0.001. Likewise a significant difference of 0.001 was found between the knowledge, attitudes and practices of the specialists, postgraduate medical residents, general physician and allied health staff. Specialists were found to be the most knowledgeable prescribers while allied health staff were the least. Health professionals practicing in city areas and the ones who were more qualified i.e specialists were much better in knowledge, attitudes and practices of prescribing antibiotics in infants.

Dr. Laiyla Shinwari was born in an intellectual family on July 14, 1987. She did her primary education from Kohat and moved to the federal capital for secondary and higher secondary school. She got first class throughout her carrier. For her B.Sc., she moved back to Kohat and got admission in Kohat University of Science and Technology. She stood first in the whole division and was awarded gold medal. She is a specialist Gynecologist and did MCPS. She worked for four years as trainee medical officer in "Gynaecology and Obstetrics" unit of Govt. P.G.M.I Lady Reading Hospital Peshawar. Where she used to help poor patients.

Kisspeptin, Hormonal Interplay and Male Infertility: A Cross Sectional Study in Karachi, Pakistan

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ABSTRACT

To determine the impact of kisspeptin on male reproductive axis in a selected population of Karachi, Pakistan. It was a cross sectional survey carried at Australian concept infertility medical centre and Sindh Institute of Reproductive Medicine from June 2014 to June 2016. A total of 313 subjects; 178 infertile males with abnormal sperm parameters and 135 fertile males were recruited for the study. Semen samples were collected by masturbation after abstinence of 3 to 5 days. Serum samples for estimation of kisspeptin, follicle stimulating hormone and luteinizing hormone were acquired on the same day. The median kisspeptin levels were higher among fertile males 16.25 (15.6-43.75) as compared to infertile males 6.25 (5.65-6.95), p-value (<0.001). Mean of the hormonal fsh (in miu/ml), lh (in miu/ml) and testosterone (in ng/ml) was higher among fertile as compared to infertile males i.e. 6.31 (2.50) vs. 3.41 (1.97), 9.96 (2.58) vs. 5.45 (2.90), 8.16 (1.38) vs. 3.35 (1.92) respectively, p-value (<0.001). Median steroid hormone binding globulin (SHBG) was higher in fertile subjects 32.06 (25.98-30.71) vs. 15.44 (12.06-18.95), p-value (<0.001). A strong positive correlation was observed between lh and testosterone ($r = 0.903$, $p \leq 0.001$) and SHBG and LH ($r = 0.933$, $p \leq 0.001$). On univariate analysis, with every one unit increase in kisspeptin the prevalence of being infertile was decreased by 6.6%. similarly, with every 1 unit increase FSH, LH, testosterone and SHBG the prevalence of being infertile was decreased by 4.7, 20, 15.7, 22.4 and 6.9%, respectively. It was observed that after adjusting for the other covariates in the final cox regression model, every one unit increase in kisspeptin decreased chance of infertility by 2.7%. moreover, there was significant interaction between FSH and testosterone at p-value <0.1. Hence, with every 1 unit increase in testosterone the FSH leads to 4.6% decrease in infertility. Therefore, testosterone interacts with FSH in its effect on infertility. Kisspeptin plays an important role in male fertility by increasing the production of hormones of the male reproductive axis, namely FSH, LH and testosterone.

Dr. Rehana Rehman, MBBS, MPhil, Ph.D. is working as an Assistant Professor of Physiology in the Department of Biological and Biomedical Sciences. She has been involved in teaching of physiology for the last 18 years in different medical colleges. The interest in medical education has inspired her to develop a synergy between teaching and research and take part in research on teaching and learning methodologies. Besides medical education her research is focused on aspects of, community awareness and reproductive health.

