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Virtual Event

5th Global Summit on

ADVANCES IN MEDICINAL CHEMISTRY AND PHARMACOLOGY

November 06-07, 2023

Adv. Med Chem 2023

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PEERS ALLEY MEDIA

YOUR FIRST CHOICE FOR RESEARCH INGENUITY

PROGRAM-AT-A-GLANCE

ADV. MED CHEM 2023

DAY 1
NOVEMBER 06, 2023

Scientific Program

GMT - Greenwich Mean Time

08:00-08:20	**Opening Ceremony**

Distinguished Speaker Talks

Sessions: Pharmaceutical Chemistry | Biosimilars and Biologics | Computer Aided Drug Design | Digital Health | Drug Delivery Systems for Biologics and Biosimilars | Globalization of Biosimilars | Drugs and Drug Targets | Biosimilars in Hematology and Oncology | Current Challenges in Developing Biosimilars | Intellectual Property Rights | Regulatory Updates on Biosimilars | Vaccines and Immunotherapies | Precision Medicine | Artificial Intelligence and Machine Learning in Drug Discovery and Development

08:20-08:40	**Title: Artificial RNA editing for genetic cord restoration** **Toshifumi Tsukahara,** *Japan Advanced Institute of Science and Technology, Japan*
08:40-09:00	**Title: A holistic method for determining floating photovoltaic schemes** **Ching-Feng Chen,** *National Taiwan University, Taiwan*
09:00-09:20	**Title: Impact of CD73 and PD-L1 co-expression on the efficacy of immunotherapy in bladder cancer** **Zhaolei Zen,** *Sun Yat-sen University Cancer Center, China*
09:20-09:40	**Title: A network pharmacology-based treatment analysis of Luteolin for regulating Pyroptosis in acute lung injury** **Xiaowei Yuan,** *University of Shanghai for Science and Technology, China* **&** **Danying Zhang,** *Shanghai Changzheng Hospital, China*
09:40-10:00	**Title: Variation of Lipid species profiles among leukemic cells significantly impact their sensitivity to drug targeting lipid metabolism and the prognosis of AML patients** **Pascal Mossuz,** *University Grenoble Alpes, France*
10:00-10:20	**Title: Feasibility of CRSF (Child Resistance & Senior Frendly) drug packages and its needs** **Kiyomi Sadamoto,** *Department of Clinical Pharmacy Shonan University of Medical Science, Japan*

10:20-10:40	**Title: Effects of glutamine and arginine combination on pro- and anti-inflammatory cytokines** **Maulydia,** *Dr. Soetomo General Hospital, Indonesia*
10:40-11:00	**Title: Association of developmental milestones with vitamin B12 and folate status among hospitalized severe acute malnutrition children at a tertiary care center in North India** **Ganesh K. Verma,** *Uttar Pradesh University of Medical Sciences, India*
11:00-11:20	**Title: Memory effects on skin tissue due to various thermal conditions** **Suniti Ghangas,** *MDSD College, India*
Refreshment Break 11:20-11:30	
11:30-11:50	**Title: Genome organization, in-silico structure, cellular localization and understanding the function of putative lipid transporter, ARV1 from parasitic nematode *Setaria Digitata*** **Palliya Guruge Thilini Sithara Wickramatunga,** *University of Colombo, Sri Lanka*
11:50-12:10	**Title: Hybrid MoS2-Plasmonic absorber covering the whole visible spectrum: Application to design transistor like photodetectors** **Mina Tavakkoli,** *University of Tabriz, Iran*
12:10-12:30	**Title: Analysis of COVID-19 death cases using machine learning** **Humaira Aslam,** *Adamas University, India*
12:30-12:50	**Title: Study of clinical and biochemical profile in children affected with thalassemia and assessment of their growth, endocrine and cardiac functions in relation with serum ferritin level** **Shashindra Bhannariya,** *District Hospital Sehore, India*
12:50-13:10	**Title: FRAX calculation with and without bone mineral density for assessment of osteoporotic fracture risk in patients of rheumatic disease: A cross-sectional study** **Butool Nusrat,** *Dow University of Health Sciences, Pakistan*
Poster	**Title: Purification and characterisation of a novel thrombin inhibitor from *Moringa oleifera: Potential for alternative medicine*** **Sawetaji,** *University School of Biotechnology, India*

Lunch Break 13:10-13:40	
13:40-14:00	**Title: Investigation of the effect of Ruscus Aculeate alkaloid extract on HTLV-1 infected cancer cells** **Arzoo Baghban,** *Mashhad Azad University, Iran*
14:00-14:20	**Title: Management of a Dentigerous cyst: A ten-year review** **Tahrir N. Aldelaimi,** *University of Anbar, Iraq*
14:20-14:40	**Title: Exploitation of alternative skin models from academia to industry: Proposed functional categories to answer needs and regulation demands** **Meital Portugal-Cohen,** *DermAb.io, Israel*
14:40-15:00	**Title: Transformation of immunosuppressive mtKRAS tumors into immunostimulatory tumors by Nerofe and Doxorubicin** **Yoram Devary,** *Immune System Key (ISK) Ltd., Israel*
15:00-15:20	**Title: Kinetics of alcohol ethoxylation reaction taking into account the influence of the association** **B.Ya. Stul,** *Research University Syntez, Russia*
15:20-15:40	**Title: Single-cell RNA sequencing analysis of human Alzheimer's disease brain samples reveals neuronal and glial specific cells differential expression** **Lilach Soreq,** *University College London, UK*
15:40-16:00	**Title: Replication of the taste of sugar by formulation of noncaloric sweeteners with mineral salt taste modulator compositions** **Grant DuBois,** *Almendra Americas, USA*
Refreshment Break 16:00-16:10	
16:10-16:30	**Title: The effects of serotonin receptor type 7 modulation on bowel sensitivity and smooth muscle tone in patients with irritable bowel syndrome** **Usama Osman,** *Michigan State University College of Human Medicine, USA*
16:30-16:50	**Title: Automatic stridor detection using small training set via patch-wise few-shot learning for diagnosis of multiple system atrophy** **Kyungsu Kim,** *Samsung Medical Center, Republic of Korea*

16:50-17:10	**Title: Suppressing notch wear by changing the tool path in the side milling of a Ti-6Al-4V alloy** **Rodrigo Henriques Lopes da Silva,** *Federal Technological University of Paraná, Brazil*
17:10-17:30	**Title: Single and combined effect of Cd and Zn on growth, metal accumulation and mineral nutrition in Tobacco plants (*Nicotiana tabacum L.*)** **Ramin Cham,** *Islamic Azad University, Iran*
17:30-17:50	**Title: Amino acid (acyl carrier protein) ligases are linked with diverse natural product biosynthetic pathways** **Vesna Simunović,** *Natural Product Solutions, Croatia*
17:50-1810	**Title: A low thermal conductivity of light weight laterite-cement composites with cotton wastes fibres** **KAMGA SAMEN Liliane Van Essa,** *Local Materials Promotion Authority (MIPROMALO), Cameroon*

Panel Discussion

Closing Remarks

DAY 2
NOVEMBER 07, 2023

Scientific Program

GMT - Greenwich Mean Time

06:50-07:00	**Opening Ceremony**

Distinguished Speaker Talks

Sessions: Pharmaceutical Chemistry | Biosimilars and Biologics | Computer Aided Drug Design | Digital Health | Drug Delivery Systems for Biologics and Biosimilars | Globalization of Biosimilars | Drugs and Drug Targets | Biosimilars in Hematology and Oncology | Current Challenges in Developing Biosimilars | Intellectual Property Rights | Regulatory Updates on Biosimilars | Vaccines and Immunotherapies | Precision Medicine | Artificial Intelligence and Machine Learning in Drug Discovery and Development

07:00-07:20	**Title: EDB FN targeted probes for the surgical navigation, radionuclide imaging, and therapy of thyroid cancer** **Guo-Kai Feng,** *Sun Yat-Sen University Cancer Center, China*
07:20-07:40	**Title: Deep learning enabled video steganography for macro block selection Tasmanian Devil Sail Fish optimization** **Surendra Bhosale,** *Veermata Jijabai Technological Institute, India*
07:40-08:00	**Title: Safety signals of albumin-bound paclitaxel: Data mining of the Food and Drug Administration adverse event reporting system** **Xiao Liu,** *The Fifth People's Hospital of Chongqing, China*
08:00-08:20	**Title: Biological reconstruction of posteromedial Tibial Defect with Autogenous Bone Graft in Complex Knee Arthroplasty** **Irfan Rajput,** *Dow University of Health Sciences Karachi, Pakistan*
08:20-08:40	**Title: Designing & commercialization of affordable chemically defined serum free media and feed for high value Biosimilar manufacture** **Vishal G. Warke,** *HiMedia Laboratories Pvt. Ltd, India*

Refreshment Break 08:40-08:50

08:50-09:10	**Title: Evaluating Self-Healing Concrete with Crystalline Admixture and Metakaolin Integration** **C. Sashidhar,** *JNTUA, India*

09:10-09:30	**Title: CCND1 amplification in pancreatic ductal and ampullary adenocarcinoma and its impact on patients' survival: A single centre observational study** **Shuchismita Chakraborty,** *Medical College and Hospital Kolkata, India*
09:30-09:50	**Title: Visual content generation from textual description** **Varsha Singh,** *Indian Institute of Information Technology Allahabad, India*
09:50-10:10	**Title: Advance drug delivery model to treat diseased tissues using reversible electroporation** **Nilay Mondal,** *The ICFAI University Tripura, India*
10:10-10:30	**Title: Sleep deprivation and sleep disorders** **Sagar Santaji,** *KLS Gogte Institute of Technology, India*
10:30-10:50	**Title: Has the pectoralis major flap really become obsolete?** **Arpan Choudhury,** *Apollo Hospitals, India*
10:50-11:10	**Title: H-Type Hypertension: Genetic Insights, Metabolic Syndrome Links, and CAD Risk in Lacto-Vegetarian Community** **Priyanka Rani Garg,** *University of Delhi, India*
11:10-11:30	**Title: Tribological parameters optimization of AZ31-SiC composite using whale optimization algorithm** **Kishor Kumar,** *Gudlavalleru Engineering College, india*
11:30-11:50	**Title: Evaluating the effect of measurement error under randomized response techniques of the sensitive variable in successive sampling** **Pidugu Trisandhya,** *Bharati Vidyapeeth's College of Engineering, India*
11: 50-12:10	**Title: Atypical Rasmussen's encephalitis presenting as focal status epilepticus and periodic generalised myoclonus** **Fazala Mehnaz,** *Apollo Hospitals, India*
12:10-12:30	**Title: Technology enabled communication during COVID 19: Analysis of tweets from top ten Indian IT companies using NVIVO** **Swati Chawla,** *Amity University, India*

12:30-12:50	**Title: Anti-tumour activity of Osthole from whole plants of *Luisia tenuifolia* Blume in A431 squamous skin carcinoma cell lines and its possible mechanisms** **Sethuraman Sakthi Priyadarsini,** *SRM College of Pharmacy, India*
Lunch Break 12:50-13:30	
13:30-13:50	**Title: Bi Attempted base optimization algorithm on hydrosystem optimization problems** **Mehtap KOSE ULUKOK,** *Cyprus Science University, Turkey*
13:50-14:10	**Title: The use of omalizumab in the treatment of bullous pemphigoid: Case report and literature review** **Seçil Soylu,** *Afyonkarahisar Health Sciences University, Turkey*
14:10-14:30	**Title: Nutritional, antioxidant and antimicrobial properties of an extruded traditional rice based composite flour mixture** **Pahan I. Godakumbura,** *University of Sri Jayewardenepura, Sri Lanka*
14:30-14:50	**Title: Revolutionizing Healthcare: The Transformative Role of ML and AI in Precision Medicine and Advanced Therapies** **Koffka Khan,** *The University of the West Indies, West Indies*
14:50-15:10	**Title: Association between serum vitamin D3 level and sympathetic skin response** **Sharareh Roshanzamir,** *Shiraz University of Medical Sciences (SUMS), Iran*
15:10-15:30	**Title: Production and wear optimization of Mango *'Mangiferaindica'* Seed Shell Ash (MSSA)-reinforced Al–Si–Mg Particulate composite: a Taguchi approach** **Ochuokpa Ezekiel Otor,** *Ahmadu Bello University Zaria, Nigeria*
15:30-15:50	**Title: The Ethical Standards of Sunni Muslim Physicians Regarding Fertility Technologies that are Religiously Forbidden** **Tarabeih Mahdi,** *The Academic College of Tel-Aviv-Yaffa, Israel*
15:50-16:10	**Title: Role of HSP65 of *Mycobacterium bovis* in predicting protection of BCG vaccine against COVID-19** **Paola Finotti,** *University of Padua, Italy*

Refreshment Break 16:10-16:20	
16:20-16:40	**Title: Imaging of ovarian lymphoma** **Diana Donatello,** *IRCCS Azienda Ospedaliero-Universitaria di Bologna, Italy*
16:40-17:00	**Title: Web accessibility evaluation of private and government websites for people with disabilities through fuzzy classifier in the USA** **Naga Simhadri Apparao Polireddi,** *IKON Tech Services/ Arizona State University, USA*
17:00-17:20	**Title: E-FaceAtlasAR: Extend Atlas of Facial Acupuncture Points with Auricular Maps in Augmented Reality for Self-Acupressure** **Menghe Zhang,** *University of California San Diego, USA*
17:20-17:40	**Title: Clinical trial risk planning strategy** **Vladimir Shnaydman,** *ORBee Consulting, USA*
17:40-18:00	**Title: Estimation of Optimal Lock-down and Vaccination rate of a Stochastic SIR Model: A Mathematical Approach** **Paramahansa Pramanik,** *University of South Alabama, USA*
18:00-18:20	**Title: High prevalence of renal salt wasting (RSW), identification of novel protein in RSW to simplify diagnosis of RSW and introducing new syndrome of RSW in Alzheimer's disease** **John K. Maesaka,** *NYU Grossman Long Island School of Medicine, USA*
18:20-18:40	**Title: Nutraceuticals and traumatic brain injury** **Brandon Lucke-Wold,** *University of Florida, USA*
18:40-19:00	**Title: Endoscopic Vacuum Therapy (EVT) for the treatment of post-bariatric surgery leaks and fistulas: A systematic review and meta-analysis** **Josselyn Mariana Vera Intriago,** *Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, Brazil*
Closing Remarks	

BOOKMARK YOUR DATES

6TH GLOBAL SUMMIT ON ADVANCES IN MEDICINAL CHEMISTRY AND PHARMACOLOGY

October 2024 | London, UK

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SCIENTIFIC ABSTRACTS

DAY 1

VIRTUAL EVENT

5th Global Summit on

Advances in Medicinal Chemistry and Pharmacology

November 06-07, 2023

ADV. MED CHEM 2023

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Artificial RNA editing for genetic cord restoration

T. Tsukahara[1,2] and **G. Fan**[1,3]

[1]*Japan Advanced Institute of Science and Technology, Japan*
[2]*GeCoRT Co. Ltd., Japan*
[3]*School of Medicine, Shaoxing University, Japan*

Gene therapy to supplement functional genes instead of unfunctional genes has been tried as a treatment for various hereditary diseases. In recent years, however, there have been growing expectations for genome editing, which restores genes. However, in present circumstances, many difficulties including unexpected mutations due to off-target effects have been pointed out in the treatment of disease patients by genome editing. We are developing therapies that target RNAs, transient molecules, rather than DNAs, permanent molecules. We are trying to treat genetic diseases by modifying mutated RNAs with artificial RNA editing enzymes to biosynthesize functional proteins. We have manipulated the deaminase domain of the ADAR1 enzyme and the MS2 system to restore nonfunctional mRNAs by sequence-specific deamination of adenosine generated by G-to-A mutations. The ADAR1 deaminase domain was fused with an RNA-binding MS2 coat protein. On the other hand, a guide RNA, a complementary sequence to the mutated site of the target RNA, was fused with MS2-loop RNA to bind with the MS2-fusion protein in introduced cells. The guide RNA was designed to target EGFP with the stop codon at amino acid 58 Trp (TGG) mutated to TAG or TAA, recruiting the ADAR1 deaminase domain to the target editing site, converting adenosine to inosine then the stop codon to read-through conversion and restored fluorescence. We have also successfully developed an artificial system using cytidine deaminases for C-to-U conversion. In this system, the blue fluorescent protein gene is generated by T-to-C site-directed mutagenesis in the EGFP gene. The artificial cytidine deaminase-MS2-guide RNA system was able to convert the targeted C to U to restore the BFP-mRNAs to wild-type sequence, and green fluorescence cells were observed. Therefore, we concluded that the artificial RNA editing enzyme system is useful as a novel genetic restoration therapy for genetic diseases caused by point mutations.

Biography

Toshifumi Tsukahara obtained Ph.D. on biochemistry from the University of Tokushima in 1987, then he received postdoctoral training in National Institute of Neuroscience, Japan and on molecular biology in Cold Spring Harbour Laboratory, USA. Then he became a senior staff researcher, then a section chief in National Institute of Neuroscience. In 2003, Dr. Tsukahara moved to Japan Advanced Institute of Science and Technology, as a professor. In 2018, founded Division of Transdisciplinary Science as a collaborative graduate school with Kanazawa University. He served as dean fr eight years, the last two as a vice president.

He focused on artificial RNA editing and genetic code restoration in patients' cells toward disease treatment and successfully restored genetic code of mutated mRNAs in cultured cells by artificial RNA editing. Upon his retirement from the university in March 2023, he founded GeCoRT Co. Ltd. which will research and develop genetic code restoration therapeutics.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

A holistic method for determining floating photovoltaic schemes

Ching-Feng Chen

Department of Civil Engineering, National Taiwan University, Taiwan

This paper determines which floating photovoltaic (FPV) commerce investment is more favorable for Taiwan's Agongdian Reservoir or Japan's Yamakura Dam integrating Time-Series forecasting, Analytical Network Process (ANP), and financial analyses. Although much literature is associated with the FPV environmental impact, energy generation, and PV units on water, there needs to be more discourse on comparative economic analysis in optimal schemes to help investors make decisions. The finances of various countries cannot support long-term renewable energy development, not to mention after the happenings of the epidemic, the Russian-Ukrainian war, extreme environment, inflation, and interest rate hiking in the United States. The results reveal that the metrics impacting FPV deployment scales are system capacity, installation cost, bank rate, and emissions trading systems (ETS) & electricity bills with weights 0.23, 0.23, 0.12, and 0.42, respectively. In the post-FIT era, investing in Japan is more favorable than in Taiwan as the latter's net present value (NPV) is cheerful (7269.8, at a discount rate of 5%). The internal rate of return (IRR) (10.1%) is affirmative, the benefit-cost ratio (BCR) is above one (1.71, at a discount rate of 5%), and the breakeven point is agreeable (about 55.2%.). The approach proposed in the study benefits stakeholders' decision-making while funding a project.

Biography

National Taiwan University (NTU), Department of Civil Engineering Majoring Hydraulic Engineering, PhD Candidate.

National Chung Hsing University (NCHU), Department of Electrical Engineering PhD student.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Impact of CD73 and PD-L1 co-expression on the efficacy of immunotherapy in bladder cancer

Zhaolei Zeng[1], Ao Shen[1], Songqing Cai[1] and **Peisen Huang[2]**

[1]State Key Laboratory of Oncology in South China, Sun Yat-sen University Cancer Center, P.R. China

[2]Guangzhou Foreign Language School, P.R. China

Objective: PD-L1 expression is one of the biomarkers known to predict the efficacy of immune checkpoint inhibitors in tumors. CD73 is a novel immune checkpoint that has been widely reported to induce an immunosuppressive tumor microenvironment by generating adenosine. However, it is still unknown whether the co-engagement of CD73 and PD-L1 can affect PD-1/PD-L1 immune efficacy in bladder cancer. Therefore, this paper aimed to explore the effect of the combination of these two targets on the immune efficacy and prognosis of bladder cancer and its possible mechanisms.

Methods: Transcriptomic data of bladder cancer in CCLE database and TCGA database were analyzed. Immunotherapy cohorts of uroepithelial cancer IMvigor210 and GSE176307 were evaluated. Single-cell dataset of bladder cancer PRJNA662018 data was also studied. The TCGA-BLCA samples were categorized into four groups: PD-L1 high+CD73 low, PD- L1 high+CD73 high , PD-L1 low+CD73 low, and PD-L1 low+CD73 high , based on the median value of the expression of CD73 and PD-L1, and were mapped to the single-cell data using the Scissor algorithm to find cells associated with the PD-L1 high+CD73 low phenotype, after which the obtained positively associated cells were analyzed differences from the negatively associated cells, and the acquired differential genes were used for enrichment analysis.

Results: CD73 and PD-L1 expression were positively correlated in bladder cancer cell lines, tissue samples, and two immunotherapy cohorts of uroepithelial cancer. Patients in the PD-L1 high+CD73 low group had the highest objective response rates and longest overall survival in both immunotherapy cohorts. Single-cell transcriptome analysis showed that differential and enrichment analyses of Scissor+ cells versus Scissor- cells from both myeloid and lymphatic systems demonstrated that these differential genes were both predominantly enriched in pathways associated with the expression of MHC molecules and antigen processing and presentation.

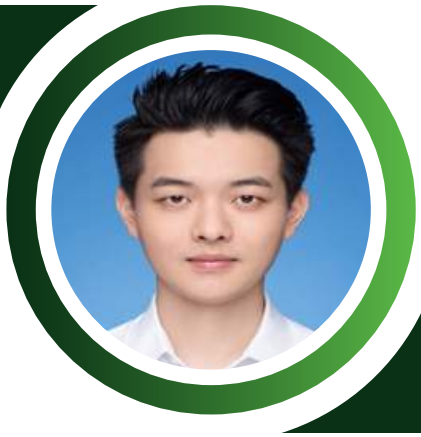
Conclusion: Cancer tissues with PD-L1 high+CD73 low have better immune efficacy and prognosis in bladder cancer, and the possible mechanism is that it improves the antigen- presentation ability in the tumor immune microenvironment and thus enhances the anti-tumor immune function.

Biography

Dr. Zhaolei Zeng is an associate researcher and doctoral supervisor at Sun Yat-sen University Cancer Center. Her studies focus on the individualized selection of immune and targeted drugs, and the mechanism of drug resistance. She has conducted several national projects, such as the National Key Research and Development Program and the National Natural Science Foundation of China (NSFC). She has published more than 30 SCI-indexed papers as the first or corresponding author, including Hepatology, J Hematol Oncol, Clin Cancer Res, Oncogene, and other authoritative journals in the field of tumors.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology



A network pharmacology-based treatment analysis of Luteolin for regulating Pyroptosis in acute lung injury

Xiaowei Yuan[2] and **Danying Zhang**[1]

[1]*Department of Emergency and Critical Care, Shanghai Changzheng Hospital, China*

[2]*University of Shanghai for Science and Technology, China*

Acute lung injury (ALI) and its severe manifestation, acute respiratory distress syndrome, are complicated pulmonary inflammatory conditions for which standard therapeutics are still not well established. Although increasing research has indicated the anti-inflammatory, anticancer, and antioxidant effects of luteolin, especially in lung diseases, the molecular mechanisms underlying luteolin treatment remain largely unclear. We explored the potential targets of luteolin in ALI by using a network pharmacology-based strategy and further validated in a clinical database. The relevant targets of luteolin and ALI were first obtained, and the key target genes were analyzed using a protein-protein interaction network, Gene Ontology, and Kyoto Encyclopedia of Genes and Genomes pathway enrichment analyses. The targets of luteolin and ALI were then combined to ascertain the relevant pyroptosis targets, followed by Gene Ontology analysis of core genes and molecular docking of key active compounds to the antipyroptosis targets of luteolin in resolving ALI. The expression of the obtained genes was verified using the Gene Expression Omnibus database. *In vivo* and *in vitro* experiments were performed to explore the potential therapeutic effects and mechanisms of action of luteolin against ALI. Fifty key genes and 109 luteolin pathways for ALI treatment were identified through network pharmacology. Key target genes of luteolin for treating ALI via pyroptosis were identified. The most significant target genes of luteolin in ALI resolution included AKT1, NOS2, and CTSG. Compared with controls, patients with ALI had lower AKT1 expression and higher CTSG expression. Luteolin simply reduced systemic inflammation and lung tissue damage in septic mice. Furthermore, we blocked AKT1 expression and found luteolin reduced the degree of lung injury and affected NOS2 levels.

Biography

Xiaowei Yuan, born in 1993, graduated from Second military medical university in 2016. After my graduation, I have finished the Standardized training of Residents in the department of icu, Shanghai Changzheng Hospital. In 2022, I started my postgraduate study in the University of Shanghai for Science and technology, whom co-educated by the Navy medical university. My aim of study is mainly about the theory of MODS and ARDS.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Variation of Lipid species profiles among leukemic cells significantly impact their sensitivity to drug targeting lipid metabolism and the prognosis of AML patients

Pascal Mossuz[1,3], Caroline Lo Presti[1,3], Yoshiki Yamaryo-Botté[2], Julie Mondet[1,4], Sylvie Berthier[5], Denisa Nutiu[1] and **Cyrille Botté[2]**

[1]University Grenoble Alpes (UGA)/INSERM U1209/CNRS 5309, Institute for Advanced Biosciences, Grenoble (IAB), Team "Epigenetic and Cellular Signaling", France
[2]Apicolipid Team, Institute for Advanced Biosciences, CNRS UMR5309, Université Grenoble Alpes, France
[3]University Hospital of Grenoble Alpes (CHUGA), Department of Biological Hematology- Institute of Biology and Pathology, France
[4]University Hospital of Grenoble Alpes (CHUGA), Department of Molecular Pathology- Institute of Biology and Pathology, France
[5]University Hospital of Grenoble Alpes (CHUGA), Platform of Cytometry Institute of Biology and Pathology, France

Several studies linked the bad prognostic of AML to the ability of the leukemic cells to reprogram their metabolism and in particular their lipid metabolism. In this context, we performed an "in-depth" characterization of lipidomic profiles in leukemic cell lines and in plasma from AML patients, into the goal to characterize lipidome characteristic of leukemic cells and alteration of this metabolism in patients. We firstly showed that different leukemic cell lines harbored significant differences of their lipid profiles at steady state, but that in nutrient stress they develop common mechanisms of protection. These reprogramming implicated variation of the same lipid species, highlighting that the remodeling of lipid homeostasis is a major and shared mechanism of adaptation to stress in leukemic cells. We also showed that sensitivity to Etomoxir, which blocks FAO, was dependent of the initial lipid profile of cell lines suggesting that only particular "lipidomic phenotype" are sensitive to drug targeting FAO. Finaly, we showed that lipid profiles of plasma from AML patients were significantly correlated with their prognosis. In particular, we highlighted the impact of species of Phosphocholine and Phosphatidylcholine metabolism on patients' survival. In conclusion, our data showed that imbalance in lipid homeostasis is a phenotypic marker of the diversity of leukemic cells, witness of lipid metabolism reprogramming, that significantly influence their proliferation and resistance to stress and the prognosis of AML patients.

Biography

Pr MOSSUZ Pascal is the head of the hematology laboratory at the CHU de Grenoble (CHUGA). His team is working on the metabolic characteristics of leukemia cells according to their subtype and showed how leukemic cells despite their disparities (particularly genotypic) develop common reprogramming mechanisms to maintain their survival in situations of nutritional stress. They also highlighted the impact of these alterations and those of the mitochondrial DNA in the prognosis of de novo AML patients.

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Feasibility of CRSF (Child Resistance & Senior Frendly) drug packages and its needs

K. Sadamoto, H. Ura and **K. Kubota**

Department of Clinical Pharmacy Shonan University of Medical Science, Japan

Increasing the number of the elderly in the world, this leads to various drug use for them. So, there is the needs of drug packages and devices which are able to use among the elderly without difficulty. Since this issue are closely related to drug adherence, it extends to issue of appropriate drug therapy. On the other hand, there are reports of children's miss use of drugs and accidents which lead to various bad results. Considering these back ground, EU and USA made the rule of CRSF (child resistance and senior friendly) for drug packages. However, the function of CRSF, difficult to use for children and not difficult to use for the elderly could be the hard issue to overcome. In addition, the packages need affordable productivity. Since the drug distribution style is different depend on the country, we need to consider social background and feasibility. In Japan, almost drugs are distributed with PTP (press through package), it is reasonable to make PTP with the function of CRSF. After experimental studies of material, we made PTP which made with soft aluminium, so the shape of the PTP was the same as the commonly used one. From the ergonomic study (followed the way of EN14375 EU standerd CR) among children, soft aluminium PTP was difficult to open for children. However, the study among the elderly and patients with Rheumatoid Arthritis (RA), they could open soft aluminium PTP without difficulty. The results demonstrated the possibility of CRSF PTP. The simple innovation could have the posibility for practical effectiveness in drug therapy. However, looking at Japanese social back ground, usability of the elderly is particularly valued, it is very cautious to make the rule of CRSF. We think it is necessary to put priority both for children and the elderly.

Biography

Kiyomi Sadamoto graduate from pharmacy and medicine at Toho University. She majored Rheumatology at University hospital and obtained Doctor's degree in the area of Rheumatoid Arthritis at Toho University. After clinical activities in Japan, she studied at Birmingham University postgraduate course, and obtained Masters of Social Science Health Management. In Birmingham, she also studied Rheumatology as an honourable research fellow. She is member of councillor in Japan college of Rheumatology. She is member of other medical and clinical activity. She is professor of Department of Clinical Pharmacy in Shonan University of Medical Science, and engaging Rheumatology examination in university hospital. She is the board of director in the society of packaging science & technology, Japan. And member of medical and pharmaceutical society including Japanese society of Internal Medicine and The Japanese society of Quality and Safety in Healthcare.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Effects of glutamine and arginine combination on pro- and anti-inflammatory cytokines

Maulydia[1], N.M. Rehatta[1] and **S.M. Soedarmo[2]**

[1]Department of Anesthesiology and Reanimation Universitas Airlangga – Dr. Soetomo General Hospital, Indonesia

[2]Department of Child Health Universitas Airlangga – Dr. Soetomo General Hospital, Indonesia

Cytokines were beneficial for diagnosis and treatment, which in clinical situations introduced from the perspective of pro and anti-inflammatory effects. An inflammatory response is commonly associated with various severe traumatic insults that consequently recruit the immune cells into the target organs and causing systemic inflammatory response that can lead to sepsis. Immune-modulating nutrients, such as glutamine and arginine, are known as pathophysiological modulate in inflammation. The aim of this study was to evaluate the effect of oral gavage supplementation with a combination of glutamine and arginine on inflammatory cytokines in intestinal mucosa, specifically jejunum. Sixteen Rattus norvegicus rats (average weight 150–200 g) were randomly divided into two groups: groups A and B, both intraperitoneal injected by 2 ml NaCl 0.9%. Group A orally supplemented with 1 ml dextrose 5% daily, meanwhile, group B orally supplemented with 1 ml combination of glutamine and arginine (contains 250 mg/kg glutamine and 250 mg/kg arginine) daily. The experiment lasted for 3 days. We compared the pro and anti-inflammatory cytokines (IL-10, NF-κB, TNF-α, IL-8, and MMP-8) between the two groups by the Mann–Whitney test. More IL-10, TNF-α, and IL-8 cytokine-produced cells found in group A. Group B produced significantly lower TNF-α ($p = 0.009$) and IL-8 ($p = 0.003$). The number of NF-κB and MMP-8 were slightly higher in group B. Giving a combination of glutamine and arginine as nutrition supplementation has beneficial effects in decreasing almost half of the cells that produce TNF-α and IL-8. Further studies must be carried out to support a standard guideline for this recommendation.

Biography

I am Dr. Maulydia, dr., SpAn-TI, Subsp.TI(K), an anesthesiologist and intensivist at Dr. Soetomo General Hospital. I was born on 9th June 1968 in Banda Aceh, Indonesia. I completed my medical degree in 1992 at Universitas Gajah Mada, and worked at a public health center in Yogyakarta from 1993 to 1996. In 1998, I worked as a medical advisor at a pharmaceutical company, PT. Otsuka Indonesia, until 2002. I pursued my specialization at Universitas Airlangga, from 2003 to 2008. Approximately two years after graduating, I began working as an anesthesiologist at Dr. Soetomo General Hospital. A year later, I enrolled in a consultant program at Universitas Airlangga and graduated as an intensivist in 2014. My career has been focused on nutritional and transfusion specifications. I furthered my knowledge by undertaking a doctoral program and conducting a research project on glutamine and arginine as nutritional support and completed it this year.

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Association of developmental milestones with vitamin B12 and folate status among hospitalized severe acute malnutrition children at a tertiary care center in North India

Ganesh K. Verma[1], Ramesh Chand[1], Imran A. Khan[2], Ashok Kumar[1] and **Rajesh K. Yadav[3]**

[1]Department of Pediatrics, Uttar Pradesh University of Medical Sciences, India
[2]Department of Community Medicine, BRD Medical College, India
[3]Department of Pediatrics, Moti Lal Nehru Medical College, India

Introduction: Severe acute malnutrition (SAM) is a severe form of malnutrition affecting nearly 20 million children worldwide. Besides increasing the risk of death and disease, malnutrition also leads to growth retardation and impaired psychosocial and cognitive development. Vitamin B12 and folate are water-soluble essential micronutrients critical in average growth and development, particularly during infancy and childhood. A deficiency of folate and vitamin B12 can result in anemia, poor growth, and increased infections, and vitamin B12 deficiency can cause irreversible neurologic damage to the developing brain. We conducted this study to assess serum folate and vitamin B12 levels in children with SAM at admission and determine its relation with their developmental milestones.

Materials and Methods: One hundred admitted SAM children between ages 6 and 59 months were taken to assess serum folate and vitamin B12 levels status in a tertiary care hospital and determine its relation with their developmental milestones.

Results: The majority of the participants were in the age group 6–12 months (64%), rural (95%), the lower class of socioeconomic status (76%), and incomplete immunization (63%). Serum vitamin B12 and folate levels were found to be significantly associated with different domains of childhood development.

Conclusion: This analysis revealed a high prevalence of vitamin B12 deficiency among malnourished children aged 6–59 months. We found that serum vitamin B12 level and folic acid were significantly associated with developmental delay in all domains (gross motor, fine motor, language, and social) of milestones.

Biography

Dr. Ganesh Kumar Verma
Associate Professor
Uttar Pradesh University of Medical Sciences, Saifai , Etawah India

Educational Qualifications:

MBBS (2007) BRD Medical College Gorakhpur.
MD (Pediatrics) 2011 MLB Medical College Jhansi.

Total Teaching Experience: 12 years.

Post Graduate Medical Teacher as per NMC

Published various publication in prestigious pubmed centeral & scopus index

Faculty and chairing the sessions in many Paediatric Conferences.

Additional Medical Superintendent of UPUMS, Saifai

Incharge OPD/IPD/CRR - UPUMS, Saifai

Incharge - Thalasemia & Hemophilia Unit

Inspector of Nursing College

Deputy medical superintendent of covid -19 during covid

Warden of MBBS & MD boy's hostel.

Member Anti Ragging Squad of UPUMS. Member of the Counseling board for admission in various courses in Nursing and paramedical college of UPUMS.

In-charge of Pediatric Intensive Care Unit (PICU).

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Memory effects on skin tissue due to various thermal conditions

Suniti Ghangas

MDSD College, India

Heating radiofrequency (RF), microwave (MW), ultrasound, laser, cryoablation are the most prominent thermal therapy treatments that destroy the malignant tissue with thermal energy. These thermal therapy treatments cause reversible or irreversible changes in the properties of tissues. Therefore, the appropriate consideration of temperature dependent tissue properties is very important for thermal therapies to achieve accurate results. Mathematical modeling of thermal therapies has been used extensively to predict and optimize clinical treatments and medical devices. This work presents a new meticulous bio-heat transfer model based on memory-dependent derivative with dual-phase-lag (DPL) that has been developed under different thermal conditions such as thermal shock and harmonic-type heating. To solve the problem Laplace transform method is applied to find the analytical results. Quantitative results are evaluated for displacement, strain and temperature along with stress distributions in time domain by using the technique of inverse Laplace transform. The effects of the constituents of memory-dependent derivatives—kernel functions along with time-delay parameter are analyzed on the studied fields (temperature, displacement, strain and stress) for both thermal conditions separately using computational results. It has been found that the insertion of the memory effect proves itself a unified model, and therefore, this model can better predict temperature field data for thermal treatment processes.

Biography

I am Dr Suniti, Assistant Professor, Department of Mathematics, MDSD College, Ambala. I completed my PhD in Dec 2022 on the topic "Mathematical Studies on Bioheat Transfer". During the research work, I was awarded by Junior Research Fellowship (JRF) and Senior Research Fellowship (SRF). I published research papers in reputed impact factor journals and presented the research work in national and international conferences. I have reviewed research papers of reputed journals.

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Genome organization, in-silico structure, cellular localization and understanding the function of putative lipid transporter, ARV1 from parasitic nematode Setaria Digitata

Palliya Guruge Thilini Sithara Wickramatunga[1], Yasanthi Illika Nilmini Silva Gunawardene[2], Kaveesha Jayani Wijesinghea[1], Naduviladath Vishvanath Chandrasekharan[1] and **Ranil Samantha Dassanayake[1]**

[1]Department of Chemistry, Faculty of Science, University of Colombo, Sri Lanka
[2]Molecular Medicine Unit, Faculty of Medicine, University of Kelaniya, Sri Lanka

Introduction/Scope: Setaria digitata, a nematode that lives in the peritoneal cavity of ruminants is the causative agent of cerebrospinal nematodiasis affecting livestock health. The 'ACAT related enzyme 2 required for viability 1' (arv-1) gene encodes putative lipid transporter that is essential in eukaryotes.

Objective: This study was aimed at understanding the molecular architecture, expression, localization and function of S. digitata ARV1 (Sd-ARV-1).

Methods: The predicted 3D structure received from I-TASSER was docked using Autodock Viena with ceramide ligands. The amplified gene sequence was compared with the cDNA sequence to identify the molecular architecture of the Sd-arv-1. Southern and western blots along with immunohistochemical staining analysis determined the gene copy number, expression pattern, and tissue localization of the protein, respectively. Si-RNA mediated RNAi studies revealed the function of Sd-ARV-1.

Results and discussion: Sd-arv-1, a single copy gene with a genomic region (1676 bp) having five exons encoding 217 amino acids interspersed by four introns, shows a similar gene organization to other nematodes. Sd-ARV-1 is expressed ubiquitously at all development stages in the S. digitata life cycle. Amino acid residues, Ile182, Leu56, Ala61, Gln186 and Gln146 are likely to be involved in the formation of potential sphingolipid binding sites having the same conserved residues in other nematodes. Sd-ARV-1 was significantly expressed in the longitudinal muscle layer, endodermis, uterine wall, eggs, and growing embryos inside the uterus, microfilariae, intestinal wall, esophagus lumen, dorsal nerve cord and ventral nerve cord. The dramatic reduction of Sd-arv-1 gene and protein expressions triggered the parasitic motility, production of eggs, microfilaria viability, and severe phenotypic deformities such as distortion of eggs and embryonic development arrest in the intrauterine stages of adult female S. digitata.

Conclusion: These results suggest that Sd-ARV-1 is a structurally conserved, single copy gene with potential ceramide binding site, ubiquitously expressed protein which plays a pivotal role in worm embryogenesis, adult parasite motility and microfilariae viability. Thus Sd-ARV-1 can be considered as a virtuous candidate to be explored as a putative anthelmintic drug target.

Biography

I am P.G. Thilini Sithara Wickramatunga a distinguished Research Scientist specializing in Molecular Biology and Biochemistry, and I have forged an extraordinary career path with an insatiable passion for scientific exploration and innovation.

I began my journey with a Bachelor's degree in Molecular Biology and Biochemistry, followed by the pursuit of a Ph.D. from the University of Colombo, Sri Lanka. My commitment to scientific advancement led me to appoint as a Molecular Biologist in the World Mosquito Program Sri Lanka, where I contributed to the fight against Dengue.

Currently, I am working as a visiting lecturer at Edith Cowan University, Australia, Sri Lanka branch sharing knowledge and my expertise with Sri Lankan students. Further, I have found my place as a research scientist at the Duke-Ruhuna Research Collaboration Center, Faculty of Medicine, University of Ruhuna, Sri Lanka specializing in drug resistance, proteomics and the discovery of drug targets.

With an unwavering commitment to advancing scientific knowledge, I would like to remain a pivotal figure in the dynamic realm of Molecular Biology and Biochemistry.

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Hybrid MoS_2-Plasmonic absorber covering the whole visible spectrum: Application to design transistor like photodetectors

Mina Tavakkoli[1], Hadi Soofi[1] and **Vahid Sheibaei[2]**

[1]*Faculty of Electrical and Computer Engineering, University of Tabriz, Iran*
[2]*Department of Mechanical Engineering, Amirkabir University of Technology (Tehran Polytechnique), Iran*

In this article, a novel MoS_2 based wideband absorber is proposed that covers the whole visible spectrum. The structure is composed of a single MoS_2 layer on top of a Si/SiO_2 distributed Bragg reflector. Coupled Au Nanospheres are utilized on top of the MoS_2 layer that broaden the absorption spectrum as a result of the coupling between the plasmonic modes of individual particles. By optimizing the geometrical features of the plasmonic Nano-antennas, a high absorption value reaching more than 80% in the range of 400 - 600 nm is obtained which decreases to 50% at 700 nm. The application of the proposed structure in designing a wideband visible light photodetector is discussed either.

Biography

During my BSc program and since 2016, I had worked at Tabriz University Innovation Center for about one year, both as a student intern and as a full-time employee. The internships were all in the research and development departments of the company, where I have acquired a variety of technical skills including getting familiar with software related to circuit design and how to program ICs, as well as getting familiar with SMD and DIP electronic components. After graduation, I had worked to extract scientific article, which was submitted. It is about half of the contents of my master's thesis and the second article will be submitted in the next few months. And I also have worked as a production expert in the largest electronics company in Asia, Sobh Parlar Asia Industrial Company, for about a year, where I got to know how to design and test several different boards functionally and mechanically.

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Analysis of COVID-19 death cases using machine learning

H. Aslam[1] and **S. Biswas**[1,2]

[1]*Department of Mathematics, Adamas University, India*
[2]*Department of Mathematics, Jadavpur University, India*

COVID-19 has threatened the existence of human life for more than the last 2 years. More than 460 million confirmed cases and 6 million deaths have been reported worldwide due to COVID-19. To measure the severity of the COVID-19, the mortality rate plays an important role. Understanding the nature of COVID-19 and forecasting the death cases of COVID-19 require more investigation of the real effect for different risk factors. In this work, various regression machine learning models are proposed to extract the relationship between different factors and the death rate of COVID-19. The optimal regression tree algorithm employed in this work estimates the impact of essential causal variables that significantly affect the mortality rates. We have generated a real-time forecast for the death case of COVID-19 using machine learning techniques. The analysis is evaluated with the well-known regression models XG Boost, Random Forest, and SVM on the data sets of the US, India, Italy, and three continents Asia, Europe, and North America. The results show that the models can be used to forecast the death cases for the near future in case of an epidemic like Novel Coronavirus.

Biography

I have completed my graduation and post-graduation from University of Calcutta, India. I have qualified the CSIR UGC NET Examination for Lectureship in Mathematics in 2017 and have more than four years of teaching experience in different engineering and management colleges. Currently, I am a final year Ph.D. research scholar at Adamas University, Kolkata and working as an Assistant Professor in the Department of Computing and Analytics at NSHM Knowledge Campus, Kolkata. My research interests primarily include Mathematical Epidemiology, Fractional Calculus and Nonlinear dynamics. I have participated and presented papers in various National and International conferences and have published my work in reputed journals. As a member of the Organizing Committee of the Analytics Global Conference (AGC 2023) held during 28th – 29th April 2023, I have had the opportunity to review the papers submitted at this conference. Besides, academia, my interests extend to literature, philosophy and debating which I enjoy during my leisure time.

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Study of clinical and biochemical profile in children affected with thalassemia and assessment of their growth, endocrine and cardiac functions in relation with serum ferritin level

Shashindra Bhannariya[1,2] and **Ganesh Kumar Verma**[2]

[1]*District Hospital Sehore, India*
[2]*Uttar Pradesh University of Medical Sciences (UPUMS) Saifai, India*

Introduction: Thalassemia refers to a group of genetic disorders of globin-chain production. There is a decrease in beta globin chain synthesis resulting in an excess of alpha globin chain and thus an imbalance between alpha and beta globin chains. (1)

B-Thalassemia syndromes result from a decrease in beta-globin chains, which results in a relative excess of alpha -globin chains. B0-thalassemia refers to the absent production of the B-globin chains. When there is homozygosity of the BO-thalassemia gene, normal ß-globin chains (HbA) cannot be made. B+ thalassemia indicates a mutation that makes decreased amounts of normal Beta globin (HbA). ß0-thalassemia syndromes are generally more severe than B+ thalassemia syndromes, but there is significant variability between the genotype and phenotype. (2)

The natural course of the disease is dramatically altered by transfusion side effects, which need to be monitored and treated. Iron overload resulting in end-organ damage and blood-borne infectious agents still represent the principal causes of morbidity and mortality. Due to repeated blood transfusions, Iron accumulates in tissues such as liver, heart and endocrine glands as these organs have high levels of transferrin-receptor. Hormone secretion disorders mainly gonadotrophins (FSH and LH) and Growth Hormone (GH) are caused due to extreme sensitivity of the anterior pituitary gland to free radical oxidative stress . Other endocrine organs affected by iron deposition secondary to multiple transfusions include the pancreas, thyroid, and parathyroid glands leading to Diabetes Mellitus (DM), Acquired hypothyroidism and hypoparathyroidism respectively.(8)

Material and methods: It is a hospital based observational study

Study Population: Indoor Patient admitted in Department of Paediatrics with thalassemia

Inclusion Criteria:

All the patients affected with thalassemia aged between 6 months – 14 years

Exclusion Criteria:

a) chidren more than 14 years

b) children less than 6 months

c) chidren on hormonal therapy

d) chidren with any other chronic disorder.

e) Children with any pre-existing cardiac diseases

g) not willing to give informed and written consent for participation in study.

Biography

My name is Dr Shashindra bhannariya lives in Bhopal M.P in India.

QUALIFICATION M.B.B.S passed in 2012 from Barkatullah University Bhopal (M.P).

DCH (Diploma in Child Health) from NSCB Medical College Jabalpur in M.P

TRAINING F-IMNCI, NSSK, RKSK, National Malaria Control Programme, T.B Control Programme

WORK EXPERIENCE

- Resident in Surgery dept in Peoples Medical College Bhopal.
- Junior Resident in Cath Lab (Catheterization laboratory) in Moolchand Hospital Delhi.
- As Medical Officer in Primary Health Centre Anjani Jabalpur (M.P)
- As Paediatric consultant in Matrusparsh hospital Kutch Gujrat
- Currently I am posted in PICU in District hospital Sehore M.P

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FRAX calculation with and without bone mineral density for assessment of osteoporotic fracture risk in patients of rheumatic disease: A cross-sectional study

B. Nusrat[3], O.U. Rehman[1], M. Sharif[1], M.S. Khan[1], S. Tahir[1], S. Zammurrad[1], K. Shabbir[1], H. Mumtaz[2] and **D. Kumar[3]**

[1]Pakistan Institute of Medical Sciences, Pakistan
[2]Health Services Academy, Pakistan
[3]Dow University of Health Sciences, Pakistan

Objective: To compare fracture risk assessment (FRAX) calculation with and without bone mineral density (BMD) in predicting 10-year probability of hip and major osteoporotic fracture in patients of rheumatic diseases. This study compares FRAX with and without BMD in cases of low socioeconomic status where dual energy X-ray absorptiometry (DEXA) scan was not available or not affordable.

Methodology: A cross-sectional was conducted on outpatients at the Department of Rheumatology in the Pakistan Institute of Medical Sciences. 63 patients aged forty and above were enrolled. Cases of rheumatic disease were diagnosed according to the American College of Rheumatology (ACR)/European Alliance of Associations for Rheumatology (EULAR) criteria. FRAX scores were calculated without BMD and recorded in a proforma. Patients were then advised to have a DEXA scan; if performed, a FRAX score with BMD was calculated, after which the two scores were compared. Data analysis was performed using SPSS software version 24. Post-stratification $\chi 2$ test and regression analysis were applied. Significance was considered as a $p < 0.05$.

Results: There was a significant association between FRAX scores calculated with BMD and age and history of previous fractures. There was no statistically significant association between FRAX scores calculated with BMD and sex, weight, height, smoking, family history of hip fractures, glucocorticoids, rheumatoid arthritis, secondary osteoporosis, alcohol, and rheumatic disease. Regression analysis demonstrated that osteoporotic fracture risk with BMD was statistically significant (Figure 1). Moreover, the overall regression analysis for osteoporotic fracture risk without BMD was also statistically significant. (Figure 2)

Conclusion: FRAX may be crucial in areas where dual energy X-ray absorptiometry scanning is not available since it is a readily available instrument. FRAX is a useful substitute for estimating osteoporosis risk when funds are scarce. Given the possible effect it will have on healthcare costs, this study has important implications for the future.