Analysis of Potential Hepatoprotective and Antioxidant Activities of Natural Phenolics

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ABSTRACT

Natural phenolics are of great interest due to their antioxidant properties and potential effects in the deterrence of various oxidative stress associated diseases such as hepatocellular carcinoma. Keeping in view the importance of herbal medicines, the present study has been designed to evaluate the hepatoprotective and antioxidant activity of selected medicinal plants i.e *Swertia chirayita* and *Teucrium stocksianum* boiss which were collected from various places in Pakistan. We have employed several methods of free radical scavenging models such as reduced glutathione and S-transferase, lipid peroxidation, glutathione peroxidase, catalase peroxidation, superoxide dismutase or *in vitro* techniques such as the 1,1-diphenyl-2- picrylhydrazyl (DPPH) and 2,2 azobis, 3-ethylbenxothiozoline-6-sulphuric acid (ABTS) radical cation quenching assays. Dried powder from leaves of selected plants was used to get crude extract with methanol and resultant crude extract was further partitioned with different solvents in an increasing polarity. These various solvent fractions were assessed for different *in-vitro* antioxidant assays to compute the free radical quenching ability. The methanol fraction possessed the highest amount of phenolics (79.2± 1.27 mg GAE/g) whereas aqueous fraction showed the highest contents of flavonoids (44.5± 2.45 mg Quercetin equivalent/g) as compared to other fractions. The highest EC50 value obtained from methanolic fraction (23.1±0.26 µg/ml), exhibiting potent scavenging ability on ABTS radical. The antioxidant capacity determined by DPPH ethanolic fraction scavenged more free radicals (19.2±0.43 µg/ml) as compared to other fractions. Hepatoprotective effects of methanolic extracts with highest phenolic amount were further assessed for *in vivo* and *in vitro* analysis. Different biochemical markers such as antioxidant enzymes and total bilirubin were used for the evaluation of hepatoprotective grade in mice. Ethanol and chloroform extracts were found to be more potent (13.41±4.60 µg/ml, 10.5±1.52 µg/ml) although ethanol and chloroform extracts have exhibited significant ($p<0.05$) cytotoxicity in Sulforhodamine B (SRB) and 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assays in HepG2 cell lines. This is the first detailed report of antioxidant profile for the selected medicinal plants from Pakistan. This study indicates the medicinal importance of natural phenolics which might be a good source to obstruct the damage linked with free radicals in hepatocellular carcinoma.

Dr. Sobia Tabassum is working as an Associate Professor in the Department of Bioinformatics and Biotechnology, International Islamic University, Islamabad, Pakistan. She had carried out her Ph.D research work at Washington State University, USA. Her research expertise includes Molecular Biotechnology and Pharmaceutical Chemistry. She has published in National and International impact factored journals. Dr. Sobia has authored one scientific book and two book chapters. She has made excellent progress with her research and gained invaluable experience in the field of pharmaceutical sciences.

Solar Photovoltaic Energy in a 100% Cleaner Energy World Vision by 2050

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ABSTRACT

In recent times, we have touched many successful milestones of renewable energy dominance over conventional fossil fuel based ones in power generation. Among all renewables, solar photovoltaic energy, as the most potential source, has come across various generations after being demonstrated first at Bell Labs with significant conversion efficiency of 6% in 1954. To date, multi mega watt-peak solar farms are reality with the utmost achievable conversion efficiencies (over 25%) for terrestrial electricity generation. It is not exaggerated to say we have replaced over 350 Nuclear Power Plants (small scale 1 GW level) with over 375 GW of cumulative Solar Photovoltaic energy harvesting plants by the end of 2017 around the globe. Many countries like Germany, Japan are committed for a nuclear-free energy roadmap in the near future. Apart from all the negative legacies Nuclear Energy left like Fukushima in the near past, it is obvious to say people have well-understood for better alternatives like Solar PV, Wind and so on. Researchers around the world are still trying to find energy harvesting in the form of electricity with many kinds of solar cells starting from inorganic silicon based to organic based ones. Even though, the first generation solar cells that are mainly crystalline or multi-crystalline silicon based ones are still dominating, the quest for other options presented many other potential candidates such as amorphous silicon, cadmium telluride, copper-indium-suphide etc. since early 70s. This talk will introduce on how solar PV has come across with successful commercialization till to date with ups and downs over the past few decades and how we can align ourselves with COP21 commitment given by 200 countries end of 2015 in France,by maximizing the utilization of renewable energy resource especially solar photovoltaics.