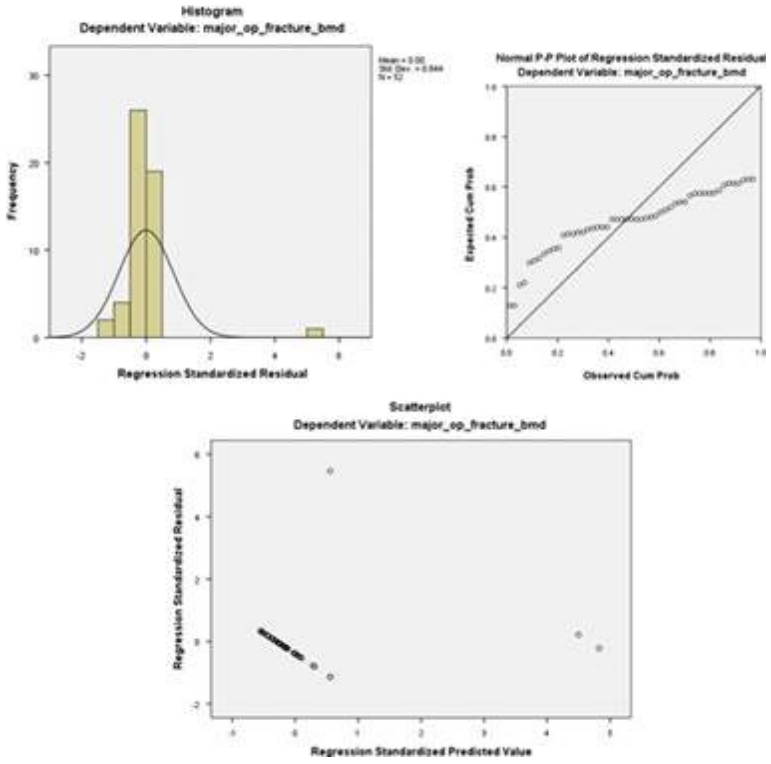

Figure 1

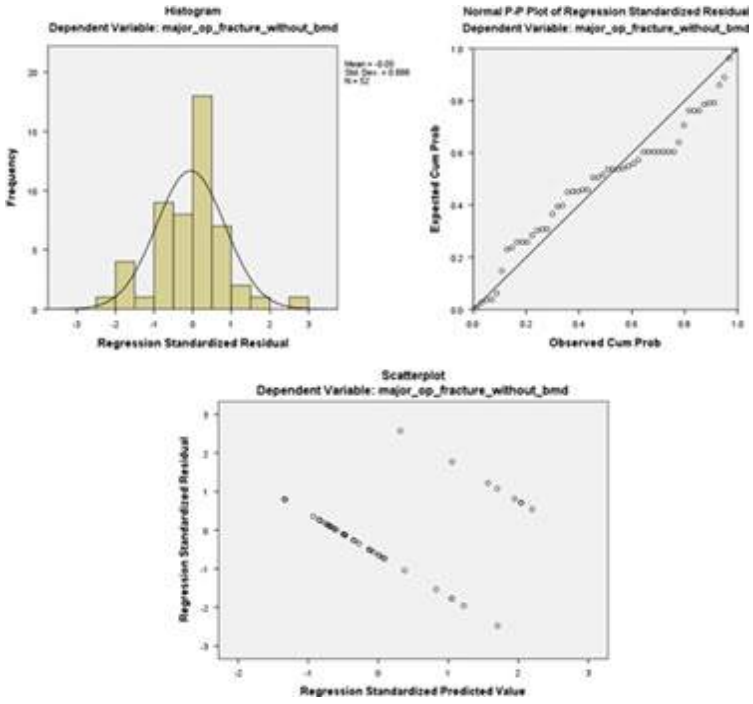

Figure 2

Biography

Dr. Butool Nusrat is a dedicated and passionate doctor, who has embarked on a remarkable journey in the field of medicine and research. Over the years, she has actively participated in numerous research projects, showcasing her unwavering dedication and relentless pursuit of scientific breakthroughs.

As a physician with a remarkable drive, she aspires to specialize in clinical research, aiming to make significant contributions to the medical field. Her specific interests lie in psychiatry and oncology, driven by a deep desire to improve the lives of patients battling these challenging conditions.

Beyond her research endeavors, she has discovered a flair for medical writing. She has successfully undertaken various writing gigs, combining her medical expertise and passion for communication to bridge the gap between scientific knowledge and the community.

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Purification and characterisation of a novel thrombin inhibitor from *Moringa oleifera: Potential for alternative medicine*

Sawetaji and **Kamal Krishan Aggarwal**

University School of Biotechnology, India

A serine protease thrombin plays crucial role in blood coagulation and has been considered as target for the development of drug against thrombosis. Available drugs against thrombosis are associated with serious side effects. Plants derived thrombin inhibitors have been proposed as potential safe anticoagulants against thrombosis. In the present work, a novel thrombin inhibitor has been purified from leaves of Moringa oleifera. A single protein stained band on Native PAGE confirms its purity and its molecular weight was determined as 50 kDa on SDS-PAGE. The purified inhibitor inhibits thrombin in a non-competitive manner and its Ki was calculated as 4.35 $x10^{-7}$ M at 37°C and pH 7.2. IC_{50} of purified inhibitor was determined as 4.23 µg. This novel thrombin inhibitor from *Moringa oleifera* may be further explored for its role as phyto-anticoagulant and alternative medicine.

Biography

I am Sawetaji, a PhD scholar at University School of Biotechnology, Guru Gobind Singh Indraprastha University, Delhi, India. I am currently working on purification and characterization of plant proteins that may be used as phytotherapeutics. This research will open new possibilities for the development of drugs from plants and contribute to our understanding of natural alternative medicines.

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Investigation of the effect of Ruscus Aculeate alkaloid extract on HTLV-1 infected cancer cells

Arezoo Baghban[1], Mohammad Momen Heravi[1] and **S.A.Rahim Rezaee[2]**

[1]Department of Chemistry, Faculty of Science, Azad University of Mashhad, Iran
[2]Immunology Research Center, Inflammation and Inflammatory Diseases Division, Faculty of Medicine, Mashhad University of Medical Sciences, Iran

Ruscus aculeatus is a traditional herb with antiviral, antibacterial and anti-inflammatory properties. Glycosides, saponins, and ruscogenins constitute the active compounds of the Ruscus aculeatus plant, often known as anti-proliferative and antiviral agents. The urgent need to find a cure for HTLV-1 infection or related diseases has prompted us to investigate Ruscus aculeatus plant extract in detail using IR spectroscopy, GC-MS and HPLC analysis.

Specific compounds in Ruscus aculeatus include 2-(1,3-Benzodioxol-5-yl)-8-methoxy-3-nitro-2H-chromene C17H13NO6, Glaucine C21H25NO4, 6-Methyl-2-nitro-6,7-dihydro-9H-5-oxa-9-azabenzocyclohepten-8-one C10H10N2O4 and polyphenols in Ruscus aculeatus, which may be physiologically active as anticancer, antiviral agents with antioxidant properties using GC-MS chromatography.

Also, in this study, the compounds of Ruscus aculeatus extract on cell proliferation of HTLV-1-MT2 and three cancer cell lines were investigated in terms of inhibitory effect for viral therapeutic purposes and cancer agents. Based on *in vitro* observations of HTLV-1- Infect MT2 cells (9.12% survival) - HT29 cells (28.8% survival) - MCF7 cells (52.55% survival) - A549 cells (80.49% survival).

According to the obtained results, the best inhibitory effect was observed for HTLV-1-Infect-MT2 cells. It can be used as a potential therapeutic agent against HTLV-1 infection.

Biography

I am 35 years old, a PhD student at Mashhad Azad University, currently completing a Ph.D. degree in physical chemistry.

I am also collaborating with the Immunology Research Centre to study and research different plant extracts for the treatment of HTLV-1 infection with the Faculty of Medicine of the University of Medical Sciences of Mashhad.

The research I have done so far includes studying the performance of yew plant toxins, its alkaloid extract, the difference of extraction on viral protease and cells infected with them.

We are analysing the chromatograms obtained by GC-MS and HPLC using different extraction conditions and comparing the extracted toxins.

Examination and comparison of extracted extracts with existing drugs in LOD amount and nanoparticle complexation.

Also, based on theoretical research and MD studies focusing on the HTLV-1 protease, the protein Tax as a target for binding with bioactive compounds obtained from extracts.

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Management of a Dentigerous cyst: A ten-year review

Tahrir N. Aldelaimi[1] and **Afrah A. Khalil**[2]

[1]*Department of Oral & Maxillofacial surgery, College of Dentistry, University of Anbar, Ramadi Teaching Hopsital, Iraq*

[2]*Department of Oral Diagnosis, College of Dentistry, University of Anbar, Iraq*

Background: Dentigerous cysts are benign, slow-growing odontogenic cysts that are considered to be developmental in origin. They are twice as common in men as in women. Dentigerous cysts are the most common developmental cysts of the jaws and frequently occur in individuals between 20 and 40 years of age and are seldom discovered in young children. They can grow to a considerable size causing painless expansion of the jaw leading to its deformity.

Objectives: To assess the clinicopathological features and management of dentigerous cyst of ten years' experience.

Materials and Methods: We report challenging cases of reviewed records of the patients who treated by surgical intervention of various dentigerous cysts throughout the period of ten years 2012-2022 at Ramadi Teaching Hospital, Razi Private Hospital, Rashid Private Hospital and Zuhur Private Hospital in Iraq.

Results: A total of 76 patients were enrolled in this clinicopathological study, there was 54% male. The highest age group affected was ≤ 18 years (68.4%). The mandible was most affected (63.1%) than maxilla (36.9%). Marsupialization was applied to (30.3%) of the cases while enucleation was carried out in (69.7%).

Conclusions: This case study confirms the importance of carefully reviewing radiographs and the implications of unidentified and untreated disease. Equipped with knowledge about oral pathology can greatly assist the dentist in diagnosis and referral, and provide anticipatory guidance for patients as they seek to establish optimum oral health of all ages.

Biography

Tahrir N. Aldelaimi, professor of maxillofacial surgery at college of Dentistry, University of Anbar and consultant at Ramadi Teaching Hospital , Ramadi city, Anbar Province, Iraq. He has over 32 publications and his publication h-index is 4. He has been serving as an editorial board member of several reputed journals and he is a member of scientific council of Iraqi Board for Medical Specializations, (19) Member in examining committee of M.Sc. Dental Student, (6) Member in examining committee of Ph.D. Dental Students, (9) Member in examining committee of Iraqi Board for Medical Specialization candidates, (1) Supervisor of M.Sc. Candidate (College of Science, University of Anbar, and (3) Supervisor of M.Sc. Candidate (Institute of Laser for Postgraduate Studies.

Afrah A. Aldelaimi, assistant professor of oral and maxillofacial pathology at college of Dentistry, University of Anbar and oral & maxillofacial pathologist at Ramadi Teaching Hospital , Ramadi city, Anbar Province, Iraq. She has over 18 publications and her publication h-index is 3. She has been serving as an editorial board member of several reputed journals, (2) Member in examining committee of M.Sc. Dental Students and (1) Supervisor of M.Sc. Candidate (Institute of Laser for Postgraduate Studies).

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Exploitation of alternative skin models from academia to industry: Proposed functional categories to answer needs and regulation demands

Meital Portugal-Cohen[1], Dror Cohen[1,2], Ron Kohen[2] and Miriam Oron[1]

[1]DermAb.io, Israel
[2]The Myers Skin Research Laboratory, Faculty of Medicine, School of Pharmacy, Institute for Drug Research, The Hebrew University of Jerusalem, Israel

Alternative skin models (ASM) have become prevalent in academia and industry due to their advantages over traditional animal testing methods - predictability, lower cost, and ethical considerations. These models include cells, reconstructed skin, ex-vivo skin cultures, organ-on-a-chip, and in-silico computational models, which can contribute to safety, claims substantiation, proof of concept, and sustainability. Despite the benefits of ASM, several challenges still need to be addressed to expand their adoption in the industry. First, standardization is necessary to ensure consistency and comparability of results across different laboratories and models. Second, the validation process for these models can be complex and expensive, hindering their adoption. More research is needed to streamline the process and replace traditional animal testing methods. Additionally, some models' lack of complexity limits their usefulness in certain applications. Finally, regulatory challenges must be addressed to ensure safety and efficacy for the use in the different industrial sectors, such as pharma, cosmetics, devices, chemical, or health-tech.

The needs, gaps and challenges in adapting and using alternative skin models for applied research to support the industry will be discussed, by examining the interplay among (a) industrial sectors and their regulation status; (b) skin models classification; (c) data obtained from alternative skin models and potential applications.

A new perspective of ASM categorization-linked to functions and solutions for industrial needs is proposed.:

- Models imitating skin stressors and diseases.
- Models for chemical safety and environmental protection.
- Models for modes of delivery.
- High throughput platforms (e.g. organ-on-a-chip, skin microbiota and models providing big data).

Together with data gathering, processing, and alignment with regulatory demands, the gaps for ASM exploitation in the industries can be significantly reduced.

Biography

Dr. Meital Portugal-Cohen possesses a two-decade strong background in academic and industrial skin clinical and pre-clinical applied research, with a focus on detecting skin biomarkers in both healthy and diseased conditions.

In her current position, she is the co-founder and Chief Technology Officer of DermAb.io, a start-up company developing predictive models for biologic therapy capitalizing on non-invasive skin biomarker measurements.

In her prior leadership roles, including her most recent stint as VP for Science & Technology in the skincare industry, Meital's expertise was in managing the intellectual property portfolio, leading international and national grants / projects, and championing innovative technologies, such as implementing a multidisciplinary platform for personalized topical treatments integrating biologic and engineering components with AI.

Meital participates in the European Network for Skin Engineering and Modeling (Netskinmodels COST), where she coordinates the collaboration between academia and industry.

Meital obtained her Ph.D. in Pharmacology from The Hebrew University, Israel in 2010.

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Advances in Medicinal Chemistry and Pharmacology

Transformation of immunosuppressive mtKRAS tumors into immunostimulatory tumors by Nerofe and Doxorubicin

Yoram Devary, Joel Ohana, Uziel Sandler and **Orly Devary**

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Members of the rat sarcoma viral oncogene (RAS) subfamily KRAS are frequently mutated oncogenes in human cancers and have been identified in pancreatic ductal, colorectal, and lung adenocarcinomas.

In this study, we show that a derivative of the hormone peptide Tumour Cell Apoptosis Factor (TCApF), NerofeTM (dTCApFs), in combination with Doxorubicin (DOX) substantially reduces viability of tumour cells. It was observed that the combination of Nerofe and DOX downregulated KRAS signalling via miR217 upregulation, resulting in enhanced apoptosis of tumour cells. In addition, the combination of Nerofe and DOX also resulted in activation of the immune system against tumour cells, manifested by an increase in the immunostimulatory cytokines IL-2 and IFN-γ as well as the recruitment of NK cells and M1 macrophages to the tumour site.

Biography

Dr. Yoram Devary, Founder, Chairman and CTO

In the beginning, as an expert in drug development, Dr. Devary was responsible for Nerofe' technology and Research & Development activities only. Dr. Devary is an expert in the molecular mechanisms by which physical and chemical agents transform cells and has published groundbreaking findings relating to the cause of cancer. Dr. Devary holds a Ph.D. degree in Biotechnology from the University of California, San Diego (UCSD). Dr Devary published several papers in distinguished journal such as Cell and Science. Later on Dr. Devary, became involved in fundraising and he was responsible for raising 18M$ for the company to support its clinical development and other activities.

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5th Global Summit on
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Kinetics of alcohol ethoxylation reaction taking into account the influence of the association

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The ethoxylation reaction of alcohols can be represented by the following scheme

$$ROH \xrightarrow[k_0,obs.]{C_2H_4O} ROC_2H_4OH \xrightarrow[k_1,obs.]{C_2H_4O} RO(C_2H_4O)_2H \xrightarrow[k_2,obs.]{C_2H_4O} \text{etc}$$

This is an irreversible alcohol-sequential reaction that can have many stages, but in this case we are mainly talking about the first stage of the reaction, characterized by the rate constant k0,obs. The objects of study were primary alcohols of the normal structure C_1-C_7 and C_{10}. The kinetics of this reaction was studied under the conditions of basic catalysis at t=80-180°C and P=1.5 MPa. It was shown that under these conditions in a flow-through mixing reactor, the reaction rate is described by the equation

$$W = (Co^o - Co)/\tau = k_{o,\ obs.}\ C_k\ Co\ (Cc^o - nC_1)$$

where W is the reaction rate, determined by the decrease in EO; C_o^0 and C_o are the EO concentrations in the initial mixture and in the reactor, respectively; τ is the residence time of the reaction mixture in the reactor; $k_{o,\ obs}$ -observed rate constant of the first stage of the reaction; C_k and C_1 are the concentrations in the reactor of the catalyst and the first reaction product, respectively; C_{co} is the concentration of alcohol in the initial mixture; n is a constant depending on temperature and alcohol concentration, which can be further interpreted as the average number of alcohol molecules in a linear chain alcohol associate. For such an interpretation, three assumptions must be satisfied.

1. Alcohol molecules are linked by hydrogen bonds into linear chain associates with an average number of molecules equal to n.
2. Of all the molecules of the chain associate, only one of the two terminal alcohol molecules (terminal) enters the reaction, the hydrogen atom of the hydroxyl group of which does not participate in the formation of a hydrogen bond.
3. The ethylene glycol monoether molecule formed as a result of the reaction remains in the composition of the associate as a terminal molecule and, having a lower reactivity, "locks" this associate, as it were, and actually turns it into a separate molecule.

It can be shown that, in accordance with this equation, the reaction rate is of the first order not in terms of the gross alcohol concentration and by the concentration of linear chain alcohol associates.

Thus, by studying the kinetics of the alcohol ethoxylation reaction, along with the kinetic parameters, one can find the association parameters of alcohols, their temperature dependences, behavior in solvents, the pharmacological activity of various associates, etc.

It is interesting to note that if point 3 of the accepted assumptions is not met, then the speed has the first order in terms of the gross alcohol concentration. This may be the cause of some kinetic anomalies.

Biography

Head of the laboratory at the Research Institute "Syntez", Moscow. The main activity is chlorination and ethoxylation of organic compounds.

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Single-cell RNA sequencing analysis of human Alzheimer's disease brain samples reveals neuronal and glial specific cells differential expression

L. Soreq
University College London, UK

Alzheimer's disease (AD) is the most common neurological disease worldwide. Unfortunately, there are currently no effective treatment methods nor early detection methods. Furthermore, the disease underlying molecular mechanisms are poorly understood. Global bulk gene expression profiling suggested that the disease is governed by diverse transcriptional regulatory networks. In order to identify distinct transcriptional networks impacted into distinct neuronal populations in AD we surveyed gene expression differences in over 25,000 single-nuclei collected from the brains of two AD patients in Braak stage I and II as compared to age- and gender-matched controls hippocampal brain samples. APOE status was not measured for this study samples (as well as CERAD and THAL scores). Our bioinformatic analysis identified discrete glial, immune, neuronal and vascular cell populations spanning Alzheimer's disease and controls. Astrocytes and microglia displayed the greatest transcriptomic impacts, with the induction of both shared and distinct gene programs.

Biography

I have a BSc in computer science (with division in mathematics and in cognitive sciences). MSc in bioinformatics and PhD in neurobiology from the faculty of medicine in Hadassah Jerusalem hospital, Israel. I did all my degrees in the Hebrew university of Jerusalem. I was supervised by Dr. Nissim Ben Arie in my MSc (published a paper on Math1 developmental transcription factor in mice) and my PhD under the supervision of Prof. Hagai Bergman (that developed DBS). During my PhD, I studied Parkinson's disease RNA expression changes in PD patients' blood leukocytes in my PhD prior to and following deep brain stimulation (DBS) on and off stimulus. Published 21 papers a book chapter and 2 patents. I did my post doc in UCL Institute of Neurology (London UK) and Francis Crick Institute studying aging (published in Cell-Reports). I had a Marie-Curie 2-year fellowship, and 3 years Alzheimer's society fellowship.

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Advances in Medicinal Chemistry and Pharmacology

Replication of the taste of sugar by formulation of noncaloric sweeteners with mineral salt taste modulator compositions

Grant DuBois[1], Rafael San Miguel[1], William Hastings[1], Pnita Chutasmit[2] and Areerat Trelokedsakul[2]

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Noncaloric sweeteners have enabled a reduction of carbohydrate sweeteners in the diet for many years, thus combating obesity, diabetes and other health disorders. However, many consumers reject noncaloric sweeteners as they exhibit delays in sweetness onset, objectionable lingering sweet aftertastes and absence of sugar-like mouthfeel. We propose that the temporal taste differences between carbohydrate and noncaloric sweeteners result from slowed diffusion of the latter to and from sweetener receptors through the amphipathic mucous hydrogel covering the tongue. And we demonstrate that formulation of noncaloric sweeteners with K+/Mg2+/Ca2+ mineral salt blends markedly attenuates lingering sweetness, an effect we believe is due to a composite of osmotic and chelate-mediated compaction of the mucous hydrogel covering the tongue. As examples, Sweetness Linger values (Intensity Units in % Sucrose Eq) for rebaudioside A and aspartame are reduced from 5.0 (0.5□SD) to 1.6 (0.4 SD) and from 4.0 (0.7 SD) to 1.2 (0.4 SD), respectively, by formulation with 10mMKCl/3mMMgCl2/3mM CaCl2. Finally, we propose that sugar-like mouthfeel is a consequence of K+/Mg2+/Ca2+ activation of the Calcium Sensing Receptor present in a subset of taste bud cells. And as example, the Mouthfeel Intensity of a sucrose solution was increased from 1.8 (0.6 SD) to 5.1 (0.4 SD).

Biography

Grant E DuBois is an Organic Chemist (BS Chemistry & Mathematics / Capital University; PhD Organic Chemistry / SUNY at Buffalo; Postdoc / Stanford University). Grant was recipient of a Distinguished Alumnus Award / Capital University and was awarded entry to his high school Wall of Fame. Grant began his professional career with Dynapol Co. (sweetener research) and then joined Syva Co. (immunoassays and fluorescent probes). Subsequently, he joined Searle Pharmaceutical Co. (sweetener research) which led to the development of neotame. Grant then joined The Coca-Cola Co. where he was named the company's first Research Fellow. Research led to 1) first 0-calorie frozen beverages, 2) first sweetener receptor positive allosteric modulators (Senomyx collaboration) and 3) GRAS approval of stevia sweetener rebaudioside A. In 2012, Grant joined stevia sweetener manufacturer Almendra, as CSO. Grant's Almendra research led to a breakthrough formulation technology, markedly improving the tastes of all sweeteners. Concurrently, Grant served as VP Research for Crave Crush LLC and developed a gymnemic acid based dietary supplement for treatment of obesity and diabetes, commercialized as Sweet Defeat™.

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The effects of serotonin receptor type 7 modulation on bowel sensitivity and smooth muscle tone in patients with irritable bowel syndrome

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[2]*California Institute of Behavioral Neurosciences and Psychology, USA*

Irritable bowel syndrome (IBS) is a gut-brain disorder involving alterations in intestinal sensitivity and motility. Currently, IBS has no cure, and treatment focuses on the management of symptoms. The diverse, and sometimes contradictory, collections of symptoms reported across the different subtypes of IBS make treatment, as well as diagnosis, difficult for physicians. All subtypes of IBS have one symptom in common: abdominal pain caused by differences in the level of visceral sensitivity. Though current research on this topic is in its infancy, some researchers have proven, through experimental studies, that 5-hydroxytryptamine (serotonin) receptor type 7 (5-HT7) affects both visceral sensitivity and smooth muscle tone in the bowel. Therefore, this review will be discussing the future possibility of alleviating abdominal pain in patients with IBS and related disorders by modulating the 5-HT7 receptor

Biography

I am a licensed doctor, with more than ten years of medical experience in Sudan, Saudi Arabia and USA. Currently, I am a research fellow doctor in the field of Geriatric Medicine with the College of Human Medicine at Michigan Satae University

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Automatic stridor detection using small training set via patch-wise few-shot learning for diagnosis of multiple system atrophy

Kyungsu Kim[5,6], Jong Hyeon Ahn[1,2], Ju Hwan Lee[3,5], Chae Yeon Lim[4,5], Eun Yeon Joo[1,2], Jin Young Yoon[1,2], Myung Jin Chung[5,6] and **Jin Whan Cho[1,2]**

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Stridor is a rare but important non-motor symptom that can support the diagnosis and prediction of a worse prognosis in multiple system atrophy. Recording sounds generated during sleep by video-polysomnography is recommended for detecting stridor, but the analysis is labor-intensive and time-consuming. A method for automatic stridor detection should be developed using technologies such as artificial intelligence (AI) or machine learning. However, the rarity of stridor hinders the collection of sufficient data from diverse patients. Therefore, an AI method with high diagnostic performance should be devised to address this limitation. We propose an AI method for detecting patients with stridor by combining audio splitting and reintegration with few-shot learning for diagnosis. We used video-polysomnography data from patients with stridor (19 patients with multiple system atrophy) and without stridor (28 patients with parkinsonism and 18 patients with sleep disorders). To the best of our knowledge, this is the first study to propose a method for stridor detection and attempt the validation of few-shot learning to process medical audio signals. Even with a small training set, a substantial improvement was achieved for stridor detection, confirming the clinical utility of our method compared with similar developments. The proposed method achieved a detection accuracy above 96% using data from only eight patients with stridor for training. Performance improvements of 4-13% were achieved compared with a state-of-the-art AI baseline. Moreover, our method determined whether a patient had stridor and performed real-time localization of the corresponding audio patches, thus providing physicians with support for interpreting and efficiently employing the results of this method.

Biography

Kyungsu Kim received his B.S./M.S. degrees in electrical engineering from Seoul National University, Seoul, Korea, and his Ph.D. degree in electrical engineering from the Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, in 2019. He joined the Graduate School of Artificial Intelligence at KAIST as a postdoctoral AI/ML researcher from 2019 to 2020. From 2020 to 2022, he has been a senior AI/ML research engineer at the Medical AI Research Center, Samsung Medical Center, Seoul, Korea. From 2021 to 2023, he has been a research professor at the Sungkyunkwan University School of Medicine in Seoul, Korea. Since 2023, he has been a postdoctoral AI/ML research fellow at Massachusetts General Hospital and Harvard Medical School.

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Advances in Medicinal Chemistry and Pharmacology

Suppressing notch wear by changing the tool path in the side milling of a Ti-6Al-4V alloy

Rodrigo Henriques Lopes da Silva[1,2], Ricardo Henrique Inácio[1], Igor Cézar Pereira[3] and Amauri Hassui[1]

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[2]Department of Mechanical Engineering, Federal Technological University of Paraná, Brazil
[3]Department of Mechanical Engineering, Federal University of Ouro Preto, Brazil

Despite many advantages offered by titanium alloys compared to other conventional materials in the industry, several manufacturing challenges arise, and they are associated with titanium's mechanical, thermal, and chemical properties. As a result of these characteristics, titanium alloys are low-machinability materials. Machining path strategies have proven their influence over surface finishing, machining forces, and tool life to reduce machinability-related problems. Most studies have shown the impact of the path strategies on frontal or end milling processes, and few are related to side (tangential) milling. Finally, based on the self-propelled rotary tool (SPRT) technique, which alters the cutting tool portion during machining, this work evaluates surface finishing behavior, machining forces, and tool life using two different tool path strategies (sinusoidal and linear) on the side milling of Ti-6Al-4 V alloy. The results show that the association between an adequate tool path strategy (sinusoidal) and the cutting parameters improves surface finishing (more than 130%), decreases cutting forces (about 20%), changes tool wear mechanisms, and increases tool life significantly (4–5 times) without productivity loss. Wear mechanisms that promote notch wear were suppressed, and uniform flank wear predominated. Consequently, the sinusoidal path has brought benefits to the cutting process. It is a technology that can have great interest and is easily applicable in the industry.

Biography

Mechanical Engineer (2008) and Master in Mechanical Engineering (2010) from the Federal University of Uberlândia (UFU). Doctor (2017) from the State University of Campinas (Unicamp) with a sandwich period at the Institute for Sustainable Manufacturing at the University of Kentucky in the United States of America. Since 2010, he has been a professor at the Federal Technological University of Paraná (UTFPR), where he served as Coordinator of the Mechanical Engineering course and was a member of the Undergraduate and Professional Education Council of that University and course collegiate. Currently, he is the Assistant Coordinator of the Multicampi Master's Programme in Mechanical Engineering at the Cornélio Procópio and Ponta Grossa campuses. He works in Machining and Manufacturing Processes, developing research on process characterization, surface integrity, tool wear, and trajectory. His primary focus is on sustainable manufacturing.

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Single and combined effect of Cd and Zn on growth, metal accumulation and mineral nutrition in tobacco plants (Nicotiana tabacum L.)

Ramin Cham[1], Tahereh Moghtaderi[2], Andrés Rodríguez Seijo[3,4] and **Razieh Alamdar[5]**

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[2]Department of Earth and Environmental Sciences, Rutgers University New Jersey state, United States
[3]Área de Edafoloxía e Química Agrícola, Departamento de Bioloxía Vexetal e Ciencia do Solo, Faculdade de Ciencias, Universidade de Vigo, Spain
[4]Instituto de Agroecoloxía e Alimentación (IAA) Universidade de Vigo – Campus Auga, Spain
[5]Department of Earth Science, Science and Research Branch, Islamic Azad University, Iran

Contamination by heavy metals (HM) is a global concern due to their impact on terrestrial and aquatic environments. This question has great relevance in agricultural areas due to excessive chemical fertilization. In this sense, Cd is a toxic element that can reach agricultural soils through chemical fertilization or sewage sludges. Tobacco plants (Nicotiana tabacum L.) can uptake and accumulate Cd in their tissues, and therefore, an increased risk for human health due to tobacco consumption. This study was performed to evaluate the response of tobacco plants to a single and combined amendment of Cd and Zn on agricultural soil with a pot experiment. A factorial experiment was performed with four Cd levels (0, 25, 50 and 100 mg kg-1) and three Zn levels (0, 15 and 25 mg kg-1). Growth, Cd and Zn bioaccumulation and nutrient uptake parameters were assessed. The results revealed that during the tobacco growth, Cd was bioaccumulated on roots (translocation factor 1). Besides, the Zn amendment signifcantly decreased the Cd uptake and accumulation, especially under intermediate doses (15 mg kg-1 Zn). Zinc amendments could be helpful as a mitigation measure for Cd uptake in tobacco plants and, therefore, for health risk reduction.

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Amino acid (acyl carrier protein) ligases are linked with diverse natural product biosynthetic pathways

V. Simunovic[1] and **I. Grubisic**[2]

[1]*Natural Product Solutions, Croatia*
[2]*Ruder Boskovic Institute, Croatia*

Mortality associated with antibiotic resistant bacteria has become one of the main global health problems, calling for urgent discovery of antimicrobial agents with new modes of actions. One way of searching for novel antimicrobials is to explore microbial genomic sequences linked with genes that encode novel families of amino acid ligases. In this study we explored the involvement of novel family of amino acid (acyl carrier protein, ACP) ligases (AALs) in natural product biosynthesis. For that purpose, we analyzed the manually curated, putative, aal-associated natural product biosynthetic gene clusters (NP BGCs) using antiSMASH-BiG-SCAPE-CORASON computational platform for NP prediction and identification. The detected BGCs included a diversity of type I polyketide/nonribosomal peptide (PKS/NRPS) hybrid BGCs, exemplified by the guadinomine BGC, which suggested a dedicated function of AALs in the biosynthesis of rare (2S)-aminomalonyl-ACP extension units. AALs were also found to constitute a biochemical pathway to O-methyl nitronates, as observed in the antibiotic enteromycin carboxamide. Besides modular PKS/NRPSs and NRPSs, AAL-associated BGCs were predicted to assemble arylpolyenes, ladderane lipids, phosphonates, aminoglycosides, β-lactones, and thioamides of both nonribosomal and ribosomal origins. Additionally, we revealed a frequent association of AALs with putative, seldom observed transglutaminase-like and BtrH-like transferases of the cysteine protease superfamily, which may form larger families of ACP-dependent amide bond catalysts used in NP synthesis. Our results disclosed an exceptional chemical novelty and biosynthetic potential of the AAL-associated BGCs in NP biosynthesis. Together, the presented in silico, *in vivo* and *in vitro* evidence supports the initial hypothesis and provides an important foundation for future experimental studies aimed at discovering novel pharmaceutically relevant active compounds.

Biography

Vesna Simunović received her B.S. degree in chemistry and biology from Mercer University, USA. Following her undergraduate studies, she obtained her Master's degree in general microbiology from University of Georgia and PhD degree from University of Saarland, Germany. Dr. Simunović completed two postdoc positions at University of Zagreb, Croatia, working at the Faculty of Natural Sciences and Faculty of Pharmacy and Biochemistry. Since 2019 she is the CEO and founder of a biotech company Natural Product Solutions. Her research interests include biosynthesis of natural products in bacteria, enzymology of natural products and discovery of novel antibiotics.

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A low thermal conductivity of light weight laterite cement composites with cotton wastes fibres

Van Essa L. Kamga. Samen[1,2], Juvenal Giogetti Deutou Nemaleu[1], Rodrigue Cyriaque Kaze[1,3], Franck Docgne Kammogne[2], Pierre Meukam[2], Elie Kamseu[1,4] and **Cristina. Leonelli[4]**

[1]Local Materials Promotion Authority (MIPROMALO), Cameroon
[2]Ecole Nationale Supérieure Polytechnique, Cameroon

These recent years, the development of eco-friendly environmental and sustainable building materials aroused the interest in the scientific community. These materials can exhibit low thermal conductivity and optimal physic-chemical properties ensuring passive thermal comfort. Having said that, the major issues related to the minimization of greenhouse-gases (GHG) emission and energy needs in homes, can be tackled. Thus, to attend this objective, the present research investigates of the use of waste cotton fibres for the design of lightweight laterite-cement composites with low thermal conductivity for structural applications. The final products were first obtained by replacing the laterite cement composites with the cotton wastes fibres (0.3-0.6 wt%). Finally, the process has been completed by an uniaxial pressing of around 14 MPa (See Figure 1).

Figure 1 : *Laterite cement composite with cotton wastes fibres*

The thermo-engineering and structural properties were performed using several techniques: X-Ray Diffraction (XRD), Environmental Scanning Electron Microscope (ESEM), Fourier Transform Infrared Spectroscopy (FTIR), mechanical properties as well as the thermal conductivity. This process has yielded to an optimum (0,78 W.m-1. K-1) structural material made with 6 wt% cement, 0.6 wt% cotton fibres and a better packing density of laterites particles (50/50). The experiments showed that the increase of the cotton fibres content resulted in lowering the mechanical performances regardless of the size of the particles. This might be due to the creation of pores and the weakness adhesion between the cellulosic fibres and laterites particles within the matrix. In addition, the presence of the cellulose within a matrix which enhanced the crystallinity of cementitious phases (CASFH and CASH) of the end-products, has certainly contributed to the observed behaviour. To prove the efficiency of the proposed design the formulated samples with the reduction of around 29% of the embodied energy have also been compared to other conventional materials (Table1). Henceforth, based on the results analyses, the proposed approach appears as a promising eco-friendly composite with good thermal comfort, small-embodied energy and low environmental impact through sustainable process.

Table 1 : *Evaluation of the embodied energy of buildings materials*

Building materials	**Materials used**	**Process**	**Embodied Energy per block (MJ/block)**	**Embodied Carbon per block ($KgCO_2$/block)**	**Thermal conductivity ($W.m^{-1}.K^{-1}$)**	**Reference**
Eco material	Laterite, cotton fibers, cement, water	drying, crushing, sieving, mixing, pressing curing	**9.52**	**0,95** (Dahmen et al., 2019)	**0.78**	**The present study**
Concrete block	Cement, sand, water	drying, sieving, mixing, molding, curing	12.5	1.33 - 1.76	2.05	Habert G, Billard C, Rossi P, Chen C, Roussel N (2010) Cement and concrete research cement production technology improvement compared to factor 4 objectives. Cem Concr Res 40:820–826. https://doi.org/10.1016/j.cemconres.2009.09.031]

Fired Brick	Clay	grinding, mixing, cutting drying, firing	30 - 40	2.17 – 4.29	1.61	Dahmen J, Kim J, Ouellet-Plamondon CM (2018) Life cycle Assessment of emergent masonry blocks. J Clean Prod 171:1622–1637. https://doi.org/10.1016/j.jclepro.2017.10.044
Alkali Activate Concrete	Metakaolin, sand, water, silicate, sodium hydroxide	drying, sieving, mixing, molding, curing	21	1,03 – 2.6	1.1	-Praseeda KI, Reddy BVV, Mani M (2015) Embodied energy assessment of building materials in India using process and input – output analysis. Energy Build 86:677–686. https://doi.org/10. 1016/j.enbuild.2014.10.042 -Dahmen J, Kim J, Ouellet-Plamondon CM (2018) Life cycle Assessment of emergent masonry blocks. J Clean Prod 171:1622–1637. https://doi.org/10.1016/j.jclepro.2017.10.044

Biography

I am a Cameroonian researcher at the Local Materials Promotion Authority (MIPROMALO) under the supervision of the Ministry of the Scientific Research of Cameroon (MINRESI). I obtained a master's degree in engineering sciences in the field of energetics at the laboratory Eau, Energie, Environnement of the National Advanced School Polytechnique of Yaounde I-Cameroon. I received the PhD degree in the same field, in 2023. My research is focused on the environmental-friendly materials for building with low energy need. I received the awards of Junior researcher at the Journées d'Excellence de la Recherche Scientifique et de l'Innovation to Cameroon (JERSCIC), 2021 Edition, 5th best oral presentation at the 2nd symposium in 2021 on "Geopolymers Research and Applications" (GRA) and best scientific researcher at the MIPROMALO (2020).

PEERS ALLEY MEDIA

SCIENTIFIC ABSTRACTS

DAY 2

VIRTUAL EVENT

5th Global Summit on

Advances in Medicinal Chemistry and Pharmacology

November 06-07, 2023

ADV. MED CHEM 2023

Virtual Event

5th Global Summit on
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EDB FN targeted probes for the surgical navigation, radionuclide imaging, and therapy of thyroid cancer

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[2]Department of Nuclear Medicine, Afliated Hospital of Jiangnan University, China

Purpose: Extradomain B of fibronectin (EDB-FN) is a promising diagnostic and therapeutic biomarker for thyroid cancer (TC). Here, we identified a high-affinity EDB-FN targeted peptide named EDBp(AVRTSAD), and developed three EDBp-based probes, Cy5-PEG4-EDBp(Cy5-EDBp), [^{18}F]-NOTA-PEG4-EDBp([^{18}F]-EDBp) and [^{177}Lu]-DOTA-PEG4-EDBp ([^{177}Lu]-EDBp) for the surgical navigation, radionuclide imaging and therapy of TC.

Methods: Based on the previously identified EDB-FN targeted peptide ZD2, the optimized EDB-FN targeted peptide EDBp was identified by using the alanine scan strategy. Three EDBp-based probes, Cy5-EDBp, [^{18}F]-EDBp and [^{177}Lu]-EDBp, were developed for fluorescence imaging, positron emission tomography (PET) imaging and radiotherapy in TC tumor-bearing mice, respectively. Additionally, [^{18}F]-EDBp was evaluated in two TC patients.

Results: The binding affinity of EDBp to the EDB fragment protein (Kd = 14.4 ± 1.4 nM, n=3) was approximately 336-fold greater than that of the ZD2 (Kd = 4839.7 ± 361.7 nM, n=3). Fluorescence imaging with Cy5-EDBp facilitated the complete removal of TC tumors. [^{18}F]-EDBp PET imaging clearly delineated TC tumors, with high tumor uptake (16.43±1.008%ID/g, n=6, at 1 h postinjection). Radiotherapy with [^{177}Lu]-EDBp inhibited tumor growth and prolonged survival in TC tumor-bearing mice (survival time of different treatment groups: Saline vs. EDBp vs. ABRAXANE vs. [^{177}Lu]-EDBp = 8.00 d vs. 8.00 d vs. 11.67 d vs. 22.33 d, ***p<0.001). Importantly, the first-in-human evaluation of [^{18}F]-EDBp demonstrated that it had specific targeting properties (SUVmax value of 3.6) and safety.

Conclusion: Cy5-EDBp, [^{18}F]-EDBp and [^{177}Lu]-EDBp are promising candidates for the surgical navigation, radionuclide imaging and radionuclide therapy of TC, respectively.

Biography

Associated Professor Feng focus on tumor molecular imaging and targeted therapy. He screened and identified several peptides targeting to integrin alpha 6, EDB-FN, NRP-1 and Na+K+ ATPase α1, and translated them into tumor molecular imaging and targeted therapy. His leading project named "The Novel High Precision PET Probes Project" has begun the transition of industrialization, and he is selected as the chief operating officer(CEO) of a newly established biomedical company. He also developed a pan-KRas degrader for treatment of KRas mutant cancers and helped colleague to develop several EBV vaccine platforms for the prevention and treatment EBV associated disease.

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Deep learning enabled video steganography for macro block selection Tasmanian Devil Sail Fish optimization

Surendra Bhosale[2] and **Shamal Salunkhe**[1,2]

[1]*Ramrao Adik Institute of Technology, India*
[2]*Department of Electrical Engineering, Veermata Jijabai Technological Institute, India*

In this digital era, most of the research findings are being digitalized by electronic medium for well-organized mass storage, transformation, transfer, and easy access. The usage of digital data is more convenient to perform any task rapidly and precisely as compared to a tangible form of information. The innovations in advanced information technologies has led to rapid delivery and sharing of multimedia data like images and videos. Deep learning technique is used to develop image and video steganography and Steganalysis.

There are many fields wherein the secrecy of information is highly essential to prevent illegal access viz., Medical, Military or Intelligence communication, Personal Information System, etc. In medical applications, the biometric system is used for personal identification and allowing for authorizing access. Human biometric having physiological, behavioural, and psychological characteristics of an individual. Physiological biometric information of a human being includes face recognition, eye recognition, fingerprints, palm classification, voice recognition, vein recognition, information related to Deoxyribonucleic Acid (DNA), Magnetic Resonance Imaging (MRI), electroencephalography, electrocardiography (ECG), and other medical information about the anatomy of the patient must be secured while communicating between the medical centres.

The behavioural characteristics include different posture and gestures created by the individual human body, the different patterns of handshaking, sitting, standing, and walking style. While psychology consists of the emotions felt by human beings, majorly he/ she is medically analysed during Norco Test. All this sensitive medical information must be prevented against the public domain's leak. Video steganography is aimed to ensure enough security on the issues related to data security such as digital communication, invisible communication via digital media and copyright protection of digitized properties. Video can be considered as combination of audio and collection of still images which moves in constant time sequence. Videos are getting popular as a cover object in steganography due to high embedding payload than a digital image and temporal features of video also provide perpetual redundancy which is not available in digital images. Video steganography is a process of hiding the secret information behind video bit streams. The main goal of video steganography is to hide presence of secret message from human visual system.

Video steganography embeds message into cover contents and is used in many fields such as military communication, medical systems, law enforcement, copyright protection and access control, etc. Since human visual system are less sensitive to the small changes of digital medias, especially for digital video, video steganography is a technique which hides message into a video and conceals the fact of the transmission. Proposed TDSFO based Deep CNN model for

video steganography using effective tests and discussion conducted on various other existing techniques. It is clearly proven that the proposed model has gained best performance with superior outcomes of high PSNR of 83.9764 dB, and Correlation Coefficient of 1.0000. To reduce effect of external noise and distortion a TDSFO based DCNN model is developed for compressed domain video stream.

Proposed TDSFO-Based DCNN for Video Steganography

The requirement of hiding data from the attackers is around the world since ancient times. For maintaining the information secrecy, various techniques of hiding are evolved wherein one of them is steganography. The video steganography has become popular, because of its ability to accommodate high payload. The goal of this model is to devise an optimized model, namely TDSFO for video steganography in compressed video stream. In embedding phase, the input video attained is fed to key frame extraction, wherein the key frames of video are mined. Then, the estimation of motion is performed for mining the motion vector.

The macro-blocks is chosen using DCNN for embedding secrete image, which is trained with TDSFO algorithm. After motion-vector embedding, the bit-stream embedding is performed and then the motion compensation is performed. Then, the DCT quantization and entropy coding is performed. Finally, compressed bit-stream is derived from entropy coding process. On the other hand, in the extraction phase the compressed bit-stream is fed into decoding process, where the information is decoded. After that, embedded motion-vector extraction is carried out then followed by bit-stream extraction in order to extract the message bit. Furthermore, motion compensation is performed using the result obtained from embedded motion-vector extraction.

Dataset description: The assessment is performed with video dataset [2] [3] [4]. Here, seven videos are considered. The first video is based on news reading, which comprises 30 frames. The second video is of classroom, which contains 30 frames. The third video is of traffic area, which contains eight frames. The fourth video is of travelling, which contains 30 frames. The fifth video is of boat ride, which contains 30 frames. The sixth video is of hockey and it contains 13 frames. The seventh video is of site, which contains 30 frames. The evaluation of designed model is done with specific measures are CC and PSNR. The techniques employed for the analysis includes DWT+DCT, DCT-CNN, DTF+WT+WEWO-DeepRNN, FrWEWO-DeepCNN, and TDSFO-DCNN. [5-12]

Outcome of the developed TDSFO algorithm and its comparison with novel algorithms:

The comparative analysis of the algorithms is summarized as follows:

(a) Analysis using video-1 CC - The performance enhancement of CC with proposed model with values of 16.7478 %, 8.23063 %, 0.69615 %, 0.32639 %, and 0.04063 %. The average overall improvement in performance is 5.2083%. The performance enhancement of PSNR with proposed method with values of 106.988 %, 80.7548 %, 88.5578 %, 37.780 %, and 48.1373 %. The average overall improvement in performance is 68.44 %.

(b) Analysis using video-2 CC - The performance enhancement of CC with proposed model with values of 35.5184 %, 14.5872 %, 2.54228 %, 1.17743 %, and 0.83674 %. The average overall improvement in performance is 10.93 %. The performance enhancement of PSNR with proposed method with values of 106.5637 %, 76.3258 %, 62.4666 %, 37.7758 %, and 41.2963 %. The average overall improvement in performance is 64.8856 %.

(c) Analysis using video-3 CC - The performance enhancement of CC with proposed model with values of 40.1528 %, 10.1279 %, 2.03956 %, 1.3505 %, and 0.6196 %. The average

overall improvement in performance is 10.8581%. The performance enhancement of PSNR with proposed method with values of 108.895 %, 75.4388 %, 67.8962 %, 36.8354 %, and 42.9672 %. The average overall improvement in performance is 66.4065%.

(d) Comparative analysis using video-4 CC - The performance enhancement of CC with proposed model with values of 22.504 %, 16.2385 %, 1.6260 %, 1.2966 %, and 0.5935 %. The average overall improvement in performance is 8.4517%. The performance boost of PSNR with proposed method with values of 98.7265 %, 80.1254 %, 71.9645 %, 44.713 %, and 44.2312 %. The average overall improvement in performance is 67.9521 %.

(e) Comparative analysis using video-5 CC - The performance enhancement of CC with proposed model with values of 44.6068 %, 20.7322 %, 0.8563 %, 6.0905 %, and 0.589671 %. The average overall improvement in performance is 14.575 %. The performance enhancement of PSNR with proposed method with values of 109.063 %, 88.7166 %, 68.0369 %, 60.7486 %, and 41.1889 %. The average overall improvement in performance is 73.5508 %.

(f) Comparative analysis using video-6 CC - The performance enhancement of CC with proposed model with values of 35.152 %, 9.5369 %, 2.501287 %, 0.7283 %, and 0.9222 %. The average overall improvement in performance is 9.7682%. The performance boost of PSNR with proposed method with values of 96.8117 %, 74.994 %, 54.4097 %, 35.8503 %, and 33.48175 %. The average overall improvement in performance is 59.1095 %.

(g) Comparative analysis using video-7 CC - The performance rise of CC with proposed model with values of 33.9944 %, 9.2419 %, 3.0503 %, 1.7294 %, and 0.0103 %. The average overall improvement in performance is 9.60525 %. The performance enhancement of PSNR with proposed method with values of 95.3575 %, 90.9622 %, 83.6585 %, 48.699 %, and 58.8337 %. The average overall improvement in performance is 75.50218 %.

Biography

Surendra Bhosale is an Associate Professor in Electrical Engineering and is a Ph.D. guide. He had received his B.E. Degree in Electrical Engg. from Shivaji University, Kolhapur and M.E. Degree in Electrical from the University of Mumbai, Maharashtra. He has obtained his Ph.D. Degree in Electrical Engineering from the University of Mumbai, India.

Currently, He is an Associate Professor of Electrical Engineering Department at VJTI, Mumbai India. He has more than 35 years of teaching experience. He was Head of monitoring and evaluation cell for World Bank Project named Technical Education Quality Improvement Programme (TEQIP-2) 2011-2016.

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Safety signals of albumin-bound paclitaxel: Data mining of the Food and Drug Administration adverse event reporting system

Xiao Liu[2] and **YuWei Wang**[1]

[1]*Radiation Oncology Center, Chongqing University Cancer Hospital, China*
[2]*Department of Gastrointestinal Surgery, The Fifth People's Hospital of Chongqing, China*

Background: With the extensive application of paclitaxel for injection (albumin-bound), its adverse reactions have also received increasing attention.

Aim: This study aims to provide a reference for the safe use of albumin-bound paclitaxel in clinical practice; adverse drug events signals of albumin-bound paclitaxel were reviewed and identified by data mining of the Food and Drug Administration (FDA) adverse event reporting system (FAERS).

Methods: The reporting odds ratio method was used for the quantitative detection of signals from the data in the FDA public data program (Open FDA) from 2004 to 2019 for the albumin-bound paclitaxel.

Results: According to the Open FDA, 1659 adverse events (AEs) were identified for albumin-bound paclitaxel. AEs were mostly observed in females rather than males, aged 45–64 years. AEs involved 17 system organ classes, mainly blood and lymphatic, gastrointestinal, hepatobiliary, respiratory, thoracic, and mediastinal systems, and general AEs. Safety signals were found in 20 unexpected adverse drug reactions that are not listed on drug labels, mainly including macular edema and lymphopenia.

Conclusion: Identifying and evaluating albumin-bound paclitaxel-associated AEs signals by mining FAERS may help evaluate the safety profiles of albumin-bound paclitaxel and reduce the risk of medical treatment. In the clinical application of albumin-bound paclitaxel in addition to the adverse reactions mentioned in the drug instructions, lymphocyte changes should be paid close attention to, and eye monitoring should be conducted regularly to avoid drug withdrawal or organ damage caused by adverse reactions.

Biography

Xiao Liu, MD, attending physician, engaged in general surgery clinical work for more than 10 years. Main research interests: Minimally invasive treatment of surgical acute abdomen; Minimally invasive treatment of external abdominal hernia; Rectal and anal diseases surgery; Early diagnosis and comprehensive treatment of gastrointestinal tumors.

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Biological reconstruction of posteromedial Tibial Defect with Autogenous Bone Graft in Complex Knee Arthroplasty

Irfan Muhammad Rajput and **Muhammad Waqas Khan**

Dow University of Health Sciences Karachi, Pakistan

Purpose: We conducted this study to examine the clinical outcomes of primary total knee arthroplasty (TKA) with autogenous bone graft for a tibial bony defect with a minimum follow-up of 12 months.

Methods: A total of 21 individuals underwent primary TKA with autogenous on-lay bone grafting (ABG) for restoration of posteromedial tibial defect between January 2016 and November 2021. The patients were clinically assessed using the knee society score (KSS), varus score and range of motion (ROM) preoperatively and postoperatively to compare using a single sample t-test. Postoperative complications were also considered.

Results: KSS before and after surgery was reported to be statistically significant [mean difference = −55.32 (6.81); $P < 0.001$]. The mean KSS before surgery was 21.14 (7.03) while improved to the mean KSS after surgery of 76.45 (3.05). ROM score before and after surgery was reported to be statistically significant [mean difference = −30.45 (8.99); $P < 0.001$]. The mean ROM before surgery was 75.45 (6.71) while the improved mean ROM after surgery of 105.91 (5.03). Varus score before and after surgery was reported to be statistically significant [mean difference = 18.45 (3.75); $P < 0.001$].

Conclusion: The mechanical axis and stability of the knee were effectively restored, with significant differences in preoperative and postoperative results, indicating that this technique is a reasonable and versatile option when reconstructing moderate-to-severe bone loss in TKA.

Biography

I am Dr. Irfan Rajput, working as an Assistant Professor at Dow University of Health Sciences Karachi, Pakistan. I completed a national and international clinical fellowship in hip and knee replacement and sports medicine after completing my orthopedic residency program in 2013.

I have worked in various medical universities in Pakistan for the past 10 years, and I have more than 30 articles in indexed journals.

These days, knee preservation techniques like PRP, Stem cells, and Osteochondral autograft are my particular area of interest.

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Designing & commercialization of affordable chemically defined serum free media and feed for high value Biosimilar manufacture

Vishal G. Warke[1], Ratnesh Jain[2], Priti V. Warke[1], Gauri Page[1], Shraddha Mane[1], Mausami Bhattacharya[1], Soni Shukla[1] and **Girish B. Mahajan[1]**

[1]HiMedia Laboratories Pvt. Ltd, India
[2]Institute of Chemical Technology, India

The global chemically defined serum-free media (CDSFM) market is categorized on the basis of media type as protein expression media, hybridoma media, & Chinese hamster cell (CHO) culture media etc. The global cell culture media market in terms of revenue was estimated to be USD 4.9 billion in 2021. It is expected to reach to about USD 10 billion by 2026. The media market will grow with the expected CAGR of about 16 percent from 2021 to 2026.

With core expertise in media development & manufacture we initiated with the mission of making India self-reliant, in quality & affordable media & feed manufacturing for biosimilar manufacture & ultimately aiding in cost reduction of anti-cancer biosimilar remedies, our project was completed with part grant support from BIRAC (Biotechnology Industry Research Assistance Council). The two most needed biosimilar are, Herceptin and Avastin, and their respective producer CHO clones, were selected for optimization of CDSFM and feeds.

Starting with high throughput screening of more than 100 media combinations through DOE, at low volume scale (96 well plates), optimization experiments were performed at parallel Bioreactor scale (Capacity 1.5L), performance validation of media and feeds were further performed on large scale bioreactors (Capacity: 10L). Cutting-edge automated technologies such as liquid handling systems, biochemical analyzer, amino acid analyzer and automated cell counters were used at each step of experimentation. The Analytics team from ICT validated the Biosimilars using IgG characterization techniques such as charge variant, aggregation and glycan analysis. With continual systematic approach for media and feed development we have successfully achieved ~40% increase in the IgG titer.

A completely validated CDSFM and feed are now available in the market to Biosimilar manufacturing companies at a very affordable cost. We envisage that this would ultimately have a positive impact on reducing the cost of Biosimilars.

Biography

Dr. Vishal. G. Warke is a reputed Scientist and the Director of Cell culture & Higronics division at HiMedia Laboratories. He completed Doctorate in Cell Biology and Molecular Genetics from University of Maryland, USA after M.B.B.S from the University of Mumbai. He has been awarded the Medical Research Fellowship of The Walter Reed Army Institute of Research, USA.

As a leader of the next generation of HiMedia, he has done pioneering work in diverse areas of biosciences. He has successfully established the Animal & Plant tissue culture, and the Higronics department. He has worked on development of media for biosimilars. He has been an active member of several reputed scientific bodies.

He is well connected with premier research institutes in India & participated in several national and international conferences & exhibitions. He is an expert in cell line media & feed development with 25+ peer reviewed publications in leading journals.

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Evaluating Self-Healing Concrete with Crystalline Admixture and Metakaolin Integration

C. Sashidhar[1] and **A. Ravi Theja**[2]

[1]*Professor of Civil Engineering, JNTU College of Engineering, JNTUA, India*
[2]*Assistant Professor in SVR Engineering College, India*

This study investigates the potential of various additives to enhance the self-healing capabilities of fiber-reinforced concrete (FRC) with wide cracks. The study focuses on the incorporation of chemical substances that improve waterproofing properties and durability in harsh environments. The self-healing capabilities of FRC enhanced with crystalline admixture and metakaolin are assessed, along with their mechanical and durability performance. The study also investigates the effects of time, crack width, additional elements, and the application of through-crack stresses.

The evaluation of self-healing abilities was conducted through visual observation, image processing, and scanning electron microscopy (SEM). FTIR spectra were used to determine the self-healing mechanisms by examining the stretching vibrations of various samples and quantifying the $CaCO_3$.

The findings show that self-healing capabilities are dependent on the type of crystalline admixtures and exposure conditions. Concrete samples with crystalline admixture and metakaolin exhibited maximum self-healing efficiency, particularly when a 15% metakaolin was incorporated as a pozzolanic material under water immersion exposure conditions.

Overall, this study highlights the potential of metakaolin, as well as crystalline admixtures, in promoting self-healing properties in concrete. These materials can aid in mitigating cracks and damage, thereby enhancing the longevity and durability of concrete structures.

Biography

Dr. C.Sashidhar is in faculty of Civil Engineering, since 1999, in Jawaharlal Nehru Technological University, Hyderabad, and he has worked in its constituent college, viz., JNTU College of Engineering, Anantapur. Presently, he is Director ICS, JNT University Ananatapur. He has taught 12 subjects to undergraduate and postgraduate students. He had implemented AICTE project 'MODROBS' on "Concrete Laboratory" in Civil Engineering Dept., of JNTU College of Engineering, Anantapur. Dr. Sashidhar is active in research since 2005 onwards in the areas of Concretes and Special Concrete. He has 34 research publications in International Journals and 5 National Journals, in addition, 19 publications in International conference proceedings and 12 in National Conference proceedings. He has successfully supervised 12 Ph.D. theses. Presently, 8 research scholars are working under his supervision. He is active in Professional societies, viz., ISTE & IEI.

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CCND1 amplification in pancreatic ductal and ampullary adenocarcinoma and its impact on patients' survival: A single centre observational study

Chakraborty Shuchismita and **Ghosh Shibajyoti**

Medical College and Hospital, India

Background: Studies conducted worldwide in the last few decades have demonstrated that, various high and low frequency inherited and somatic mutations play important roles in the pathogenesis of periampullary carcinoma. Owing to relatively inaccessible location and lack of specific early diagnostic signs, majority of periampullary tumours are difficult to manage. Limited chemotherapeutic options that are available are highly toxic and not very efficacious. CyclinD1, if found to be amplified in these malignancies, might become an important gene to be targeted for monoclonal antibody therapy.

Objectives: To find any relationship of CCND1 amplification and impact of clinicopathological parameters of pancreatic ductal and periampullary carcinoma.

Methodology: An analytical retrospective-prospective study was done on 35 patients of operable periampullary carcinoma, in Medical College, Kolkata from January 2019 to July 2020. After isolating DNA from tumour and corresponding normal tissue by Qiagen DNEasy kit, CyclinD1 amplification was assessed by RT-PCR using Taqman DNA copy number in the laboratory of Indian Statistical Institute. Survival analysis was done by Kaplan-Meier estimator and all statistical calculations performed through SPSS software.

Results: 6 (17%) out of 35 patients were found to have >2 fold amplifications of CyclinD1 gene. However, no positive correlation was found between CyclinD1 amplification and overall survival of the patients (p value 0.21) (Figure1).

Conclusion: Positive correlation was not found in our study between CCND1 amplification and periampullary malignancy. However, in a single large study conducted in Japan by Yamazaki showed reduced survival and higher metastasis in CyclinD1 positive periampullary carcinoma. So there is reasonable scope in future for large scale population based studies to establish similar association in our subcontinent as well.

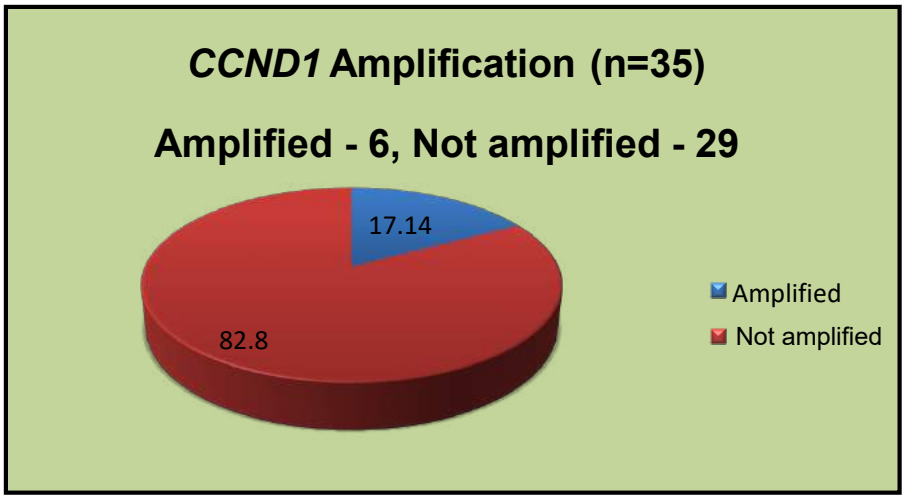

Figure1: Distribution of the Study Population According to the Status of Amplification of CCND1

Correlations		
Parameters		***CCND1* Amplification**
Lymph Node Status	Pearson Correlation	.178
	Sig. (2-tailed)	**.330**
	N	32
Stage of Disease	Pearson Correlation	.109
	Sig. (2-tailed)	**.553**
	N	34
Grade of Tumor	Pearson Correlation	-.387
	Sig. (2-tailed)	**.608**
	N	35
Correlation is significant at the 0.01 level (2-tailed)		

Table1: Correlation of Histopathological Parameters with CCND1 Amplification

Biography

PERSONAL PROFILE :

- FATHER'S NAME : Mr. Sunil Chakraborty
- MOTHER'S NAME : Mrs. Ratnasri Chakraborty
- DATE OF BIRTH : 20th March , 1993
- LANGUAGES KNOWN : Bengali, English, Hindi
- HOBBIES : Singing, Dancing, Knitting, Travelling

OBJECTIVES OF LIFE :

- To Become A Skilled And Compassionate Surgeon
- To Be A Good Human Being

QUALIFICATIONS:

- •MADHYAMIK (WBBSE, 2009) : 92.12%
- •HIGHER SECONDARY (WBBHSE, 2011) : 91.4%
- •M.B.B.S (MEDICAL COLLEGE, KOLKATA – WBUHS, 2016) – 73.8%
- •M.S GENERAL SURGERY (MEDICAL COLLEGE AND HOSPITAL, KOLKATA, 2021) – 64.6%
- •DNB GENERAL SURGERY – 64% (Theory), 78% (Practical)

AWARDS :

- ABSICON Poster Presentation in SASICME 2019: 2nd Prize
- Video Presentation in SASICME 2019: 1st Prize
- Competitive Poster Presentation at ASICON 2020: 1st Prize
- Prof Gargi Banerjee Memorial Award for Best Resident in Medical College Kolkata 2021
- Paper Presentation at ASICON 2021 (Dr. C. Palanivelu Best PG Papers) : 1st Prize
- ABSICON Young Surgeon's Award for Paper Presentation in SASICON 2022 : 3rd Prize

PRESENTATION AT INTERNATIONAL CONFERENCE :

- Poster Presentation at NCCN 2022 Annual Conference (Virtual): "CCND1 Amplification in Periampullary Carcinoma: Impact on Patients' Survival"

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Visual content generation from textual description

Varsha Singh

Indian Institute of Information Technology Allahabad, India

In this, we discuss about an improved adversarial network for visual content generation from textual description. Synthesizing high-quality images from the textual description is the most challenging problem in Computer vision. Existing methods first generate the initial image sketch and then refine that to fine-grained details at different portions of that image. Mostly available text-to-image generation methods and approaches nearly reflect the meaning of a given text description. But have not successfully generated details and different parts of the objects as these methods depend on: the initially generated image. If the initial image is not generated correctly, the process fails to generate the fine-grained image with details. Second, according to the image's content, each word has a different level of importance; however, similar text representation is used even for different image contents. Here, an improved Adversarial Network based on hyper-parameter optimization to generate fine-grained images is proposed. Inception Score (IS), t-Distributed Stochastic Neighbor Embedding (TSNE) and R-precision as a metric is used to automatically evaluate and refine the initial image. An attention mechanism is used to pay attention to more valuable words of text description to generate more refined sub-parts of the image. An attentional module is used to calculate the matching loss of image-text for generator training. The proposed model has been evaluated on the Caltech-UCSD Birds 200 dataset. Results using the Inception score, R-precision, and TSNE matrix show the model performs favorably against state-of-the-art approaches ATT-GAN and DM-GAN, improving by 25.72% and 19.37% respectively in terms of Inception score.

Biography

Varsha Singh is Research Scholar at Indian Institute of Information Technology Allahabad, Prayagraj, India, in the Department of Information Technology. She has completed her B. Tech. in Computer Science and Engineering from Meerut Institute of Engineering and Technology, Uttar Pradesh Technical University, Lucknow, in 2005 and M. Tech. in Computer Science and Engineering with specialization in Artificial Intelligence from Noida Institute of Engineering and Technology, Uttar Pradesh Technical University, Lucknow, in 2011. She has also served as an Assistant Professor in JSS Academy of Technical Education, Noida for twelve years. Her research interests includes Artificial Intelligence, Computer Vision, Natural Language Processing and Fuzzy Logic. She is a member of IACSIT, Singapore and IEEE.

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Advance drug delivery model to treat diseased tissues using reversible electroporation

Nilay Mondal[1] and **D. C. Dalal**[2]

[1]*Department of Mathematics, The ICFAI University Tripura, India*
[2]*Department of Mathematics, IIT Guwahati, India*

One of the major challenges is to deliver the desired amount of drugs into the diseased tissues. Drug delivery through electroporation could be highly beneficial for the treatment of different types of diseased tissues within the human body. In this work, a mathematical model of reversible tissue electroporation is presented for injecting drugs into the targeted tissue that requires treatment. The model emphasizes the tissue boundary where the drug is injected as a point source. Drug loss from the tissue boundaries through extracellular space is also studied. Multiple pulses are applied to deliver a sufficient amount of drug into the targeted cells. The set of differential equations that model the physical circumstances are solved numerically. This model obtains a mass transfer coefficient in terms of pore fraction coefficient and drug permeability. It controls the drug transport from extracellular to intracellular space. The drug penetration throughout the tissue is captured for the application of different pulses. The boundary effects on drug concentration are highlighted in this study. The advocated model is able to perform homogeneous drug transport into the cells so that the affected tissue is treated completely. This model can be applied to optimize clinical experiments by avoiding lengthy and costly *in vivo* and *in vitro* experiments.

Biography

I (Dr. Nilay Mondal) am an Assistant Professor in the Department of Mathematics, Faculty of Science and Technology, The ICFAI University Tripura, India. I completed my Ph.D. in Mathematics from IIT Guwahati, Assam, India in 2022. I did M.Sc. in Mathematics from Visva Bharati, West Bengal in 2013 and B.Sc. (Hons.) in Mathematics from Ramananda College under the University of Burdwan, India in 2011. My board research areas are Mathematical Modelling and Computational Fluid Dynamics. Currently, I am working in Drug Delivery, Tissue Electroporation, Membrane Permeabilization and Heat & Mass Transport. In this area of research, I deal with mathematical models for the application of drug delivery and solve them with numerical simulation. I use numerical schemes based on the finite difference or finite volume methods. I use C-programming, Matlab, and Tecplot to solve the model equations and plot results.

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Sleep deprivation and sleep disorders

Sagar Santaji

KLS Gogte Institute of Technology,India

Sleep deprivation refers to a condition where an individual consistently fails to get enough sleep to meet their physiological and psychological needs. It can result from various factors, including lifestyle choices, work schedules, medical conditions, and sleep disorders. Chronic sleep deprivation can lead to a range of negative effects on physical, mental, and emotional health. Symptoms of sleep deprivation may include excessive daytime sleepiness, fatigue, difficulty concentrating, irritability, mood swings, memory problems, and impaired performance. It can have adverse effects on cognitive functions such as attention, memory, decision-making, and problem-solving abilities.

Sleep disorders are a group of conditions characterized by disturbances in the normal sleep patterns, duration, quality, or timing. They can affect the ability to fall asleep, stay asleep, or experience restorative sleep. Common types of sleep disorders include insomnia, sleep apnea, narcolepsy, restless legs syndrome (RLS), and circadian rhythm disorders. Insomnia involves difficulty falling asleep, staying asleep, or experiencing non-restorative sleep, and it can be caused by various factors such as stress, anxiety, depression, medications, or underlying medical conditions. Sleep apnea is a disorder characterized by interrupted breathing during sleep, leading to recurrent awakenings and poor sleep quality. It can result in excessive daytime sleepiness, loud snoring, and increased risk of cardiovascular problems.

Biography

Dr. Sagar Santaji, B.E in Electronics and Communication Engineering, M.Tech in Digital Communication Networking, Ph.D in Bio Medical Signal Processing.

Work/Recognition/Achievements

1. Best Project award for "Sleep Classification Using Machine Learning" by Karnataka State Science Council and Technology in 2019
2. Research Collaboration with University of Toronto, Canada
3. Research Collaboration with University of Tennessee, USA
4. Published 7 papers in peer reviewed Journals on the topic Bio Medical Signal Processing, Machine Learning

Subject Expertise:

Digital Communication, Information Theory, Wireless Communication, Sensor Networks

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Has the pectoralis major flap really become obsolete?

Arpan Choudhury, Murtuza I. Laxmidhar and **Neelam Ahirwar**

Department of Surgical Oncology, Apollo Hospitals, India

Introduction: Pectoralis major (PM) flap has historically been the workhorse in head and neck reconstruction. However, micro vascular free flaps are now the gold standard. Even at our institution at Apollo Hospital, Ahmedabad free flaps are the preferred method of reconstruction. But some patients still undergo PM flap reconstruction. In this study we evaluated the current role of PM flap including the reasons for selecting it.

Materials and methods: All patients who underwent PM flap from January 2020 to December 2022 were included. Patient demographics, tumour characteristics and complications studied and reasons for selecting pectoralis major flap analyzed. Data was entered in Microsoft excel and analyzed using online statistical calculators. p value of <0.05 was considered statistically significant.

Results: 57 patients underwent reconstruction with PM flap while 154 underwent free flap (Figure: 1). 54 were male and 3 females. Median age was 51 years. PM flap was used for intraoral lining in 25 patients and it was bilobed in 26 patients. Most common complication was wound infection in 10 patients. 5 patients developed marginal necrosis of flap and 5 had donor site wound dehiscence. No complete flap loss was seen. During the same period, 15/154 (9.74%) patients with free flaps developed complete flap necrosis and this was statistically significant (p=0.012) (Table: 1). Reasons for choosing PM flap were also analyzed. 14 patients had major comorbidities, 18 had extensive disease, in 5 patients it was used for salvage post free flap failure, while 10 previously treated patients had unavailability of suitable vessels for anastomosis. 12 patients underwent PM flap due to financial constraints.

Conclusion: PM flap does not outscore free flap by any means but there are still certain situations where we may have to choose PM flap. Thus, PM flap is not obsolete and continues to maintain its place in head and neck reconstruction.

Figure 1: Reconstruction Method

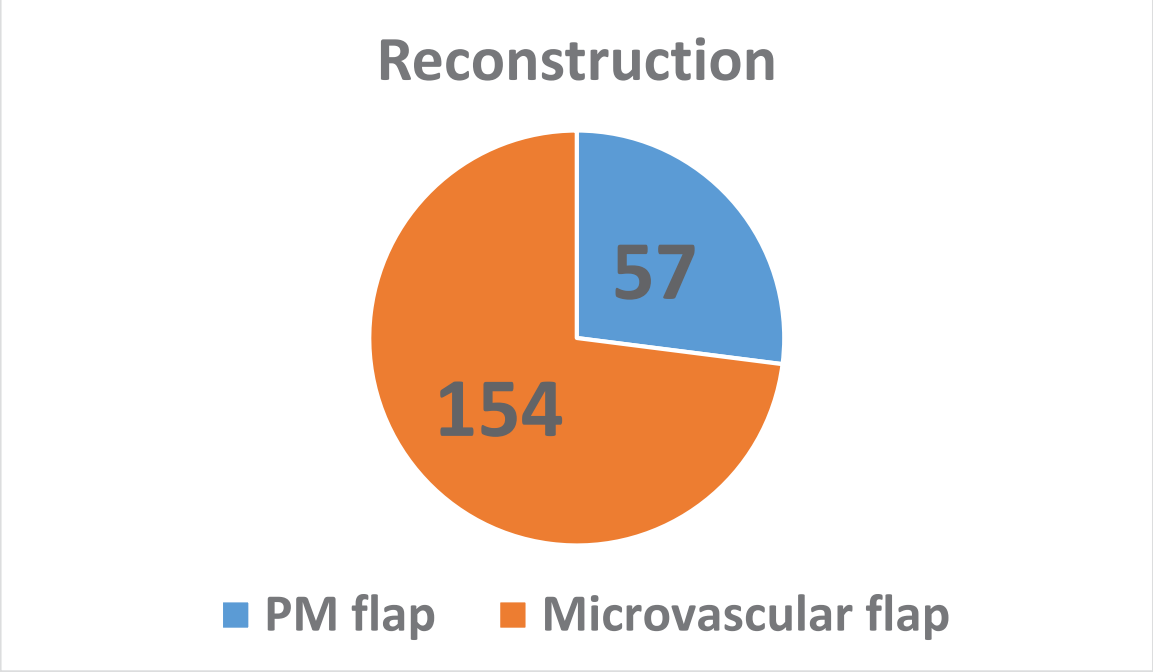

Table 1: Difference in complete flap loss

	Complete flap loss	No or partial flap loss	p-value
PM flaps	0	57	0.012 (S)
Free flaps	15	139	

Biography

A dedicated Cancer Surgeon with nearly a decade of experience in the field of Surgery. Passed MBBS from Assam Medical College, MS in Surgery from Gauhati Medical College and DrNB in Surgical Oncology from Apollo Hospitals Ahmedabad. Worked as Senior Registrar in Surgical Oncology at Apollo Hospitals Ahmedabad with special interest in Cancer Prevention & Research.

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H-Type Hypertension: Genetic Insights, Metabolic Syndrome Links, and CAD Risk in Lacto-Vegetarian Community

Priyanka Rani Garg[1] and **K.N. Saraswathy**[2]

[1] *Ex-scholar, Department of Anthropology, University of Delhi, India*
[2]*Department of Anthropology, University of Delhi, India*

H-Type Hypertension is a distinct form of hypertension characterized by elevated blood pressure and high levels of homocysteine. This abstract summarizes a study conducted to investigate the association of H-Type Hypertension with metabolic syndrome (MetS) and an elevated risk for coronary artery disease (CAD) among lacto-vegetarian individuals in an Indian community, with a specific focus on the genetic risk associated with the T allele.

The study included a sample of approximately 1500 individuals from an Indian community who followed a lacto-vegetarian diet. Detailed clinical evaluations, including blood pressure measurements, lipid profiles, and fasting glucose levels, were conducted to assess the presence of H-Type Hypertension and MetS. Additionally, participants underwent cardiac evaluations, such as electrocardiograms and stress tests, to identify the presence of CAD. Genotyping was performed to analyze the association between H-Type Hypertension and the T allele.

The findings of the study revealed a significant association between H-Type Hypertension and MetS in lacto-vegetarian individuals. MetS components, including central obesity, dyslipidemia, and hyperglycemia were more prevalent in individuals with H-Type Hypertension compared to those without with elevated risk for those with CAD. Furthermore, the study identified a higher risk of developing H-Type Hypertension among individuals carrying the T allele. The T allele, located in a specific genetic locus, was associated with an increased susceptibility to H-Type Hypertension ($p<0.05$). This finding suggests a potential genetic predisposition for H-Type Hypertension in the lacto-vegetarian population studied.

These findings highlight the importance of recognizing H-Type Hypertension as a distinct subtype of hypertension and its association with MetS and CAD. Moreover, the identification of a genetic risk associated with the T allele emphasizes the need for personalized preventive strategies targeting lacto-vegetarian individuals who carry this allele.

In conclusion, this study provides valuable insights into the association between H-Type Hypertension, MetS, CAD, and genetic susceptibility in a lacto-vegetarian population. The results underscore the significance of early detection, management, and genetic profiling in individuals at risk for H-Type Hypertension, particularly those carrying the T allele. Future research should focus on elucidating the underlying mechanisms and exploring potential interventions to mitigate the adverse health outcomes associated with H-Type Hypertension.

Biography

Dr. Priyanka Rani Garg is an Anthropologist with a Ph.D. in Biological Anthropology from the University of Delhi and a national-level Research Fellowship awardee (UGC-NET-JRF). She has expertise in conducting implementation research, evidence-building, monitoring & evaluation of programs, and interventions at social, clinical, and public health interfaces in the fields of Non-communicable and communicable diseases, and Sexual and Reproductive Health and Rights of adolescents, young people, and Key populations.

She is currently leading and implementing projects in the areas of RMNCH+A for prestigious organizations such as the World Health Organization and the Department of Biotechnology. She has been instrumental in carrying out mobile health application-based interventions and research, nationally and in South-Asian countries such as Cambodia. Her rich experience in her field is also evident from the significant number of quality research papers that she has authored and co-authored.

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Tribological parameters optimization of AZ31-SiC composite using whale optimization algorithm

Kishor Kumar Kothuri

Gudlavalleru Engineering College, India

In this paper, a Whale Optimization Algorithm (WOA) is proposed for the optimization of tribological parameters of AZ31-SiC metal matrix composite. Experiments were carried out by the surface of pin with the different loads of 10, 20, 30 N, velocities of 0.5, 1.0, 1.5 m s21 and sliding distances of 500 m, 750 m, 1000 m respectively for optimization. The equations derived from the regression analysis are considered as objective functions to find the optimal parameters of wear and coefficients of friction (COF) using WOA. Considering these objective functions, the WOA is used to optimize the tribological parameters. The optimized parameters obtained from the WOA are compared with the parameters derived from PSO, DE, FFA and experimental results. The optimum wear values obtained from WOA, PSO, DE, FFA and experiment results are 3.55, 3.63, 3.60, 3.57 and 3.77 mg respectively. The optimum values of COF obtained from WOA, PSO, DE, FFA and experiment results are 0.311, 0.313, 0.314, 0.312, and 0.33 respectively. The optimum wear values obtained from WOA, PSO, DE and FFA are 6.01, 3.89, 4.69, 5.48% lower than the experimental value. The optimum COF values obtained from WOA, PSO, DE and FFA are 5.76, 5.15, 4.85, 5.45% lower than the experimental value. It is evidence from the results that WOA has provided the best wear and COF values for AZ31-SiC metal matrix composite when compared to other methods. This proposed method reduces the time and effort of the manufacturer to use the composite material in an application with the optimum operating condition for more life. The microstructural SEM micrographs reveal the distribution of reinforcement in the composite. The SEM micrographs of worn-out surfaces present various wear mechanisms of the composites under variety of operating conditions.

Biography

Dr. K. Ch. Kishor Kumar is a Professor in the Department of Mechanical Engineering, Seshadri Rao Gudlvalleru Engineering College. He has been working in the college since 1999 with 24 years of experience in Teaching, Research and Consultancy. He graduated from KLCE, Vijayawada. He did Master's and Ph.D from Jawaharlal Nehru Technological University Kakinada, Kakinada. His area of interest is the characterization of composite materials, modeling and optimization of tribological parameters of composites. He has published 25 papers in international journals and presented 8 papers at various conferences including five SCI publications. He is a Reviewer for silicon (Springer) journal and an editorial board member for another 5 journals. He has published one patent. He has received "Best Researcher Award" by ITSR Foundation, Rajasthan in 2023. He was the Editor - in - Chief for "International Journal of Composite Materials and Matrices". He has completed two In-house R&D projects sponsored by Gudlavalleru Engineering College.

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Evaluating the effect of measurement error under randomized response techniques of the sensitive variable in successive sampling

Pidugu Trisandhya[2], Kumari Priyanka[1] and **Ajay Kumar[3]**

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[2]Department of Applied Sciences, Bharati Vidyapeeth's College of Engineering, India
[3]Department of Mathematics, University of Delhi, India

In the present work, we estimate sensitive population mean at current occasion in presence of measurement error at both occasions in two occasion successive sampling. Compulsory and optional randomized response technique have been fused with calibration technique at both occasions. Responses are recorded with measurement error. Asymptotic properties of estimators are derived. The variances of the proposed estimators are also obtained upto first order of approximation under both the models. Mutual comparison of compulsory and optional randomized response technique is carried out in presence of measurement error. To show the impact of measurement error, the estimators are compared with similar direct estimators. A natural population related to COVID-19 infection has been considered to validate the theoretical findings. Further, simulation study is aided to show the practicability of the proposed estimators.

Biography

Dr Pidugu Trisandhya was awarded a PhD degree on February, 2022 and at present she is working as an Assistant Professor of Mathematics at Department of Applied Sciences, Bharati Vidyapeeth's College of Engineering (BVCOE), New Delhi, India. Her research interests are Sampling theory, Statistical Inference, Sensitive estimation theory and Theoretical & Computational Data Science. Dr P.Trisandhya has published 13 research papers in peer reviewed international journals of repute and participated in many International conferences/ seminars.

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Atypical Rasmussen's encephalitis presenting as focal status epilepticus and periodic generalised myoclonus

Fazala Mehnaz[2], Pavan Kumar Rudrahhatla[1] and **Srinivas Metta[3]**

[1]Department of Neurology, Apollo Hospitals, India
[2]Department of Pediatrics. Apollo Hospitals, India
[3]Department of Radiology, Apollo Hospitals, India

Introduction: Rasmussen's encephalitis (RE) is a rare chronic neurological disorder, first described by Theodore Rasmussen, a neurosurgeon, and his colleagues in the late 1950s [I]. RE is characterized by inflammation of the cerebral cortex, drug-resistant epilepsy, and progressive neurological and cognitive deterioration. The 2005 European consensus on pathogenesis, diagnosis, and treatment remains the accepted guideline for RE [2]. We report an atypical presentation of RE with new onset focal status epilepticus and generalized myoclonus.

Case description: A 7-year-old boy presented to emergency room with new onset seizures amounting to focal Status epilepticus. He was born out of a non-consanguineous parentage, term delivery without any perinatal insult; there was mild language developmental delay and hyperactivity. A day before presentation, he had rhinitis and cough, without fever. There was no family history of epilepsy or developmental delay. Seizures were of left hemispheric semiology with clonic jerking of right upper and lower limbs, and right sided facial twitching. He was given loading dose of intravenous (IV) phenytoin (PHT) elsewhere, but seizures persisted with no improvement in sensorium between the events. In the emergency room he was given loading dose (25 mg/kg) of IV sodium valproate (VPA), later was intubated. and started on midazolam infusion (0.1 mg/kg IV bolus followed by 0.125 mg/kg/h infusion) in view of refractory seizures. Upon shifting to the intensive care unit, he was noted to have periodic generalised myoclonus and electroencephalogram (EEG) showed generalised slowing with variable interval generalised periodic discharges (Fig. IA) corresponding with the myoclonus. These episodes resolved after a loading dose (30 mg/kg) of IV levetiracetam (LEV) following which, midazolam infusion and split doses Of IV VPA and LEV were continued.

Etiological possibilities considered were viral encephalitis, autoimmune encephalitis, Rasmussen's encephalitis, and structural pathology involving the left frontal and perisylvian regions; IV acyclovir (15 mg/kg TID) was started. Routine blood investigations including blood counts, electrolytes, blood sugar. liver and kidney function tests were essentially normal except for neutrophilic leucocytosis. Cerebrospinal fluid (CSF) analysis showed normal protein (45 mg/dL) and glucose (69 mg/dL) values, and cytology (l cell/pl„, 100% lymphocytes). His MRI brain showed atrophy of the left hemisphere and curvilinear gliosis in insular, temporal, and frontal gyri along with non-specific T2/FLAIR hyperintensities suggestive of post-ictal gyral oedema (Fig. IC—F). As the seizure semiology and imaging findings were in favour Of RE, the patient was initiated on intravenous immunoglobulin (IVIG) on the 2nd day Of admission; also, EEG on the 2nd day showed left hemispheric slowing (Fig. 1B).

The patient was seizure free and was extubated on day-2 of IVIG. Neurological examination was normal, there was no weakness or spasticity of right upper and lower limbs. CSF analysis was negative for viral encephalitis (adenovirus, enterovirus, EBV, HHV-7, HPV, parvo B19, HSV-I & 2, VZV RT-PCR), autoimmune cephalitis (Anti-NMDA, AMPA. GABA-B. I-CGI-I, CASPR2 antibodies), and measles lgG antibody: no increase in CSF lgG synthesis was noted (immunoglobulin synthesis index was 0.22). He was discharged on day-5 on oral VPA (25 mg/kg/day) and LEV (30 mg/kg/day) and was planned for maintenance immunomodulation with IVIG and systemic steroids; he was seizure-free without any neurological deficits at I month follow-up.

Discussion: Rasmussen's encephalitis is a sporadic, immune mediated epileptic encephalopathy of suggested viral a etiology. The three stages Of RE include a 'prodromal stage' with relatively low frequency seizures, an 'acute stage' with frequent focal motor seizures (with preserved awareness)

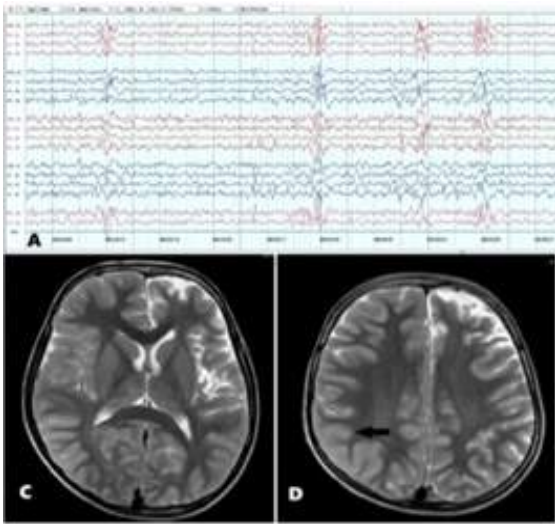
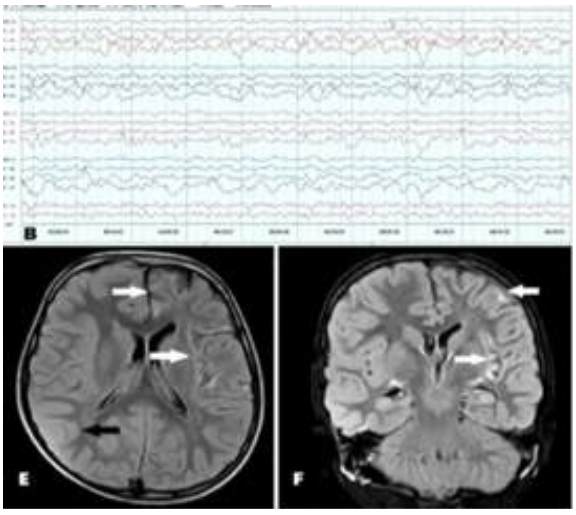


Fig. I EEG shows (A) periodic generaliscd bursts lasting 0.5—1 s comprised of sharps and slow waves with variable inter-discharge interval and (B) left hemispheric slowing; Itime base: 15 mm's (A) and 30 mm/s gain: 7.5 11V/mm. high-frequency tilter: 70 H'.



low-frequency filter: 1 MRI brain (C. D) axial (E) axial FLAIR and (F) coronal FLAIR images show left hemispheric atrophy, (D, E) right parietal gyral oedema (black arrows) and (E, F) left insular. frontal and temporal gliosis (white arrows)

often in the form of epilepsia partialis continua (EPC), progressive hemiparesis and the 'residual stage' with permanent/stable neurological deficits and drug refractory seizures, although less frequent than in the acute stage [2]. Bien et al., has pmposed the sequential staging of MRI features in RE ranging from stage O to 4 [3]. A study from southern India, showed that simple partial seizures/EPC are the most common seizure type followed by complex partial seizures in patients with RE; recurrent convulsive Status epilepticus was noted in 42.1%141. Mgjority Of the patients belonged to MRI stage3 (78.9%) or stage 4 (15.7%) of Bien classification [3.4]. According to the European consensus criteria [2], RE can be diagnosed if either all three criteria Of Part A or two out of thæe criteria of Pan B are present. Part A criteria include (i) focal seizures with or without EPC. (ii) unihemipheric slowing with or without epileptilörm activity, (iii) unihemispheric focal cortical atrophy with hyperintense signal in white/grey matter or caudate nucleus. If a patient fails to fulfil the criteria Of Part A, the criteria Of Part B should be checked which include (i) EPC or Progressive unilateral cortical deficits, (ii) progressive unihemispheric focal cortical atrophy, (iii) histopathology showing T-cell dominated encephalitis with activated microglial cells and reactive astrogliosis. Part A criteria are characteristic of early cases whereas part B tries to cover residual/burnt out cases and less common forms of RE as well.

Reported atypical presentations of RE include late onset seizures, movement disorder like hemidystonia or hemichorea, periodic spasms [2, 5, 6]. Our patient presented with focal status epilepticus at onset followed by periodic generalised myoclonus with corresponding eneralised bursts on EEG (Fig. IA), which has not yet been described to the best of our knowledge in RE. Generalised EEG abnormalities and seizure types have been reported in children with early focal brain lesions (25% in a series) 171. It is hypothesized that the plasticity of the brain at this age may lead to increased synchrony and generalized epilepsy. MRI findings were of stage 3 with left hemispheric atrophy and hyperintense signals and EEG showed left hemispheric slowing. Satisfying the European consensus criteria (Part-A) for the diagnosis of RE [2]. Atypical presentations Of RE are extremely rare considering the rarity of RE itself, which can result in erroneous diagnosis and treatment delay. The typical seizure semiology, imaging and EEG findings helped us in the promptdiagnosis and management of our patient. Comprehensive knowledge of this rare and disabling entity is of paramount importance to initiate early immunotherapy, improving quality)' of life and reducing morbidity and mortality.

Dr Fazala Mehnaz joined Apollo Hospital in 2018. She had been working in the paediatric and neonatal Units since 2011 while her training in UK. She realised early in her training that the tiny babies in NICU had an unbreakable hold on her heart. Her research interests are focussed on the rare genetic syndromes in children. Dr Mehnaz is married to Dr Abdul D Khan who is a renowned Orthopaedic Surgeon trained in the UK and is blessed with 3 children. She appreciates the opportunity to provide the highest care to her patients and their families.

Biography

Education:	MBBS (DCMS, Hyderabad, India)
Postgraduation:	DCH (Royal College of Paediatrics & Child Health, London, UK)
	PGC (PEM) (Paediatric Emergency Medicine, University of Edinburgh, UK)
Fellowship:	Neonatology (Saint Mary's Hospital, Manchester, UK)
Additional Qualification:	MCHA (Hospital administration, Medvarsity, India)

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Technology enabled communication during COVID 19: Analysis of tweets from top ten Indian IT companies using NVIVO

Swati Chawla

Amity Business School, Amity University, India

The corona virus (COVID-19) pandemic has impacted industries across the globe. Lockdown was imposed to curb the spread of the deadly virus. This resulted in closure of the factories and manufacturing units. Few sec- tors switched to work from home (WFH) for the first time. The present study aims to understand and analyze the way in which Information Technology (IT) sector communicated on Twitter during the pandemic. The top ten IT companies in India were selected on the basis of net sales. Qualitative data analysis was employed to extract tweets, understand and analyze them. Tweets were extracted from the official Twitter handles of these top ten IT companies using N-Capture extension tool of NVivo 12 software from April 1, 2020 to April 30, 2021. To get insights out of collected data, Word Cloud, TreeMap and Sentiment Analysis of tweets were carried out using NVivo 12 software. The research found that IT companies focused on digital transformation, business development, customer satisfaction and enriching customer experience, new product development for healthcare and insurance and organizational resilience. They also focused on effective communication through Twitter in times of crisis. Most of the companies tweeted moderately positive. Very small numbers of tweets were found to be very negative.

Biography

Ms. Swati Chawla is a research scholar, pursuing Ph.D in Management from Amity Business School, Amity University, Uttar Pradesh, Noida. She is working as an Assistant Professor of Management at the Management Education and Research Institute (MERI College), Janakpuri, New Delhi affiliated with Guru Gobind Singh Indraprastha University (GGSIPU), India. She has a demonstrated history of working in the education sector for more than 12 years. She did her Bachelor of Arts in Mathematics from Janki Devi Memorial College, Delhi University (2004-2007). Then she completed her Post Graduate Diploma in Management (Approved by AICTE, Ministry of HRD, Govt. of India) with a dual specialization in HR and Marketing (2007-2009) from Management Education and Research Institute (MERI College), Janakpuri, New Delhi campus. She has worked with renowned educational institutions namely Career Launcher, The International Institute of Planning and Management (IIPM) and Jagan Institute of Management Studies (JIMS). Her area of specializations are Human Resource Management and Organization Behaviour. Her areas of interest are Organizational Citizenship Behaviour and Employee Engagement. She is skilled in Digital Marketing and Trend Analysis. She has successfully administered PDP Sessions, T& D Sessions, Mock Campus Drive Training Sessions, and Career Development Sessions at several institutions. She has attended and participated in various seminars, conferences & workshops and has presented papers. She has articles/papers /book chapters published in Scopus, Web of Science and UGC-Care indexed National as well as International Journals to her credit.

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Anti-tumour activity of Osthole from whole plants of *Luisia tenuifolia* Blume in A431 squamous skin carcinoma cell lines and its possible mechanisms

Sethuraman Sakthi Priyadarsini and **Pathangi Ramachandran Kumar**

Department of Pharmacognosy, SRM College of Pharmacy, Faculty of Medicine and Health Sciences, SRM Institute of Science & Technology, India

Luisia tenuifolia Blume (Orchidaceae), an epiphytic orchid is common along the Western Ghats at an altitude of 900 m. The whole plants are traditionally used to treat boils, abscess and tumors. Our previous studies recorded the pharmacognostical, phytochemical and *in-vitro* cytotoxic effect of successive extracts in skin cancer cell line. With an inquisitiveness to determine the active compound(s) present in the ethanol extract of *Luisia tenuifolia Blume,* we directed our research upon column chromatographic separation and characterization using spectroscopical studies. The ethanol extract of Luisia tenuifolia Blume yielded osthole, a coumarin compound. To the best of our knowledge, this is the first report of this phytocompound in *Luisia tenuifolia Blume*.

In the process of our investigation on the isolated bioactive compound, we further studied the anticancer effect of the isolated compounds against squamous cell carcinoma cell line, A431 cultured *in vitro*. Further, the effects of osthole on the cell cycle was determined by flow cytometry, apoptosis activity were assessed by flow cytometry and Annexin V-Propidium iodide staining and the protein expression levels of B-cell lymphoma 2 (Bcl-2), Bcl-2-associated X protein (BAX), caspase-9 and caspase-3 were evaluated by western blotting. The results revealed that osthole exhibited promising cytotoxic effect in A431 squamous cell carcinoma cell line through cell cycle arrest, apoptotic induction and increased Bax/Bcl-2 ratio, caspase-3 and caspase-9 levels. Thus the study validates the traditional claims of *Luisia tenuifolia Blume* and osthole can be the bioactive constituent responsible for the skin cancer activity.

Biography

Dr. Sakthi Priyadarsini Sethuraman is currently working as an Assistant Professor – Grade 1 in the Department of Pharmacognosy, SRM College of Pharmacy, SRM Institute of Science and Technology, Tamil Nadu, India. After her B.Pharm, she has worked as an Eye Camp Coordinator and later as a Hospital Counsellor at Dr. Agarwal's Eye Hospital, Ashok Nagar, Chennai. She has also worked as Research Analyst, in the Experimental Pharmacology Division at Clarivate Analytics (Formerly Thomson Reuters), Mylapore, Chennai, India in 2016. She has published 25 research papers in various National and International journals to her credit. Her research interests include anti-cancer and anti-diabetic screening of medicinal plants, and isolation and characterization of secondary metabolites in epiphytic orchids.

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Bi Attempted base optimization algorithm on hydrosystem optimization problems

Mehtap KOSE ULUKOK[1] and **Burhan YILDIZ**[2]

[1]*Cyprus Science University, Turkey*
[2]*Mugla Sitki Kocman University, Turkey*

The Bi-Attempted Base Optimization Algorithm (ABaOA) is a numerical search algorithm that can be used to find the best design parameters for practical issues like the scheduling of multiple reservoirs and a slurry pipeline. The slurry pipeline problem has two distinct cost terms that respond differently to changes in choice variables. It is a restricted non-linear cost minimization problem with limits on facility capacities. A well-known hydraulics issue, the multi-reservoir problem seeks to optimize gains by maximizing reservoir discharges. The ABaOA is developed from the Base Optimization Algorithm (BaOA) by transforming its operators to diversify search paths to reach the global optimum. The flowchart diagram is shown in Figure 1 below.

Slurry pipelines are used to transport ore materials from mine pits to processing factories, and their hydraulics are analyzed following two-phase flow conditions. The optimization problem is multi-modal, having local optimum solutions in the search space and high non-linearity in the equations. The cost function is simplified to the sum of energy and pipe layout costs at each pipeline.

Water reservoirs, either naturally or artificially created by constructing dams, are used for water storage and supply when anticipated. When using water for hydropower generation, an optimization study is needed to maximize the profit from energy production. The optimum operation of reservoirs has been studied extensively, with several studies focusing on single, parallel, and cascade reservoir systems.

For the other two constraint violations, C was selected as -100. The displacement parameters were used as 0.1 and 0.001. The best, mean and worst fitness values obtained from each set are given in Table 1.

Increasing the penalty multipliers limits the algorithm to find individuals with better benefits and slight penalties. Two applications of ABaOA in the optimum design and operation of hydrosystems show signs that this search algorithm can be a decent alternative in optimizing non-linear and complex engineering problems.

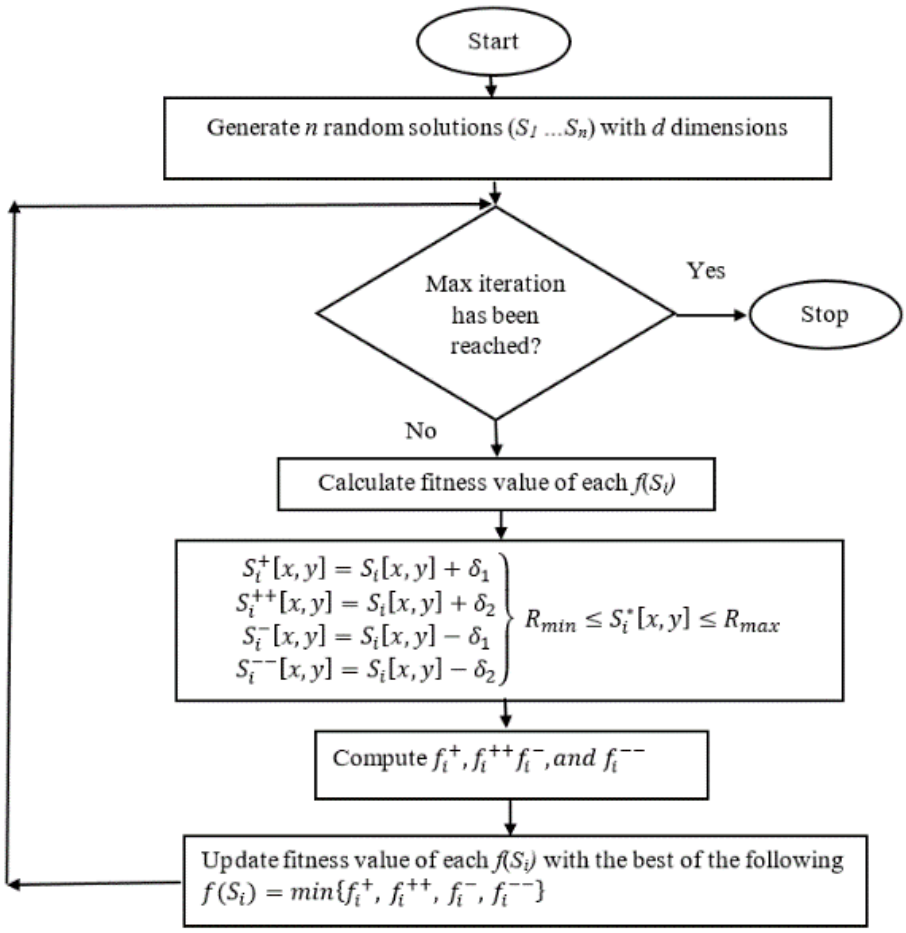

Figure 1. ABaOA Flow Chart

Table 1. The four-reservoirs problem results with the best, mean, and worst fitness values after 10 runs for various penalty multipliers (C).