Dr. Nowshad Amin is a Professor at the Institute of Sustainable Energy of The National Energy University (Universiti Tenaga Nasional) of Malaysia. After the higher secondary education from his native country, Bangladesh, he received the Japanese Ministry of Education (MONBUSHO) scholarship in 1990 to study electrical engineering, where he got BSc (1996) from Toyohashi University of Technology, Masters (1998) and PhD (2001) from Tokyo Institute of Technology, Japan. His areas of expertise include Solar Photovoltaic Energy applications and Solar Cell development. He is actively involved in promoting Solar Energy to the developing countries in South and South East Asia.

Smoking (Water-Pipe and Cigarette) and Obesity Among University Students in UAE and Palestine: A Cross-Sectional Study

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ABSTRACT

To assess the prevalence rate of water-pipe smoking behavior among university students in West Bank and Dubai and to determine the factors associated with water-pipe smoking among university students. Design: cross-sectional study. Setting: 5 universities in west bank- Palestine and 5 universities in Dubai- UAE. Participants: 3800 students randomly selected from the universities with a response rate of 87.6%. Self-administered questionnaire was used to collect the data. The key measures were water-pipe smoking, weight, height, cigarettes smoking, dieting to reduce weight, perception and knowledge related water-pipe smoking. Weight, height and waist circumference were measured from a subsample of 500 students. Body mass index (BMI) was calculated using the who cutoffs to identify obese, overweight and underweight students. In total, 3327 students (54% West Bank and 46% Dubai) included in this analysis. In Dubai, 22% were overweight and 9% were obese. In west bank, 14% were overweight and 4% were obese. The 16% in Dubai and 18% in West Bank smoke cigarettes. The 26% of the students in Dubai and 32% in west bank smoke water-pipe. The 17% in Dubai and 18% in west bank smoke water-pipe in order to reduce their weight. Significant associations were found between smoking water-pipe and obesity, overweight and abdominal obesity ($p<0.001$). Water-pipe smoking is common among university students. Smoking water-pipe is associated with BMI and abdominal obesity. Programs aimed at education, prevention and intervention for water-pipe use are needed to address the high prevalence rate of water-pipe smoking and this growing public health concern.

Dr. Haleama Al Sabbah is an Associate Professor and chair of Health Sciences Department at Zayed University in Dubai. She completed her Ph.D in Public Health Nutrition at Gent University, Belgium. Haleama was a Fulbright Senior Visiting Scholar at Jean Mayer Human Nutrition Center, Tufts University, Boston, USA.