	Best Fitness	Mean Fitness	Worst Fitness
C1=-100, C2=-100, C3=-40	401.748	401.740	401.730
C1= C2= C3= -100	401.076	401.975	400.035
C1= C2= C3= -200	399.925	399.783	399.689

Biography

Dr. Mehtap Köse Ulukök is an accomplished Associate Professor in the Department of Software Engineering at Cyprus Science University, located in Ozankoy, Mersin 10, Turkey. She received her Bachelor of Science (B.S.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) in Computer Engineering from Eastern Mediterranean University in Gazimagusa, Mersin 10, Turkey, in 1998, 2000, and 2009, respectively. Dr. Ulukök specializes in machine learning, robotics, meta-heuristics, and cryptology, and her expertise continues to make valuable contributions to her field. As an Associate Professor at Cyprus Science University, Ozankoy, Dr. Ulukök is dedicated to both research and teaching and actively engages in academic pursuits.

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The use of omalizumab in the treatment of bullous pemphigoid: Case report and literature review

Seçil SOYLU, Çağrı TURAN, Gülhan GÜREL, Bahar SÜNCAK and **Esra KILIÇ MANAVLI**

Afyonkarahisar Health Sciences University, Dermatology Department, Turkey

Aim: Bullous pemphigoid (BP) is the most common autoimmune subepidermal bullous disease of the skin. First-line treatment of systemic corticosteroids and the conventional streoid sparing agents may cause serious adverse events. Biologic agents can be explored as alternative treatment options to improve outcomes. We herein present a case of BP who developed complications with conventional treatments, and benefited from treatment with omalizumab.

Case: A 65-year-old woman who had hemiparesis for 20 years and decubitus ulcers for 15 years has been admitted to our outpatient clinic with blisters on her skin for the last 1 year. On dermatological examination, grade 4 decubitus ulcers on the glutea and sacrum, and multiple blisters located more prominent on her toes, buttocks were detected. The histologic examination of the biopsy material taken from the lesion and perilesional area of the patient who was undergoing Vacuum-Assisted Closure and local wound care for decubitus ulcer was compatible with bullous pemphigoid. In a 1 week of prednisone equivalent dose of 32 mg/day therapy, insulin was also started due to the development of diabetes mellitus. After 20 days, Azathioprine 50 mg/day treatment as a steroid sparing agent was added to the treatment, and the drug was immediately discontinued due to the development of pancytopenia in his tests performed 3 days later. She was transferred to the Infectious Diseases Clinic due to worsening of his general condition, decubitus wound cultures produced pseudomonas aeruginosa, klebsiella pneumonia, providencia stuartii while receiving Piperacillin, meropenem, teicoplanin intravenous treatment for 30 days. After 1 week, Omalizumab 300 mg/28 days was started as a steroid sparing agent and the steroid dose was switched to the tapering phase after the absence of new lesions.

Discussion: Much of the morbidity and mortality related to BP results from the combined effect of patient comorbidities and adverse effects of treatment, rather than from direct effects of the disease. Therefore, treatment should be conservative, incorporating the minimal amount of medication required to achieve remission and careful consideration of drug toxicity.

Treatment for pemphigoid diseases was a growing issue in the field. Biologic therapies as Rituximab, Dupilumab, Omalizumab are a treatment option for patients who has contraindications or fail to respond to topical corticosteroids, systemic corticosteroids, and the other corticosteroid-sparing agents.

Conclusion: Comprehensive studies on omalizumab related pemphigoid are needed.

Biography

Dr. Soylu is an Assistant Professor at the School of Medicine, Afyonkarahisar Medical University, Turkey. Having received his MD degree from Ankara Faculty Medical University in 1997, Dr. Soylu undertook his postgraduate training at the Ankara Numune Training and Research Hospital, Ministry of Health, Medical University Hospital in 2004 and worked in cosmetic and clinical dermatology in private hospitals for 10 years in Ankara until 2018. She has been working as a Physician, Faculty member in the Dermatovenereology Division, Department of Internal Medicine since 2018. Dr. Soylu served as the founding Director of the Dermatovenereology Division, Faculty of Medicine, Afyonkarahisar Medical University (2019 to 2020). She is a reviewer of several scientific journals and has published more than 100 peer-reviewed articles. Her ongoing research interests are dermato-oncology, dermato-surgery, contact dermatitis, and cosmetic dermatology.

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Nutritional, antioxidant and antimicrobial properties of an extruded traditional rice based composite flour mixture

Pahan I. Godakumbura, T. P. Sathsara Perera, MAB Prashantha and **S.B Navaratne**

University of Sri Jayewardenepura, Sri Lanka

Sri Lankan traditional rice varieties (STRV) are identified as a food source rich in numerous health benefits over nutrition. Recent studies have shown that twenty five of STRV have bio-activities such as antioxidant, anti -amylase, anti-glycation and anti-inflammatory properties and higher nutritional composition compared to improved varieties. In this study, a flour formulation, which also can be used as a porridge was developed using traditional red-rice variety-Kalu heenati (WF 13272) in combination with mung bean, black gram, and meneri together with cinnamon powder, sesame and black seeds. The samples were subjected to proximate analysis according to AOAC standard procedures in determining carbohydrates, fat, protein, ash and fiber contents. Further, antioxidant activity of the flour formulation was analysed according to DPPH, ABTS and FRAP assays. The qualitative antimicrobial potential of the formulation was determined using agar well diffusion assay against selected eight pathogenic and food spoilage bacteria. The results showed that the developed formulation contained 2.36 ± 0.01, 5.17± 0.06, 19.94± 0.06, 9.15± 0.03, 65.15± 0.06 ash, crude fat, protein, dietary fiber and carbohydrates in grams per 100 g dry weight. Further, DPPH assay revealed that the flour extract had an antioxidant activity of 0.67 ± 0.3 mg trolox equivalent per gram dry weight (mg, TEAC/g dw). ABTS and FRAP assays indicated antioxidant activities of 0.92± 0.1 TEAC/g dw, 0.72 ± 0.1 TEAC/g dw respectively. Results of the antimicrobial assays showed that the developed formulation had significant susceptibility towards all the tested bacteria in varying degrees. Among them, gram positive bacteria showed a higher sensitivity to ethanol and water extracts of the flour formulation. S. aureus depicted the highest inhibition zone while that of E. coli was the lowest. In conclusion, considering the nutritional, antioxidant and antimicrobial properties, this flour formulation can be promoted as a value added product to the market.

Biography

Prof. Pahan I. Godakumbura obtained her PhD in Chemistry at the Department of Chemistry, Wayne state University, MI in 2008 and did her postdoctoral training in Signal Transduction in two component system in bacteria at University of Illinois, Chicago USA in 2009. Having joined to the Department of Chemistry University of Sri Jayewardenepura, Sri Lanka in 2011, she is working with traditional rice varieties to uncover the chemistry behind natural products and to reveal numerous health benefits and nutritional properties, while fuelling plants with nano-fertilizer.

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Revolutionizing Healthcare: The Transformative Role of ML and AI in Precision Medicine and Advanced Therapies

Koffka. Khan

Department of Computing and Information Technology, The University of the West Indies, Trinidad and Tobago, W.I.

Advancements in biologics and biosimilars have transformed healthcare, ushering in targeted treatments and personalized medicine. Precision Medicine and Advanced Therapies stand at the forefront of this healthcare evolution. However, the intricacies of biologics and the necessity for rigorous monitoring present distinct challenges for patient safety and treatment optimization. This presentation elucidates the indispensable role of Machine Learning (ML) and Artificial Intelligence (AI) in tackling these challenges within the domain of Precision Medicine and Advanced Therapies. ML and AI have emerged as potent tools for data analysis, predictive modeling, and real-time surveillance, furnishing invaluable insights and decision support for healthcare practitioners.

Firstly, we delve into the sphere of enhanced pharmacovigilance. ML and AI empower automated analyses of extensive datasets, facilitating timely detection of adverse events, safety concerns, and emerging trends linked to biologics and biosimilars. This proactive approach prioritizes patient-centric risk mitigation and swift response. Next, we explore personalized treatment optimization. ML algorithms analyze patient-specific data, including genomics, proteomics, and clinical parameters, customizing biologic therapies. This personalization maximizes treatment efficacy while minimizing adverse effects, propelling precision medicine into a new era. Our discussion also encompasses real-time quality control. AI-driven monitoring systems ensure consistent biologics production quality, reducing variability and enhancing biosimilarity. This upholds product integrity and fosters trust among patients and healthcare providers. Lastly, we highlight early therapy response detection. ML models scrutinize patient response data, identifying treatment responders and non-responders promptly. This capability enables timely treatment adjustments, ultimately enhancing therapeutic outcomes and patient experiences.

The integration of ML and AI into Biologics and Biosimilars monitoring and management signifies a profound advancement in Precision Medicine and Advanced Therapies. These technologies empower healthcare professionals with the tools needed to optimize therapy, enhance patient safety, and ensure the ongoing success of biologic therapies.

Biography

Koffka Khan received the B.Sc., M.Sc., M.Phil. and D.Phil. degrees from the University of the West Indies. He is currently a Lecturer at the UWI and has up-to-date, published over 170 books, journal and conference papers in proceedings of international repute. His research areas are Artificial Intelligence, Optimization, Distributed Computing, Computational Intelligence, Machine Learning and Network Security.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Association between serum vitamin D3 level and sympathetic skin response

Sharareh Roshanzamir[1], Leila Sadat Mohamadi Jahromi[2] and **Alireza Dabbaghmanesh[3]**

[1]M.D., Physiatrist, Associate Professor of Physical Medicine and Rehabilitation, School of Medicine, Shiraz University of Medical Sciences (SUMS), Iran
[2]M.D., Physiatrist, Assistant Professor of Physical Medicine and Rehabilitation, School of Medicine, Shiraz University of Medical Sciences (SUMS), Iran
[3]Department of Internal Medicine, School of Medicine, Shiraz University of Medical Sciences (SUMS), Iran

Background: Vitamin D3 (VD) deficiency has been reported to have many critical roles in regulating cellular metabolism and body functions. studies also have revealed its relevance to neuronal function. The effects of autonomic nervous system on many body functions such as immune system regulation may be the mid-step of the effects of VD. This study was designed to find any relationship between serum VD and sympathetic skin response.

Methods: In this cross-sectional study, one hundred cases without any medical or musculoskeletal diseases who met the inclusion and exclusion criteria were recruited. Serum VD level was measured. The participants also went under sympathetic skin response (SSR) study. The results were compared to the normal values.

Results: Only 16% of the participants had normal serum VD levels (>30 μM) while other 84% had abnormal levels. 19% of the cases had insufficient level (20-30 μM), 47% cases had deficiency (10-20 μM) and 18% had severe deficiency (<10). All individuals with abnormal serum VD levels showed prolonged SSR latencies from both palms and soles comparing to the normal values while individuals with normal levels showed normal SSR latencies. The latency of the SSR consistently increased with the decreasing levels of VD showing a negative correlation ($P<0.001$). No correlation was found between SSR amplitude and serum VD level ($P>0.05$).

Conclusion: There was a strong negative correlation between the serum VD level and SSR latency raising the hypothesis that at least part of the detrimental effects of VD deficiency might be exerted through derangements of autonomic nervous system.

Biography

Name: Sharareh Roshanzamir

Birth date: 25/03/1980

Work Experience:

- **Associate professor, and research manager:** Department of physical medicine and rehabilitation, Shiraz University of Medical Sciences (SUMS), Shiraz, Iran, 2017 up to now.

- **Assistant professor, and research manager:** Department of physical medicine and rehabilitation, Shiraz University of Medical Sciences (SUMS), Shiraz, Iran, 2013-2017.
- Assistant professor, and manager (chairwoman) of the Physical Medicine and Rehabilitation Department, and Research manager of International branch: Shiraz University of Medical Sciences (SUMS), Shiraz, Iran, 2011-2013.

Education:

- **Fellowship in medical education:** Shiraz University of Medical Sciences (SUMS), Shiraz, Iran (2013).
- **Fellowship in research:** Shiraz University of Medical Sciences (SUMS), Shiraz, Iran. (2012).
- **Fellowship in Electronic learning:** Shiraz University of Medical Sciences (SUMS), Shiraz, Iran (2012).
- Board certification in physical medicine and rehabilitation, Shiraz University of Medical Sciences (SUMS), Shiraz, Iran (2011).
- **MD degree:** School of Medicine, Shiraz University of Medical Sciences (SUMS), Shiraz, Iran (1998-2005).

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Production and wear optimization of Mango '*Mangiferaindica*' Seed Shell Ash (MSSA)-reinforced Al–Si–Mg Particulate composite: a Taguchi approach

Ochuokpa, Ezekiel Otor[1], Yawas, Danjuma Saleh[2], Sumaila and **Malachy[2]**

[1]Dept. of Metallurgical & Materials Engineering, Ahmadu Bello University Zaria, Nigeria
[2]Dept. of Mechanical Engineering, Ahmadu Bello University Zaria, Nigeria

A composite material is the artificial combinations of two or more distinct and insoluble phases that are chemically bonded together to improve their properties. The common mango *magniferaindica* is indigenous to the Indian and south east Asia. The mango is a very common tropical fruit grown vastly in many tropical regions in the world and Nigeria is ranked 10th amongst the world producers. Benue State of Nigeria is the major producer of several varieties of mango, yet there are no industries to process them in the state. In this work a composite was developed by adding Mango seed shell Ash (MSSA) particulate in Al- Si-Mg Alloy by mass ratio 5%, 10%, 15% and 20%. The composite was prepared by stir casting technique. This composite material is proposed to be used for production of motorcycle wheel hubs which are subjected to continuous wear as they are in direct contact with the brakes and rotating sprockets. The MSSA, was characterized using X- ray fluorescent (XRF). The result reveals SiO2, has the highest percentage of 40.3% composition followed by CaO, Al2O3, Fe2O3 and Mg2O as major phases. The presents of these hard constituent compounds suggests that the mango seed shell ash can be used as particulate reinforcement in various metal matrices since the chemical composition has similarity with the XRF analysis of Periwinkle shell ash, fly ash, and bagasse ash currently used in metal matrix composite. The Mechanical tests conducted revealed that increase in the percentage of MSSA progressively increased the hardness of the material from 5% wt to a maximum hardness of 43.2 HV at 15% addition of MSSA. This represents a 26.16% improvement over the unreinforced alloy. However, the impact energy progressively decreases up to 5%wt of MSSA and later increased to optimum energy at 15% addition of MSSA. The Taguchi design of experiment was employed for the optimization of the wear properties of the developed composites at the range of MSSA from 5% wt - 20% wt. The optimal wear rate of the MSSA-reinforced Al–Si–Mg composite was obtained to be 0.001517 mm3/ N/m at stirring time of 60 s, processing temperature of 720°C, MSSA content 20%wt, and particle size 25 µm. Analysis of variance also proved the significance of MSSA particles in the reduction of the wear rate of Al–Si–Mg alloys. The wear behavior of the developed composite was successfully modeled using regression analysis with a prediction accuracy of 90.32%. From the results it is concluded that composite material such as Al- Si-Mg/ MSSA is one of the options as a material for production of motorcycle hub and other engineering and biotechnology applications.

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Advances in Medicinal Chemistry and Pharmacology

The Ethical Standards of Sunni Muslim Physicians Regarding Fertility Technologies that are Religiously Forbidden

Mahdi Tarabeih

School of Nursing Sciences, The Academic College of Tel-Aviv-Yaffa, Israel

This research project is pioneering in that it is the first to provide empirical data regarding the ethical standards of Sunni Muslim physicians toward religiously prohibited reproductive technologies, a topic which is considered taboo in Muslim society.

This study explored the attitudes of Sunni Muslims towards religiously forbidden reproductive options: gamete donation, sex selection, surrogacy, and adoption. A total of 689 married Sunni Muslim people read 14 hypothetical vignettes depicting five types of assisted reproductive technologies: (i) sperm donation; (ii) egg donation, (iii) surrogacy; (iv) sex selection of a male foetus; and (v) and sex selection of a female foetus. They also related to the option of adopting a baby. Each vignette was presented twice: once depicting a relatively younger couple and once again describing a relatively older couple. The respondents were asked to state the level of their objection or acceptance for each of the twelve vignettes. In accord with the Islamic ruling, respondents reported objections to sex selection, egg and sperm donation, and surrogacy. However, they expressed a moderate level of acceptance of adoption of a baby. The greatest objection was directed at sperm donation, followed by objection to egg donation. Our study shows that the Sunni Muslims do not support the provision of fertility care for reproductive options that clearly contravene Islamic religious ruling.

The findings show that the Sunni Muslim medical establishment avoids fertility options that are considered in violation of Islamic law, and Sunni Muslim physicians tend to obey religious law and may help fertility experts understand the cultural and religious complexities in treating Sunni Muslim couples.

Biography

Dr. Tarabeih Mahdi received her doctorate. In Psychoneuroimmunology, Be'er Sheva University 2008. Tarabeih specializes in medical care and family research and reproductive technologies, family dynamics and health behavior. The quality of life of recipients of four types of transplant (kidney, liver, heart, lungs), ethical dilemmas of transplant coordinators, transfer of children who received kidney transplants from pediatric ward to adult ward, effect of Ramadan fasting on kidney function in healthy people, deceased and live organ donation in three cultures: Jewish, Muslim, and Christian ,Sperm donations, egg and sperm selection in the Muslim population ,Euthanasia in the three religions, Judaism, Christianity, and Islam.

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Role of HSP65 of *Mycobacterium bovis* in predicting protection of BCG vaccine against COVID-19

Paola Finotti

Department of Pharmaceutical and Pharmacological Sciences
University of Padua, Italy

The BCG vaccine is known to have protective effects not only against TBC but also against other unrelated infectious diseases caused by different pathogens. The documented beneficial effects of BCG vaccine in reducing both susceptibility to, and severity of SARS-CoV-2 infections has been attributed to an antigen-independent enhancement of the innate immunity. One of the most immunogenic proteins of Mycobacterium bovis, considered the main antigen of BCG, is the heat shock protein (HSP)65, highly homologous to the proteins of the same class expressed in many other bacteria and viruses. This prompted us to hypothesize that also the proteins of SARS-CoV-2 could show a sequence similarity with HSP65 such that it could support a specific immune mechanism of BCG vaccine. To this aim, we conducted a thorough in silico investigation to analyse sequence similarity between HSP65 and both Spike(S) and nuclear (N) proteins of SARS-CoV-2. In addition, the predicted CD4+ T cell and B cell epitopes of HSP65 were investigated together with the corresponding epitopes identified in both CoV-2S and CoV-2N proteins. Results indicate that a high degree of sequence similarity exists between HSP65 and CoV-2S and that this similarity also includes sequences that are both CD4+ T cell and B cell epitopes. Likewise, HSP65 shared with CoV-2N a number of similar sequences that, although less numerous than those found in Cov-2S, for the most part contained immunodominant epitopes.

The results that the broad sequence similarity shared by HSP65 with SARS-CoV-2 viral proteins involves sequences identified as B cell and class II immunodominant epitopes with high binding affinity to CD4+ T cells support the view of a specific immune response elicited by HSP65 of BCG against SARS-CoV-2 and have implications for the crucial role that HSPs play as immunoregulatory proteins in infectious diseases.

Biography

The professional experience I gained these years as investigator in the basic research finalized to the clinical practice (area of molecular medicine) proved fruitful in coordinating and supporting the work of other researchers and in establishing successful collaborations in Italy and abroad.The broad expertise in the field of proteomics was profitably applied to the identification of biomarkers of diseases of immunological relevance, exploitable for diagnostic and therapeutic applications. The research interests are mostly centred on, but not limited to the mechanisms of the immune alterations underlying pathologies such as Type 1 diabetes and tumours, with specific attention to the role of the class of heat shock proteins in the pathogenesis and development of these diseases. More recently, the focus is on the use of bioinformatics tools to identify antigenic peptides and make predictions of their role as candidate vaccine in pathological conditions characterized by either excessive or blunted immune responses.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Imaging of ovarian lymphoma

Diana Donatello

IRCCS Azienda Ospedaliero-Universitaria di Bologna, Pediatric and Adult CardioThoracic and Vascular, Oncohematologic and Emergency Radiology Unit, Italy

Objective: The aim of the study is to describe the radiological spectrum of appearances of ovarian lymphoma (OL). The manuscript describes the radiological aspects of OL to assist the radiologist in achieving correct orientation of the diagnosis.

Methods: We conducted a retrospective evaluation of imaging studies of 98 cases of non-Hodgkin's lymphoma, with extranodal localisation (ovaries) in three cases (1 primary, 2 secondary). A literature review was also performed.

Results: Of the three evaluated women, one had a primary ovarian involvement and two had a secondary ovarian involvement. The most common lesion characteristics were a well-defned, solid homogeneous and hypoechoic mass at US. CT depicts OL as a well-defned, non-infltrating, homogeneous hypodense solid mass, with mild contrast enhancement. On T1-weight MRI, OL appears as a homogeneous mass of low signal intensity, which enhances avidly following intravenous gadolinium.

Conclusion: Clinical and serological presentation of OL can be similar to that of primary ovarian cancer. As imaging plays a central role in the diagnosis of OL, the radiologist should be familiar with US, CT and MRI appearances of this condition to correctly orient the diagnosis and so avoid unnecessary adnexectomy.

Biography

DIANA DONATELLO is an MD, Radiologist is Self-employed activity Assisting and consulting for centers and private practices in radiodiagnostics. She received Master's Degree Training for Director UOC of Radiology. She is a meneber of EUSOBI, ESER (EDiR EXAMINATION PARTICIPATION CERTIFICATE IN JANUARY 2023), SIRM, USMLE-ECFMG STEP 1, ECPR and ECR. She had been Participating in various congresses and conferences as auditor and speaker..

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Web accessibility evaluation of private and government websites for people with disabilities through fuzzy classifier in the USA

Naga Simhadri Apparao Polireddi and **K. Chaitanya**

IKON Tech Services/ Arizona State University, USA
Computer Science and Engineering, Open stream Technologies, India

The impact of technological advancements in construct the web in order to make it accessible for people with impairments was examined through a retrospective analysis of websites. For the years 1997–2002, an arbitrary illustration of overall webpages and a suitability illustration of the US administration webpages were researched and related. The accessing the web becomes barrier and difficulty ratings remained computed. ANOVA and Tukey's HSD remained recycled to detect alterations between centuries for overall positions. ANOVA repeat measurements were utilized to analyze changes in the US government websites, and Pearson's connection factor (r) was calculated toward assess the connection among convenience and difficulty. Arbitrary webpages gradually develop unreachable as difficulty rises. The complexity of the US government websites is increasing while they are still accessible through fuzzy classifier. It is not necessary for increasing complexity, which is frequently brought on by adding complicated components to a Web page, to result in greater accessibility hurdles reducing the use of scripts in webpage design will increase complexity

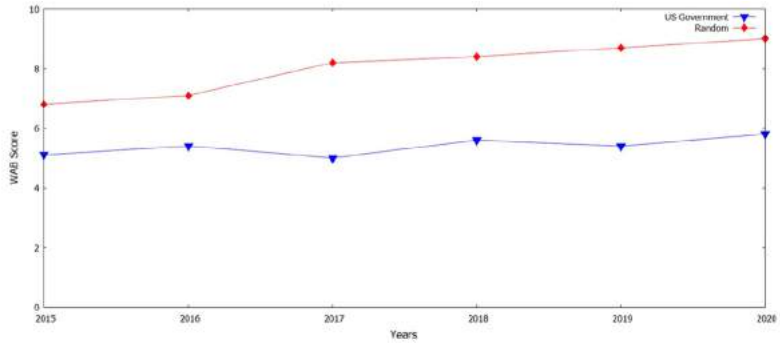
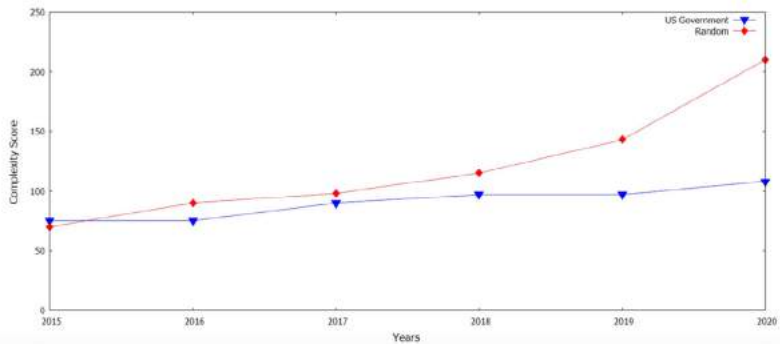


Fig. 2 Years versus WAB score



Biography

I have over 20 years of experience in Information Technology industry and Academe is working with IKON Tech Services as a Solution designer and Technical Manager at American Express Client location in USA. I earned my Master of Computer Science degree from Arizona State University (ASU) in United States. Accomplished 20 Years of Artificial Intelligence/ML and Web Dev Experience at Fortune 500 companies, clients and Peer work Reviewer, Author of Renowned Publications and Book Chapters.

Based on my technical expertise, I was invited as a Guest Speaker on Content Distribution Networks (CDN) technology I implemented for American Express website at USA. When I was working for TATA, I was invited to review client software projects at Saudi Telecom Company, Riyadh Saudi Arabia and Nokia Networks Portugal, to review their products like Netcracker Telecom Rating and Billing product and Nokia NetAct Operation Support Systems (OSS) product. Based on my previous telecom domain and technical skills, recently I was invited to review Verizon Wireless Hyper Precision Location (HPL) Product architectural review in USA.

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Advances in Medicinal Chemistry and Pharmacology

E-FaceAtlasAR: Extend atlas of facial acupuncture points with auricular maps in augmented reality for self-acupressure

Menghe Zhang and **Jürgen Schulze**

University of California San Diego, USA

Acupuncture is an important form of alternative and integrative medicine that involves precisely inserting thin needles into targeted body areas. It has long been used in clinical practices around the world. The key component of acupuncture treatment is identifying and stimulating anatomic sites called acupuncture points, or acupoints. In addition to needle insertion, acupressure is another commonly employed technique within acupuncture, which involves the application of pressure to these acupoints, providing a non-invasive alternative to needle stimulation. Self-acupressure is when individuals apply pressure to these acupoints using their fingers, palms, or specialized devices on themselves. This method has gained popularity due to its convenience and effectiveness.

However, locating the acupoints accurately can be challenging, especially for novices without medical backgrounds who lack visual cues. To address this issue, we have developed E-FaceAtlasAR, a prototype system that leverages augmented reality (AR) to visualize and localize facial acupoints and auricular zone maps. This system offers a user-friendly solution for self-acupressure treatments.

The E-FaceAtlasAR system employs a feasible and anatomically accurate approach to localize facial acupoints and auricular zone maps. Using the Mediapipe cross-platform machine learning framework, we have developed a real-time pipeline that operates on desktop computers and Android phones. This pipeline enables the system to overlay requested acupoints and auricular zone maps onto the user's ears in an AR environment.

Extensive experiments have been conducted to validate the effectiveness and robustness of the E-FaceAtlasAR system. The results demonstrate its ability to accurately locate and visualize acupoints and auricular zone maps. As a result, even non-professionals can utilize this system to position the acupoints quickly and effectively for self-acupressure treatments.

Biography

Menghe Zhang is a research engineer in Samsung semiconductor, inc. She holds an M.S. degree and a Ph.D. from the University of California, San Diego. Her interdisciplinary research combines computer science, design, and the health sciences. She focuses on Human-Computer Interaction, eXtended Reality, Computer Graphics, and pushing the boundaries of technology to create intuitive and immersive experiences.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Clinical trial risk planning strategy

Vladimir Shnaydman

ORBee Consulting, USA

A clinical trial holds many potential risks that could jeopardize a company's multimillion-dollar drug development investment. The increasing complexity of clinical trials compounds these challenges. Therefore, comprehensive risk planning, including efficient monitoring and risk mitigation strategy, is essential for efficient drug development under limited contingency resources.

Currently used risk planning techniques may be limited due to the complexity of the clinical trial risk mitigation problem (e.g., multiple risks, multiple mitigation options per risk, risk mitigation impact uncertainty). Deriving an effective clinical trial risk mitigation strategy could be time-consuming without proper modeling methodology. If a risk eventuates, necessary resources should be available on time to mitigate it.

For efficient risk plan execution, Quality Tolerance Limits (QTL) and Key Risk Indicators (KRI) should be efficiently positioned and aligned with risk level, contingency resources, and risk monitoring strategy. The presentation will focus on implementing analytical techniques for strategic risk planning. It will answer the following questions:

- How to align clinical trial risks and contingency budget?
- How to optimally derive a clinical trial contingency budget aligned with risk tolerance and allocate the budget across risks and business groups responsible for risk mitigation?
- How to derive optimal values of QTLs and KRIs?
- How to define the most efficient starting point for risk mitigation?

Biography

Vladimir Shnaydman, Ph.D., is the President of ORBee Consulting. Vladimir has a BS & MS in Electrical Engineering and Computer Science, an MS in Applied Mathematics & Operations Research, and Ph.D. in Engineering. He contributed to many industries, such as biotechnology, computer networking, data storage, water resources planning and management, telecommunications, transportation, etc. Dr. Shnaydman published more than 60 papers. He is the co-author of three books.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Estimation of Optimal Lock-down and Vaccination rate of a Stochastic SIR Model: A Mathematical Approach

P. Pramanik

University of South Alabama, USA.

This paper utilizes a stochastic Susceptible-Infected-recovered (SIR) model with a non-linear incidence rate to estimate the optimal lock-down intensity and vaccination rate under the COVID-19 pandemic environment. We use a Feynman-type path integral control approach to determine a Fokker-Plank type equation of this system. Since we assume the availability of information on the COVID-19 pandemic is complete and perfect, we show the existence of a unique fixed point. A non-linear incidence rate is used because, it can be raised from saturation effects that if the proportion of infected agents is very high so that exposure to the pandemic is inevitable, then the transmission rate responds slower than linearity to the increase in the number of infections. The simulation study shows that with higher diffusion coefficients susceptible and recovery curves keep the downward trends while the infection curve becomes ergodic. Finally, we perform a data analysis using UK data at the beginning of 2021 and compare it with our theoretical results.

Biography

I am an Assistant Professor in the Department of Mathematics and Statistics, at the University of South Alabama. I got my Ph.D. in Statistics in 2021 with a concentration in Probability and Stochastic Processes. I have come up with a new Feynman-type path integral control approach to solve stochastic control problems. My Master's thesis was under the supervision of Dr. Larry (Lei) Hua and Dr. Alan Michael Polansky from the Department of Statistics and Actuarial Science, Northern Illinois University, where I studied a sensible metric to quantify the degree of non-exchangeability for bivariate copulas. In my present position, I am keenly interested in applying my knowledge in the field of biomedical genetics and want to perform mathematical modelling of human cancers with a view to developing risk assessment and disease monitoring strategies.

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High prevalence of renal salt wasting (RSW), identification of novel protein in RSW to simplify diagnosis of RSW and introducing new syndrome of RSW in Alzheimer's disease

John K. Maesaka

NYU Grossman Long Island School of Medicine, USA

Background: The approach to hyponatremia is in a state of flux. Cerebral/renal salt wasting (RSW) is considered rare and presents with identical parameters as SIADH that create a diagnostic and therapeutic dilemma, whether to fluid-restrict water-logged patients with SIADH .r administer saline to dehydrated patients with RSW. We previously demonstrated the presence of a natriuretic protein (NP) in the plasma of RSW neurosurgical patients and in patients with Alzheimer's disease (AD).

Methods: We determined the causes of hyponatremia in the general hospital wards by utilizing a new algorithm and identified the NP in an RSW patient with subarachnoid hemorrhage (SAH) and another with AD by the same rat clearance methodology.

Results: Of 62 hyponatremic patients, (A) 17 patients (27%) had SIADH, (B) 19 patients (31%) had a reset osmostat (RO), (C) 24 patients (38%) had RSW, 21 without clinical evidence of cerebral disease, (D) 1 had Addison's disease and (E) 1(1.6%) due to hydrochlorothiazide.

The SAH and AD sera had identical robust increases in FEsodium and especially FElithium, lithium serving as a marker of proximal tubule sodium transport. We identified haptoglobin related protein (Hpr) without signal peptide (Hpr-WSP) as the natriuretic protein. Recombinant Hpr with signal peptide had no natriuretic activity.

Conclusions: RSW is common, cerebral salt wasting should be changed to renal salt wasting. Hpr-WSP may be the NF that causes C-RSW, can serve as a biomarker to differentiate RSW from SIADH on first encounter, need to develop inhibitor to HPR-WSP, introduces a new syndrome of RSW in AD and can effectively treat congestive heart failure when combined with distal diuretic.

Biography

John Maesaka is presently professor of medicine at the NYU Long Island School of Medicine and Chief Emeritus of the Division of Nephrology and Hypertension at the NYU Langone Hospital Long Island. He was born in Hawaii, received a BA degree from Harvard University, an MD degree from the Boston University School of Medicine and trained at Barnes Jewish Hospital at Washington University in St. Louis and the Mount Sinai Hospital and Medical School in New York. He also spent 5 years exclusively in the physiology laboratory at Mount Sinai Medical Center, which prepared him well for his future research endeavors. He has spent many years studying hyponatremic conditions, especially renal salt wasting and identifying the protein that causes it.

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Nutraceuticals and traumatic brain injury

Brandon Lucke-Wold MD, PhD, MCTS

University of Florida, USA

Traumatic brain injury (TBI) is a leading cause of morbidity and mortality worldwide, with an estimated incidence of 69 million cases annually [1]. While TBI is an umbrella term encompassing multiple intracranial pathologies, it can be generally dichotomized into primary and secondary injury. Primary injury occurs at the initial traumatic insult, resulting in mechanical damage to intracranial structures through penetrating and non-penetrating injuries (e.g., acceleration-deceleration forces) [2]. These primary injuries often cause tissue damage to vasculature and/or brain matter through focal impact and/or traumatic shearing forces. The subsequent alterations in cerebral blood flow and metabolism following primary injury result in oxidative stress, formation of free radicals, hypoxemia, mitochondrial dysfunction, endoplasmic reticulum (ER) stress and neuroinflammation, comprising secondary injury [2,3]. Where the prevention of primary injury is limited to increased education and changing public policy or culture, biological insult due to secondary effects lacks defined therapy and is thus one of the major factors driving current TBI management research [4,5].

Biography

Brandon Lucke-Wold was born and raised in Colorado Springs, CO. He graduated magna cum laude with a BS in Neuroscience and distinction in honors from Baylor University. He completed his MD/PhD, Master's in Clinical and Translational Research, and the Global Health Track at West Virginia University School of Medicine. His research focus was on traumatic brain injury, neurosurgical simulation, and stroke. At West Virginia University, he also served as a health coach for the Diabetes Prevention and Management program in Morgantown and Charleston, WV, which significantly improved health outcomes for participants. In addition to his research and public health projects, he is a co-founder of the biotechnology company SwiftScience, the pharmaceutical company ProPhos Neuroscience, and was a science advocate on Capitol Hill through the Washington Fellow's program.

He has also served as president of the WVU chapters for the American Association of Pharmaceutical Scientists, Neurosurgery Interest group, and Erlenmeyer Initiative Entrepreneur group. In addition, he has served as vice president for the graduate student neuroscience interest group, Nu Rho Psi Honor Society, and medical students for global health. He was an active member of the Gold Humanism Honor Society and Alpha Omega Alpha Honor Society. He is currently Vice President of the UF House Staff Council, Chair of the Quality Improvement Committee, on the Board of Directors for the Alachua County Medical Society, and active member of Institutional Review Committee and Accreditation Requirements Review Committee. He is married to Noelle Lucke-Wold and has two children. As a family, they enjoy running with their dogs, rock climbing, and traveling. In his spare time, Brandon frequently runs half marathons and 10ks together with is wife. Brandon also enjoys reading, playing piano, discussing philosophy, and playing chess. He is currently a Pgy6 neurosurgery resident at University of Florida with pursuing endovascular enfolded training and was awarded the Dempsey Cerebrovascular Research Fellowship, SNS Fellowship, Van Wagenen Fellowship, R25 Grant, and SNIS Fellowship.

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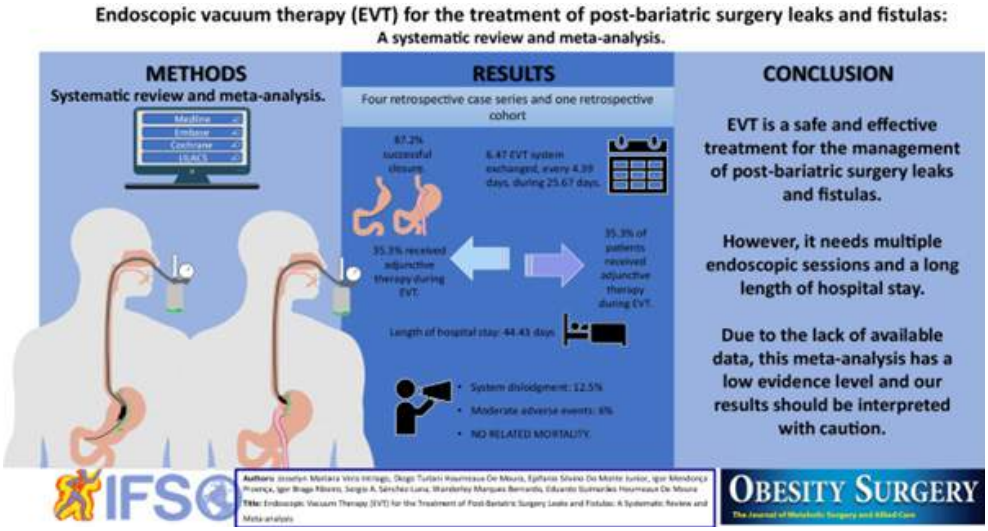
Endoscopic Vacuum Therapy (EVT) for the treatment of post-bariatric surgery leaks and fistulas: A systematic review and meta-analysis

Josselyn Mariana Vera Intriago and **Diogo Turiani Hourneaux de Moura**

1 Gastroenterology Department, Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, Brazil

Bariatric surgery remains the most effective treatment for morbid obesity and its comorbidities. However, post-surgical leaks and fistulas can occur in about 1-5% of patients, with challenging treatment approaches. Endoscopic vacuum therapy (EVT) has emerged as a promising tool due to its satisfactory results and accessibility. In this first systematic review and meta-analysis, EVT revealed rates of 87.2% clinical success, 6% moderate adverse events, and 12.5% system dislodgements, requiring 6.47 EVT system exchanges every 4.39 days, with a dwell time of 25.67 days and a total length of hospitalization of 44.43 days. Although our results showed effectiveness and safety, they should be interpreted with caution due to the paucity of available data.



Biography

Josselyn Vera is a polyglot Ecuadorian doctor, specialized in Brazil, in gastroenterology and therapeutic digestive endoscopy. She is passionate about reading and research. Josselyn considers that the costs of some endoscopy supplies often impedes an adequate endoscopic therapy from being carried out, for which reason we must look for more accessible methods, such as vacuum therapy, which is feasible to perform, even in third world countries. She recently published her first paper, called Endoscopic Vacuum Therapy (EVT) for the Treatment of Post-Bariatric Surgery Leaks and Fistulas: a Systematic Review and Meta-analysis, performed at the Hospital das Clínicas of the University of São Paulo, further contributing to the experience that the qualified team of medical professionals to which she belongs has in the treatment with this type of therapy.

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5th Global Summit on

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November 06-07, 2023

ADV. MED CHEM 2023

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Banach Theorem in Opto-Acoustic Visualization

A. Rudnitskii
Institute of Hydromechanics NASU, Ukraine

The main goal of the work was to develop and study a numerical algorithm designed to correct artifacts and distortions that occur during image reconstruction in optical-acoustic tomography problems. The task was to develop an algorithm capable of compensating for the peculiarities of the reconstruction method. The proposed iterative scheme for improving biomedical optoacoustic images is based on the Banach Fixed Point Theorem. The problem of eliminating distortions and artifacts in optical-acoustic images for four iterative schemes was modeled and tested. To study the effectiveness of the proposed algorithm, two-dimensional and three-dimensional numerical models were used. The optical-acoustic experiment simulated a biological environment with a renewable object built into it. Linear (2D case) and planar (3D case) recording acoustic gratings located on the surface of the samples under study were considered. The quality of the reconstruction was determined both by quantitative and visual evaluation of the results obtained. The effectiveness of an iterative algorithm for improving the quality of reconstruction using the SSIM structure similarity index and the relative reconstruction error E is quantitatively evaluated. It was shown that the developed algorithm can significantly improve image quality compared to traditional methods of optoacoustic tomography even with a few number of iterations. For comparison, the algorithms of the k-Wave Matlab toolbox software package for the time-domain simulation of propagating acoustic waves in 1D, 2D, or 3D were used. The results obtained in this work may be important from the point of view of the prospects for their further practical application in biomedical imaging problems.

Biography

Alexandr Rudnitskii received the M.D. degree in Applied Mechanics from Kiev University, Ukraine in 1981. From 1981 to 2004 he was a Researcher and then a Senior Researcher at the Institute of Hydromechanics of the NAS of Ukraine. He received the Ph.D. degree in fluid, gas and plasma mechanics in 1991. From 2004 to 2011 he worked as an Associate Professor at the Department of Higher Mathematics at the Kyiv University of Transport. Since 2011 he has held the position of Senior Researcher at the Institute of Hydromechanics of the NASU. He took an active part in a number of projects related to computer diagnostics in Italy, Germany and Iran, in particular in the projects "Modeling, analysis, and Approximation Theory toward applications in tomography and inverse problems" and "EU-Ukrainian mathematicians for life sciences". His research interests are in biomedical signal processing and pattern recognition, optoacoustic tomography, and biomedical modeling.

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Three-Layer Model for the Control of Epidemic Infection Over Multiple Social Networks

Ali Nasir

King Fahd University of Petroleum and Minerals, Saudi Arabia

This talk presents a hierarchical approach for controlling the spread of an epidemic disease. The approach consists of a three-layer architecture where a set of two-layer multiple social networks is governed by a (third) top-layer consisting of an optimal control policy. Each of the two-layer social networks is modeled by a microscopic Markov chain. On top of all the two-layer networks is an optimal control policy that has been developed by using an underlying Markov Decision Process (MDP) model. Mathematical models pertaining to the top-level MDP as well as two-layer microscopic Markov chains have been presented. Practical implementation methodology using the proposed models has also been discussed along with a numerical example. The results in the numerical example illustrate the effectiveness of the control of an epidemic using the optimal policy. Directions for further research and characterization of the optimal policy have also been discussed with the help of the same numerical example. The three-layer approach for epidemics control is extremely useful for optimal resource utilization and effective control of the spread of an epidemic disease. Therefore, its major application is in the policy-making for health governance.

Biography

Ali Nasir obtained his PhD along with M.Sc. degrees in Electrical Engineering and Aerospace Engineering from the University of Michigan Ann Arbor in USA. He received his B.Sc. in Electrical Engineering from University of Engineering and Technology, Taxila, Pakistan. He is the recipient of Fulbright scholarship for MS leading to PhD. He is currently working on distributed control of multi-agent systems, control of epidemic infections, and human intent prediction. His research interests also include Approximate Dynamic programming, fault tolerant control, and nonlinear control and estimation.

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A Health Data Analytics Maturity Model for Hospitals Information Systems

Álvaro Rocha[1] and **João Vidal de Carvalho**[2]

[1]*ISEG, University of Lisbon, Portugal*

[2]*ISCAP, Polytechnic of Porto, Portugal*

In the last five decades, maturity models have been introduced as reference frameworks for Information System (IS) management in organizations within different industries. In the healthcare domain, maturity models have also been used to address a wide variety of challenges and the high demand for Hospital IS (HIS) implementations. The increasing volume of data exceeds the ability of health organizations to process it for improving clinical and financial efficiencies and quality of care. It is believed that careful and attentive use of Data Analytics in healthcare can transform data into knowledge that can improve patient outcomes and operational efficiency. A maturity model in this conjuncture, is a way of identifying strengths and weaknesses of the HIS maturity and thus, find a way for improvement and evolution. This speech presents a proposal to measure Hospitals Information Systems maturity regarding Data Analytics. The outcome is a maturity model, which includes six stages of HIS growth and maturity progression.

Biography

Álvaro Rocha holds the title of Honorary Professor, and holds a D.Sc. in Information Science, Ph.D. in Information Systems and Technologies, M.Sc. in Information Management, and BCs in Computer Science. He is a Professor of Information Systems at the University of Lisbon - ISEG, researcher at the ADVANCE (the ISEG Centre for Advanced Research in Management), and a collaborator researcher at both LIACC (Laboratory of Artificial Intelligence and Computer Science) and CINTESIS (Center for Research in Health Technologies and Information Systems). His main research interests are maturity models, information systems quality, online service quality, requirements engineering, intelligent information systems, e-Government, e-Health, and information technology in education. He is also Vice-Chair of the IEEE Portugal Section Systems, Man, and Cybernetics Society Chapter, and Founder and Editor-in-Chief of both following Scopus and/or WoS journals: JISEM (Journal of Information Systems Engineering & Management) and RISTI (Revista Ibérica de Sistemas e Tecnologias de Informação / Iberian Journal of Information Systems and Technologies). Moreover, he has served as a Vice-Chair of Experts for the European Commission's Horizon 2020 Program, and as an Expert at the COST - intergovernmental framework for European Cooperation in Science and Technology, at the European Commission's Horizon Europe Program, at the Government of Italy's Ministry of Universities and Research, at the Government of Latvia's Ministry of Finance, at the Government of Mexico's National Council of Science and Technology, at the Government of Polish's National Science Centre, and at the Government of Cyprus's Research and Innovation Foundation.

He has 342 of his publications indexed in Scopus database, having an H-Index = 26 and 2629 citations. In Google Scholar he has an H5-Index = 36, having 5995 citations. He has 204 of his publications indexed in the Web of Science database (Core Collection), having an H-Index = 20 and 1433 citations. And in ResearchGate he has an H-Index = 30 and 4162 citations, being part of the group of the 2% best scientists in the world, considering all areas of research, and part of the group of the 1% best scientists in the world, considering only his area of research: Information Systems.

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Vitamin D and Vitamin D Receptor in Head and Neck Squamous Cell Carcinomas

Aya Khamis[1,2*], Laura Koll[1†], Désirée Gül[1†], Manal I. Elnouaem[2], Hanaa Raslan[2], Omneya R. Ramadan[2], Shirley K. Knauer[3], Sebastian Strieth[4], Jan Hagemann[1] and Roland H. Stauber[1*]

[1]Department of Otorhinolaryngology Head and Neck Surgery, Molecular and Cellular Oncology,University Medical Center, Germany
[2]Oral Pathology Department, Faculty of Dentistry, Alexandria University, Egypt
[3]Centre for Medical Biotechnology (ZMB/CENIDE), Institute for Molecular Biology, University Duisburg-Essen, Universitätsstraße, Germany
[4]Department of Otorhinolaryngology, University Medical Center Bonn, Germany

Vitamin D (VitD) and its receptor (VDR) have been intensively investigated in many cancers. As knowledge for head and neck cancer (HNC) is limited, we investigated the (pre)clinical and therapeutic relevance of the VDR/VitD-axis. We found that VDR was differentially expressed in HNC tumors, correlating to the patients' clinical parameters. Poorly differentiated tumors showed high VDR and Ki67 expression, whereas the VDR and Ki67 levels decreased from moderate to well-differentiated tumors. The VitD serum levels were lowest in patients with poorly differentiated cancers (4.1 0.5 ng/mL), increasing from moderate (7.3 4.3 ng/mL) to well-differentiated (13.2 3.4 ng/mL) tumors. Notably, females showed higher VitD insufficiency compared to males, correlating with poor differentiation of the tumor. To mechanistically uncover VDR/VitD's pathophysiological relevance, we demonstrated that VitD induced VDR nuclear-translocation (VitD < 100 nM) in HNC cells. RNA sequencing and heat map analysis showed that various nuclear receptors were differentially expressed in cisplatin-resistant versus sensitive HNC cells including VDR and the VDR interaction partner retinoic acid receptor (RXR). However, RXR expression was not significantly correlated with the clinical parameters, and cotreatment with its ligand, retinoic acid, did not enhance the killing by cisplatin. Moreover, the Chou–Talalay algorithm uncovered that VitD/cisplatin combinations synergistically killed tumor cells (VitD < 100 nM) and also inhibited the PI3K/Akt/mTOR pathway. Importantly, these findings were confirmed in 3D-tumor-spheroid models mimicking the patients' tumor microarchitecture. Here, VitD already affected the 3D-tumor-spheroid formation, which was not seen in the 2D-cultures. We conclude that novel VDR/VitD-targeted drug combinations and nuclear receptors should also be intensely explored for HNC. Gender-specific VDR/VitD-effects may be correlated to socioeconomic differences and need to be considered during VitD (supplementation)-therapies.

Biography

Dr. Aya Khamis, a distinguished professional in dentistry and molecular oncology, currently holds the position of Scientific Coordinator at the Clinic for Oral and Maxillofacial Surgery, Plastic Surgery, University Medical Center of the Johannes Gutenberg University, Mainz, Germany.

Education:

Ph.D. in Molecular and Cellular Oncology with the highest distinction of Summa cum laude, University Medical center of the Johannes Gutenberg University, Mainz, Germany, 2023

M.Sc. in Oral Pathology (GPA 3.736), Alexandria University, Egypt, 2015

B.D.S. (with honor degree), Faculty of Dentistry, Alexandria University, Egypt, 2010

Experience:

Ph.D. Student in Prof. Dr. R. Stauber's work group in Molecular and Cellular Oncology, Otolaryngology University Medicine of the Johannes Gutenberg University, Mainz, Germany 2019-2023

Assistant Lecturer, Oral Pathology Department, Faculty of Dentistry, Alexandria University, Alexandria, Egypt 2011-2018

Dentist and Clinic Manager, Dr. Nadia Sobhy Private Clinic, Alexandria, Egypt, 2010-2018

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Machine Learning Analyses Constructed a Novel Model to Predict Recurrent Thrombosis in Adults with Essential Thrombocythemia

Jia Chen[1,2], Huan Dong[1,2], Renchi Yang[1,2] and **Lei Zhang[1,2]**

[1]State Key Laboratory of Experimental Hematology, National Clinical Research Center for Blood Diseases, Haihe Laboratory of Cell Ecosystem, Institute of Hematology & Blood Diseases Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Tianjin Key Laboratory of Gene Therapy for Blood Diseases, CAMS Key Laboratory of Gene Therapy for Blood Diseases, China
[2]Tianjin Institutes of Health Science, China

Background: Essential thrombocythemia (ET) is a Ph-negative myeloproliferative neoplasm (MPN) that presents with clonal thrombocytosis and an elevated risk of thrombohemorrhagic consequences. However, reliable biomarkers to accurately predict recurrence in ET patients who have a previous thrombosis have been lacking thus far, and the prognostic significance remains to be carefully defined.

Objective: We aimed to use the machine learning algorithm to develop a model for predicting recurrence in ET patients with a thrombosis history to evaluate the impact of selected predictive factors and distinct treatment strategies on rethrombosis-free survival (rTFS).

Methods: The current study involving 318 essential thrombocythemia (ET) patients with prior thrombosis was designed to identify risk factors that were predictive of recurrent thrombosis. The whole cohort was randomly split into derivation and validation cohorts. The random forest method, support vector machine with built-in recursive feature elimination model, and Logistic multivariable analysis were performed in the derivation cohort. Results We found that cardiovascular risk factor (OR=2.983, 95% CI: 1.330-6.690, p=0.008; 1 point) and RBC distribution width with standard deviation (RDW-SD, OR=4.241, 95% CI: 1.863-9.654, p=0.001; 1.5 points) were finally selected as independent predictors. Subsequently we devise a 3-tiered model (low risk: 0 points; intermediate risk: 1-1.5 points; and high risk: 2.5 points) and it showed good discrimination and favourable performance in all cohorts. Moreover, the model was significantly correlated with overall survival and rTFS (p=0.036, p=0.0007 in the derivation cohort; p=0.0047, p=0.0019 in the validation cohort). In the whole cohort, cytoreductive therapy was more effective than antiplatelet agents alone for 10-year rTFS (p=0.0336). No significant difference in 10-year rTFS was observed among interferon (IFN), hydroxyurea (HU), and IFN+HU therapy (p=0.444).

Conclusion(s): The present study helps identify individuals who need close monitoring and provides valuable risk signals for recurrence in ET patients with prior thrombosis.

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Anomaly-based Intrusion Detection System for IoT Application

Mansi Bhavsar, Kaushik Roy, John Kelly and **Odeyomi Olusola**

North Carolina A&T State University, USA

Internet-of-Things (IoT) connects various physical objects through the Internet, and it has wide applications in transportation, military, healthcare, agriculture, and many more. Those applications are increasingly popular because they address real-time problems. In contrast, the use of transmission and communication protocols has raised serious security concerns for IoT devices, and traditional methods such as signature and rule-based methods are inefficient for securing these devices. Hence, identifying network traffic behavior and mitigating cyber-attacks are important in IoT to guarantee network security. Therefore, we developed an intrusion detection system (IDS) based on a deep learning model called Pearson-Correlation Coefficient - Convolutional Neural Networks (PCC-CNN) to detect network anomalies. The PCC-CNN model combines the important features obtained from the linear-based extractions followed by the Convolutional Neural Network. It performs a binary classification for anomaly detection and a multiclass classification for various types of attacks. The model is evaluated on three publicly available datasets: NSL-KDD, CICIDS-2017, and IOTID20. we achieved a promising performance with a better detection accuracy of 99.89% and a low misclassification rate of 0.001 with our proposed PCC-CNN model. Finally, we compare and discuss our PCC-CNN model in comparison to five traditional PCC-ML models. Our proposed Deep Learning (DL)-based IDS outperforms traditional methods.

Biography

Dr. Bhavsar Mansi is an Assistant Professor in the Computer Information Science department. Dr. Bhavsar graduated from the Electrical and Computer Engineering department at North Carolina A&T State University, Greensboro, NC. Her primary research interest is applying computational techniques to solve cyber threats to the systems supporting IoT devices and building an Intrusion Detection system to detect early cyber threats. Along with that, she is a member of the AIM (Artificial Intelligence and Machine Learning Research) laboratory, CCD (Center for Cyber Defense), and NC-CAV (Center of Excellence on Connected and Autonomous Vehicle Technology) group at NCAT. She placed 3rd (Honorable mention) in the Google Inclusive Design Challenge 2021. Dr. Bhavsar presented her research work to the President of the United States, Joe Biden, NC Governor Roy Cooper, Congresswoman Kathy Manning, and Administrator Michael Regan during their visit to the Cyber Defence lab at NCAT.

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Chemical profiling and development of an identification method for fern extracts using High Performance Thin Layer Chromatography (HPTLC)

Melania M. Enot[1,3,4], Roxan D. Sabesaje[1], Glenn Mark S. Presores[1], Gina B. Barbosa[1,3], Aileen May G. Ang[1,3,4], Rajane Faith T , Bautista[4], Reggie Y and **Dela Cruz[1,2]**

[1]Tuklas Lunas Development Center, Central Mindanao University, University Town, Philippines
[2]Department of Biology, Central Mindanao University, University Town, Philippines
[3]Department of Chemistry, Central Mindanao University, University Town, Philippines
[4]Natural Products Research and Development Center, Central Mindanao University, University Town, Philippines

Traditional herbal medicines have been used for the treatment of various diseases and improving health for many years until the present time. The presence of phytochemical constituents of the herbal medicines has provided a significant contribution to modern therapeutics. Awareness of the chromatographic fingerprint is useful in the discovery of effective therapeutic agents. Among the commonly used traditional herbal medicines are the pteridophyte species. These include Drynaria quercifolia, Diplazium esculentum, and Asplenium nidus that can be found in Bukidnon, Philippines. This paper describes the chemical profiles and the development of a high-performance thin-layer chromatography (HPTLC) method for the chromatographic fingerprints of the fern species. Multivariate statistics of principal component analysis (PCA) was done. PCA revealed that the studied species showed a significant metabolite variation and displayed potential markers. The presence and separation of phytoconstituents were evaluated using different mobile phases with varying polarities and proportions. The plates were derivatized using natural products (NP) reagent. The mobile phase composed of ethyl acetate– formic acid– acetic acid– water (30:2.75:2.75:6.5, V/V) produced a good separation of the compounds present in the fern species. The developed HPTLC method for the fingerprint of the fern species was validated qualitatively by considering the RF values of the selected zones to evaluate the stability of the fingerprint. The validation results proved that the developed method is reproducible, precise, and robust. This method can thus be used for the chemical profiling and standardization of the fern species and the developed fern herbal products for quality monitoring.

Biography

The author is a Professor at the Chemistry Department of Central Mindanao University (CMU), Philippines. She is the current Director of the Natural Products Research and Development Center (NPRDC) of CMU. As Director of NPRDC, she has established and leads its core programs. She also lead the project on "Pharmafern: Chemical Profiling and Standardization of Developed Herbal Products from Ferns", under the Tuklas Lunas Development Center of Mindanao, Philippines funded by the DOST-Philippine Council for Health Research Development (DOST-PCHRD). She obtained her Doctor of Philosophy in Chemistry at Mindanao State University-Iligan Institute of Technology (MSU-IIT), Iligan City, Philippines. She went on a Sandwich Program at The University of Adelaide, South Australia in 2014 funded by the Commission of Higher Education as Scholar. She graduated MS Chemistry Degree at De La Salle University-Manila, Philippines. She has two Philippine patent applications and six published utility models in the field of natural products.

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Cerebral Palsy and Neurogenetic Syndromes: A comparative study

Mercedes Cabezas-López

Fundación Bobath [Bobath Foundation, Department of Neuropsychology and Research, Spain

Aims: With recent advancements in technical and theoretical knowledge in genetic sciences, the consideration of genetic disturbances as a potential cause of cerebral palsy has emerged. Moreover, childhood neurogenetic syndromes and progressive rare diseases that exhibit motor dysfunctions resembling cerebral palsy are now being recognized as forms of cerebral palsy itself. This study aimed to examine the differences between these two clinical conditions: cerebral palsy and genetic syndromes/disorders.

Methods: A group of children diagnosed with cerebral palsy was compared to a group with neurogenetic syndromes in terms of health, sensorimotor functions, and basic social-cognitive skills, both currently and four years prior. The assessment of both groups utilized the Bobath Foundation Scale and clinical appraisal. Throughout the four-year duration, all participants received the same treatment method at the same center.

Results: The group with neurogenetic syndromes exhibited a greater degree of impairment compared to the group with cerebral palsy. While both groups demonstrated improvement over the four-year period, the group with neurogenetic syndromes did not show any progress in the social-cognitive domain, which aligns with previous research findings.

Conclusions: Distinct levels of impairment were observed between children with cerebral palsy and those with neurogenetic syndromes/disorders, with the latter group experiencing significantly greater impact, and displaying less advancement in intellectual aspects. This study suggests adopting specific perspectives for each clinical condition regarding prognosis, intervention program objectives, and treatment methods. Moreover, the inclination to classify genetic disorders of childhood as cerebral palsy warrants scrutiny.

Biography

Born in Madrid, Spain, she graduated in Psychology from the Complutense University of Madrid and specialized in Childhood Neuropsychology and Psychology Research.

With over thirty years of experience, she has worked as a neuropsychologist at the Bobath Foundation, focusing on Cerebral Palsy.

She has conducted courses and delivered lectures on Cerebral Palsy in various organizations, institutions related to neurodevelopmental disorders and disabilities, as well as university training programs.

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Challenges in Remote Medical Diagnosis

Purva Joshi

Department of Information Engineering, University of Pisa, Italy

The collection of patient data can be centralized using remote medical monitoring (RPM), also known as remote medical diagnosis. Doctors handle chronic diseases with RPM telehealth. IoMT's (Internet of Medical Things) healthcare applications include remote patient monitoring. This technology enables clinicians monitor patients outside hospitals and clinics. Hundreds to millions of sensors and smart devices collect health data for remote patient monitoring. Every second, the platform must capture and write gigabytes. A remote patient monitoring system can collect health data from biosensors, fitness trackers, and other wellness devices. Secure data allows remote healthcare providers to examine, intervene, and update. RPM can help doctors serve patients while they're short-staffed. RPM collects patient vital signs, symptoms, and other health data via telemedicine. Sensors, data storage, transmission, and analysis enable remote patient monitoring. Chronic diseases, post-surgical recovery, and mental health are monitored by RPM. The practice of medical diagnosis using remote means has gained significant significance, particularly during the outbreak of the disease COVID 19. However, there are a few challenges that must be overcome before healthcare providers may successfully diagnose patients remotely.

Biography

Purva Joshi is a PhD scholar at the University of Pisa, Italy with the title of "Bilateral teleoperation using beyond 5G networking". She was a research scholar at Wroclaw University of Science and Technology, Wroclaw, Poland. She completed her bachelor's study in instrumentation and control engineering, at Government Engineering College, Gandhinagar, India. After graduation, she joined the Institute of Technology, Nirma University, Ahmedabad, India, for her post-graduation in instrumentation and control engineering. She has also more than 3 years of teaching experience in various reputed universities. She worked on a project of ISRO based on a satellite network simulator using features like uplink power control (ULPC) and Adaptive Coding and Modulation (ACM). Her research interests are haptic and tactile network, system identification, 5G and beyond 5G network, telehealth, and robotics.

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Multidisciplinary topics and Bridged between Sciences in Supporting IoMT and Medical-based Applications

Seyedeh Yasaman Hosseini Mirmahaleh

Department of Electrical Engineering, Science and Technology, France

The COVID-19 epidemic proved the efficient role of remote monitoring and service providing to patients with the disease and controlling their vital signs. It guided human society to the essentials of Artificial Intelligence (AI) in different aspects that inspired to prepare a real-time and accessible platform for supporting medical-based applications for timely service providing and covering people. Timely diagnosis and drug recommendation play two critical roles in remedying patients with various types of cancers, infected to viruses, and preventing the aggravation of Alzheimer's and Parkinson's, and other dangerous diseases. The recent computer and medical studies targeted finding novel strategies for incorporating solutions to confront the problems of deploying Metavesre, IoT, and IoMT technologies in medical-service providing, energy efficiency, and security. The patterns of aggregating proteins and Brain Mapping (BM)-based techniques emerged to create a state-of-the-art research area for timely remote diagnosis and drug recommendation through IoT and IoMT applications. Neural Networks (NNs) conformed to the hierarchal neural structures of the human brain to infer different input concepts, train, and learn features where depicted their roles to solve various problems in diverse applications. The brain-based analysis manners appear to improve the efficiency of Medical-based applications to satisfy users' requirements through the timely detection and prediction of faulty nodes after adjusting to the human brain's behaviors. This presentation narrates bilateral relations between computer and medical sciences to bridge simplifying and coming over the challenges of IoMT and timely service providing.

Biography

Seyedeh Yasaman Hosseini Mirmahaleh received the B.Sc. degree from Alameh Dehkhoda University, Qazvin, Iran, in 2011, M.Sc. degree from Science and Research Branch, IAU, Tabriz, Iran in 2014. She received the Ph.D. degree from the Department of Computer Engineering Science and Research Branch, IAU, Tehran, Iran, in 2020. She current research interests include embedded systems, Reliability and testability of chips based on three-dimensional technology, Hardware modeling, and languages as well as the synthesis, systems on chip architecture design methodology, and tools. Also, she focuses on multidisciplinary topics.

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Human Values in Software Engineering: Should AI Systems Get More Attention?

Rifat Ara Shams

CSIRO's Data61, Australia

The ubiquity of software in daily life raises the imperative that software should reflect human values (e.g., transparency, privacy, social recognition, tradition). However, human values are not usually taken into account in software development. Violations of human values by software have been reported in the media and have resulted in a wide range of difficulties for end users. This shortfall becomes more pronounced when designing Artificial Intelligence (AI) systems due to their significant societal impact. Ignoring or violating human values in AI systems can lead to user dissatisfaction, negative socio-economic repercussions, and in some instances, societal harm. This presentation will cover the necessity of addressing human values in software and AI systems, the prevalence of human values in current software and AI systems, and the strategies to address them while designing software/AI systems.

Biography

Rifat Ara Shams is a Postdoctoral Fellow at Australia's National Science Agency (CSIRO's Data61). She is working in Software Engineering for Responsible AI (SE4RAI) research group. Her research area is Diversity and Inclusion in Artificial Intelligence and Requirements Engineering for Responsible AI. Her research interests are Artificial Intelligence (AI), Diversity and Inclusion in AI, Software Engineering, Human Values in Software Engineering, Human and Social Factors in Software Engineering and AI, Empirical Software Engineering, Mixed-methods Research.

She completed her PhD from Monash University, Australia, on "Operationalizing Values in Mobile Applications: A Mixed-Methods Empirical Study with Agriculture Apps for Bangladeshi Female Farmers". Rifat is the winner of "Women in Technology 2021" award from Zonta Club of Melbourne and Lockheed Martin. She is also the Ambassador of STEM Sisters Victoria. To know more about Rifat and her work, explore her homepage: https://sites.google.com/view/rifatarashams.

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Rheumatic Diseases in Elderly – A Therapeutic Challenge in Rare Evidence

M. Smeikal

Haus der Barmherzigkeit, Austria

As with many inflammatory rheumatic diseases, incidence increases with age and, if left untreated, many rheumatic diseases are associated with increased mortality. Furthermore, older patients in particular are at an additionally increased risk to die due to frequent comorbidities, but for various reasons receive guideline-based treatment less frequently, e.g., with biological drugs. The etiology of rheumatologic diseases is not fully understood. In advanced age, increasing immune senescence with an age-associated increased production of proinflammatory cytokines favors the development of rheumatic and cardiovascular diseases and also dementia. In this lecture, the most common rheumatic diseases in the elderly are presented. Furthermore, current innovative therapeutic concepts are outlined, paying special attention to biological drugs and their modes of action, indications, and potential side effects; recommendations regarding the management of diseases in geriatric rheumatology are provided.

Biography

Personal

Name: Michael Smeikal

Country of citizenship: Austria

Date of birth: October 18th 1976

Place of birth: Vienna

Marital status: married, 2 children

Education

1995 – 2002 Medical studies in Vienna

2002 – 2011 Residency in internal medicine & general medicine

12/2011 specialist in geriatric medicine

10/2014 specialist in rheumatology

01/2017 Master of Science, Danube University Krems

08/2015 Chief physician geriatric hospital, Haus der Barmherzigkeit Vienna

07/2019 Publicly appointed and sworn expert in medicine

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Glycosylation and Collagen: The Biochemical Basis of Diabetic Ulcers

Subramanian Gunasekaran

Encoll Corp, USA

This comprehensive review delves into the multifaceted genesis of Diabetic Foot Ulcers (DFUs), shedding light on the intricate factors contributing to their development. Diabetic ulcers (DUs) stand as among the most challenging chronic wounds to manage. While the conventional understanding attributes their formation to peripheral neuropathy and compromised arterial and venous blood flow, a deeper exploration from a nano-molecular biochemical standpoint uncovers critical nuances often overlooked in clinical evaluations.

Notably, the impact of uncontrolled diabetes, characterized by heightened blood glucose levels, leads to the glycosylation of extracellular matrix proteins. This physiological and biochemical facet plays a pivotal role, impacting the natural maturation of the wound bed's collagen, primarily through the post-translational modification (glycosylation) of this structural protein. From a biochemical perspective, it becomes evident that glycosylated collagen within the wound bed becomes resistant to the standard cross-linking process, typically facilitated by the lysyl oxidase enzyme, which leads to the non-healing wound (ulcer).

This review rigorously examines existing literature, focusing on the influence of elevated blood glucose levels in the development of diabetic ulcers. By deciphering the disruptions within these biochemical processes, particularly the hindrance of the oxidative deamination of lysine residues, essential substrates for lysyl oxidase, we gain valuable insights into the intricate biochemical underpinnings of wound bed collagen maturation and its profound implications on proper wound healing.

Biography

Dr. Gunasekaran is the Founder, President and CEO of Encoll Corp. (since 1994). He has directed a number of programs for successful development of tissue regenerative biomedical devices like Helicoll skin substitute in USA and related advanced products outside USA. Dr. Gunasekaran has 30 years of experience in medical device manufacturing and has been in the advisory committee for FDA and the Society for Biomaterials, USA.

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NIH Selection Processes and Capabilities: SBIR Grant Program

S. Dutta
Rutgers University, USA

One-way governments aim to spur healthcare innovation is through providing startup capital to qualified healthcare startups. In the United States, this effort is spearheaded by the National Institutes of Health (NIH) through federal grant programs like the SBIR/STTR program. Despite the government's efforts to spur innovation through capital distribution, we don't know much about the selection capabilities the NIH has in place to choose qualified projects for funding. This presentation brings in insights from two studies ascertaining NIH's selection capabilities. The first study exploits a quasi-natural experiment enabled by the American Reinvestment and Recovery Act (ARRA) of 2009, to determine whether the NIH selects ventures with the most innovation and commercialization potential. Overall, our findings suggest that the NIH effectively identifies and prioritizes startups with superior observable innovation capabilities. Yet, they could do more to discern the underlying tacit value of the innovation to prioritize selecting high-risk projects that have the potential to create impactful innovation in the future. The second study adopts an exploratory approach to ascertain the impact of the uncertainty around COVID-19 on the selection choices in the SBIR grant program at the NIH. In so doing, we find that grant review teams were more likely to select startups for funding during COVID-19 that were safer bets and pursued less novel innovation compared to startups selected for funding during the pre-COVID-19 period. We speculate on the possible explanations driving the change in the selection attributes.

Biography

Supradeep Dutta is an assistant professor of management at Rutgers University, Camden. He received his PhD from Purdue University. His research is at the intersection of innovation, strategy, and entrepreneurship, exploring a central conundrum for the technology entrepreneur—attracting resources when there is information asymmetry about the quality of a venture. One research strand examines the influence of capital funding sourced from various external investors, including government grants on spurring innovation and commercialization. A second strand analyzes the influence of decision-making behavior of investors, the variance in investors' risk appetite on their ability to catalyze innovation and create economic value.

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A Brief Insight into the Rare Diseases in Egypt

Tarek Taha[1], Dina Ahmed[1,2], Zaynab El-Gammal[1], Gehad Atef Oura[1], Shimaa E. Elshenawy[1], Yasmine Gaber[1,3], Tarek Elnagdy[1] and **Khaled Amer[1]**

[1]Stem Cell and Regenerative Medicine branch, Egypt Center for Research and Regenerative Medicine (ECRRM), Egypt
[2]School of Life Sciences, University of Westminster, UK
[3]Faculty of Medicine, AlKasr Al-Eini Teaching Hospitals, Egypt

Objective: This review sheds the light on Egyptian achievements and efforts in the field of rare diseases to prioritize the rare genomic diseases to be studied in Egypt. This will grab the attention towards conducting further studies that target Egyptians, to include the under-recognized populations potentially affected.

Scope: This review highlights the population architecture and genetic homogeneity in the Egyptian population, the status of rare diseases diagnosis and treatment, the status of orphan drugs, and the rare diseases research and clinical trials in Egypt (focusing on the rare diseases classification and the institutions performing rare diseases studies).

Methods: Literature searches for relevant articles were performed in Google scholar, PubMed, Egyptian knowledge bank (EKB), Scopus, and The Catalogue for Transmission Genetics in Arabs (CTGA) databases. The inclusion criteria were original articles, case reports, editorials, dissertations, thesis, opinion studies, or experience reports indexed in the selected databases, Egyptian patients, one or more authors affiliated to Egypt, English language, and no selection criteria on the date.

Results: The systematic searches identified a total of 1886 references in the five selected databases. Of these, duplicates were excluded by Readcube. Only 479 met the inclusion criteria. 1407 were excluded by the title and abstract.

Conclusion: The majority of the rare disease studies in Egypt focus on rare developmental anomalies, rare inborn errors of metabolism, and rare neurological diseases. Genomics can reduce the burden of rare diseases by providing quicker and more precise diagnostic tools. This will offer rare disease patients the chance for personalized medicine alleviating the family's suffering and Egypt's economic burden. This sheds the light on the importance of the national project "Egyptian Genome Project—Rare diseases project" to decrease the rare disease burden.

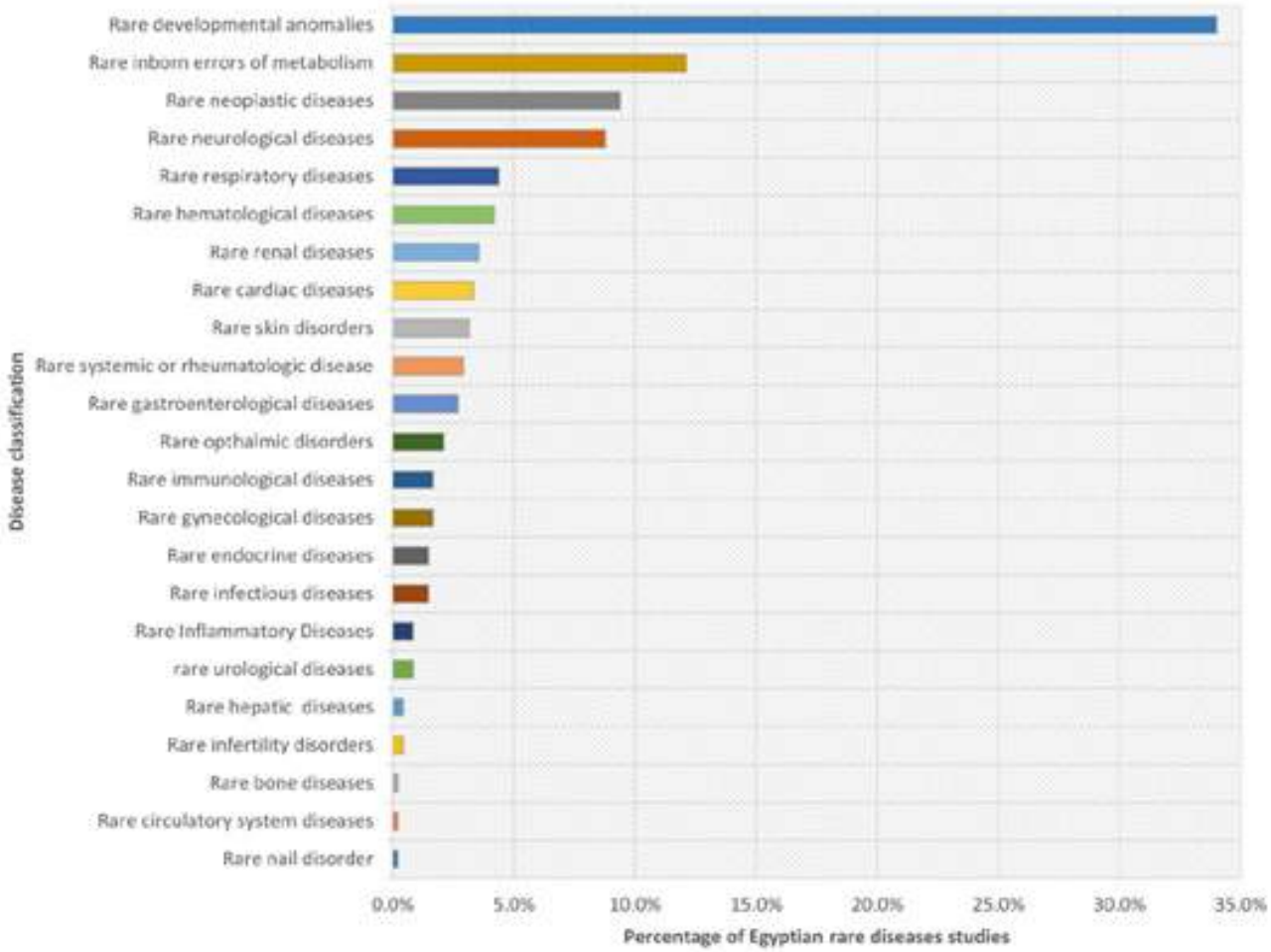

Fig.1. *Rare diseases' classification of the Egyptian rare disease studies. Next to each column is the percentage of the studies on this category of rare diseases in the Egyptian literature.*

Biography

Dr. Tarek is currently serving as the head of Stem Cell and Regenerative Medicine branch at Egypt Center for Research and Regenerative Medicine, and member of the scientific committee for Egyptian Genome Project. Dr. Taha's extensive experience in the field of immunology is highlighted by his prior role as the founder of the immunogenetics unit and the head and consultant of Immunology and Tissue Typing in the Egyptian Armed Forces Central Lab in 2017. Dr. Taha's commitment to advancing scientific knowledge is underscored by his role as the head of the organizing committee for Lab conference and Exhibition (EGY Health 2019 and 2021, Africa Health 2022 and 2023) and Manama Health Conference and Expo 2023. In addition to his scientific credentials, Dr. Taha serves as a consultant and head of grievances committee (Unified Procurement Authority) in 2020, and the head of the scientific committee for Lab and Blood Bank in Egyptian Supplies Procurement Committee.

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The Legislative Paradigm of China's Biosafety Law and Its Positive Significance for the SARS-CoV-2 Prevention and Control

Zhou Chen[1] and **Wu Wanqiang**[2]

[1]*Shanghai University of Political Science and Law, China*
[2]*Shanghai Jiao Tong University, China*

In the past decades, the emergence and spread of infectious diseases have brought great public health risks that continue to plague human civilization. China has been exploring the legal system in many sub-fields of biosafety to prevent and control the health and social risks caused by infectious diseases. China's Biosafety Law, which came into effect on April 15, 2021, is the latest achievement of legislative exploration in the biosafety field. At present, the Biosafety Law consists of 10 chapters and 88 articles, which are mainly divided into eight regulatory areas. After sorting out the normative documents in all related fields, we found that the newly promulgated Biosafety Law is like a central nerve that connects all the relevant laws and regulations in these eight regulatory areas, which can comprehensively coordinate scattered system norms in various fields and avoid conflicts in the operation of various laws and regulations. In terms of legislative orientation, it is both an integral part of the national security system and basic and comprehensive legislation in the field of biosafety. It adopts a policy-oriented legislative model and takes risk prevention as the basic principle with regard to the legislative paradigm. Meanwhile, China's Biosafety Law has positive significance for the SARS-COV-2 prevention and control, including enhancing China's early warning and emergency responding capability for infectious diseases and clarifying the government's division of function.

Biography

Zhou Chen, Ph.D. in Law, is an assistant professor at Law School, Shanghai University of Political Science and Law. Her research focuses on criminal justice and Biosafety law. Her recent publications appear in European Journal on Criminal Policy and Research, Journal of National Prosecutors College, Journal of Beijing Institute of Technology (Social Sciences Edition),Biotechnology Law Report, among others.

Wu Wanqiang (corresponding author), is a Ph.D. candidate at KoGuan School of Law, Shanghai Jiao Tong University. His research focuses on criminal justice and Biosafety law. His recent publications appear in China Review of Administration of Justice, Biotechnology Law Report, among others.

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Environmental Selenium: Occurrence, Public Health Implications and Biological Treatment Strategies

Adhena Ayaliew Werkneh, Gebretsadkan Gebremedhin Gebretsadik and **Shifare Berhe Gebru**

School of Public Health, College of Health Sciences, Mekelle University, Ethiopia

Selenium is an essential toxin that functions as essential micronutrient for maintaining good health with a small safety margin, but is toxic at slightly higher concentrations or doses. The dietary deficiency of Se is (40 µg/d, while Se is toxic to human health when) 400 µg/d to cause several public health risks such as respiratory, neurological, and dermal damage by decreasing the activity of cellular enzymes and through interrupting the integrity of proteins. It is being distributed throughout the environment, including mines, water, plants, soils, wastewater and the atmosphere. Multi-sectorial studies should be required to eliminate the toxic effects of Se and retain its public health benefits through the application of various treatment strategies from the contaminated environment. The public health concerns of Se could be resolved by applying a suitable water treatment technology (biological techniques). Amongst them, the biological techniques by inoculating several Se-respiring microorganisms in removing Se-laden wastewater have received worldwide attention. The treatment performances of the reviewed biological technologies (bioreactors systems) have been performed higher removal efficiency, but their sustainability in continuous processes depends on the effects of operational parameters. Both in small- and large-scale operations, the phytoremediation techniques utilizing microalgae and artificial wetlands performed a considerable Se elimination efficiency. This paper provides a critical review on the occurrence of selenium, public health significance of selenium to be used as an essential micronutrient and supplement for patients with various diseases (including those with HIV-AIDS and COVID-19), its toxicity, and the biological selenium treatment technologies investigated at laboratory and currently in use at pilot, and full-scale processes.

Biography

Mr. Adhena Ayaliew Werkneh is an Assistant Professor at the School of Public Health in College of Health Sciences, Mekelle University (Ethiopia). He received an International Master of Science Degree (M.Sc.) in Environmental Science and Technology from UNESCO-IHE Institute for Water Education from Netherlands in 2016. Mr. Adhena published 20 original research articles, review papers and book chapter in peer reviewed reputable international journals (such as Elsevier, Springer and Wiley Publishers). Among his papers 11 of them were published in 2022 & 2023.

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Serial Platelet Rich Plasma Intraarticular injections in Kellgren and Lawrence grade IV Knee Joint Osteoarthritis: A prospective blinded placebo controlled interventional study

Amit Saraf and **Altaf Hussain**

Teerthanker Mahaveer medical college and research Centre, India

Purpose: The purpose of this study was to evaluate whether serial intra-articular (IA) platelet rich plasma (PRP) injections improve pain and function in patients of Kellgren-Lawrence (K-L) grade IV primary knee osteoarthritis (KOA), not willing for arthroplasty or having relative contraindications to surgery.

Methods: 90 patients (84 available at final follow up) of grade IV KOA were given 3 PRP or NS injections at 1-month interval. Pain and functional assessment was done with Visual analogue scale(VAS) and Western Ontario and McMaster universities osteoarthritis index(WOMAC) respectively, at baseline and then at three and six months of follow-up. Both groups were homogenous with similar baseline characteristics.

Results: Both groups showed statistically significant improvements in the outcome scores but only PRP showed minimal clinically important difference(25% in WOMAC and >2cm difference of mean in VAS at follow up). For intergroup comparison, PRP showed better results as there was statistically significant difference in WOMAC at 3 months (Difference=-9.220,95% CI=-13.1945 to-5.2455,P<0.0001) and at 6 months (Difference=-10.360,95%CI=-14.5358 to -6.1842,P<0.0001). Similar results were seen for VAS also (Difference= -0.580, 95% CI= -1.1412 to -0.0188, P=0.04 at 3 months) and (Difference= -0.870, 95%CI -1.3993 to-0.3407, P=0.001 at 6 months). Outcome scores significantly correlated with age and sex but not with body mass index (BMI).

Conclusion: Serial intra-articular injections of autologous PRP mildly improve short-term subjective pain and knee function scores in patients of grade IV KOA without any major complications.

Table: Comparison of outcome scores among the two groups

VAS	NS Group		PRP Group		t test	p value
	Mean	SD	Mean	SD		
Baseline	7.90	1.04	8.02	1.12	0.26	0.61
3 Months	6.37	1.58	5.79	0.94	4.17	0.044*
6 Months	6.61	1.39	5.74	1.03	10.57	0.002*
AC Score	**NS Group**		**PRP Group**		**t test**	**p value**
	Mean	**SD**	**Mean**	**SD**		
Baseline	78.49	6.69	81.54	7.43	4.89	0.052
3 Months	70.22	10.51	61	7.64	21.28	<0.01*
6 Months	70.73	10.27	60.37	8.95	24.35	<0.01*

Biography

Altaf Hussain has received his master's in orthopaedics from Jawaharlal institute of postgraduate medical education and research (JIPMER) pondicherry and currently works as an assistant professor in Teerthanker mahaveer medical college and research centre, UP, India. He has a deep interest in the role of biologics in treatment of musculoskeletal conditions with many published research articles in national and international journals and this current paper is a result of this interest.

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Stearoyl-CoA Desaturase 1 as a Therapeutic Target for Cancer: A Focus on Hepatocellular Carcinoma

Amir Mehdizadeh[1*], Mortaza Raeisi[1], Leila Hassanbeigi[1], Fatemeh Khalili[1], Hengameh Kharrati-Shishavan[2] and Mehdi Yousef[3]

[1]Hematology and Oncology Research Center, Tabriz University of Medical Sciences, Iran
[2]Department of Plant Biology, Faculty of Natural Sciences, University of Tabriz, Iran
[3]Stem Cell Research Center, Tabriz University of Medical Sciences, Iran

One of the main characteristics of cancer cells is the alteration in lipid composition, which is associated with a signifcant monounsaturated fatty acids (MUFAs) enrichment. In addition to their structural functions in newly synthesized membranes in proliferating cancer cells, these fatty acids are involved in tumorigenic signaling. Increased expression and activity of stearoyl CoA desaturase (SCD1), i.e., an enzyme converting saturated fatty acids to Δ9-monounsaturated fatty acids, has been observed in various cancer cells. This increase in expression and activity has also been associated with cancer aggressiveness and poor patient outcome. Previous studies have also indicated the SCD1 involvement in increased cancer cells proliferation, growth, migration, epithelial to mesenchymal transition, metastasis, chemoresistance, and maintenance of cancer stem cells properties. Hence, SCD1 seems to be a player in malignancy development and may be considered a novel therapeutic target in cancers, including hepatocellular carcinoma (HCC). This review study aims to discuss the impact of SCD1 as a major component in lipid signaling in HCC.

Biography

Amir Mehdizadeh is an Assistant Professor of Medical Genetics in the Hematology and Oncology Research Center at Tabriz University of Medical Sciences having occupied the position since 2017. He completed his MSc in clinical biochemistry and PhD in medical genetics at Tabriz University of Medical Sciences. His main research interest is molecular metabolism, epigenetics, genetic engineering and targeted therapy with a focus on cancer biology.

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TLR-7 activation in CD8+ T Cells Modulates Inflammatory Mediators in Patients with Rheumatoid Arthritis

Nitish Swain[1] and **Archana Tripathy**[2]

[1]*Disease Biology Laboratory, School of Biotechnology, Kalinga Institute of Industrial Technology (KIIT), Deemed to be University, India*
[2]*Laboratory of Immuno-Genomics and Systems Biology, Institute of Life Sciences, India*

Background: Rheumatoid Arthritis (RA) is an autoimmune disorder of unknown etiology with aberrant immunological responses leading to inflammation, swelling and pain of the joints. CD8+ T cells have been known to be one of the major immune modulators in the progression of RA and the presence of Toll Like Receptors (TLRs) on these cells further accentuate their role in RA.

Objective: Through this study we have tried to focus on the effect of activation of TLR7 via ligation of imiquimod and its role in reduction of inflammatory mediator activity in patients with Rheumatoid Arthritis.

Methods: Blood samples of 80 RA patients and 73 healthy controls (HC) were screened for presence of TLR7, transcriptome analyses, cytokine profiling, expression of Tristetraprolin (TTP), T cell subset population patterns and the results were statistically analysed.

Results: In this study, TLR7 is shown to be excessive in the CD8+T cells of RA patients and significantly increases with disease severity. Upon activation of TLR7 post ligation via Imiquimod, NFkB and pERK are activated and led to the downstream transcription of inflammatory cytokines. The activation of TTP truncates the translation of the inflammatory proteins and leads to downregulation of inflammatory cytokines.

Conclusion: The stimulation of TLR7 with Imiquimod in these CD8+ T cells drives the signalling cascade via NFkB and pERK activation and hence an increase in the mRNA transcripts of signature cytokines and cytolytic enzymes. However, a parallel synthesis of TTP, a mRNA destabilizing protein does not induce translation of the mRNA transcripts. We thus report that a direct TLR7 ligation by its agonist increases cytokine transcript signature but not an equivalent protein surge.

Biography

I am Dr. Archana Tripathy, pursuing my research career as a Quality Control Consultant in immunology facility Laboratory at Institute of life Sciences, India. I have completed my PhD in 2021 on a topic "Understanding the role of CD8+T cells in rheumatoid arthritis patients" at from School of Biotechnology, Kalinga Institute of Industrial Technology (KIIT) [http://biotech.kiit.ac.in/], India.

During my PhD studies, I have focused on immune cells differentiation in rheumatoid arthritis patients. We have found out the presence and function of unique receptors on CD8+T cells of patients. We have also focused on mitochondrial processes in PBMCs as well as CD8+T cells. We have also performed correlation analysis of gut microbiota with immune cells. My post-PhD experience includes vaccine manufacturing and efficacy testing in animal models using a variety of immunological assays, such as full spectral flow cytometry, ELISA, Neutralization assay, and PRNT50. These experiences have improved my knowledge on viral immunology. I have the expertise of a variety of molecular techniques, including Plasmid isolation, transformation, PCR, qPCR, cloning, ligation, DNA isolation, RNA isolation that have helped me study bacterial pathogenesis and virulence mechanisms.

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Online Lending Platform and Supply Chain Finance Strategies

Ata Allah Taleizadeh and **Aria Zaker Safaei**

[1]*University of Tehran, Iran*
[2]*Islamic Azad University, Iran*

Online peer-to-peer (P2P) lending platform is an emerging FinTech business model that establishes a link between investors and recipients of capital in supply chains (SCs). This article studies optimal decisions and operational strategies in a logistics network considering two capital constrained manufacturers producing products of dissimilar qualities and selling them to a retailer having deterministic demand over a specific period. High quality product manufacturer borrows capital through an online P2P lending platform with a service fee, while low quality product manufacturer pre-sells its products to compete with the high-quality manufacturer. We find optimal prices of the SC participants, service rate of the online P2P platform and percentage of the pre-ordering quantity of the retailer. We analyse optimal Stackelberg and Nash equilibrium of the SC participants. We find that an increase in the amount of opportunity cost can cause a decrease in the pre-ordering quantity of the retailer affecting the SC profit in numerous ways. The online P2P lending platform should consider amount of the retailer's target profit in determining the platform's service rate.

Biography

My name is Aria Zaker Safaei and I am Supply Chain manager of Arshia Medical Ind. With over 5 years in the field of Medical Products, and I used my experience in order to improve the overall efficiency of our company in various aspects. I earned a Master's degree of Industrial Engineering at 2018. While I am planning to immigrate to Canada in the upcoming year.

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Study on the Applicability of a Self-Learning System to Evaluate the Effectiveness of Pandemic Response Measures

B. Chetverushkin, A. Karandeev, V. Osipov and **Yu. Rykov**

Keldysh Institute of Applied Mathematics, Russia

The COVID-19 pandemic has highlighted the need to use digital technologies to find effective solutions in the face of limited information and rapidly changing environment. The spread of pandemic was rapid, which required an operational forecast of the incidence and its impact on the socio-economic state of society.

A chain reaction concept similar to that used in nuclear physics is used to model and predict the spread of the COVID-19 pandemic. The main problem in this case is the collection of information about the components of the process, similar to the reaction rate constants, necessary to predict the state of the system. The main active groups of the population (students, pensioners, etc.) were identified, which act as analogues of chemical elements in the model. Based on the analysis, the intensity of contacts between population groups is predicted. Each element of the group is represented by an intelligent agent with an original set of characteristics, preferences, and behaviors.

For the correct planning of the actions of each intelligent agent, determining the main foci and the likelihood of the spread of diseases, a large amount of information obtained from various sources, including the Internet, is used. The problem of lack of information is solved by monitoring the information space of the external environment (information about tickets for planes and trains, data from mobile operators, etc.).

Modeling and forecasting the spread of pandemic, taking into account the use of various countermeasures, is carried out using artificial intelligence technologies, in particular, self-learning systems. Thus, using an acceptable set of preventive measures, based on a computational experiment, an optimal trajectory is sought in the multidimensional phase space of the states of the socio-economic system, followed by the formation of a knowledge base on the effectiveness of management decisions to reduce the impact of the epidemic.

Biography

B.N. Chetverushkin is prominent specialist in the field of applied mathematics, parallel computing and mathematical modeling. He is an author of more than 390 scientific publications, including 4 monographs. He developed algorithms for solving problems of the dynamics of the emitting gas. The new approach to solving problems of gas dynamics is proposed – kinetic difference schemes. Unlike other methods, this algorithm explicitly uses the connection between the kinetic and hydrodynamic description of a continuous medium. As studies conducted in recent years have shown, this approach has shown its effectiveness in solving problems of magnetic hydrodynamics and high-temperature gas dynamics.

The scientific school has been created by B.N. Chetverushkin that develops models, algorithms and mathematical software that allow successfully modeling scientific and technical problems on high-performance multiprocessor systems. In 2010, based on these scientific approaches, the first K100 hybrid computing complex in Russia was created and put into operation.

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Optimization and Prediction on the Mechanical Behavior of Granite Particle Reinforced Al6061 Matrix Composites Using Deer Hunting Optimization Based DNN

Koli Gajanan Chandrashekhar[1] and **D. P. Girish**[2]

[1]*Sanjeevan Engineering & Technology Institute, India*
[2]*Another InstituteGoverment college of Engineering, India*

The enhancement in the mechanical characteristics of aluminum alloy is always an essential need for the development of industrial technologies. The work presented is focused on the development of Al6061 composite reinforced with granite particles using the stir casting technique at four diferent proportion rates such as 2%, 4%, 6%, and 8% of granite particles.

The developed composites were subjected to heat treatment as per T6 temperature conditions for diferent aging time durations (1 to 9 h). The mechanical characteristics such as hardness, ultimate tensile strength, and yield strength analysis are performed for both the casted and heat-treated granite reinforced aluminum specimens. Deer hunting optimization (DHO) is used to optimize the better-reinforced aluminum alloy from the heat-treated and heat untreated specimens. Besides, the hybrid deep neural network (DNN) is used to predict the experimented mechanical characteristics and compared with other similar predicted neural networks. Such optimization and prediction behavior are performed in Matlab software. From the experimentation, the hardness is better for heat-treated Al6061 reinforced with 8% of granite particles, besides the yield and the ultimate tensile strength is optimal for 6% granite reinforced Al6061. The proposed DNN-DHO provides nearer values

to the experimented mechanical characteristics with minimal error than the predicted outcomes of Particle swarm optimization (PSO) based DNN and DNN alone. The DNN-DHO predicted optimal mechanical characteristics are 68.45 BHN of hardness, 199.67 MPa of ultimate tensile strength, and 100.01 MPa of yield strength. From the overall fndings, heat-treated Al6061 with 6% and 8% granite ofers superior mechanical properties.

Biography

This is Dr. Koli Gajanan Chandrashekhar having 16 years of teaching experience and five years of research experience. Currently working as a Associate Professor at Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, Bharat. I have published 19 international journal papers in the field of mechanical engineering. My area of interest is Composite material, Bio-mechanics, CAD/CAM/CAE etc. I am research guide of renowned university in India and 03 PG students have completed under my guidance.

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A Micro Analytical Approach for Evaluating the Hazardous Aluminum Dross Characterization for Treating Industrial Waste

Neeraja D[1] and **Satish Reddy M**[2]

[1]*Professor and Head of Civil Engineering Department, JNTUA College of Engineering, India*
[2]*Assistant Professor in Civil Engineering, Navodaya Institute of Technology, India*

By finding appropriate recycling approaches, the volume of wastes, corresponding disposal cost, and the pollution to the environment could be diminished. Such promising approaches can also result in the conservation of natural sources and economic benefits. Aluminum (Al) dross as a hazardous solid waste in aluminum production industries has caused serious environmental and public health challenges. Various methods have been introduced for management, utilization, and recycling of the waste. The use of mineral and mixtures in cement-based materials or in concrete has grown significantly in recent years in view of their technical advantages and also to address the environmental issues. As the demand for Al and its derivatives is very high globally, large amounts of wastes are being produced despite the optimization of reprocessing. Especially some of them are hazardous in nature for which some specific measures are to be employed. Secondary Al dross is one of the byproduct materials generated during the production of Al. In the present research work, physico-chemical characterizations are performed for untreated and treated secondary Al slag/dross samples by using various micro-analytical techniques to assess its suitability as partial replacements for cement-based materials using multitude of techniques including XRD (X-ray diffraction analysis), SEM (Scanning Electron Microscope), TG–DTA (Thermo Gravimetric analysis—Differential thermal analysis), Heat of hydration analysis, and X-ray fluorescence. From the analysis, it can be concluded that secondary Al trash can be used as fractional material of cement used for structural and non-structural applications wherein the required mechanical properties are of normal strength concrete.

Biography

Dr. D. Neeraja holds her Bachelor's degree in Civil Engineering, Masters in Structural Engineering; PhD in Civil Engineering from S.V. University Tirupati, Andhra Pradesh, India. She has teaching experience of around 22 years and she is working as Professor and Head of the Department of Civil Engineering at Jawaharlal Nehru Technological University Anatapur (College of Engineering Kalikiri), Andhra Pradesh, India. She also worked as Former Head i/c of Food Technology in the same University. Her areas of research interests include fracture mechanics, finite element analysis, concrete materials (Green technologies) etc. She has guided one MS (by research), 4 PhD students and around 34 M.Tech students in the field of structural Engineering. She has published more than 100 papers in reputed journals and conferences.

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Lung Cancer Prediction using Deep Learning Techniques

Deepa Priya B.S

Bannari Amman Institute of Technology, India

Due to the increase in pollution, the number of deaths caused by lung disease is rising rapidly. It is essential to predict the disease in earlier stages by means of high-level knowledge and acquaintance. Deep learning-based lung cancer prediction plays a vital role in assisting the medical practioners for diagnosing lung cancer in earlier stage. Computer-Aided diagnosis is considered to bring a boost to the field of medicine by tying it to automated systems. In this research paper, several models are experimented by using chest X-ray image or CT scan as an input to detect a particular disease. This research work is carried out to identify the best performing deep learning techniques for lung disease prediction. The performance of the method is evaluated using various performance metrics, such as precision, recall, accuracy and Jaccard index. The objective of the paper is to review the various deep learning models using various type of dataset. The first section is the study of the related works done in the field of lung disease detection. The next section provides the insights of various models used and the accuracy gained by the model. Finally this paper concludes an optimal model for the task to be performed.Deep learning-based lung cancer prediction plays a vital role in assisting the medical practioners for diagnosing lung cancer in earlier stage. Due to the increase in pollution, the number of deaths caused by lung disease is rising rapidly. Computer-aided diagnosis (CAD) is considered to bring a boost to the field of medicine by tying it to automated systems. In this research paper, several models out there which take the chest X-Ray image or CT scan as an input to detect a particular disease. This research work is carried out to identify the best performing deep learning techniques for lung disease prediction. The performance of the method is evaluated using various performance metrics, such as precision, recall, accuracy and Jaccard index. The result concluded that MSD-NET gives better results compared to other models considered for experimental analysis.