The Importance of Pistachio Nut either in Diet or Public Health

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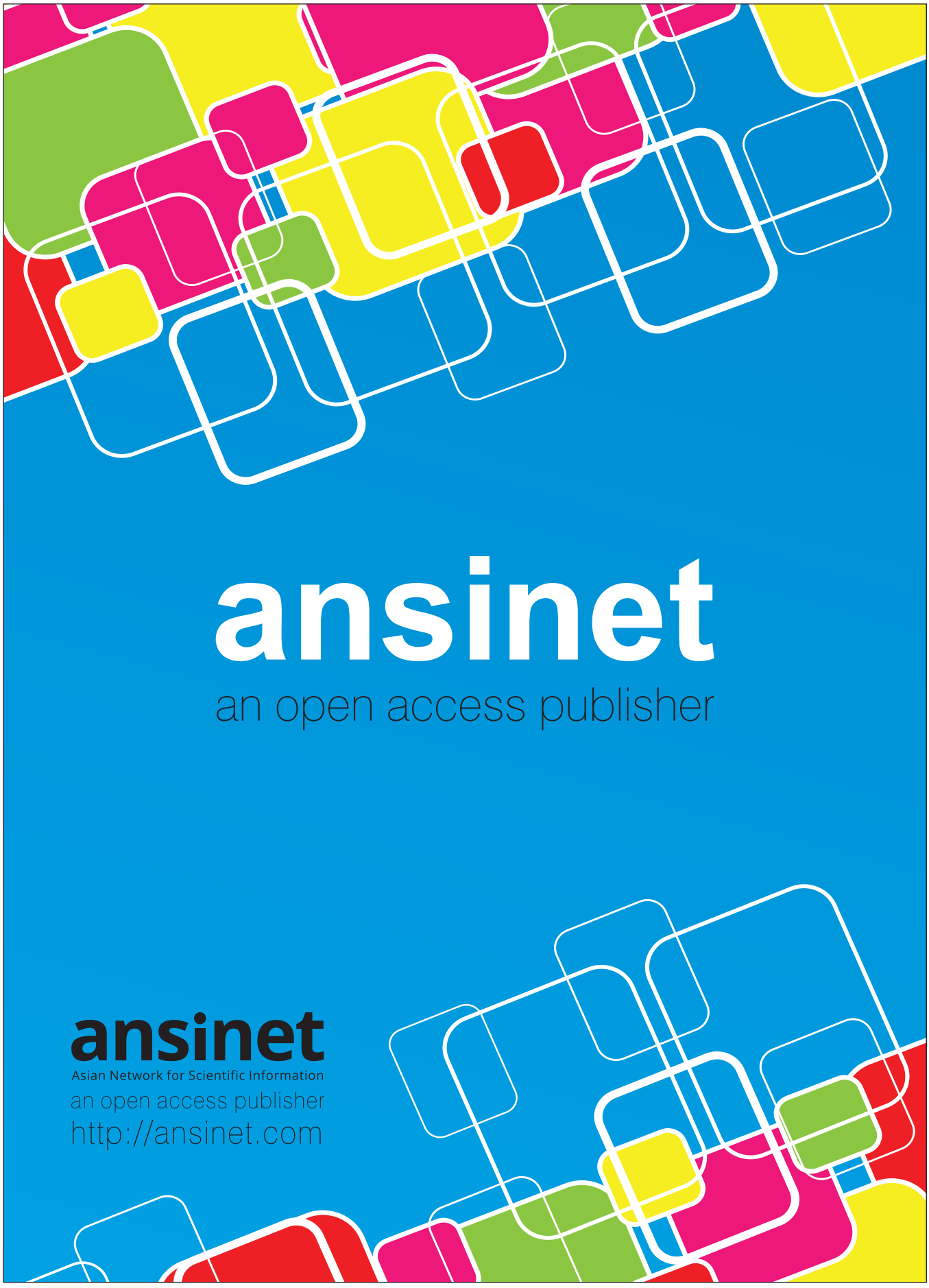
ABSTRACT

Pistachio is one of the fruit consumed namely as snack, it has a considerable importance in human food and health. It is also prevalent raw material in desert industry. Pistachio is an abundant food either proteins or unsaturated fatty acid ingredients. It is a favorable source of ferrum, calcium, phosphorous and potassium therefore it is recommended against to osteoporosis, anemia and blood pressure regulations. On the other hand, pistachio fulfilled with vitamin E, A and B complex. It is again recommended as dietary supplement due to its high volume of pulp. It is reported that pistachio a useful supplement for cardiovascular problems. It is also concluded that pistachio a good tool against to re-carcinogenic cell suppression.

Gülsüm is a PhD student in molecular biology at the University of Gaziantep Graduate School of Natural and Applied Sciences. She graduated from University of Kilis 7 Aralik, with master degree in Biology in 2013. She graduated from the University of Gaziantep, in 2009.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