Results and Discussion:

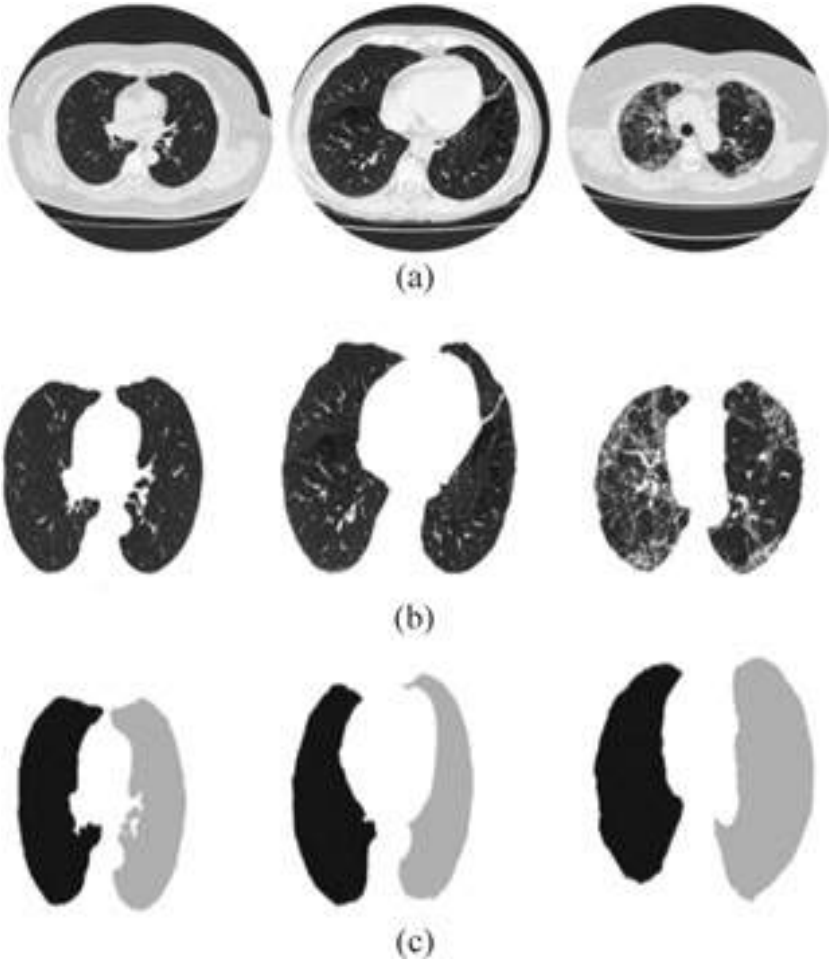

Fig. 3 a Original images of healthy lungs, Lungs with COPD and Lungs with fibrosis respectively. b Segmented lung image of the corresponding original images. c Ground Truth images defining ROI of the corresponding original images

Lung disease classification method	Accuracy	Precision	Recall	Sensitivity
12 classes using text data (SVM)	73	73	91	91
12 classes using text data (k-NN)	67	67	100	100
12 classes using text data (GB)	58	58	64	64
12 classes using audio data (SVM)	63	63	96	96
12 classes using audio data (k-NN)	64	64	99	99
12 classes using audio data (GB)	48	48	53	53
12 classes using text and audio data (SVM)	70	70	99	99
12 classes using text and audio data (k-NN)	66	66	100	100
12 classes using text and audio data (GB)	58	58	69	69
Healthy versus sick using text data (SVM)	75	100	55	55
Healthy versus sick using text data (k-NN)	95	94	98	98
Healthy versus sick using text data (GB)	98	98	99	99
Healthy versus sick using audio data (SVM)	88	89	88	88
Healthy versus sick using audio data (k-NN)	92	94	94	92
Healthy versus sick using audio data (GB)	91	98	85	85
Healthy versus sick using text and audio data (SVM)	64	100	43	43
Healthy versus sick using text and audio data (k-NN)	92	90	96	96
Healthy versus sick using text and audio data (GB)	97	97	95	95

Table 4 Experimental comparison of various Deep Learning Techniques

Biography

Dr.B.S.Deepa Priya, is working as an Associate Professor in Department of CSE, Bannari Amman Institute of Technology, Sathyamangalam, Erode, Tamil Nadu, India. She received her Bachelor's degree in CSE from Manonmanium Sundaranar University. She has received her Master of Technology Degree in CS & IT from Manonmanium Sundaranar University, Tirunelveli. She received her doctorate from NOORUL Islam Centre for Higher Education, Kumaracoil. She has published several journals in scopus and science citation index. Her area of interest in research is Wireless Sensor Networks and Ad-hoc Networks and Deep Learning. Her total teaching experience is 16 years.

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A Multidimensional Approach for Safe and Effective Use of Biosimilars in India: Invovling Regulatory Authorities, Healthcare Professionals and Patients in the Past-COVID-19 Era

Dr A. Naveena

G.Narayanamma Institute of Technology and Science (for women), India

The COVID-19 pandemic has underscored the need for a comprehensive multidimensional approach to ensure the safe and effective use of biosimilars in India. This abstract highlights the importance of collaboration among regulatory authorities, healthcare professionals, and patients in addressing challenges and promoting patient safety in the post-COVID-19 era.

Biosimilars have played a crucial role in expanding access to affordable biologic therapies, particularly during the pandemic. However, their increased utilization has raised concerns regarding their safety and effectiveness. To address these concerns, a multidimensional approach involving regulatory authorities, healthcare professionals, and patients is vital.

Regulatory authorities play a pivotal role in establishing and enforcing guidelines and regulations for the approval, quality assessment, and post-marketing surveillance of biosimilars. They should ensure robust pharmacovigilance systems, monitor manufacturing processes, and provide clear guidance on the evaluation of biosimilarity. Regular updates and revisions of regulations based on scientific advancements are necessary to address the evolving landscape of biosimilar utilization.

Healthcare professionals, including physicians, pharmacists, and nurses, are at the forefront of biosimilar utilization. They require adequate education and training to enhance their understanding of biosimilars, including their indications, potential adverse effects, and monitoring requirements. Collaboration with regulatory authorities and access to reliable information are essential to enable healthcare professionals to make informed decisions and ensure safe and effective prescribing, dispensing, and monitoring of biosimilars.

Patients play a crucial role in their own healthcare decisions. Empowering patients through education and engagement is critical in the safe and effective use of biosimilars. Accessible and accurate information should be provided to patients, enabling them to make informed choices in consultation with healthcare professionals. Active involvement of patient support groups and advocacy organizations can further contribute to patient education, awareness, and safety.

In conclusion, a multidimensional approach involving regulatory authorities, healthcare professionals, and patients is crucial for the safe and effective use of biosimilars in India, particularly in the post-COVID-19 era. Collaborative efforts among these stakeholders are essential to address challenges, enhance patient safety, and expand access to affordable biologic therapies. Continued education, communication, and vigilance are needed to ensure the long-term success of biosimilar utilization in India.

Biography

Dr. A.Naveena is a passionate academician and researcher. She completed her B.Tech in Electronics and Telematics Engineering from GNITS, Hyderabad, M.E in Digital Systems from Osmania University, Hyderabad and Ph.D in Electronics and Communication Engineering with specialization in Wireless Communications and Networks from JNTUH, Hyderabad. She has total 20 years of teaching experience in G. Narayanamma Institute of Technology and Science (for women), Hyderabad. She has 9 years of experience in Research & Development. At present she is working as Assistant Professor in ETE department, GNITS, Hyderabad since June 16th, 2003. Her areas of interest are Wireless communications and Networks, IoT, Machine Learning, Deep Learning. She has published more than 20 papers in International reputed indexed journals and 15 papers in International Conferences. She has supervised 8 M.Tech projects and 16 B.Tech projects.

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Metaverse aided Talent Management

Debolina Dutta[1], Yuvaraj Srivastava[2] and **Eshmeeta Singh[3]**

[1]Indian Institute of Management Bangalore, India
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The COVID-19 pandemic caused an unprecedented global crisis, and its negative effects continue to cause ripples at regional and national levels, impacting the social, economic, and political systems. Ever since the lockdowns imposed by the pandemic and associated global travel restrictions, the tourism and hospitality industry at large has been heavily impacted by rapid technological changes, including the degree of virtual experiences, giving rise to 'virtual tourism'. In an era of talent shortages in the hospitality and tourism sector, the increasing use of technology adoption, including the metaverse, is critical for providing organizations with a competitive advantage. While metaverse adoption is becoming increasingly important for enabling customer experience in tourism, there is a surprising dearth of research on applications in the learning and development of the workforce engaged in this sector. The paper examines how hospitality and tourism HRM practices leveraging the metaverse can meaningfully increase learning engagement with the distributed workforce. Using a qualitative case study research design, we draw on practice theory and attempt to address the changing structures, practices, norms, and interpretive schemes while using the metaverse for learning and development within organizations. The study finds that the metaverse serves as augmenting technology or assistive technology, and its use with partial or wholly immersive environments enables asynchronous and synchronous learning.

Biography

Eshmeeta Singh is an undergrad student at National Institute of Technology (NIT) Srinagar pursuing Bachelors in Computer Science Engineering. With an excellent academic background, Singh not only has had various academic achievements but also has various extra-curricular achievements to her credit. Eshmeeta is a State Level Mental Arithmetic Champion. She is honoured with the position of Head of Public Relations and Logistics at IIEDC (Innovation, Incubation and Entrepreneurship Development Centre). Born and bought up in the heaven on earth, Kashmir valley, Singh has completed her schooling from Presentation Convent Higher Secondary School. As an active member of the academic community, Singh continues to research on how emerging technologies particularly Web 3.0 aim in improving the contemporary HRM practices and is dedicated to provide holistic models incorporating Web 3.0 in every sphere of business management whether it is healthcare, tourism or even mental healthcare practices.

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Experimental brain models of radiant energy interaction CENEPSIA

N. Garay Badenian[1], N. Benech[2], G. Cortela[2], H. Prinzo[3] and **F. Simini[1]**

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Epilepsy affects more than 50 million people worldwide and its treatment is still a challenge, 30% of the patients are refractory to medication. Surgery is the most effective method to treat these refractory epilepsies, however, due to adverse effects, many patients reject it. Neuromodulation devices are also used. With these devices, a 50% reduction in seizures can be achieved in up to 70% of patients. Unfortunately, the most effective device is the most invasive with the highest risk side effects.

There is still no device that ensures great effectiveness in epileptic patients in a non-invasive way, it is necessary to advance in the development of devices. Research on the energetic interaction of electromagnetic fields and ultrasound on nervous tissue allow us to think about the delivery non-invasive energy in brain areas. The effect of ultrasonic radiation in phantoms that simulate biological tissue has promising results in terms of energy measurements delivered to specific points.

Ultrasound is being investigated to perform ablation and neuromodulation in brain tissue for the inhibition of epileptic foci. In the CENEPSIA master's project (for Concentration of Energy in Epilepsy) we are working with a single ultrasound transducer for controlled, directed targeting and in small volumes (0.025cm3), in order to have access to ultrasound as a treatment in developing countries.

Two different situations are pursued in the simulations: focused thermal ablation and non-invasive neuromodulation. To perform these simulations and obtain specific parameters, we designed and tested phantoms that simulate the properties of brain tissue,are cheap, reproducible and accessible, to explore the effect of appropriate signals on specific points on these phantoms. These remote actions from outside the phantom anticipate conditions of non-invasive use for future clinical implementations.

Biography

Natalia, 27 years old, is a professional in the field of Clinical Neurophysiology and biomedical sciences. She holds a Bachelor's degree in Clinical Neurophysiology and is currently pursuing a Master's degree in Biomedical Sciences. Her passion for research lies specifically in neurology, with a strong focus on epilepsy.

Since 2017, Natalia has played a pivotal role at the Biomedical Engineering Nucleus, where she has gained invaluable experience in research. During her tenure at this renowned institution, she has expanded her knowledge across various branches of research, enhancing her understanding and skills in the field of biomedicine.

With an unwavering passion for the study of epilepsy and a commitment to scientific excellence, Natalia continues to advance in her career with the firm belief of contributing to the advancement of knowledge in the field of neurology in Montevideo, Uruguay.

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Alpha lipoic acid potentiates the myocardial function and anti arrhythmic effects of ischemic postconditioning in the setting of cardiac ischemia/reperfusion injury in diabetic rats

Sanaz Gholami, Reza Badalzadeh and **Alireza Alihemmati**

Faculty of Medicine, Tabriz University of Medical Sciences, Iran

Background: Prevention of lethal ventricular arrhythmias induced by myocardial ischemia/reperfusion (I/R) in diabetic patients is the major goal of cardio-protective strategies. Here, we aimed to examine the anti-arrhythmic effect of ischemic postconditioning (IPostC) and alpha-lipoic acid (ALA) in myocardial I/R injury of type-II diabetic rats, focusing on the involvement of connexin-43 and nitric oxide (NO) in this context. Methods: Diabetes (duration of 12 weeks) was induced by high-fat diet and low dose of streptozotocin in thirty male Wistar rats (12 weeks old, 200–250 g). After mounting the hearts on the Langendorf apparatus, I/R was induced by the ligation of left anterior descending coronary artery for 35 min, and reperfusion for 60 min. ALA (100 mg/kg/day) was administered orally in diabetic rats for five weeks before I/R. IPostC was applied immediately at early reperfusion. The arrhythmias were evaluated according to the Lambeth convention. Connexin-43 expression and NO levels were assessed by western blotting and Griess calorimetric method. Results: IPostC could not significantly decrease the number, duration, and incidence of premature ventricular contraction, ventricular tachycardia, and ventricular fibrillation, also the severity of arrhythmias in diabetic hearts. However, IPostC in combination with ALA-preconditioning significantly decreased the above mentioned parameters and recovered cardiac function compared with untreated or monotherapies-received diabetic rats ($p< 0.05$ to $P<0.001$). Furthermore, this combination therapy significantly increased connexin-43 expression and NO levels, compared with untreated diabetic rats ($P<0.01$). Conclusion: Preconditioning with ALA restored cardio-protection and anti-arrhythmic effect of IPostC in diabetic hearts. Increased connexin-43 expression and NO levels may be the key players in this cardio-protection.

Biography

I was born on April 30, 1991 in Iran. I graduated in Master of Anatomical science from Tabriz University of Medical Sciences, Iran in 2017 and I am about to finish my Ph.D course from this university. I've had research experience for more than five years. I am working on the effects of drugs and cardio-protective interventions in cardiac ischemia reperfusion injury and myocardial infarction in diabetic rats. In addition, I evaluate various indicators including function of the heart, myocardial histological changes, and molecular and cellular mechanisms of interventions and drugs in different conditions.

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Insight into Microbes and Plants Ability for Bioremediation of Heavy Metals

Nishtha Vaid[1], Jebi Sudan[1], Saurabh Dave[2], Himanshi Mangla[1] and Hardik Pathak[1]

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Contamination of ground and surface water, soil, and air by harmful and carcinogenic chemicals is one of the most prevalent problems in the modern industrialized world. Heavy metal toxicity has demonstrated to be paramount hazardous and there are various risks associated with it. In addition, these heavy metals have adverse effects on human health and plant physiology.

The field of bioremediation has undergone an impactful revolution in recent years due to an exponential increase in various issues related to soil and water pollution. Bioremediation is an advanced and efficient technology, which involves the use of biological means such as microorganisms and plants to degrade heavy metal contaminants. Among the millions of microbes present in the ecosystem, the highest metal adsorption ability is possessed by species belonging to genus Penicillium, Streptomyces, Bacillus, Rhizopus, Chlorella, Ascophyllum, Sargassum, and Aspergillus. Among different plant species, Allium,Eucalyptus, Helianthus, and Hibiscus are the main heavy metal absorbers. The present review concentrates on the research in the bioremediation of important heavy metals through the use of plants and microbes.

Biography

Prof. (Dr.) Hardik Pathak, Professor, Department of Biotechnology, JECRC University, Jaipur, Rajasthan, India. Prof. Pathak has 19 years of teaching and research experience in the JECRC University Jaipur. He has published more than 50 research papers and review articles in Journals of repute and books. He has edited and written 12 Books and Guided 5 Ph.D. students. He has been the Principal Investigator of 2 major research projects funded by national organizations (U.G.C., C.S.I.R., I.C.A.R., D.S.T., D.B.T.). His major contribution includes studies on bioremediation of petroleum hydrocarbons and study on phytoremediation of heavy metals in the State of Rajasthan. He has made significant contribution to Science education, science policy& Planning & Management of higher education in Rajasthan.

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Lactobacilli-trained mesenchymal stem/stromal cells and restoring the destroyed balance of Th1/Th2 in lupus disease

Akram Hoseinzadeh[1], Seyed-Alireza Esmaeili[1,2], Zahra Rezaieyazdi[1,3], Mahmoud Mahmoudi[1,2], Jalil Tavakol Afshari[1] and **Fahimeh Lavi Arab[1]**

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[2]Immunology Research Center, Mashhad University of Medical Sciences, Iran
[3]Department of Rheumatology, Ghaem Hospital, Mashhad University of Medical Science, Iran

Background: In the present investigation, our objective was to examine the potential impact of administering Lactobacilli probiotics-educated mesenchymal stem cells (MSCs) on modifying the therapeutic efficacy of MSCs in a murine model of lupus.

Methods: An experimental animal model of systemic lupus erythematosus (SLE) in mice was established by intraperitoneal administering Pristane, followed by the measurement of specific biomarkers to confirm the disease. The isolated MSCs from the bone marrow of healthy BALB/c mice underwent a series of comprehensive identification and confirmation procedures utilizing flow cytometry and cytodifferentiation techniques. Naive MSCs were co-cultured with either Lactobacillus rhamnose or Lactobacillus delbrueckii, or a combination of both, for a duration of 48 hours. The resulting MSCs were subsequently intravenously administered to distinct groups. At the termination of the investigation, flow cytometry was employed to determine the proportion of Th1/Th2 cells in the splenocytes. Subsequently, analysis of variance (ANOVA) was conducted to perform multiple comparisons.

Results: The research indicates that Lactobacillus delbrueckii has the ability to augment the suppression of cell proliferation in naive MSCs, particularly in the lupus microenvironment. On the contrary, the efficacy of Lactobacillus rhamnosus in this particular milieu was deemed to be rather restricted. Nonetheless, the coculture of both probiotics with naive MSCs yielded distinctive outcomes. Therefore, it can be argued that these probiotics have the potential to modulate the immunoregulatory capacity of MSCs, both in terms of mitigation and provocation.

Conclusion: The findings of this study indicate that MSCs trained with probiotics demonstrate different capacities in relation to their effect on the index profile of lupus-like disease, in contrast to their untrained counterparts.

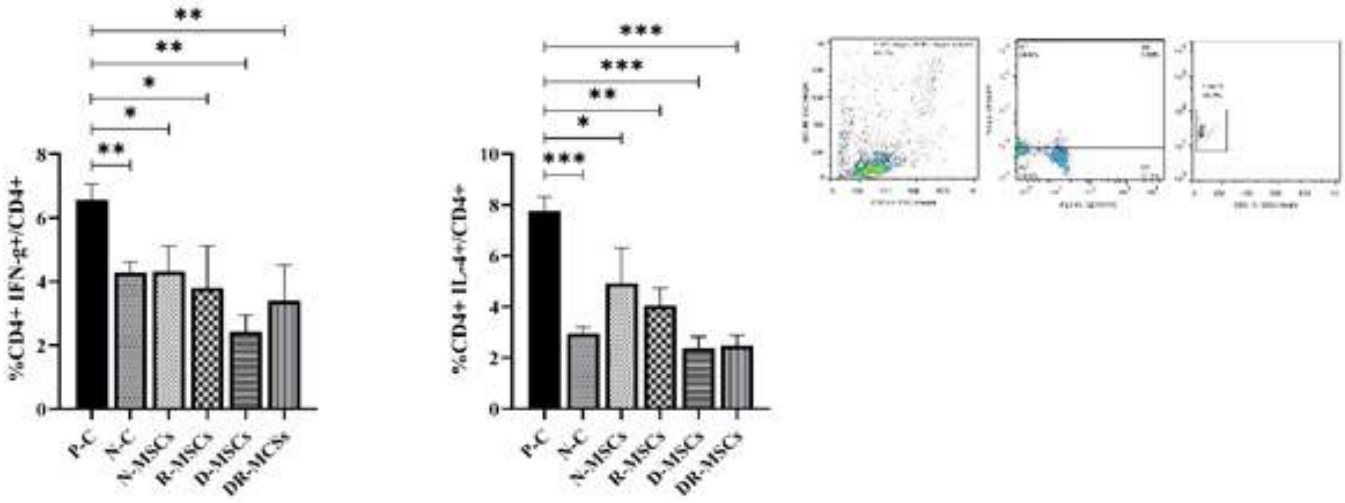

Figure 1. *Flow cytometric analysis to evaluate the effect of engrafted MSCs on the frequency of splenocytes. A representative gating scheme and representative dot plots are also presented. Th1 and Th2 percentages were significantly higher in the P-C group than in the N-C group. The population of Th1 and Th2 in all MSCs treated groups was significantly lower than in the P-C group. These findings support the hypothesis that bacteria can interact with MSCs and educate MSCs with potent immunosuppressive and immunomodulatory properties. Interestingly, a mix of bacteria did not have a similar effect as R-MSCs or D-MSCs. Tukey's multiple comparisons were used to determine the relationship between the variable's means. N-C: Negative Control (Healthy mice treated with PBS); P-C: Positive Control (Pristane-immunized mice treated with PBS); N-MSCs (Naïve MSCs without any interventions); R-MSCs: MSCs exposed to lactobacillus rhamnosus; D-MSCs: MSCs exposed to lactobacillus delbrueckii; DR-MSCs: MSCs exposed to a mixture of lactobacillus rhamnosus and delbrueckii. Data were presented as Mean ± Standard Error of the Mean (SEM). P values of ≤ 0.05 were considered significant. (*P ≤ 0.05, **P ≤ 0.01, ***P ≤0.001).*

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The effects of pomegranate consumption on inflammatory and oxidative stress biomarkers in adults: A systematic review and meta-analysis

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[4]Cancer Research Center, Shahid Beheshti University of Medical Sciences, Iran

Background: Several studies have shown the effects of pomegranate on oxidative stress and inflammation biomarkers, while some studies showed no effects of pomegranate on these biomarkers. Therefore, we aimed to evaluate the effects of pomegranate consumption on C-reactive protein (CRP), Interlukin-6 (IL-6), Tumor necrosis factor α (TNF-α), Total antioxidant capacity (TAC), and Malondialdehyde (MDA) in adults.

Methods: A systematic literature search was performed using databases, including PubMed, Web of Science, and Scopus, up to May 2023 to identify eligible randomized controlled trials (RCTs). Heterogeneity tests of the included trials were performed using the I2 statistic. Random effects models were assessed based on the heterogeneity tests, and pooled data were determined as the weighted mean difference with a 95% confidence interval.

Results: Of 3811 records, 33 eligible RCTs were included in the current study. Our meta-analysis of the pooled findings showed that pomegranate consumption significantly reduced CRP (WMD: -0.50 mg/l; 95% CI: -0.79 to -0.20; p=0.001), IL-6 (WMD: -1.24 ng/L 95%CI: -1.95 to -0.54; p=0.001), TNF-α (WMD: -1.96 pg/ml 95%CI: -2.75 to -1.18; p<0.001), and MDA (WMD: -0.34 nmol/ml 95%CI: -0.42 to -0.25; P<0.001). Pooled analysis of 13 trials revealed that pomegranate consumption led to a significant increase in TAC (WMD: 0.26 mmol/L 95%CI: 0.03 to 0.49; p=0.025).

Conclusion: Overall, the results demonstrated that pomegranate consumption has beneficial effects on oxidative stress and inflammatory biomarkers in adults. Also, pomegranate can be consumed as an effective dietary approach to attenuate oxidative stress and inflammation in patients with cardiovascular diseases.

Biography

I graduated from Mashhad University of Medical Sciences with a master's degree in nutrition science.

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Laser ablation of asphalt and coal in different solvents an *in vitro* study

Huda Mahmood Al-attar[1], Maeda H. Mohammad[2] and **Ali Hussein Alwan[3]**

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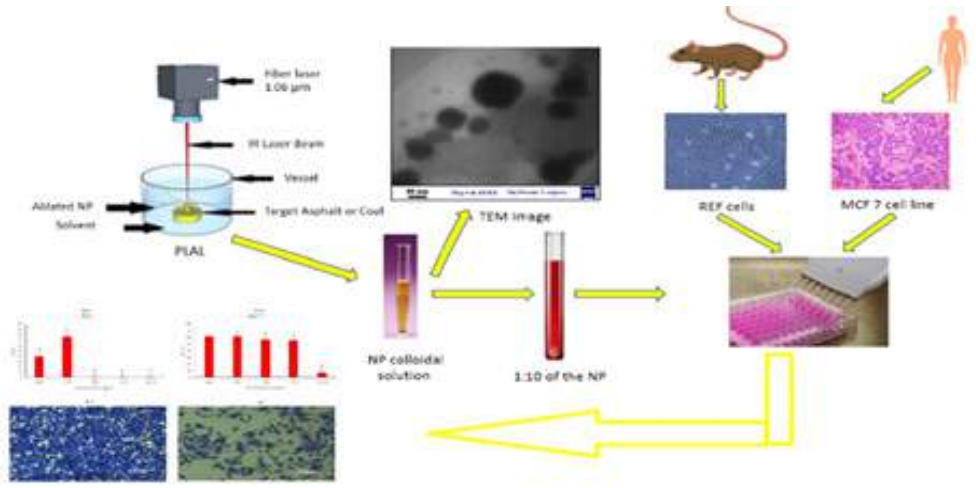
[2]*Iraqi Center for Cancer and Medical Research/ Al Mustansiriyah University, Iraq*
[3]*Iraqi Center for Cancer and Medical Research/ Al Mustansiriyah University, Iraq*

The objective of this study is to test the cytotoxicity of carbon-based materials prepared by PLAL on both the normal (REF) cell line and the human breast cancer (MCF7) cell line. In this study PLAL is used to prepare nanocolloids of asphalt and coal in different solvents such as Ethanol, Dimethyl sulfoxide (DMSO), Phosphate buffer saline (PBS) and Distilled water (D.W.). A fiber laser of wavelength of 1.06 µm and an average power of 10 watts was used to prepare different nanocolloids in different solvents from asphalt and coal. The cytotoxic effect of the prepared materials was tested against breast cancer MCF7 cell line *in vitro*. The asphalt in both Ethanol and DMSO was found to has a cytotoxic effect and the Growth inhibition (G.I.) was found to be 62.1% and 50.5 % at concentrations of 620 and 80 ppm respectively. The coal in DMSO showed G.I. of 59.5 %. Both the prepared materials in the mentioned solvents showed a low toxicity against the normal cell line (REF). The particle size of the prepared nanomaterial ranged from 35-184 nm with homogeneous circular shape. we can conclude that the organic materials prepared in organic solvents using the PLAL had shown a low toxicity against the (REF) cell line while exhibited a significant cytotoxic effect against the MCF7 cell line. Further studies are recommended to test these prepared materials *in vivo*.



Graphical Abstract

Biography

Huda Mahmood Al-attar is a lecturer in college of Engineering /University of Baghdad, Iraq, holding Ph.D in Laser Engineering. I have published four papers. I am currently working on anticancer treatment using photothermal therapy and interested also in photocatalysis.

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Assessment of the quality of pozzolans from Tombel plain, bamileke plateau and noun plain (cameroon volcanic line, cameroon) as additives in cement manufacture

Mbowou Ngantche Igor Fulbert[1,2], Owona Sébastien[1], Nsangou Ngapna Moussa[1], Balla Ateba Christian[1], Wabo Defo Pascal Landry[1], Lissom Justin[1] and **Ekodeck Georges Emmanuel[3]**

[1]University of Buea, Department of Geology, Cameroon
[2]University of Douala, Department of Earth Sciences, Cameroon
[3]University of Yaoundé I, Department of Earth Sciences, Cameroon

Seventeen pozzolan samples from Tombel Plain, Bamileke Plateau and Noun Plain within the Cameroon Volcanic Line (CVL) were analysed in order to determine their ability to partially replace clinker in blended cement manufacture. Electrical conductivity (ΔEc = 0.26 - 3.83mS/cm), SiO_2+Al_2O_3+Fe_2O_3T (SAF =69.58- 81.01%) and loss on ignition (LOI = −0.73 - +7.21%). Except sample TMC18 (ΔEc<0.4mS/cm), others show good pozzolanicity. Microdeval (MD = 24.2 - 93.2%) and water gassing (ω_G = 25.20 - 28.80%) indicate high-grinding ability and good consistency respectively. The obtained pozzolanic cements display longer setting time (149 – 256 >143 mn) than Portland cement, highlighting pozzolan's contributions to mortar's workability. Only sample ML37 reaches the target of 32.5 MPa whereas others show lower (26.4 - 32.1 MPa) compressive strengths after 28 days (Rc 28d). Strength activity index (SAI = 55.0 - 68.33%) are low. Samples with SAI > 60% while using 40% highlight contribution of pozzolans to strengths. Increasing strength gain (SG) with curing time indicates high-activity of pozzolans. These Pozzolanic cements show lower durability gain index (DGI = −7.21 - −2.68< 0) than Portland. A part from sample TDJ16 (DGI = −2.91), other good (Lim52, Lim53, TDJ16, TMC18, BL32, FM42, MB46, MB47) to excellent (N35, ML37, TMjo19) pozzolans in term of strength, display poor durability. Based on standard ASTM C 618 (2015), SAF used till now to make assumption on the quality of pozzolans seem to be less reliable than CIM (CaO+FeO+MgO); instead of decreasing with SAF (R^2=0.24), compressive strength (Rc28d) increases with CIM (R^2=0.31).

Biography

MBOWOU NGANTCHE Igor Fulbert is a Senior Lecturer within the Department of Geology, of the Faculty of Science, University of Buea (South West Cameroon). He teaches Igneous Petrology, Geochemistry, Environmental and Engineering geology at both undergraduate and postgraduate levels. PhD holder in Petrology and Valorization of Lithospheric Materials of the University of Douala (Littoral region of Cameroon), Dr Mbowou's area of interest is the understanding of the petrogenesis of geologic materials as well as their use for industrial production of widely useful products such as cement and ceramic. He is also interested in finding industrial uses for any geologic material with "low" commercial value.

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Experimental and DFT study of the corrosion inhibition of mild steel during acid pickling using chlorpheniramine: a green approach

Alexander I. Ikeuba

Materials Chemistry Research Group, University of Calabar, Nigeria

The corrosion inhibition of mild steel by chlorpheniramine in acid solution was studied using the hydrogen evolution technique across a temperature range of 303-333 K. Results obtained indicate that chlorpheniramine inhibits mild steel corrosion in acid media. The inhibition efficiency of the chlorpheniramine increases with increase in the concentration of chlorpheniramine with a maximum inhibition efficiency of 95.1 % at 800 mg/L. The inhibition efficiency decreased with an increase in temperature. Kinetic data were in line with first-order reaction kinetics. Thermodynamic data reveal that values of the entropy ΔS and enthalpy, ΔH are positive which indicates that the corrosion process is spontaneous and endothermic. The trend in adsorption free energy ΔGoads and activation energy Ea indicate that the adsorption of the inhibitor is spontaneous and physisorption was proposed as the predominant mode of adsorption. The adsorption behavior of the chlorpheniramine is concordant with the Langmuir adsorption isotherm (R2 =0.99). Quantum chemical simulations were used to substantiate the molecular properties, stability, and reactivity of chlorpheniramine from information obtained from atomic population analysis, electron localization function, and natural bonding orbital analysis. Molecular dynamic simulations were used to deduce the stable adsorption configuration of chlorpheniramine on the Fe surface and a very strong interaction was observed toexist between the chlorpheniramine and Fe surface with apparent interaction energy of 157.2 kcal/mol.

Biography

Dr. Alexander I. Ikeuba is the Principal Investigator in the Materials Chemistry Research Group, University of Calabar, Calabar, Nigeria. He holds a PhD degree in Materials Science and Engineering from the University of Chinese Academy of Sciences (UCAS), China. In addition, a Masters degree in Physical Chemistry and a First Class B.Sc. (Hons.) Degree in Chemistry. He is a Lecturer in the Department of Pure and Applied Chemistry, University of Calabar, Calabar, Nigeria. His research interests spans through materials design, understanding corrosion mechanisms of metallic materials, green corrosion inhibition strategies and sustainable/green energy development. He has to his credit, a number of scientific publications reputable journals with an increasing scientific index and rating as indicated in his google scholar profile (https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=ikeuba+alexander&oq=ikeuba)

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Genetic basis of ß-thalassemia in families of pashtun ethnicity in dera ismail khan district of khyber pakhtun-khwa province, pakistan

Jabbar Khan[1], Muhammad Ayaz[5], Muhammad Muzammal[2], Sami Siraj[3], Sumaya Fatima[4], Sana Fatima[2], Muzammil Ahmad Khan[2], Muhammad Ishaq Shah[1], Zia Ur Rehman[1] and **Lin Wei[1]**

[1]Institute of Biological Sciences, Gomal University, Pakistan
[2]Gomal Centre of Biochemistry and Biotechnology, Gomal University, Pakistan
[3]Institute of Biomedical Sciences, Khyber Medical University, Pakistan
[4]Research Centre, The Fourth Hospital of Hebei Medical University, China
[5]Department of Immunology, Hebei Medical University, China

Objectives: The objective of current genetic research was to verify the genetic basis of ß-thalassemia and its pattern of inheritance in families of Pashtun ethnicity in District Dera Ismail Khan, Pakistan.

Methodology: Blood samples from clinically diagnosed five unrelated ß-thalassemia families were collected and target Sanger Sequencing of HBB gene was done. Moreover, in silico analysis including protein modeling and Protein-Protein docking was aslo performed.

Results and Discussion: Clinical analysis of patients from family 1,2, 4, and 5 revealed Thalassemia Intermedia, while patient from family 3 was suffering from thalassemia major. The average Hb concentrations between the cases that were severe were found to be a little lower (6.3 mg/dl) than the patients with milder clinical manifestations (7.6 ± 1.4). Genetic analysis in family 1 identified compound heterozygous mutation of HBB (NM_000518) i.e. c.20A>T +c.92 G>A, in family 2 and 4 compound heterozygous mutations c.20A>T + c.27_28insG, in family 3 homozygous mutation c.27_28insG, while in family 5 we identified homozygous mutation c.92 + 5 G>C (IVS-1 + 5 G>C).

Conclusion: This study offers an effective incentive to establish a mutation detection as well as prenatal diagnosis (PND) centers at a larger scale in the Pashtun ethnicity. The study will also determine the course of disease of thalassemic patients.

Biography

I have currently been working as a professor in zoology and director Institute of biological Sciences, Gomal University, D. I. Khan, KP Pakistan. I did my master in Zoology from university of Peshawar and then Master of Philosophy in molecular biology (1999-2001) from CEMB, university of the Punjab with fully funded scholarship. I did my PhD (2008-2012) in Cell biology from university of Rennes1, France with distinction, showing that Aurora kinase C acts as an oncogene when overexpressed in somatic cells. I was fully supported financially by higher education commission of Pakistan during my PhD studies. I did my postdoctoral studies on mitochondrial genome of longevity individuals in KIZ, Kunming China, for which, I was supported by Chinese government

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Characterization of the anti-cancer and antimicrobial bioactive compounds of the body extract of the physid snails (gastropoda:mollusca) using esi-ms

Javaria Altaf[1], Adiba Ramzan[1], Quratulain Amjad[5], Hidayat Rasool[1], Imran Arshad[6], Abdullah Khalil[2], Hassan Khalil[3], Faisal Saeed Awan[4] and **AbdurRauf Shakoori[5]**

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[2]Rawalpindi Medical College, Rawalpindi, Pakistan
[3]Ameer-ud-Din Medical College, Pakistan
[4]Center of Agricultural Biochemistry and Biotechnology, University of Agriculture Faisalabad, Pakistan
[5]School of Biological Sciences, University of the Punjab, Pakistan
[6]Department of Clinical Medicine and Surgery, University of Agriculture Faisalabad, Pakistan

Physids have been found as excellent sources of novel bioactive compounds with antibacterial activity. Only two species have been found to show potent bioactivity. The body extracts of *Physa acuta* and *Physa fontinalis* were prepared in Ethanol, Acetone, and Ether solvents to check their antibacterial, antifungal, antiviral, and anticancer properties. The antibacterial and antifungal properties were assayed by Well Diffusion Method followed by Minimum Inhibitory Concentration analysis by the Broth Culture method. The antifungal assay was carried out against *Aspergillus flavus*. The body extracts of *P. fontinalis* prepared in acetone and ether showed a zone of inhibition of 19 mm at 0.5mg/ml and 15 mm at 1mg/ml respectively. The MIC was 0.5mg/ml for both the extracts. *P. fontinalis* body extracts in ethanol, *P. fontinalis* body extracts in acetone, and P. acuta body extracts in ether extract showed the zone of inhibition of 21mm, 20mm, and 18 mm (1.5mg/ml) respectively against Staphylococcus aureus. The body extracts of *P. fontinalis* in acetone showed the least minimum inhibitory concentration (MIC) i.e. 0.25mg/ml, followed by the body extract of *P. fontinalis* prepared in ethanol i.e. 0.5mg/ml, and body extract of P. acuta in ether showed 0 .5mg/ml. For the antiviral assay, the 9th-day infected embryos were treated with different concentrations (0.5mg/ml;1mg/ml;1.5mg/ml) of the *P. fontinalis* and *P.acuta* body extracts prepared in ethanol, acetone, and ether to check antiviral activity considering the viability of the embryo. The haemagglutination test was carried out on the live embryos using 96 well microtitration plate. The MIC to prevent the RBCs agglutination was 23.4 ug/ml and 31.25 ug/ml by *P. fontinalis* extract prepared in ethanol and *P. fontinalis* body extract prepared in diethyl ether. The anticancer assays have shown that the body extracts have increased cancer cell proliferation by more than 100%. More than 2000 compounds have been identified through ESI-MS analysis. The structural and functional elucidation of 155 compounds has been using different software.

Biography

I have been working on the taxonomy, ecology and natural drug discovery of the gastropods since 2006 and has published various research articles as has been shown in my CV. Due to this I am well trained in identification and molecular characterization of the species through barcoding. My three M-Phil students have completed barcoding of different species belonging to Family Bagridae and Famiy Channidae. I have produced six M-Phil students who have carried out various assays to assess the bioactivities of the body extracts of gastropods. Recently two students have characterized the compounds, with structural and functional illucidation, responsible for showing positive activities as anticancer, antimicrobial, antioxidant etc. and we have found a range of bioactive compounds which are potential candidates for certain drugs quite useful for human beings. . The results will be further used for the academia-industrial partnership for the product development. Once we get beneficial product from any species (either milk or flesh) we start not only its conservation but also its culture. Being a conservation biologist I am extremely interested to explore valueable product from our species so that we can learn the importance of every creature on the earth.

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Acute membranous tonsillitis: its different etiological factors and clinical presentation as studied in a tertiary referal centre

Kalpana Sharma[1] and **Sunita Das**[2]

Gauhati Medical College, India

Introduction: Membranous tonsillitis is the infection of the palatine tonsils where the exudations from the crypts coalesce to form a membrane over the tonsillar surface. It is a stage ahead of the acute follicular tonsillitis.

Aims & objective: To study 1.Etiological factors, 2.Clinical presentation, 3.Diagnosis and management, 4. Outcome.

Materials & methods: A year long prospective study on 37 patients with membranous tonsillitis in a tertiary care centre. The sequence of management was hospital admission, throat swab for culture/sensitivity, gram stain, Albert stain, routine blood investigations, blood sugar level, serum electrolytes, ECG, Broad spectrum antibiotics, IV fluids for all patients. Nasogastric tube feeding in case of odynophagia, antidiphtheric serum and isolation, tracheostomy in selected patients.

Results & observation: Most of the patients were male in age group 6-12 years from lower socio economic, rural background. Common presenting symptoms were sore throat with exudate, odynophagia, fever, palpable lymph nodes, less common were malaise, nausea, vomiting. Complications of myocarditis seen in 5% cases and mortality was 14%.

Throat swab	Number of cases	%
C.diphtheriae	26	70.3
No growth	6	16
Streptococcus pneumonia	4	11
Candida	1	2.7

Discussion: Acute membranous tonsillitis constitutes about 1-2% of oropharyngeal diseases(3), Late presentation in hospital increases morbidity and mortality. Modified CENTOR score can be used to estimate the probability of streptococcal infection and early management(11). One point for each symptoms (a) No cough (b) Tonsillar exudates/swelling (c) Tender cervical lymphadenopathy (d) Raised temperature (e) Age 3-14 years, > or equal to 45 years. Score < or equal to 1, no further diagnostic test, antibiotics needed. Score 2-3 recommends antigen test, throat culture. Score > or equal to 4 recommends use of emperical antibiotics.

Conclusion: Diphtheria is still prevalent in current Indian scenario, needs strict vigilance on implementation of Universal Immunization programme.

Biography

- DR.Kalpana Sharma Born in 1964 in Borbheta, Jorhat, ASSAM
- Completed MBBS in 1987 with Gold medal in Surgery from ASSAM MEDICAL COLLEGE, DIBRUGARH, ASSAM
- Completed DLO and MS in Otorhinolaryngology from GAUHATI MEDICAL COLLEGE, GUWAHATI, ASSAM in 19991 & 1993 respectively
- With 29 years of experiences as UG teacher and 20 years of experiences as PG teacher, published many original articles in national and international jouranals.
- Both UG & PG Examiner in different Universities of India.
- Special interest in Paediatric Otorhinolaryngology more so in childhood deafness.
- Married to DR. Amal Ch. Kataki, a gynaec oncologist and blessed with two children.
- Travelling and reading are the special hobbies.

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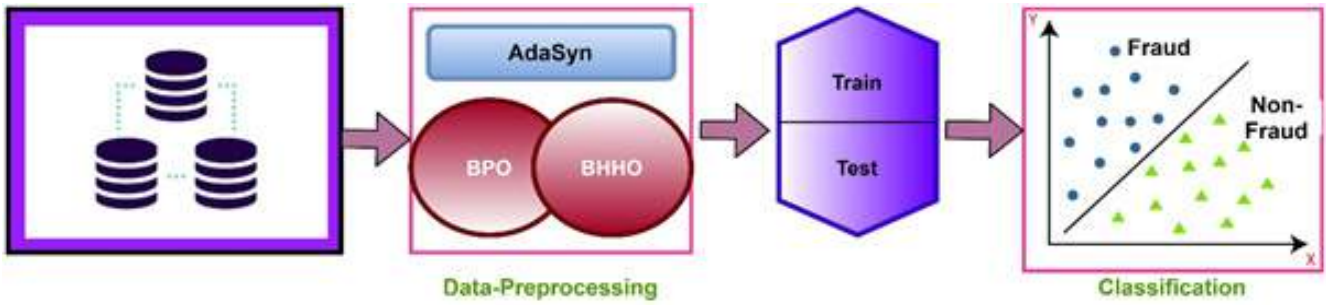
Advances in Medicinal Chemistry and Pharmacology

Metaheuristic and Boosting based Classification for Smart Payment Fraud Detection

Karthika Natarajan and **Chandana Gouri Tekkali**

School of Computer Science and Engineering, VIT-AP University, India

With the advancement of banking and Internet technology, the risk associated with fraudulent smart transactions is continually increasing due to the intricate nature of the information involved in the E-Commerce industry. Despite the prevalence of machine learning-based models for detecting smart fraudulent transactions, their performance still requires enhancement due to the high redundancy of feature information and class distribution imbalance in transaction data. Hence, the development of fraud detection models incorporating effective feature engineering and sampling techniques becomes crucial. This article introduces a smart fraud detection model that integrates a hybridized metaheuristic algorithm mechanism for feature engineering and utilizing cat boosting for classification. In particular, we propose an optimal feature selection technique that explores a broader search space to identify essential features from the pre-processed payment transaction dataset by Adaptive Synthetic Minority Oversampling Technique (AdaSyn), thereby enhancing data quality. Our approach employs a feature embedding mechanism that combines the strengths of Binary Pelican Optimization (BPO) and Binary Harris Hawks Optimization (BHHO) as critical steps. We evaluate the best fitness function for each feature, thereby improving the decision-making capability of each feature within the target domain. Extensive experimental results conducted on the payment dataset demonstrate that our methods significantly contribute to efficient smart transaction fraud detection, outperforming state-of-the-art techniques with an accuracy of 99.94%.



Biography

Dr. Karthika Natarajan Assistant Professor, School of Computer Science and Engineering, Vellore Institute of Technology, AP. She did her undergraduate in B.E in Computer Science and Engineering from Anna University, Chennai. She completed postgraduate in M.E (Computer Science and Engineering) with distinction from Anna University, Trichy. She has done her research at National Institute of Technology, TamilNadu. She has published in journals and conferences. Her research interests are Multimedia Information Processing, Information Retrieval, Machine Learning, and Deep Learning.

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EIDDM: Edge and internet layer distributed dos threats detection and mitigation for internet of things wireless communications

Kavita S. Kumavat

Vishwakarma University, India

Internet of Things (IoT)-enabled distributed communication systems suffer from various Distributed Denial of Service (DDoS) attacks. Various techniques for detecting and mitigating the impact of such attacks on IoT wireless networks have already been established. Because distinct DDoS threats are introduced on different layers of IoT communication systems, designing a unified technique to fight against multi-layer DDoS attacks is difficult. We propose novel security measures to analyze, detect, and mitigate the attacker's nodes in the communication systems. The Edge and Internet Layer DDoS Threats Detection and Mitigation (EIDDM) protocol is proposed in this paper since the majority of DDoS threats are introduced on the edge layer and Internet layer. The functionality of the EIDDM depends on the concept of the network tree analysis mechanism. Each sensor node connected to the IoT communication system is periodically analyzed using the edge and internet layer trust factors. We compute the trust parameters from the edge and internet layers to perform the particular node behavior and reputation analysis in the network tree form. This trust-based network tree analysis of each node first detects whether the current node is an attacker and then identifies the type of DDoS threat with its root cause. After detection of DDoS attackers, we mitigate from being part of IoT communication systems until the next periodic interval. To validate the efficiency of the EIDDM protocol, we perform the experimental analysis using Network Simulator (NS2) tool. The simulation outcomes prove that EIDDM outperformed the underlying protocols in terms of throughput, delay, energy consumption, packet delivery ratio (PDR), and communication overhead.

Biography

Kavita S. Kumavat

Ph.D. Scholar at St. Francis Institute of Technology, Mumbai. Working as an Assistant Professor in the Computer Engineering Department, Vishwakarma University, Pune.

Virtual Event

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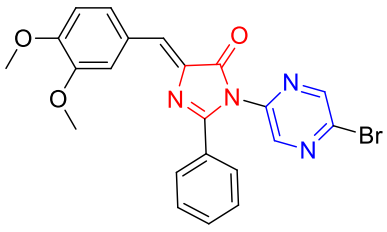
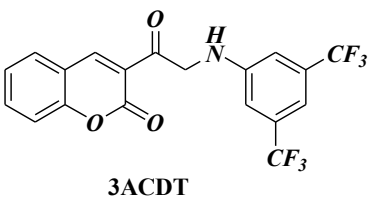
Exploring anticancer potential of bioactive compounds

Khursheed Ahmed

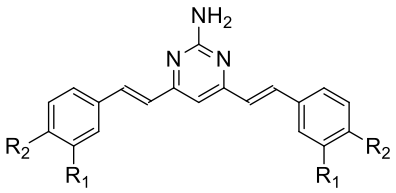
MCE Society's Abeda Inamdar Senior College, Azam Campus, India

Cancer is one of the leading causes of death, and it places a significant impact on the healthcare system. Because of its prevalence, there is undeniably a need for novel anticancer drugs. At the same time, many target-specific anticancer drugs have failed to produce positive results, encouraging to investigate natural products with multi-target properties to achieve better results. Bioactive compounds as anticancer agents are a viable therapeutic option due to their accessibility, applicability, and low cytotoxicity. Such bioactive compounds have the potential to be promising novel compounds for cancer treatment. We used a structure-based drug designing method that entails the combination of two or more heterocyclic moieties with related biological activities because of the reported pharmacophoric characteristics. This method supported the creation of novel imidazolinone pyrazine derivatives with fundamental pharmacophoric properties as anticancer agents. In p53-knockout HCT-116 colon cancer cells, compounds 1a, 2d, and 1g were strongly antiproliferative and induced programmed cell death (apoptosis). The high selectivity for p53-negative colon carcinoma cells over p53-wildtype precursors suggests well for the treatment of drug-resistant tumors with dysfunctional p53 transcription factors. Coumarin or α-benzopyrone framework has been extensively used as a structural subunit for designing and discovery of various anti-cancer agents. The new conjugates were synthesized by linking the coumarin and different anilines and aromatic hydrazides and evaluated for their antibacterial, antioxidant and anti-proliferative potentials. Similarly, 2-amino-4,6-bis(styryl)pyrimidines analogs of curcumin were prepared and tested for their antiproliferative activities against human breast cancer cell lines MCF-7 and MDA-MB-231. Compounds 3b (IC50 = 0.61 μM) and 3g (IC50 = 4.95 μM) exhibited promising *in vitro* anti-proliferative activity against MCF-7 cells and low toxicity towards normal MCF-10A cells.





3ACDT



Biography

Name: PROF. KHURSHEED AHMED

Date of Birth: August 26, 19971 (India)

Designation (Present): Professor in Chemistry, Dean-Faculty of Science and Head, Department of Chemistry, MCE Society's Abeda Inamdar Senior College, Azam Campus, Pune-411001.

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Crystal structure determination, molecular docking and dynamics of arylidene cyanoacetates as potential JNK-3 inhibitors for Ischemia reperfusion Injury

K.S. Kiran[1], Chandan R[1], Chaithanya M.S[2] and Aditya M[3]

[1]Department of Physics, Jain Deemed-to-be University, india
[2]Department of Quality Assurance, Shri Siddaganga college of pharmacy, india
[3]Department of Biotechnology, Siddaganga Institute of Technology, India

Castrate resistant prostate cancer (CRPC) is a form of prostate cancer that keeps proliferating even during low expression of testosterone in the body. It is associated with increased androgen receptor (AR) signaling brought about by elevated intratumoral androgen biosynthesis and AR amplification. Aldo-keto reductase family 1 member C3 (AKR1C3) catalyzes the formation of potent AR ligands from inactive precursors and is one of the most upregulated genes in CRPC. The present study was aimed at determining crystal structure of the ligand by x-ray methods and to perform molecular docking and molecular dynamics studies of the synthesized molecules against AKR1C3. From the results obtained it was found that the MMPBSA binding energies of ligands ADM is -7.3109 kcal/mol and BDM is -4.3277. This has created a new rational approach to drug design, where the structure of drug is designed, based on its fit to structures of receptor site, rather than basing it on analogies to other active structures. The above compounds are binding strongly with Aldo-keto reductase family 1 member C3 protein.

Biography

Dr. K.S.Kiran is working as an professor, Department of physics, Faculty of Engineering and Technology, Jain Deemed to be University, Bangalore. He completed his M.Sc and Ph.D degrees in Physics from Bangalore University, Bangalore, India. Awarded gold medal in M.sc 6th rank from Bangalore University. He has published 30 papers in reputed national and International Journals. He had participated in many national and international workshop, seminars, and conferences and presented around 30 papers. He has been the organizing committee member for the conference in materials research conducted at National level. He has 26 years of experience in teaching the Engineering Physics and 7 years in the field of research. Worked as Board of studies and BOE member in various institutions. His area of research includes material science, crystal growth, x-ray crystallography and Molecular docking studies. He is a life member of many Indian and International Research associations like Life member, Indian society for Technical education,(ISTE),New Delhi, Indian Physics Association,(IPA),Mumbai, Indian Association for Physics Teachers,(IAPT),Kanpur, Luminescence society of Indian- Karnataka chapter (LSIKC), Bangalore, India, Indian crystallographic Association (ICA),Bangalore, Indian Association for crystal growth (IACG), Chennai, India. Serving as an associate editor in Archives of Organic and Inorganic Chemical Sciences and as an editor in open chemistry journal. Received best teacher award from ESN publications, Chennai during the year sep 2019. He has written two text books for UG students, E- book on Engineering physics and field theory for electronics and communication stream.

Received the Best teacher award from ESN publications, Chennai during the year 2019.Vidya kala ratna award from Saraswathi mahavidyalaya, Gujrat during the year 2020.

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A revolutionary platform for the conduct, analysis, and reporting of complex survey data

L. Nkosi[1] and **I. Agaku**[2]

[1]*School of Health Systems and Public Health, University of Pretoria, South Africa*
[2]*Harvard School of Dental Medicine, United States*

Background: Limited access to diverse datasets, labor-intensive data analysis, and inefficient publication processes pose challenges to epidemiologic research. Chisquares, a novel platform, aims to revolutionize epidemiologic research by integrating advanced technologies and providing a comprehensive ecosystem that streamlines the research process while increasing access to global data.

Methods: This review presents an overview of Chisquares, set to launch in late 2023, to highlight its potential in transforming epidemiologic research.

Results: Chisquares offers a multitude of features that provide a robust value proposition for volume, veracity, and velocity in epidemiologic research. The platform utilizes a hybrid approach of artificial intelligence (AI) and cutting-edge algorithms to automate over 80% of the tasks involved in writing a manuscript, reducing the time and effort required for publication. Researchers can collaborate seamlessly within the platform, fostering teamwork and knowledge sharing. Chisquares provides end-to-end support for all aspects of the scientific process, including sample size calculation, sampling, data collection, analysis, writing, and journal submissions. By integrating these functionalities, the platform streamlines the research workflow and eliminates the need for researchers to switch between multiple applications. The platform includes a centralized repository of large, nationally representative surveys worldwide, cleaned, standardized, and stored in a cloud-based environment. Chisquares implements robust security measures, including encryption, access controls, and compliance with data protection regulations. Furthermore, the platform adheres to the guidelines of the Committee on Publication Ethics, ensuring the ethical use of AI tools for language-related tasks.

Conclusion: Chisquares presents a transformative solution to major challenges in epidemiologic research. By automating tedious tasks and integrating research processes, the platform improves efficiency and user experience. With its hybrid AI approach and advanced algorithms, Chisquares accelerates the research workflow and enhances research veracity. It has the potential to reshape epidemiologic research and drive impactful discoveries in the field of Digital Health.

Biography

I am a public health professional currently pursuing my PhD at the University of Pretoria in South Africa. My area of expertise lies in chronic disease prevention and health promotion, with a specific focus on modifiable risk factors such as tobacco use and dietary behaviors. I hold a Bachelor's degree in Dietetics, which has provided me with a comprehensive understanding of nutrition and its impact on overall health. Building upon this foundation, I earned a Master of Public Health degree, further expanding my knowledge in the field. Throughout my academic journey, I have co-authored at least 10 publications, contributing to the advancement of public health research. With a passion for leveraging technology to advance research and improve health outcomes, I am actively working with a team of experts on developing a research platform that streamlines and enhances the research process.

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Towards fair machine learning using combinatorial methods

A. Saraswat[1], S. Pokhriyal[2], A. Kumar[3] and **M. Pal[4]**

[1]National Institute of Technology Kharagpur, India
[2]Indian Institute of Technology Kharagpur, India
[3]National Institute of Technology Patna, India
[4]Indian Institute of Technology Kharagpur, India

With the rise of artificial intelligence and machine learning in the last decade, there has been an increasing interest in developing a solid theory and implementing algorithmic fairness, which has eventually resulted in a large volume of work over the past few years. Despite the enormous amount of work done on the topic over a concise period, there has been little consensus of a unifying theory of algorithmic fairness. In this paper, we develop a notion of fairness that is based on the notion of discrepancy of set systems, a widely studied topic in the theory of computer science and combinatorics.

Biography

Manjish Pal received his B-Tech and M-Tech degrees from IIT-Kanpur, India. He has visited several world renowned universities like Princeton University, ETH Zurich, Tel-Aviv University and had been an Assistant Professor of Computer Science at NIT-Meghalaya, India for five years. Currently he is pursuing PhD at IIT-Kharagpur, India and his interests lie in Machine Learning, Optimization and Combinatorics.

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Tinnitus Control by Auditory Stroop training

Maryam Emadi

Department of Audiology, Hamadan University of Medical Sciences, Iran

Background: Deficit in cognitive functions and central executive function is one of the popular hypotheses on the underlying cause of tinnitus. Some studies expressed the effect of tinnitus on the inhibitory cognitive tasks, referring to the slower inhibitory results such as in the Stroop task in the people suffering from tinnitus as compared to normal subjects. Since Stroop engages the network overlapping the attention and tinnitus distress networks, it seems likely that Stroop exercises can effectively contribute to controlling the tinnitus and its consequent distress through improvement of the cognitive function and increasing the physiological inhibition.

Method: A total of 25 patients with chronic tinnitus (> 6 months) were randomly divided into two groups: an intervention group of 15 patients and a control group of 10 patients. Both groups were subjected to initial evaluations including pure tone audiometry, psychoacoustic measurements, tinnitus handicap inventory (THI) survey, and visual analogue scale (VAS) of annoyance and loudness. The intervention group underwent a rehabilitation program consisting of 6 Stroop training sessions. The control group didn't receive any training. Afterwards, both groups were reevaluated and the results were compared to those of initial evaluations.

Results: Results of this study indicated significant differences in THI scores and VAS of annoyance, before and after Stroop training in the intervention group, although no significant difference was observed when it came to VAS of loudness.

Conclusion: Successive sessions of conflict processing training can improve the annoyance of tinnitus by enhancing the patient's inhibition control, making this task a safe practice for tinnitus treatment.

Biography

I have pHD in Audiology and now work as an assistant professor in audiology department of Hamadan University of Medical Sciences. I have been studying on tinnitus and general field of audiology.

My Phd thesis was about effect of neuromodulation and auditory Stroop training in tinnitus. Through which I especially focused on treating tinnitus patients. Nowdays, I am trying my hardest to study Cognitive Behavioral Therapy (CBT) and combination therapies of tinnitus.

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Investigating the antimicrobial activity of zygophyllum species extract against human pathogens

Mostafa Alamholo

Department of Biotechnology and Biomedicine, Institute of Science and Modern Technology, Syria

Herbal plants are a rich source of antimicrobial agents and provide a safer and cost-effective way to treat bacterial infections. This study aimed to investigation of antibacterial activity of Zygophyllum fabago, Zygophyllum eurypterum, Zygophyllum propinquum and Zygophyllum megacarpum extracts against human pathogenic bacterial. The samples were collected from West Azarbaijan province and were analyzed in biotechnology department of Bu Ali Sina University, Iran. The antibacterial activity by agar well diffusion assay, and MBC and MIC by the serial dilution method were determined. In addition, the phenolic and flavonoid contents were calculated by Folin-Ciocalteu and Aluminum Chloride methods, respectively. The highest sensitivity was observed on S. epidermidis with MIC of 3.125% on flower extract of Z. fabago. The most potent radical scavenging activity belonged to the flower extract of Z.megacarpum. The highest phenolic and flavonoid contents were obtained in Z. fabago root extract as 301.04 mgGA/DWg and 8.04 mgQ/DWg, respectively as well as carvacrol was determined as the dominant compound. Based on the findings, Zygophyllum spp can be suggested for producing natural drugs and antimicrobial agents. By extracting and identifying the compounds of seed extract with antimicrobial properties can be used as organic poison to control of pathogenic microorganisms.

Biography

Education

- Ph.D. Department of Biotechnology and Biomedicine, Institute of Science and Modern Technology, Rojava University, Syria
- Thesis: Investigation of Molecular Mechanism of Abiotic Stress Tolerance in Barley (Hordeum vulgare L.) through Meta-analysis of Transcriptome Data

Research Interests

Gene expression by RNA sequencing and Microarray

Bioinformatics

Gene transfer by Agrobacterium rhizogenesis

Genetic diversity by molecular markers

Tissue culture

Phylogenetic

Machine learning

Microbiology (antimicrobial, anticancer and antioxidant).

Molecular docking

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Dynamical analysis of spread of online misinformation and a delayed optimization technique

Moumita Ghosh and **Pritha Das**

Department of Mathematics, Indian Institute of Engineering Science and Technology, India

The Spread of online misinformation has momentous impact on people's daily life. Like transmission of infectious disease, production and propagation of misinformation has become a social contagion process among netizens. Nowadays with advent of various social media platforms, the twisted news targeting the public opinion have started to disseminate significantly fast and in wide scale. On the basis of the attitudes of netizens toward misinformation, here we have proposed a delayed Susceptible-Exposed-Infected-Recovered (SEIR) model to study the dynamics of propagation of misinformation, considering four categories of netizens, namely, ignorant population, exposed population, active spreaders, aware. Here the delay is incorporated to signify that the online misinformation usually lacks credibility and it takes time to persuade netizens to believe it or circulate it to others. Next the critical value of the spread of misinformation (spreading threshold,) is derived, that gives the condition of prevalence of misinformation. For the delayed system, the system bifurcates from its stable condition, when the time delay crosses a certain value. Also, the streaming rate of misinformation destabilizes the system when it reaches its threshold value. To counter misinformation and inhibit its spreading process, an optimization technique with the help of mainstream media is formulated and solved by Pontryagin's maximum principle with constant delay. Finally, some numerical results are presented to validate our analytical findings.

Results and discussions: To enhance the theoretical analysis some plots are simulated using MATLAB2020.

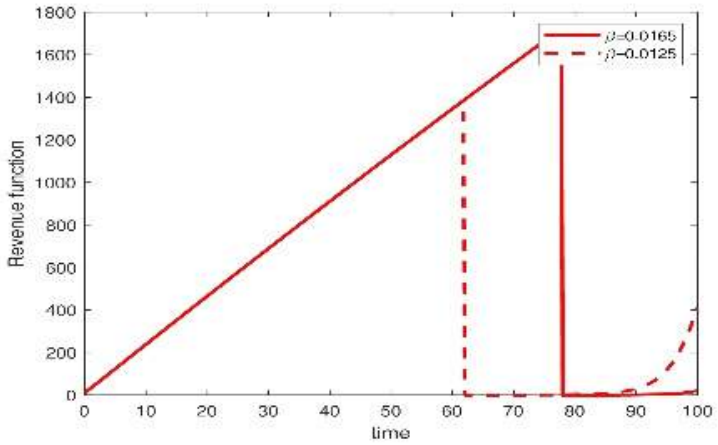

Figure 1: *Comparison of evolution of cost function with different values of after application of control.*

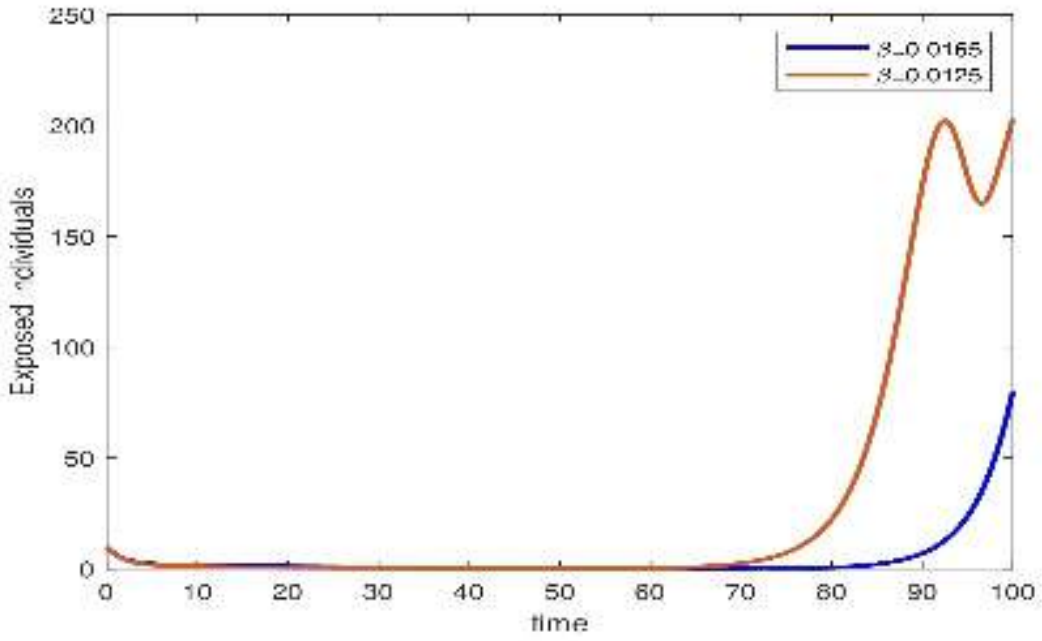

Figure 2: *Exposed population with higher value of decreases to lower value after application of control.*

One can see that, when the transmission rate increases a bit, the execution of control is also increased. Here control is effective only for exposed class, because control cannot stop deliberate(active) spreaders. We have proved that in case of an emergency caused by any sensitive misinformation, the control using mainstream media is efficient to inhibit the spreading rate and bring back the stability of the system with minimum cost.

Biography

A research fellow at IIEST, Shibpur, is presently doing research on 'Mathematical Biology'. There are three articles published in three reputed journals, with me as the first author (title of the articles are listed below). There is also a book chapter (accepted in 2022) where I am the first author. I have completed my M.Sc. degree from IIEST, Shibpur, on 'Applied Mathematics' with optimization techniques as a special paper. I have also cleared GATE and NET in mathematical science.

- Dynamics and control of delayed rumor propagation through social networks. (Journal of Applied Mathematics and Computing)
- Analysis of online misinformation spread model incorporating external noise and time delay and control of media effort. (Differential Equations and Dynamical Systems)
- A comparative study of deterministic and stochastic dynamics of rumor propagation model with counter-rumor spreader. (Nonlinear Dynamics)

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Advances in Medicinal Chemistry and Pharmacology

A production inventory model for non-instantaneous deteriorating items with conditional production rate, variables demand rate, and holding cost

M. L. Malumfashi[1], B. Babangida[1], Majid Khan Majahar Ali[2] and **I. A. Hali[3]**

[1]Department of Mathematics and Statistics, Umaru Musa Yar'adua University, Nigeria.
[2]School of Mathematical Sciences, Universiti Sains Malaysia, Malaysia.
[3]Department of Mathematics and Statistics, Hassan Usman Katsina Polytechnic, Nigeria.

To deal with production-related problems similar to the one forced on by the Covid-19 epidemic, the economic production quantity (EPQ) model for non-instantaneous deteriorating items is presented. This model takes into account two-phase production periods, combined constant and exponential demand rates, and linearly increasing function of time holding cost. Without Backlogs, a theorem and lemmas are used to characterize the necessary and sufficient conditions for this model's optimality, and a solution approach based on differential calculus is used. The optimal total variable cost and production quantity for an imperfect production industry are calculated in this research along with the best replenishment cycle time. A numerical experiment is run to demonstrate this model. The findings show that a longer demanding time lowers an industry's total variable cost while a greater carrying fee lowers output volume. Finally, managerial insights are discussed using sensitivity analysis and future research directions are exposed.

Biography

Mustapha Lawal Malumfashi joined the services of Umaru Musa Yar'adua University (UMYU), Katsina-Nigeria in 2015 as a graduate assistant and is currently a Lecturer II in the Department of Mathematics and Statistics of the same university. He graduated in 2012 with a Bachelor of Science in Mathematics from the Umaru Musa Yar'adua University, Katsina-Nigeria, and a Master of Science in Mathematics at the same university in February 2018 with the highest score. He then proceeded to obtain his Ph.D. in Mathematics with a specialization in Inventory Control/ Supply Chain Management from the prestigious Universiti Sains Malaysia (USM) in 2022. His research interests include queuing theory, inventory control, and numerical analysis. He has published several papers in high-impact journals and conference proceedings.

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Advances in Medicinal Chemistry and Pharmacology

Bioactivity of cyanobacterial secondary metabolites

Rupanshee Srivastava[1], Rajesh Prajapati[1], Tripti Kanda[1], Sadhana Yadav[1], Nidhi Singh[1], Shivam Yadav[2], Rajeev Mishra[3] and **Neelam Atri[1]**

[1]Department of Botany, Banaras Hindu University, India
[2]Department of Botany, University of Allahabad, India
[3]Department of Bioinformatics, Banaras Hindu University, India

The production of several advantageous secondary metabolites by microbes has a significant positive impact on human health all over the world. Prokaryotic photosynthetic bacteria with a global distribution are known as cyanobacteria. The ability of cyanobacteria to adapt to a wide range of environmental conditions can be attributed to the development of several secondary metabolites that have medicinal potential. They are hence a good choice for creating pharmaceutical compounds. The bulk of these substances have shown significant pharmacological effects, including neurotoxicity, cytotoxicity, and antiviral activity against HCMV, HSV-1, HHV-6, and HIV-1. As a result, these metabolites could be intriguing COVID-19 treatment alternatives. As Fischerella ambigua creates ambigols that are active against bacteria, fungi, and protozoa, they have been shown to produce a single metabolite that is active against a broad range of microorganisms. Similar to this, Moorea producens produces the antibacterial, antifungal, and antitumor compounds malygomides O and P, majusculamide C, and somocystinamide. In addition to the aforementioned, Moorea sp. also produces apratoxin A and dolastatin 15, both of which have anti-cancer properties. Regrettably, the FDA has only approved brentuximab vedotin (trade name Adcetris), a drug made from marine peptides, for the treatment of Hodgkin lymphoma and anaplastic large cell lymphoma.Therefore, the field of phycochemistry requires more intensive and interdisclipinary research and many clinical trials need to be take place in order to establish them as a source of antimicrobial agent or anti cancerous agent.

Biography

Professor Neelam Atri is currently a Professor of Botany in the Department of Botany, Banaras Hindu University, India. She has completed her Ph.D from Banaras Hindu University under the supervision of Prof. L.C. Rai on the topic 'Interactive effect of UV-B and heavy metals (Cd and Zn) on selected cyanobacteria'. She further did her Post-Doctoral in the same laboratory on the title, 'Antioxidant property of Anabaena doliolum under metal stress'. Till date she has produced five Ph.D. (Botany) and has guided thirty two masters' students of bioinformatics in their dissertation. She has published several research articles in peer reviewed international journal. Her current area of research interest is unraveling the molecular aspect of cyanobacteria under stress. She has also actively worked in various administration work of the University and is also an active expert member of TEP (Technology entrepreneur programme) outreach centre, Indian Institute of Technology, Banaras Hindu University, India.

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DNA repair enzyme XRCC4 30 bp Indel Intron 3 locus significant association with predisposition of cataract in senility

Neelam Bizenjo, Sanober Kafeel, Shams Salman Shivji, Asifa Keran, Zehra Hashim and **Syeda Nuzhat Nawab**

Ziauddin University, Pakistan

Impaired DNA damage repairing cascade can disrupt the lens transparency due to aging associated oxidative stress. The aim of study was to assess the association of 50 bp indel mutation (rs28360071) in XRCC4 gene with susceptibility of cataract in senility. The study followed case-control design with a total of n=200 participants divided equally into senile cataract patients and control groups. Conventional polymerase chain reaction (PCR) was performed for the genotyping of XRCC4 (rs28360071) mutation. In statistical measures, SPSS ® 20.0 software, MedCal© and SNPStats© tools were used for data analysis. Distribution of homozygous D/D, and mutant D allele was higher in senile cataract patients in comparison to controls. XRCC4 (rs28360071) mutation was significantly associated with predisposition senile cataract

Biography

Neelam Bizenjo is a Bachelor in Biotechnology graduate from Ziauddin University, Pakistan. She was fascinated by science from a very young age and hence, persuade her career in sciences to learn about how the natural world works. She is a keen enthusiastic Fresh Graduate and is interested to broaden her experience as a future Biotechnologist and as an academic researcher. Apart from academics, she works on several conservation activities and nonprofit organizations focused on sustainability.

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Trends in Regional Inequalities in Childhood Anaemia in Ethiopia: Evidence from the 2005-2016 Ethiopian Demographic and Health Surveys

Negussie Shiferaw Tessema and **Nigatu Regassa Geda**[2]

[1]*College of Development Studies, Addis Ababa University, Ethiopia*
[2]*College of Pharmacy and Nutrition, University of Saskatchewan, Canada*

Introduction: Globally, 269 million children aged 6–59 months were anaemic in 2019. Of these, 103 million anaemic children were from Africa. Childhood anaemia is still a serious public health concern in SSA countries, including Ethiopia. In Ethiopia, the prevalence of childhood anaemia largely varies by geographic administration regions. This study is aimed to examine trends in regional inequalities in childhood anaemia in Ethiopia over the period 2005–2016.

Method: This cross-sectional study was based on a pooled total sample of 17,766 children aged 6–59 months drawn from three rounds of the Ethiopian Demography and Health Surveys (2005–2016). We employed multilevel binary logistic regression analysis to identify the determinants of childhood anaemia among children aged 6–59 months. We also used Theil and multivariate decomposition analyses to examine the levels and trends in relative regional inequalities in childhood anaemia.

Result: A combination of individual-, household- and community-level factors were significantly ($p < 001$) associated with childhood anaemia. From the pooled data, the highest childhood anaemia was observed in Somali (78.68%) followed by Afar region (72.76%) while the lowest childhood anaemia was in Amhara (41.01%), Addis Ababa (42.64%) and SNNPR (44%) between 2005 and 2016. The total relative inequality declined from 0.620 in 2005 to 0.548 in 2016. Overall, one third of change in regional inequalities in childhood anaemia was due to the differential resulted from the difference in observable characteristics of the subjects.

Conclusion: Overall progress made in Ethiopia was very slow with only a 13.14% reduction in the relative regional inequalities in childhood anaemia over 11 years. The present study underscores addressing the existing disparities in socioeconomic status, maternal anaemia and maternal employment status between emerging and non-emerging regions to reduce regional inequality in childhood anaemia.

Biography

Negussie is a PhD candidate in Population Studies at Addis Ababa University. Negussie's research interests include: improving the evidence base in child survival- especially in relation to immunization, undernutrition, anemia, and under-five mortality. Negussie has more than seven peer-reviewed journal articles.

Negussie has a Bachelor degree in Mathematics from the Dilla University, and Masters in Population Studies from the Addis Ababa University in Ethiopia. Negussie has strong experience in consultancy industry. Since 2009 he has been involved with and managed more than 100 research projects in Ethiopia. From 2018 to 2021 he worked as senior researcher at Frontieri Consult in Ethiopia, and since 2021 he has consulted UNICEF as a Data Specialist Consultant in Ethiopia.

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Design of ileo-colon releasing tablet dosage form by compression coating: effect of carboxymethyl chitosan on budesonide release

Nikhil Sutar and **Satish CS**

PES University, India

Microbiotically activated ileo-colonic delivery of budesonide from compression coated tablets with considerably reduced carboxymethyl chitosan (CMCH) concentration was designed and investigated. CMCH was synthesized from chitosan dissolved in 20%w/v sodium hydroxide (NaOH) with monochloroacetic at 40±5°C and characterized by proton NMR, FTIR and Degree of Substitution (Ds). The microbiotically activated compression coated tablets (MACC-TABs) were prepared by wet granulation and compression coated with Eudragit S100: HPMC K100M in different ratios for enteric protection and ileo-colon selectivity. Dissolution studies without enzymes and in presence of enzymes such as pepsin at pH 1.2, diastase and pancreatin at pH 6.8, the F1C3 did not show significant changes. Addition of colonic enzymes at the tenth hour, resulted in significant increase in release of budesonide. The % Cumulative Drug Release (%CDR) was 98.49±1.42%, due to the enzymatic triggering (produced by the colonic microflora) leading to the lysis of glycosidic bonds. Scanning Electron Microscopy (SEM) revealed the pores formed after dissolution was due to the water-soluble nature of CMCH to release budesonide. The evidence during *in-vitro* dissolution studies confirmed the pH sensitivity along with microbiotic activation of the MACC-TABs tablets to efficiently and reproducibly release budesonide in the ileo-colon site in presence of the bacterial enzymes.

Biography

Nikhil Sutar has completed his M. Pharm from Rajiv Gandhi University of Health Sciences, Bengaluru, India. He is a full-time PhD research scholar, Faculty of Pharmaceutical Sciences, PES University, Bengaluru. Dr. Satish CS has completed his PhD from Rajiv Gandhi University of Health Sciences, Bengaluru, India. Dr. Satish CS, is currently working as Chairperson Department of Pharmaceutics, PES University. He has published more than 25 abstracts in different high impact journals.

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A review of deep learning based approaches for detection and diagnosis of diverse classes of drugs

Nishant Kumar[1], Ashish Kumar[2], Jeril Kuriakose[3] and **Yogesh Kumar[4]**

[1]Department of CSE, Gurukula Kangri (Deemed to be University), India
[2]Department of CSE, Manipal University Jaipur, India
[3]Mizuho Bank, Singapore
[4]Department of CSE, Pandit Deendayal Energy University, India

Artificial intelligence-based drug discovery has gained attention lately since it drastically cuts the time and money needed to produce new treatments. In recent years, a vast quantity of data in various formats has been made accessible in the medical field to analyse different health complications. Drug discovery aims to uncover possible novel medications using a multidisciplinary approach that includes biology, chemistry, and pharmacology. Traditional sentiment analysis methods count or repeat words in a text assigned sentiment ratings by an expert. Several outdated, ineffective old methodologies are utilized to forecast drug design and discovery. However, with the development of DL (deep learning), the traditional drug discovery method has been further simplified. In this work, we applied deep learning models, such as LSTM (Long short-term memory), GRU (Gated recurrent units), Bidirectional LSTM (BiLSTM), Bidirectional GRU(BiGRU), SimpleRNN, embedding+LSTM, embedding+GRU, embedding+GRU+dropout, embedding+conv1d+LSTM, and Embedding+Conv1d+GRU on a dataset of drug reviews. Furthermore, we used Adam and RMSprop, two optimizers, for each model, for increased optimization. This research focuses on categorizing medication reviews into positive and negative categories. The effectiveness of the different deep learning models was assessed using a wide range of performance measures. Experiments demonstrated that the GRU (Gated Recurrent Unit) generated exceptional validation dataset results. In addition, this study emphasizes the relevance of deep learning methods over traditional learning approaches in categorization.

Biography

An avid and keen researcher with over ten years of teaching experience in the field of computer science. Rich experience web application designing, server technologies, cloud technologies. A great team worker with motivational skill, enabling knowledge sharing within and across teams.

Currently working as Assistant Professor in Computer Science & Engineering at the Faculty of Engineering & Technology, Gurukul Kangri University, Haridwar. Designated as IBM Cloud Advisor for 2015.

Have experience of 10 years in academics and loves to deliver inspiring and technical talks. Have more than 20 papers in reputed journals/conferences. Believes in strong teamwork and has organized many successful conferences/workshops.

A Member of CSI, ISCA Haridwar. Have contributed to CSI as Vice-Chairman and Hon. Secretary CSI Haridwar Chapter.

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Investigation into Burnishing Process to Examine Effect on Surface Integrity, Wear and Corrosion Resistance of Carbon Alloy (EN31) Steel

Nitin Jalindar Varpe

Department of Automation and Robotics Engineering, Amrutvahini College of Engineering, India

Residual stress and surface finish are prominent members responsible for service attributes of component, like wear resistance, corrosion resistance and fatigue life. This leads to investigate ball burnishing as a supplementary process to enhance durability of component. Burnishing is a well-known, inexpensive yet powerful super finishing process that includes plastic deformation of surface layer resulting in cold working which improves mechanical properties and extend components operational life. The aim of current examination is to investigate and optimize ball burnishing process by Taguchi integrated PCA technique for finding most feasible combination of process variables to decrease specific wear rate and increase corrosion resistance of EN31 steel components. Post-burnishing, hardness improved from 178.5 to 265 Hv and roughness of surface reduced from 0.439 to 0.091 µm. The optimization findings revealed that 52% improvement in wear resistance as compared to the turned surface. X-ray diffraction shows that compressive residual stress was induced exactly under the burnished surface. The observed polarization curves and surface micrographs demonstrate that corrosion resistance is improved and consistent. The results confirm that ball burnishing technique enhanced the functional properties of EN31 steel.

Biography

Nitin Jalinadr Varpe received the bachelor's degree in production engineering from Pune University in 2012, the master's degree in production engineering with specialization in CAD/CAM from Pune University in 2015, and the doctorate of philosophy (Ph.D.) degree in Mechanical Engineering from University of Engineering and Management, Jaipur in 2023. He is currently working as an Assistant Professor and Assistant Workshop Superintendent at the Department of Automation and Robotics Engineering, Amrutvahini College of Engineering, Sangamner. His research areas include manufacturing process optimization and CAM.

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Fungal Biocontrol Decrease the Populations of *Pratylenchus Vulnus* in Apple Rootstock

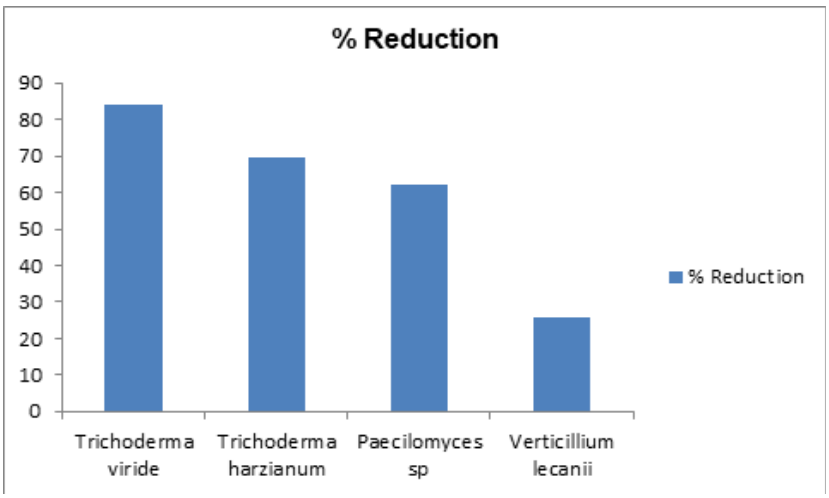
Noura Chihani- Hammas[1], Lobna Hajji- Hedfi[2] and Najet Horrigue- Raouani[1]

[1]Department of Biological Sciences and Plant Protection, Higher Agronomic Institute of Chott-Meriem, Sousse University, Tunisia
[2]Regional Centre of Agricultural Research of Sidi Bouzid, Tunisia

Background: *Pratylenchus vulnus* is considered one of the most dangerous plant pathogens of apple. Plant parasitic nematode management is difficult and at present, synthetic nematicides are being removed from the market because of their negative impacts on the environment and human health. The alternative control method includes cultural practices and the use of resistant rootstocks. The eco-friendly and a low- yield cost method is the use of bio-control microorganisms such as nematophagous fungi.

Materials/Methods: The present Study was carried out to determine the fungal effect of four antagonistic fungi: *Trichoderma viride* isolate (TR1), *Trichoderma harzianum* (TR2), *Paecilomyces* sp. and *Verticillium lecanii* on the root-lesion nematode, Pratylenchus vulnus. Fungal inoculums were applied to the apple rootstock "Ba29" naturally infected with *P. vulnus* in a pot experiment. All fungi were very effective in inhibiting the nematode reproduction rate within 120 days.

Results: Our results revealed that *Trichoderma viride* decreased significantly (P<0, 05) the



Pratylenchus vulnus population by over 84.09%, *Trichoderma harzianum* by 69.68, *Paecilomyces* sp. by 62.13 and *Verticillium lecanii* by 25.65%. Meanwhile, the chemical treatment "oxamyl" performed better than all biological agents with 93.28% of *P. vulnus* population reduction but its efficiency is comparable to the indigenous isolate (TR1) of T. viride.

Conclusion: This study provides the first information on the important potential of Tunisian *Trichoderma viride* isolate (TR1) for the control of root lesion nematodes *P. vulnus* in Apple crop. The results are encouraging, demonstrating their potential as an alternative and complementary crop protection component especially for *Trichoderma* isolate.

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Evaluation of Double M-Band on Serum Protein Electrophoresis Simulating Biclonal Gammopathy: A Case Report

Pallavi Jain, Reeta Choudhary, Arun Kumar Harith and **Charu Yadav**

Medanta-The Medicity, India

Introduction: Monoclonal proteins are immunoglobulins seen in hematological disorders such as monoclonal gammopathies, MGUS, Multiple Myeloma and Waldnstorm s macroglobulinemia. Multiple myeloma is characterized by the presence of M-protein (monoclonal) in blood or urine. These proteins are immunoglobulins which are produced by a clone of abnormally proliferating B-lymphocytes and/or plasma cells.

Objective: To evaluate the presence or absence of M-protein in the given serum sample in a 62-year-old male, presenting with persistent backpain. Bone marrow biopsy showed hypercellular marrow with 28% plasma cells. Beta 2-microglobulin was increased (4.19 mg/L). Renal function was normal, no pallor, disc space reduced at C5-C6 and L4-L5 levels.

Methods used: Serum protein capillary electrophoresis (SPEP) was performed to detect the presence of a monoclonal band on Minicap, Sebia. Immunofixation Electrophoresis was performed using a Hydrasys system (Sebia). Both systems were used according to the manufacturer's instructions

Results and Discussion: The gel picture and densitometric tracing (Fig. 2) showed two distinct M-bands (M1 and M2 in the beta and gamma globulin region respectively). This led us to suspect a possibility of biclonality. Also, since one of the M-bands was present in the Beta region, a monoclonal M-protein of IgM or IgA (known for its tendency to aggregate) isotype producing a second M-band due to polymeric form was also suspected. To differentiate whether the case is of monoclonal or biclonal gammopathy, two methods are used. A repeat SPEP in reducing conditions by pretreatment of 10 uL sample with 100 uLof beta-mercaptoethanol can be used in facilities where IFE is not available. However, we preferred doing IFE as this facility was available in our institute. IFE revealed two bands in IgA Lane at different positions along with corresponding two bands in one of the Light Chains Lane s i.e., IgA kappa IgA kappa (Fig. 3).

DISCUSSION: Thus, it can be safely concluded that the two M-bands on SPEP originated from the same monoclonal protein, thus ruling out biclonality.

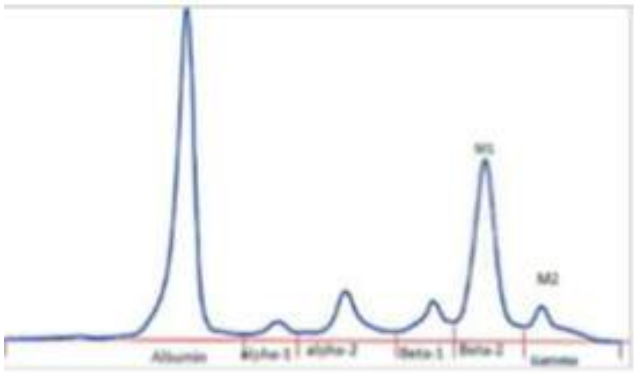

Fig 2: Densitometric tracing showing two bands, M1 in the beta -2 region and M2 in the gamma globulin region

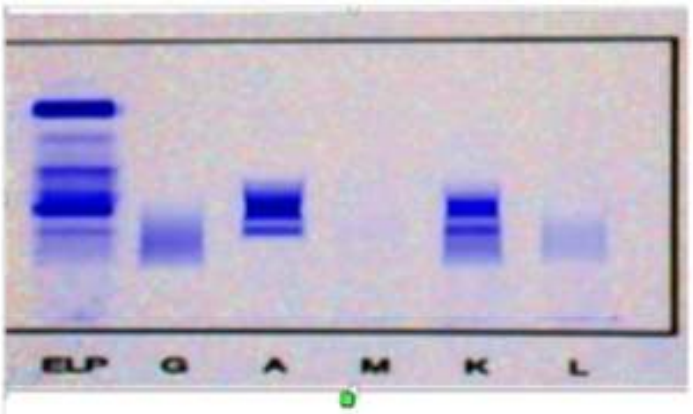

Fig 3: Immunofixation electrophoresis showing expansion of IgA-kappa, IgA kappa chains

Biography

Dr. Pallavi Jain is an MBBS and MD in Biochemistry from Assam and Gauhati Medical Colleges, India, respectively. She has worked as a Senior Resident at Lady Hardinge Medical College, New Delhi and at Medanta - The Medicity, Gurgaon before joining Batra Hospital and Medical Research Centre as a Consultant in Clinical Biochemistry.

Dr. Jain has extensive experience working in state-of-the-art clinical biochemistry laboratories, introducing new instruments, and performing IQ, OQ, and PQ for the instruments. She is well-versed with Quality Assurance and Quality Management Systems as per national and local guidance, along with interpretation of the medical reports and suggesting new tests parameters. Dr. Jain has also taught MBBS, DML, MLT, Dental, and Nursing students. Her interests include statistics, research, and programming languages like HTML, LINUX and Python for data analysis.

Dr. Jain is a strong communicator with excellent time management skills. With nine years of experience, she has become particularly interested in myeloma cases and specializes in using serum protein electrophoresis (SPEP) and immunofixation electrophoresis (IFE) to diagnose disease.

In addition to her expertise in myeloma diagnosis, she is dedicated to staying up-to-date on the latest advancements in medical research and technology, and she is committed to providing personalized treatment plans that meet the unique needs of each patient.

When Dr Jain is not working, she likes to spend her time cycling and enjoying with friends and family.

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Crosswise radiative convective transport of viscoplastic type nanofluid with influence of lorentz force and viscosity variation

Rabil Tabassum[1] and **Rashid Mehmood**[2]

[1]*Air University, Pakistan*
[2]*HITEC University, Pakistan*

Flow of rheological fluids often obeys stagnation flow dynamics in a number of modern-day manufacturing processes. Such flows not only invoke radiative heat transfer under high temperature but also exhibit considerable viscosity variation with temperature. Motivated by such fascinating facts, the present study is an effort to explore steady, two-dimensional crosswise transport of Casson fluid past a surface. A temperature-dependent viscosity model is incorporated along with magneto-hydrodynamic effects. The conservation equations for mass, normal and tangential momentum and energy are normalized with the help of similarity transformations that are solved afterwards numerically using efficient Runge Kutta Fehlberg scheme with shooting quadrature in MATLAB symbolic software. Comparison with the existing published literature is also presented to validate the solutions. Results of velocity, temperature, skin friction and heat flux are presented graphically and discussed in a physical manner. Graphical outcomes indicated that normal velocity profile declined rapidly with magnetic field strength, whereas thermal radiation enhanced the temperature distribution in the fluid flow. This trend revealed that thermal performance of visco-plastic fluid flow improved when radiation effects are incorporated. It is also noted that heat transfer rate at the stretching surface dropped with radiation parameter. Normal skin friction is observed to be significantly reduced, while tangential skin friction enhances with stronger magnetic field effects.

Biography

Rabil Tabassum has completed her PhD in Mathematics at the age of 34 years from HITEC University, Pakistan. She is the Assistant Professor at Department of Mathematics Air University Islamabad, Pakistan. She has over 17 international journal publications that have been cited over 180 times, and her publication H-index is 7 and has been serving as an editorial board member of many reputed Journals.

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Global digital divide and environmental degradation in africa

S. Azeem and **S. Rameen**

The Urban Unit, Pakistan

ICTs and access to Internet use are considered vital for the achievement of sustainable development goals. So, this study explored the effect of the global digital divide, trade openness, renewable energy consumption, and forestation on greenhouse gas (GHG) emissions in 42 high-income countries (HICs) and high-middle-income (HMICs), low-income countries (LICs), and low-middle-income countries (LMICs) of Africa from 1990 to 2018. The Dumitrescu-Hurlin causality results confirmed a unidirectional causality from GHG emissions to the global digital divide (HICs and HMICs), global digital divide to GHG emissions (LICs), and GHG emission to trade openness (LICs and LMICs). Moreover, the long-run results of the autoregressive distributed lag (ARDL) model showed an increase in GHG due to an increase in the global digital divide in all three panels. Further, ARDL results showed reduced GHG emissions due to increased trade openness in LIC and LMICs, renewable energy consumption, and forestation in all three panels. Thus, to encounter pollution from Internet use, the government should start environment-friendly projects through public and private investment in smart and modern environment-friendly technology and reduce the taxes and tariffs on them. Moreover, the governments of African countries should create public awareness through print and electronic media for raising the forestation area.

Biography

I am an Agro-Economist with more than 10 years of experience in research, extensive field surveys, policy and planning in the areas of Agriculture, Livestock, Food Security, Climate Resilient Agriculture, Water Resource Management, Disaster Risk Management, Institutional and Value Chain Analysis and Spatial Planning & Development. I am currently working for Urban Unit, Lahore as Senior Program Manager (Agricultural Development), and focal person on Agriculture, Food Security and Livestock Development. I have been part of multiple policy and planning initiatives including Punjab Spatial Strategy (2047), Punjab Growth Strategy, CPEC and Cholistan Strategy, which aims to transform agriculture & livestock sectors for better inclusivity, food security, economic growth and prosperity. In addition, I have also worked on multiple World Bank projects, supporting climate-resilient policy actions in Punjab. My portfolio also includes extensive research work with 10 publications.

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Optimization of quality of service using ECEBA protocol in wireless body area network

Renuka S. Pawar and **D. R. Kalbande**

Sardar Patel Institute of Technology, India

The paradigm Internet of Things (IoT) gains significant attention worldwide to bring smartness in different applications especially in metropolitan cities. Smart healthcare using IoT is the Internet of Healthcare Things (IoHT) that consists of smart monitoring of health remotely by forming the Wireless Body Area Networks (WBANs) connected with actuators and access points. At the edge layer, IoHT consists of several WBAN nodes, and each WBAN node having body sensors to collect the periodic medical information of patients. The gathered medical information will be sent to actuators or access points where the medical decision is taken in a multi-hop manner. The IoHT deployment suffers from the two challenges such as cost-effective link establishment and effective access control policies. This paper proposed the novel edge layer protocol called Enhanced Cost-effective & Efficiency Based Access control policies (ECEBA). For a cost-effective link establishment, energy minimization and network management cost minimization algorithm are proposed. The goal of cost-effective algorithms is to minimize energy consumption, network overhead, communication delay, etc. For IoHT efficiency under various threats, an efficiency-based security solution proposed using the lightweight Elliptical Curve Cryptography (ECC) to achieve medial data security and medical user privacy preservation. The ECC defines the access control policies to the user's medical information using hybrid cryptography and digital signature verification. The ECEBA protocol is implemented and evaluated with similar methods using NS2. The simulation results prove the efficiency of the proposed protocol over existing methods.

Biography

Prof. Renuka Pawar is an Assistant professor in the Information Technology department at Sardar Patel Institute of Technology, Mumbai. Pursuing a Ph.D. from the computer department in the field of security in wireless sensor networks and having over 15+ Years of experience in teaching & research. Areas of interest include Linux operating systems, system and web security, network security, and WBAN security. Conducted various sessions on OWAPS, Ethical hacking, and digital forensics at various places. Published 15+ research papers in various conferences,2+ research papers in journals, and one poster in the research colloquium. Have participated and presented a research proposal in the final round of the 15th intercollegiate/institute/department Avishkar research convention 2020-21 organized by the university of Mumbai on July 1st, 2021.

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A comprehensive survey on meta heuristic based energy minimization routing techniques for wireless sensor network: classification and challenges

S. Kumar and **R. Agrawal**

National Institute of Technology Patna, India

Wireless sensor networks (WSNs) refer to a group of battery-operated tiny sensor nodes having vast application areas in daily use. These are spatially dispersed and dedicated wireless sensor nodes for observing and recording the different parameter and physical conditions of the surroundings. There is a recent advancement in the field of network connectivity and computations in WSNs. The key functions of WSNs are a data extraction and to transmit the extracted data to the server placed at an isolated location. Various types of WSNs like underground underwater, terrestrial, and multimedia networks get applications domains such as in industrial automation, traffic monitoring and control medical device monitoring, and many other areas. Despite the thriving market, there are several challenges like energy efficiency, limited storage and computation, low bandwidth, high error rates, scalability, and survivability in harsh environment; hence, network lifespan expanding is a critical demanding issue. So many researchers have earlier focused towards finding the optimal path in between member node and sink node, so that energy depletion can be reduced to improve the network lifespan. There are different challenges in WSNs but one of the most challenging issues is how to minimize the energy consumption; numerous bio-inspired techniques have been proposed previously to obtain an optimal path between the member node and the sink node. In this manuscript, we are presenting a comprehensive survey on optimization technique-based routing and clustering. The study of this comprehensive survey offers in-depth summary of the past researches in the area of WSNs.

Biography

Richa Agrawal received the B.Sc. degree with specializations Mathematics, Physics and Chemistry, from University of Allahabad in 2003. She received her B. Tech. and M. Tech. degrees in Electronics and Communication Engineering from University of Allahabad, in 2006 and 2008, respectively, and the PhD degree in Electronics and Communication Engineering from Motilal Nehru National Institute of Technology, Allahabad, India. Currently she is working as an Assistant Professor in the Department of Electronics and Communication Engineering, National Institute of Technology Patna, Patna. Her research interests include ad-hoc and sensor networks, delay tolerant networks, network security and post-quantum cryptography.

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Effectiveness of gratitude therapy in diabetes management: a qualitative study

Safeya Makhmur[1] and **Sangeeta Rath**[2]

[1]*Dept. of Psychology, JAIN (Deemed-to-be) University, India*
[2]*Dept. of Psychology, Ravenshaw University, India*

The objective of the study was to design gratitude therapy, for diabetic participants having a low sense of gratitude, moderate depression, and high perceived stress, and also to assess the effectiveness of the interventions on the diabetic participants on the aforementioned measures. The present study involves qualitative research. The sample for the present study consists of 4 participants (2 males and 2 females) and was chosen from two different clinics in Odisha, based on the higher inflow of diabetes patients across the state (one male and one female from each clinic). The study consisted of three successive phases such as baseline assessment, intervention, and follow-up. Pre-test and Post-test designs were adopted. Participants have received a primary evaluation of the above-mentioned psychological issues related to diabetes along with their blood glucose readings. The participants were assessed by using Perceived Stress Scale, Beck Depression Inventory, Gratitude Questionnaire-6, and Automatic Glucometer as their pre-test. Gratitude therapy was used as an intervention to manage psychological issues among diabetics, to promote gratefulness, and to reduce stress and depression levels. A total of six sessions, over four weeks, were conducted for participants for a total duration of almost one and half months including two weeks of the follow-up period. After 45 days, the researcher again measures the changes in psychological and behavioral self-report outcomes by using those aforementioned questionnaires (post-test). Qualitative data were expressed as percentages, and Schwartz and Blanchard's technique was administered. Results of the study suggested that participants have shown improvement in positive dimension scores and there is a reduction in negative dimension scores. Blood glucose level readings were also marked before, during, and after the intervention. Participants were found to control their blood glucose levels, but the change in the glucose level was not clinically significant.

Biography

Dr. SAFEYA MAKHMUR is working as an Assistant Professor in the Department of Psychology at JAIN (Deemed-to-be) University, Bangalore, India. In her 20s, she earned her Ph.D., M.Phil., and MA with a specialization in Health Psychology and Positive Psychology. She has also completed a Post-Graduation Diploma in Counseling and Family Therapy. She is the co-author of two psychology textbooks. She has published research papers in SCOPUS and peer-reviewed journals and presented papers at national and international conferences. She has guided 150 post-graduation learners in the completion of the research dissertation. She is a passionate-dedicated educator and enthusiastic learner.

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Recent advances in non-small cell lung cancer targeted therapy; an update review

Samaneh Rostami

School of Medicine, Zanjan University of Medical Sciences, Iran

Lung cancer continues to be the leading cause of cancer-related death worldwide. In the last decade, significant advancements in the diagnosis and treatment of lung cancer, particularly NSCLC, have been achieved with the help of molecular translational research. Among the hopeful breakthroughs in therapeutic approaches, advances in targeted therapy have brought the most successful outcomes in NSCLC treatment. In targeted therapy, antagonists target the specific genes, proteins, or the microenvironment of tumors supporting cancer growth and survival. Indeed, cancer can be managed by blocking the target genes related to tumor cell progression without causing noticeable damage to normal cells. Currently, efforts have been focused on improving the targeted therapy aspects regarding the encouraging outcomes in cancer treatment and the quality of life of patients. Treatment with targeted therapy for NSCLC is changing rapidly due to the pace of scientific research. Accordingly, this updated study aimed to discuss the tumor target antigens comprehensively and targeted therapy-related agents in NSCLC. The current study also summarized the available clinical trial studies for NSCLC patients.

Biography

Samaneh Rostami studied laboratory sciences at Zanjan Medical University, and now she is working in the Pasteur Institute of Iran as a quality control specialist.

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A multi-machine bicriteria flow shop scheduling with sequence- dependent setup time

Meenakshi Sharma[1] and **Sameer Sharma**[2]

[1]*Panjab University, India*
[2]*SPN College, India*

Bicriteria permutation flow shop scheduling problem with sequence-dependent setup time (BPFSSP/SDST) is an interesting NP-hard problem in production scheduling. Many heuristic and metaheuristic algorithms are available in the literature to solve the BPFSSP when setup time is not considered to be an independent factor. In this paper, a bicriteria optimization problem with the objective of minimizing the weighted sum of makespan and system utilization time is studied. Minimum system utilization time is usually favoured by the producers and manufacturers to have a control over machine wear and tear, complexity of the production plan and rental/leasing cost while the minimum makespan is related to throughput which is mostly considered by the customers as a measure of service and also by the producers to ensure high utilization of production equipment's. Mixed-integer programming model is developed and implemented to solve the small size referred scheduling problem. To get the approximate solution of the referred problem in large size machine job scheduling environment, the heuristic approach based on the Nawaz, Enscore, Ham (NEH) neighbourhood structure and the metaheuristic approach of hybrid iterated greedy algorithm has been proposed. Further, to improve the results delay time is introduced. The performance of all the referred heuristics and metaheuristics is computed on the varying size job machine environment.

Biography

Dr Sameer Sharma has a credit of more than 80 research papers in the journals of international repute. He has presented more than 35 research papers in various national/International conferences and has given a number of talks in the seminar/conferences of international repute. He is presently working as Principal Swami Premanand Mahavidyalaya, Mukerian, Punjab, India.

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Multi-modal fusion of deep transfer learning based COVID-19 diagnosis and classification using chest x-ray images

Kotte Shailaja[1], A. Siva Krishna Reddy[4], K. N. Brahmaji Rao[5], Narasimha Reddy Soora[1], N. C. Santosh Kumar[3], Abel Sridharan[3] and **J. Uthayakumar[3]**

[1,2,3]Kakatiya Institute of Technology & Science, India
[4]SR University, India
[5]KRaghu Institute of Technology, India

COVID-19 pandemic has a significant impact on the global health and daily lives of people living over the globe. Several initial tests are based on the detecting of the genetic material of the coronavirus, and they have a minimum detection rate with a time- consuming process. To overcome this issue, radiological images are recommended where chest X-rays (CXRs) are employed in the diagnostic process. This article introduces a new Multi-modal fusion of deep transfer learning (MMF-DTL) technique to classify COVID-19. The proposed MMF-DTL model involves three main processes, namely pre- processing, feature extraction, and classification. The MMF-DTL model uses three DL models namely VGG16, Inception v3, and ResNet 50 for feature extraction. Since a single modality would not be adequate to attain an effective detection rate, the integration of three approaches by the use of decision-based multimodal fusion increases the detection rate. So, a fusion of three DL models takes place to further improve the detection rate. Finally, a softmax classifier is employed for test images to a set of six different. A wide range of experimental result analyses is carried out on the Chest-X-Ray dataset. The proposed fusion model is found to be an effective tool for COVID-19 diagnosis using radiological images with the average sensy of 92.96%, specy of 98.54%, precn of 93.60%, accuy of 98.80%, Fscore of 93.26% and kappa of 91.86%.

Biography

Kotte Shailaja completed B.Tech degree in Electronics & Instrumentation Engineering and M.Tech degree in Embedded Systems, working as Assistant Professor in the department of Electronics & Instrumentation Engineering in Kakatiya Institute of Technology & Science, Telangana, India.

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DNA repair enzyme xrcc4 30 bp indel intron 3 locus significant association with predisposition of cataract in senility

Shams Salman Shivji, Sanober Kafeel, Neelam Bizenjo, Asifa Keran, Zehra Hashim and **Syeda Nuzhat Nawab**

Ziauddin University, Pakistan

Impaired DNA damage repairing cascade can disrupt the lens transparency due to aging associated oxidative stress. The aim of study was to assess the association of 50 bp indel mutation (rs28360071) in XRCC4 gene with susceptibility of cataract in senility. The study followed case-control design with a total of n=200 participants divided equally into senile cataract patients and control groups. Conventional polymerase chain reaction (PCR) was performed for the genotyping of XRCC4 (rs28360071) mutation. In statistical measures, SPSS ® 20.0 software, MedCal© and SNPStats© tools were used for data analysis. Distribution of homozygous D/D, and mutant D allele was higher in senile cataract patients in comparison to controls. XRCC4 (rs28360071) mutation was significantly associated with predisposition senile cataract.

Biography

Shams Shivji is a recent graduate in the field of Biotechnology. He is extremely passionate about working on genes and strongly believes that genetics is a powerful science. He has gained valuable experience through in various internship programs and plans to continue his research in the field as a healthcare professional. He has completed several innovative projects including creation of methane gas from cow dung, alignment between covid 19 strains and SARS strains.

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PEI lipopolyplex for the delivery of HuR siRNA in the treatment of diabetic retinopathy

Kavita Singh[1*], Shibani Supe[1], Archana Upadhya[1], Santosh Tripathi[3] and Vikas Dighe[2]

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[2]National Centre for Preclinical Reproductive and Genetic Toxicology ICMR- National Institute for Research in Reproductive and Child Health, India
[3]Bombay Veterinary College, India

Diabetic retinopathy (DR) is a vision-impairing complication of diabetes resulting from damage to the retinal microcirculatory system. The overexpression of VEGF (vascular endothelial growth factor) has been identified as a key contributor to DR's pathogenesis. To combat this issue, researchers are exploring a novel therapeutic approach using small interfering RNAs (siRNAs) to downregulate HuR, an RNA-binding protein responsible for promoting VEGF protein expression by binding to VEGF-encoding mRNA. In this study, the scientists developed lipopolyplexes (LPPs) by co-formulating cationic polymers (polyethyleneimine) and lipids (liposomes) with the HuR-targeting siRNA. These LPPs-siRNA complexes underwent rigorous analysis to assess their size, zeta potential, serum stability, RNase stability, heparin stability, toxicity, and siRNA encapsulation efficiency, ensuring their suitability as effective delivery agents. To evaluate the biological efficacy of LPPs-HuR siRNA, the researchers conducted *in vitro* experiments using human ARPE 19 cells. They investigated cellular uptake, HuR downregulation (both at mRNA and protein levels), as well as its impact on VEGF protein expression. Additionally, *in-vivo* studies were performed on Wistar rats with streptozotocin (STZ)-induced diabetes and retinopathy. After the development of retinopathy, the LPPs-HuR siRNA formulations were intravitreally injected into the rats' eyes. The findings of this study revealed a significant reduction in retinal HuR and VEGF levels after administering LPPs-HuR siRNA, providing compelling evidence for the potential of this intravitreal treatment utilizing LPPs as effective siRNA delivery carriers.

In summary, this research offers promising insights into the use of HuR-siRNA delivered via LPPs as a potential therapeutic strategy for combating diabetic retinopathy.

Biography

Dr. Kavita Singh is a motivated researcher and faculty of pharmacy with a successful record of accomplishments. She completed her B.Pharm. and M.Pharm. from Bombay College of Pharmacy, Mumbai, and PhD (Tech.) from SNDT Women's University Mumbai. Before starting her academic career, she worked in pharmaceutical companies like Pfizer and Ipca Laboratories. Presently, she is working as Asst. Professor in Pharmaceutics at SPP-School of Pharmacy &Technology Management, SVKM's NMIMS, India.

Her expertise and research interest include polymeric and lipid-based nano-carriers, novel ophthalmic drug delivery systems, osmotic drug delivery systems, colon-targeted, extended-release oral solid dosage forms, anti-aging interventions, pharmacokinetic studies, etc. She has several publications, presentations, and patents in her credit. She has completed multiple industrial projects for the Indian and US market, and some of her products are also in the market. She has excellent project management capabilities and presently handling multiple industrial and government projects in her lab.

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Role of nitrogen dioxide as proxy indicator for assessment of air pollution from fossil fuel burning during COVID -19 in delhi using sentinel-5 precursor (5p) spectrometer sensor

S S Singh and **Pawan Kumar**

Rani Laxmi Bai Central Agricultural University, India

There has been a long-lasting impact of the lockdown imposed due to COVID-19 on several fronts. One such front is climate which has seen several implications. The consequences of climate change owing to this lockdown need to be explored taking into consideration various climatic indicators. The lockdown, which began to break the corona transition chain, has seen substantial environmental improvements. The latest satellite data from the US Space Agency NASA have revealed that during these days air pollution in North India is at its lowest level as specified in the past 20 years. Further impact on a local and global level would help the policymake NO_2 rs in drafting effective rules for handling challenges of climate change. Nitrogen dioxide (NO_2) provides an adverse effect to human respiratory problems . For in-depth understanding, a temporal study is being conducted in a phased manner in the New Delhi region taking NO_2 concentration and utilizing statistical methods to elaborate the quality of air during the lockdown and compared with a pre-lockdown period. In situ mean values of the NO_2 concentration were taken for four different dates, viz. 4th February, 4th March, 4th April, and 25th April 2020. These concentrations were then compared with the Sentinel (5p) data, which is delivering information about atmospheric trace gases, aerosols, affecting air quality, and climate, across 36 locations in New Delhi are found to be promising. The results indicated that the air quality has been improved maximum in Eastern Delhi and the NO_2 concentrations were reduced by one-fourth than the pre-lockdown period, and thus, reduced activities due to lockdown have had a significant impact. The result also indicates the preciseness of Sentinel (5p) for NO_2 concentrations.

Biography

Dr S.S.Singh is the Director Extension Education, Rani Lakshmi Bai Central Agricultural University, Jhansi India. He has served as Director, ICAR- Agricultural Technology Application Research Institute, Kolkata. He was Head of Division, Crop Production at Indian Institute of Pulses Research, Kanpur & Head , Crop Research Division at ICAR Research Complex For Eastern Region , Bihar .Dr Singh has also worked in CIMMYT India . Dr. S.S.Singh has handled 16 external funded projects on Natural Resource Management, Crop Management, livelihood Development and Crop Improvement funded by DFID, IFAD, USAID, BMGF, IRRI, CIMMYT, Ford Foundation and European Union. His works on resource conservation technologies and integrated farming systems have been adopted by state governments in their up-scaling of agricultural programmes in eastern India. He has published 155 Research Papers, 6 books, 20 Book Chapters, 15 Technical Bulletins, 135 Papers in Proceedings/ symposium/ seminar, 50 Popular Articles and 40 Extension Folders.

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Randomised control study of misoprostol and mifepristone versus misoprostol alone in second trimester termination of pregnancy

Swetalin Mishra[1] and **A.K.Nayak**[2]

[1]*P.G.I.M.E.R, India*
[2]*F.M.M.C.H, India*

Introduction This study was done to assess and compare the efficacy and safety of mifepristone and misoprostol combination Vs misoprostol alone for second trimester termination of pregnancy in relation to induction abortion interval, average amount of misoprostol required in each group, success rate and side effects.

Materials and Methods This randomised control study was conducted on 100 women admitted in the Department of Obstetrics & Gynaecology, S.C.B. Medical College & Hospital, Cuttack for second trimester termination of pregnancy, divided into two groups, Group A and Group B of 50 patients each. Group A patients received 200 mg of oral Mifepristone followed by 400mcg of vaginal misoprostol after 48 hours, and then 400 mcg of vaginal misoprostol every 3 hourly until complete expulsion or up to a maximum of 6 doses. Group B patients received 400mcg of vaginal misoprostol every 3 hourly until complete expulsion or up to maximum 6 doses.

Results Complete abortion was seen in 92% and 72% cases in Group A and Group B respectively. Mean induction abortion interval was 11.59 ± 2.71hours in Group A and 15.57 ± 2.27 hours in Group B (p value <0.001).

The average dose of misoprostol required was less in combination regimen, i.e., 1128 ± 384mcg compared to 1680 ± 302mcg in misoprostol alone group (p value <0.001).

Side effects like nausea, vomiting, diarrhoea were less in combination regimen than misoprostol alone group.

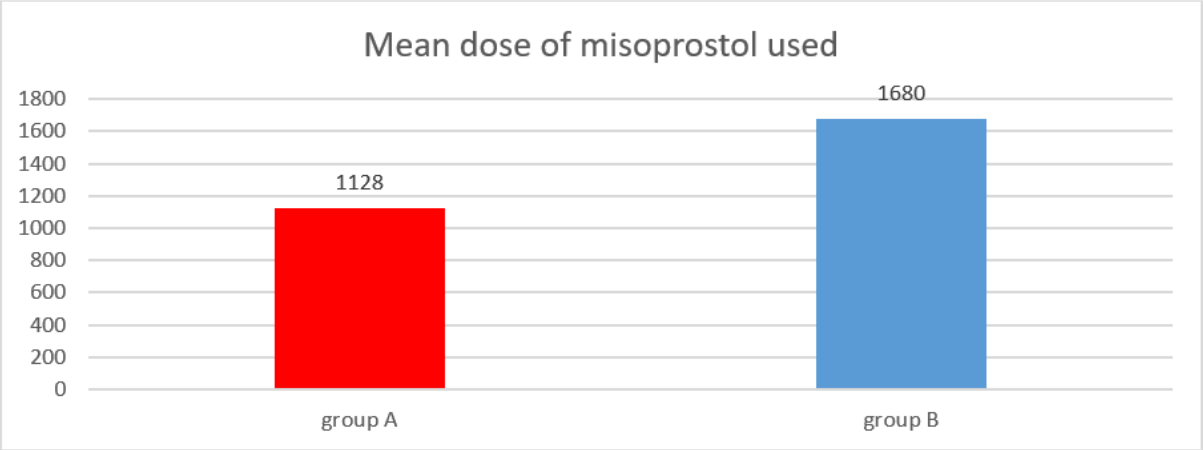
Conclusion Mifepristone and misoprostol combination is more effective and safer alternative than misoprostol alone in second trimester termination of pregnancy.

Table 1: Comparison of mean induction abortion interval

Parameter	Group A		Group B		p value
	Mean ± SD	Min - Max	Mean ± SD	Min - Max	
Induction abortion interval (hours)	11.59 ± 2.71	6.17 - 16.67	15.57 ± 2.27	11.17 - 20.66	<0.001

	Induction abortion interval			
Obstetric score	group	min	max	mean induction abortion interval
Primigravida	A	6hr 10min	15hr 30min	09hr 04min
	B	11hr 10min	20hr 40min	15hr 56min
G2	A	7hr 20min	15hr	11hr 30min
	B	11hr 20min	18hr 30min	15hr 07min
G3	A	7hr 40min	15hr 10min	12hr 35min
	B	14hr 20min	17hr	15hr 17min
G4	A	7hr 30min	16hr 40min	11hr 12min
	B	12hr 30min	17hr 30min	15hr 46min
G5	A	8hr 20min	13hr 40min	10hr 25min
	B	11hr 40min	11hr 40min	11hr 40min

Figure: Dose of misoprostol used in different group



Biography

Dr. Swetalin Mishra M.S (O&G), MBBS is working as Senior Resident at P.G.I.M.E.R and Capital Hospital, Odisha , India, has recently completed her postgraduation and was university topper of her batch. Her field of interest includes high risk pregnancy.

Dr. Ajit Kumar Nayak M.D, DNB(O&G), MNAMS, FICOG, FICMCH, PGDMCH, DIP. USG, PDCC Endoscopy, Infertility & Genetics, working as Professor and Unit Head, Department of Obstetrics & Gynaecology, F.M Medical College & Hospital, Balasore, Odisha. Published many original articles and case reports in various national and international indexed journals, presented many scientific papers in various national conferences. His field of interest include high risk pregnancy, Foetal medicine, infertility and Endoscopy.

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Augmenting Social Intelligence with Mindfulness: A Perspective of Indian Scenario

Tanushree Sanwal

KIET Group of Institutions, India

In today's globalized world, organizations and their employees play essential roles. Their social intelligence is a crucial factor in enlightening their performance. This paper investigates whether mindfulness enhances social intelligence which in turn may augment their performance. Mindfulness is a psychological process that promotes mental health whereas social intelligence is the intelligence required to interact amicably with the public. Mindfulness and social intelligence are two distinct constructs, and the purpose of this paper is to determine whether or not mindfulness augments social intelligence. In the current research, mindfulness meditation and exercises inspired by the MBSR program were conducted and implemented on the samples. Purposive sampling was used to select the sample, which consisted of faculty from various institutions. The age range of the respondents was between 28 and 38 years. The research was conducted with two hundred and fifty employees from various prestigious institutions in India. These teaching faculties were required to perform mindfulness-related exercises and meditation daily for one hour. Mindfulness-based stress reduction (MBSR) has produced positive behavioural, psychological, and physiological effects, but these programs typically require a significant investment of time, effort, and dedication from the participants. An evaluation of Social Intelligence was administered prior to and following the meditation and exercise sessions. In this investigation, the scale of social intelligence developed by Chadha and Ganesan in 1986 was utilized. The scale includes a total of sixty-six items encompassing eight constructs, including patience, confidence, cooperation, social environment recognition, sensitivity, sense of humor, memory, and tact. The results showed that after engaging in or practicing mindfulness meditation, employees demonstrated improved levels of patience, cooperation, confidence, tact, sensitivity, humor, and memory; the various constructs of social intelligence. The difference in score could be attributable to the beneficial influence of mindfulness.

Biography

Tanushree Sanwal is an Assistant Professor at the KIET School of Management at the KIET Group of Institutions in Delhi-NCR, Ghaziabad, and is a well-known teacher, and trainer in the education system. She had an illustrious career that spanned more than fifteen years in teaching and handling various administrative and academic positions. She has published numerous articles and papers in journals. She has extensive experience in teaching and writing in a variety of management disciplines. She also presented several research papers at national, international, and IEEE conferences. Ms. Sanwal has contributed chapters in different books published by Springer, and IGI Global. She has conducted and attended various workshops, FDPs and MDPs. Her research interests include social intelligence, human development, organizational behavior, and human resource management.

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Medicinal Cannabis- A valuable plant for pharma industry

U. Ashraf

Department of Botany, University of Education, Pakistan

Medicinal cannabis has gained significant attention and recognition in recent years for its therapeutic potential. Owing to its exception phytochemistry, cannabis has become a focal point of research and development within the pharmaceutical sector. One of the primary attributes that make medicinal cannabis appealing to the pharma industry is its diverse bioactive compounds, particularly cannabinoids like Delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD), which have potential therapeutic benefits for conditions such as chronic pain, epilepsy, and multiple sclerosis. Moreover, the endocannabinoid system, a network of receptors within the human body that interacts with these compounds, provides a promising avenue for the development of novel pharmaceuticals. Furthermore, the cultivation and processing of medicinal cannabis offer opportunities for pharmaceutical companies to expand their product portfolios and diversify revenue streams. The regulatory landscape surrounding cannabis is evolving, providing a framework for the development of standardized, pharmaceutical-grade products. Overall, medicinal cannabis presents a valuable prospect for the pharmaceutical industry, with the potential to address unmet medical needs, tap into new markets, and contribute to the development of innovative pharmaceutical formulations. However, ongoing research, clinical trials, and regulatory collaboration are essential to fully unlock the potential of this remarkable plant within the pharma industry.

Biography

Dr. Umair Ashraf is young scientist and serving as an Assistant Professor in the Department of Botany, University of Education, Lahore, Punjab, Pakistan. He earned his doctorate degree from South China Agricultural University, Guangzhou China. He has more than 125 SCI research articles in various peer-reviews and world recognized scientific journals with more than 400 cumulative impact factor and more than 6000 citations. His research areas are Plant stress physiology, Climate change impacts on crops, Sustainable crop production, Plant/crop nutrition and management. He is the member of editorial board and reviewer of various SCI journals. Dr. Ashraf has won various national and international awards and research grants.

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Dynamics of cancerous tumors under the effect of delayed information: mathematical and electronic study

Vandi Deli[2], Florent Feudjio Kemwoue[1], Joseph Marie Mendimi[3], Carlos Lawrence Gninzanlong[4], Joseph Fossi Tagne[1] and Joseph Atangana[5]

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[2]Department of Pharmaceutical Sciences, University of Douala, Cameroon
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[4]Department of Physics, University of Yaoundé I, Cameroon
[5]Department of Physics, University of Yaoundé I, Cameroon

Understanding the mechanisms that govern tumor emergence and growth is an important task in oncology and medical research. Cancer cells develop strategy to put immune cells to sleep to avoid killing them. This strategy increases the information delay of the presence of cancer cells. We conducted a study that characterizes the evolution of cancer in a tumor site, by analytical, numerical and electronic techniques. Particular attention was paid to the delay of information, stimulation and activation of the immune system by tumor cells. The delay in the studied system is due to the inactivation of the stimulation, signaling and transport of immune cells. The biological relevance of the stability is studied. The influence of the delay parameters on the dynamic behavior of the system is studied. It is shown that the region of stability for the parameters of the continuous delay is relatively larger than that of the discrete delay usually studied. The analysis of the effect of the delay shows that in the absence of delay, the tumor site can be stable or unstable and that the delay of information acts as a destabilizer of the dynamics of the tumor site and not as a stabilizer. We show using the tools characteristic of dynamical systems, the appearance of a chaotic behavior manifested by a maximum size of cancer cells in the tumor site when the delay is high. We find that the complexity of the tumor site due to this high delay could indicate the phenomena of long-term cancer relapse. An experimental study by electrical circuits is carried out to validate the theoretical results. Investigations by the electronic approach can be relevant for biomedical technology, in the context of the development of simulators of tumor systems, with clinical and pharmaceutical applications.

Biography

Doctor VANDI DELI is a Pharmacist (PharmD), Lecturer in the Faculty of Medicine and Pharmaceutical Sciences, Expert in Pharmaceutical Regulation, Pharmaceutical Products Procurement, Evaluation of CommonTechnical Document for Marketing Authorization of Drugs. From 2015 to 2019 the assumed the responsibilities of chief of the Registration Service, at the Directorate of Pharmacy, Medicines and Laboratories (DPML)which is one of the directorates of the Ministry of Public Health in Cameroon. During that period, he familiarized with drugs (including antitumor) registration procedures worldwide. From May 2019 to September 2020 he was appointed as Director of the Cameroon National Regulatory Authority (DPML) where he highlighted the problems related to anticancer drugs availability and accessibility. His experience as General Manager of the National Procurement Center for Essential Drugs and Medical Devices (CENAME) from September 2020 to June 2022 permitted him to confirm the importance of new antitumor therapies even through analytical, numerical and electronic techniques.

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Pervasive Healthcare Systems and Their Advancements

Dr. Sonali Vyas

UPES University, India

Pervasive healthcare is an emergent trend that focuses on continuously keeping track of multiple vital symptoms of patients via numerous healthcare sensors, smart relative applications, and dedicated communication procedures. Ubiquitous healthcare services notify the healthcare staff if any emergency occurs in the monitored patient's health. It has benefited patients who suffer from various diseases and require constant care, like disabled people, aged and fragile people, etc.

Utilizing immersive technologies like artificial intelligence, machine learning, and IoT devices for smart healthcare centres provides 24X7 personal health monitoring. The accessibility of fast communication, cloud computing and multimedia services in a smart city also has huge potential in telemedicine, remote medical services and the analysis and movement of medical data. Components of intelligent healthcare management may include personalized healthcare, intelligent hospital, telemedicine/online consultation, intelligent medicine, intelligent disease control and intelligent healthcare reporting. Technological advances in smart cities also significantly increase the possible ways to improve the health of citizens.

In my talk, I will cover all aspects of Pervasive healthcare and its implementation areas in real-world scenarios. I will also discuss some cases and prospects of utilizing immersive technologies for making healthcare services more efficient.

Biography

Dr. Sonali Vyas has been serving as an academician and researcher for more than 13 years. Currently, she is working as an Associate Professor in the School of Computer Science at the University of Petroleum and Energy Studies, Uttarakhand. Her research interest includes Healthcare Informatics, Data Science, Database Virtualization, Data Mining, and Data Analytics. She has authored more than 45 research papers, articles and chapters in refereed journals/conference proceedings and books. She authored a book on "Smart Health Systems", Springer. She is also an editor of "Blockchain Technology: Exploring Opportunities, Challenges, and Applications. CRC Press, Taylor & Francis Group", "Pervasive Computing: A Networking Perspective and Future Directions", Springer Nature and "Smart Farming Technologies for Sustainable Agricultural Development, IGI Global". She acted as a guest editor in a special issue of "Machine Learning and Software Systems" in "Journal of Statistics & Management Systems (JSMS)" (Thomson Reuters)". She has also authored 04 patents in the area of Smart and sustainable systems.

She has also acted as a Resource Person in AICTE-ISTE Faculty Refresher Course on "Embedded Systems, IoT, Pervasive Computing" and delivered many talks at reputed International and National Conferences. She is also a member of the Editorial Board and Reviewer Board in many referred National and International journals. She has

also been a member of the Organizing Committee, National Advisory Board and Technical Program Committee at many International and National conferences. She has also Chaired Sessions at various reputed International and National Conferences.

She has been awarded "National Distinguished Educator Award 2021" and "International Young Researcher Award 2021", instituted by the "International Institute of Organized Research (I2OR) which is a registered MSME, Government of India" and Green ThinkerZ. Also awarded as "Women Researcher Award 2021", by VDGOOD Professional Association in International Conference on Award winners in Engineering, Science and Medicine. Also awarded "Best Academician of the Year Award (Female)" in "Global Education and Corporate Leadership Awards (GECL-2018)".

She is a professional member of Senior Member-IEEE, ACM-India, Life Member-CSI, IFERP, IAENG, ISOC, SCRS and IJERT.

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Formulation and in-silico study of meclizine ointment as anti-eczema

Wafa M. Al-Madhagi[1,2,3*], Abdulkarim K. Y. Alzomor[2,4], Nor Hisam Zamakshshari[5], Maria A. Mubarak[3]

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[2]Department of Pharmacy, Faculty of Medicine, Al Nasser University, Yemen
[3]Department of Pharmacy, Faculty of Medicine, Yemen Jordan University, Yemen
[4]Department of Pharmacy, Faculty of Medicine and Health Sciences, Thamar
[5]Department of chemistry, Faculty of Sceience, University Putra Malyasia

Meclizine is antihistamine and is used in combination with pyridoxine to treat motion sickness. The in-silico Study of Meclizine prediction studied showed that Meclizine has anti-eczema activity with possible activity 95. This research aimed to explore the anti-eczema activity of Meclizine. Therefore, five formulations of meclizine ointment have been prepared using different bases (White base, simple ointment base, Hydrophilic petrolatum base, Hydrophilic, and Emulsifying ointment bases). The efficiency of meclizine ointment has been evaluated by testing the physical compatibility and stability, homogeneity and irritant effect, absorbance and spreadability, chemical identification, calibration curve, drug content (assay), and dissolution test. This is followed by evaluating the ointment's effectiveness on volunteers and molecular docking. Five creams trials have been prepared, and two formulas (F3, and F5) have been selected for further evaluation. The formulas three and five (F3, F5) have passed the physical and chemical tests and showed compatibility, homogenous, absorbed, non-irritant, and stable with calibration curve (R= 0.9999). Then, the F3 formula was selected by testing them on seven volunteers after evaluating the irritant test. Four of the volunteers showed excellent recovery, and three of the volunteers suffered from uncomforting feelings and the formation of new pills. Therefore, F5 has been tested by eight volunteers that contain high oleaginous activity; five showed an excellent recovery, while three of the volunteers showed no difference. According to that, F5 is more efficient for eczema patients than F3, and Meclizine showed promising activity as an anti-eczema that requires further evaluation in the future.

Biography

Prof assistance in drug discovery and pharmaceutical medicinal chemistry Accomplished pharmaceutical research, pharmaceutical development, in various research, and pharmaceutical development and quality. Nine years of experience as a pharmacy manager and experience in research and development for drug formulation and drug discovery. Eight years as an academic lecturer and more than three years in humanitarian work as a health and WASH coordinator and then relation and fundraising manager and evaluation. Have good skills in reporting, proposal writing, and communication; incorporate in different technical groups and develop TOR and plan. Accurate, reliable, diligent, and focused on the timely, quality completion of all lab procedures

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Prioritization-based management of the watershed using health assessment analysis at sub-watershed scale

Zahra Ebrahimi Gatgash[1] and **Seyed Hamidreza Sadeghi**[2*]

[1]*Department of Watershed Management Engineering, Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University, Iran*

[2]*Department of Watershed Management Engineering, Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University, Iran*

Examining the problems and prioritization of various parts of the watershed is one of the essential items for presenting programs and action plans for the adaptive management of the watershed. In other words, presenting executive measures should be based on specific problem-dependent variables, determinant criteria, and effective indicators in the watershed. Hence, the health assessment of the watershed would be the best framework to identify problems and effective variables leading to sustainable watershed management. So that, at the watershed scale, a health assessment is a valuable method for assessing and identifying effective human, ecological, and environmental resource management strategies. However, such a comprehensive approach has seldom been considered. The current study, therefore, employed the health analysis initiative for the prioritization of sub-watersheds of the Mikhsaz Watershed, Mazandaran Province, Iran. The watershed health was conceptualized and consequently outlined based on various effective and problem-oriented criteria using the pressure-state-response (PSR) framework. Towards that, the PSR framework was customized and corresponding watershed indicators of pressure (P), state (S), and response (R) were conceptualized according to 17 climatic, hydrologic, physical, and anthropogenic factors. The results showed that biologic density and ratio of the number of permitted to unauthorized livestock contributed to pressure indicator at the tune of 36.54%. Whilst, hydrologic factors controlled state and response statuses at a contribution rate of 56.07 and 80.11%, respectively. Accordingly, pressure, state, and response indices were found to be 0.68, 0.61, and 0.75 leading to a dominant relatively healthy status of the watershed health (i.e., 46%) with an overall index of 0.68. Besides, pressure, state, response indices were calculated, and associated effective variables were recognized for each sub-watershed led to a prioritization zoning map. The sub-watershed prioritization map can be utilized for designating optimal strategy for the sustainable and of course problem-oriented management of the study watershed.

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Contrast enhancement of digital mammograms

Suryya Farhat[1] and **Arti Vaish**[2]

[1]*Department of Applied Science and Humanities, India*

[2]*Deparment of Computer science, OP Jindal University, India*

The micro calcifications being tiny deposits of calcium appears as small bright spots in the mammogram but sometimes can be hardly. The challenge is to avoid the misinterpretation in results by improving the contrast of the images and remove unnecessary noise and artifacts to overcome the misdiagnosis of the condition. This paper is based on the removal of noise and artifacts from the digital mammograms followed by the segmentation. The proposed work has been successfully applied on 50 mammogram images out of 322 images in the MIAS database. The pre-processing was carried out by using the median filter for removing noise, then performing image binarization with morphological operation for removing the artifacts. For the contrast enhancement, the effective CLAHE technique was employed which gave promising results by improving the contrast to great extent from all types of images. Results obtained had a better image quality with improved contrast and therefore, can be successfully interpreted by the radiologists for further analysis and prognosis of breast lesion.

Biography

Dr. Arti Vaish at present is working as a Professor in the Department of Computer Engineering, School of Engineering and Technology at O P Jindal University, Raigarh, CG, India. She received her Ph.D. Degree from Netaji Subhash Institute of Technology, Delhi University, New Delhi, India (2012) and M.Tech. in Microwave Engineering from MITS, Gwalior, RGPV- Bhopal (2004). With twenty years teaching and research experience, she has published twenty patents, more than hundred research papers, seven books. She is Recipient of 2021 Who's Who in the World® Lifetime Achievement Award! She received academic excellence award from WeGrow and MSME 2020 and best researcher award 2020 from ITSR Foundation. She had guided six PhD students. She has been reviewer for several archived journals at the International level. Progress in Electromagnetic Research, Wireless Personal Communication, IETE journal of research, Materials Today: Proceedings IEEE Transactions on Engineering Management etc. are to name a few of them.

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Modelling of pathogens impact on the human disease transmission with optimal control strategies

A. S. Melese
Adama Science and Technology University, Ethiopia

This study concentrates on a nonlinear deterministic mathematical model for the impact of pathogens on human disease transmission with optimal control strategies. Both pathogen-free and coexistence equilibria are computed. The basic reproduction number R0, which plays a vital role in mathematical epidemiology, was derived. The qualitative analysis of the model revealed the scenario for both pathogen-free and coexistence equilibria together with R0. The local stability of the equilibria is established via the Jacobian matrix and Routh-Hurwitz criteria, while the global stability of the equilibria is proven by using an appropriate Lyapunov function. Also, the normalized sensitivity analysis has been performed to observe the impact of different parameters on R0. The proposed model is extended into optimal control problem by incorporating three control variables, namely, preventive measure variable based on separation of susceptible from contacting the pathogens, integrated vector management based on chemical, biological control, ... etc. to kill pathogens and their carriers, and supporting infective medication variable based on the care of the infected individual in quarantine center. Optimal disease control analysis is examined using Pontryagin minimum principle. Numerical simulations are performed depending on analytical results and discussed quantitatively.

Biography

Abdisa Shiferaw Melese is an assistance professor in the department of applied mathematics, Adama Science and Technology University, Adama, Ethiopia. His research areas include modeling and optimal control. He received his Ph.D in Mathematical modelling from Adama Science and Technology University, Ethiopia, in July 2022. He has published seven research papers. His research interests includes in the area of mathematical modelling, differential equations and optimal control.

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The pharmacological importance of ethnomedicinal plants, used in traditional health care in the tropical forest of Eastern India

Abhishek Das and **Priyanka Halder Mallick**

Department of Zoology, Vidyasagar University, India

Since, the accretive necessity for global health care, traditional medical knowledge is getting a lot of interest to cope with the human health demands in the world. According to the World Health Organization, 80% of the world's population in developing countries including India accounting for approximately 65% of its populace depends on traditional or folk medicine, and this use of herbal supplements has increased globally from 2.5 % to 12.0% in the last few centuries. In this term, forests have contributed substantially to the existence of human beings, providing a healthy atmosphere and a range of important forest services like food, medicine, and healthcare. Forest fringe ethnic inhabitants rely heavily on forests for their existence, and the traditional knowledge of different plant species is defended from one generation to the following among them. The Indian traditional system of Ayurvedic science is a package of various local and folk practices based on a vast repository of medicinal knowledge. But unfortunately, this knowledge of medicinally valuable species is abandoned. This study explored and documented the information on the traditional knowledge of ethnomedicinal, phytochemical, and pharmacological understanding of wild plant species used by forest fringe communities of the Medinipur Forest Division, West Bengal, India. The data was collected from 200 household respondents, including traditional Kaviraj selected by multi-stage random sampling method from the study area. Over 100 medicinal plant species have been identified from this area. We only focused on four species (Figure 1), mostly used for the treatment of various diseases and health conditions. The forest fringe civilizations have a wealth of knowledge about wild medicinal plants and their unique characteristics for healing various maladies. This ethnomedicinal assessment and understanding of the ancient doctrine of medicinal plants may bring renewed insights toward the discovery and development of novel medications.

Hygrophila auriculata **Parts used:** Whole plant **Phytoconstituents:** Apigenin, Luteolin, Lupeol, Gallic acid, Ellagic acid, quercetin, Lupenone, Hentricontane **Pharmacology:** Antimicrobial, Nephroprotective, Hepatoprotective, Antitumor, Antidiabetic, Anticataract, Antioxidant, Hematopoietic, Diuretic, Aphrodisiac, Antinociceptive, Anti-inflammatory, Antipyretic.	***Asparagus racemosus*** **Parts used:** Root **Phytoconstituents:** Spiro-steroids, Nor-lignans, Sarsasapogenin, Phytosterol, Saponins, Flavonoids **Pharmacology:** Antidiabetic, Antifungal, Antiviral, Antimicrobial, Anti-leishmanial, Anti-hyperlipidemic, Antidiarrheal, analgesic, Antidepressant, Aphrodisiac, Anti- hepatocarcinogenetic
Aristolochia indica **Parts used:** Root **Phytoconstituents:** Aristolochene, Ishwarane, Allatonin, Aristolindiquinone, Aristololactam, Savinin, Aristolochic acid **Pharmacology:** Antioxidant, Antimicrobial, Antidiarrheal, Antidiabetic, Anticancer, Antivenom, Anti-inflammatory, Abortifacient, Antiallergic, Tympanites treatment	***Hemidesmus indicus*** **Parts used:** Root **Phytoconstituents:** Vanillin, Isovanillin, Ledol, Nerolidol, Borneol, Linalyl acetate, Dihydrocarvyl acetate, Isocaryophyllene, Lupene, Flavonoids, Phenolics **Pharmacology:** Neuroprotective, Anti-diabetic, Anti-hyperlipidemic, Anti-ulcerogenic, Cardioprotective, Diuretic, Anti-urolithiasis, Wound healing, Antifungal

Biography

My name is Mr. Abhishek Das from India and I am a junior researcher in the discipline of Zoology. With over five years of research experience working at Vidyasagar University. I graduated from Calcutta University in 2017 and completed my master's in 2019 from Vidyasagar University in Zoology. My areas of interest are forest ecology, forest ecosystem services, ethnomedicinal chemistry, soil ecology, and soil metagenomics. I have been actively involved in regional and national environmental and human health research and practice as well as participated in biodiversity conservation programs.

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Automatic lung disease classification from the chest X-ray images using hybrid deep learning algorithm

Abobaker M. Q. Farhan and **Shangming Yang**

School of information and Software Engineering, University of Electronic Science and Technology of China, China

The chest X-ray images provide vital information about the congestion cost-effectively. We propose a novel Hybrid Deep Learning Algorithm (HDLA) framework for automatic lung disease classification from chest X-ray images. The model consists of steps including pre-processing of chest X-ray images, automatic feature extraction, and detection. In a pre-processing step, our goal is to improve the quality of raw chest X-ray images using the combination of optimal filtering without data loss. The robust Convolutional Neural Network (CNN) is proposed using the pre-trained model for automatic lung feature extraction. We employed the 2D CNN model for the optimum feature extraction in minimum time and space requirements. The proposed 2D CNN model ensures robust feature learning with highly efficient 1D feature estimation from the input pre-processed image. As the extracted 1D features have suffered from significant scale variations, we optimized them using min-max scaling. We classify the CNN features using the different machine learning classifiers such as AdaBoost, Support Vector Machine (SVM), Random Forest (RM), Backpropagation Neural Network (BNN), and Deep Neural Network (DNN). The experimental results claim that the proposed model improves the overall accuracy by 3.1% and reduces the computational complexity by 16.91% compared to state-of-the-art methods.

Biography

Farahn Abobaker is a software engineering PhD student currently enrolled at the University of Electronic Science and Technology of China. He graduated from Taiz University in Yemen in July 2014 with a Bachelor's degree and Yangzhou University in China in June 2020 with a Master's degree. Farahn is expected to graduate from his PhD program in December 2023.

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Dicrocoelium Dendriticum: An emerging foodborne pathogen

Mahendra Pal[1] and **Adugna Girma Lema**[2]

[1]*Narayan Consultancy on Veterinary Public Health and Microbiology, India*
[2]*Yemelogi Welel Woreda Agriculture Office, Ethiopia*

Dicrocoeliosis, caused by the hepatic trematode Dicrocoelium dendriticum is an important helminthic zoonosis that is reported from many nations of the world. It is a parasitic disease of health and economic significance to extensive livestock breeding and farming. This trematode affects a wide range of species of mammals, mainly the ruminants, in Spain and various countries in Europe, Asia, America and North Africa. It can also occasionally affect humans. This parasite has an extraordinarily complex life cycle, with the intervention of various species of land molluscs and ants, which act as its primary and secondary intermediate hosts, respectively. Dicrocoelium dendriticum is considered as an ancient parasite, connected to the origin and diversification of Eurasian ovicaprines that took place 14.7–14.5 million years ago. In domesticated animals and people, the earliest palaeo parasitological discoveries of Dicrocoelium date to more than 5000 BC in Europe. In a grave from a Bronze Age cemetery (2600–2200 BC) adjacent to Yasuj city in southwest Iran, D. dendriticum eggs were discovered. Dicrocoelium dendriticum plays an important role as infected animals may suffer from severe clinical symptoms even leading to death of the animals. Dicrocoelium dendricitum is semitransparent and has a tapering, lancet-shaped, flattened body. The uterus is located at the back of the body, while the vitellaria are in the middle of the body. The eggs grow into larvae, or miracidium, and subsequently into cercariae, which are the juvenile stage. Spurious infection is commonly encountered in the people who consume the raw liver of the infected animals with eggs or adults. Laboratory help is required to confirm the diagnosis of the infection. Praziquantel is the main stay of treatment of dicrocoeliasis. The public should be educated to avoid chewing of herbage (blade of grass), ingestion of raw liver of infected animals, and proper washing of vegetables and fruits before consumption. We present the information on the etiology, life cycle, transmission, epidemiology, pathophysiology and economic and public health significance of dicrocoeliosis, as well as the most current developments in diagnostic and therapy.

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Intrawound low-dose vancomycin is superior to high-dose in controlling the risk of wound dehiscence in spine surgeries

Ahmed M Sonbol, Ayman M Baabdullah, Mohamed Awad A Mohamed and **Farid N Kassab**

International Medical Center, Saudi Arabia

Wound complications in spine surgeries are common and serious. This study aimed to determine the risk of wound dehiscence with a low-dose of intrawound vancomycin compared to that with a high-dose and no-vancomycin and its effectiveness in the prevention of surgical site infection. Patients were categorized into 3 groups. The first group did not receive any intrawound vancomycin. In the second, patients received a high-dose of vancomycin (1 g). The third group included patients who received a low-dose of intrawound vancomycin (250 mg). Patient demographics, clinical data, and surgical data were also collected. Multivariate linear regression analysis was used to examine factors associated with dehiscence or infection. Of the 391 patients included in our study, 56 (14.3%) received a high-dose of intrawound vancomycin, 126 (32.2%) received a low-dose, and 209 (53.5%) did not receive any treatment. The overall incidence of wound dehiscence was 6.14% (24 out of 391 patients). Wound dehiscence was significantly higher (P = .039) in the high-dose vancomycin group than in the low-dose vancomycin group. The overall incidence of postoperative infection was 2.05% (8 patients) and no statistically significant differences were observed between the low-dose and high-dose vancomycin groups. Patients with higher body mass index were more likely to experience wound dehiscence and postoperative infection, irrespective of the dose of vancomycin used. The use of low-dose intrawound vancomycin (250 mg) resulted in less wound dehiscence compared with high-dose vancomycin. Further trials are required to evaluate the effectiveness of the low-dose in preventing postoperative infections.

Biography

Ahmed Sonbol is a board-certified orthopedic surgeon since 2021. Currently, he is a master student of medical education at the King Abdulaziz University. Interested in general orthopedic surgery and related conditions like infections, arthroplasty and surgical training. Researches coordinator in the Musculoskeletal Center of Excellence in the International Medical Center, Jeddah, Saudi Arabia.

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Factors inciting agroforestry adoption based on trees outside forest in Biosphere Reserve of Yangambi landscape

Alain L. Katayi[1], Chadrack Kafuti[2] and Daddy D. Kipute[3]

[1]Université Officielle de Mbujimayi, Mbujimayi, Democratic Republic of the Congo
[2]Ghent University, Belguim
[3]University of Kisangani, Kisangani, Democratic Republic of the Congo

The Biosphere Reserve of Yangambi (BRY) landscape is facing the challenge of conserving biodiversity while supporting the food security of local communities. Farmers, in search of fertile soil, travel long distances to establish their fields, sometimes in the core area of the reserve. Faced with this reality, agroforestry is an alternative that could contribute to improving local livelihoods while protecting forests and biodiversity in this protected area (PA). This study was conducted in order to identify factors which motivate and/or inhibit farmers for adopting agroforestry practices. To this end, household surveys were conducted in three villages bordering the BRY, namely Bengamisa, Lilanda and Yaselia. The results revealed that only the age of farmers influence significantly agroforestry adoption and 56.2% of the respondents deliberately leave naturally occurring agroforestry species in their farmlands. In order to benefit from the collection of edible caterpillars and fruits, improvement of soil fertility, extraction of medicinal products, production of charcoal and exploitation of timber. However, 43.8% of respondents who were not in favour of agroforestry feared accidents due to windfall, as well as for the collapse of agricultural production. The ethnobotanical analysis revealed that Petersianthus macrocarpus sp. and Erythrophleum suaveolens sp. had the highest use value due to their multi-functionality in the BRY landscape. Thus, the extension work to promote these species could increase the rate of agroforestry adoption and contribute to sedentarization of farmers which in turn reduce the rate of deforestation and promote biodiversity conservation in BRY landscape.

Biography

Alain KATAYI LUKUSA is a young researcher in environmental economics focusing on the socio-economic issues of tropical agroforestry in the landscapes of protected areas with multiple challenges. He is an agro-economist and engineer at the Université Officielle de Mbujimayi, where he has been lecturer since 2022. He has also completed a Master's degree in biodiversity management and sustainable forest management at the University of Kisangani since 2021. He is currently doing his doctoral research on the socio-environmental challenges of the cocoa value chain in the Tshopo landscape. He is involved in a number of scientific research projects on agroforestry issues. He has 7 years' professional and academic experience, not to mention work supervising young researchers.

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Safety and health risks associated with illegal municipal solid waste disposal in urban Zimbabwe: A case of Masvingo City

Amato Chiresh, Tapiwa Shabani and **Takunda Shabani**

Midlands State University, Zimbabwe

Municipal solid waste management (MSWM) is a worldwide problem as most local authorities are unable to dispose Municipal solid waste (MSW) safely. The study sought to evaluate safety and health risks associated with illegal MSW disposal in Masvingo City. Descriptive cross-sectional design was employed in which quantitative and qualitative data were collected concurrently. Questionnaires with both close and open-ended questions, semi-structured interviews, observations and secondary data sources were used during data collection. The study population comprised participants from Masvingo City's residential areas, Masvingo City Council employees and Environmental Management Agency (EMA) officials. A sample of 406 participants, comprising 354 residents from high-density, 16 residents from medium-density, 24 residents from low-density suburbs. Six interviewees were included during the study. Interviewees were selected purposively. Quantitative data was entered into Microsoft Excel Spreadsheet for analysis and content analysis was used to analyse qualitative data. Results showed that Cholera, skin problems, injuries and malaria were the main health problems. Results also indicated that flooding and fire were the main safety risks associated with illegal municipal solid waste disposal in Masvingo. Based on the findings of the study, it can be concluded that MSW disposal in Masvingo was a threat to safety and human health. The study recommends that Masvingo City council provide receptacles and collect waste frequently.

Biography

Amato Chireshe is a holder of a PhD in Environmental Management (University of South Africa). He is a holder of a Master of Science in Safety, Health and Environmental Management at Midlands State University, Zimbabwe. He also has a B.Sc. in Geography and Environmental Studies (Zimbabwe Open University). For the past few months, he has been involved in teaching and helping undergraduate and postgraduate students to improve their academic writing skills. Amato Chireshe's research interest includes waste management, safety, health and the environment. He played an important role in the publication of the following papers:

1. Safety and health risks associated with illegal municipal solid waste disposal in urban Zimbabwe. "A case of Masvingo City"
2. Assessment of ergonomic risks among refuse collectors in municipalities of Harare District, Zimbabwe

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Linear and nonlinear optical absorption coefficients and refractive index changes of GaAs/GaAsSb/GaAs V-shaped quantum wells affected by intense laser fields

A. Haghighatzadeh[1] and **A. Attarzadeh**[2]

[1]*Department of Physics, Ahvaz Branch, Islamic Azad University, Iran*
[2]*Department of Science, Institute for Higher Education, Iran*

This theoretical study addressed the first-order linear and third-order nonlinear optical features of GaAs/GaAsSb/GaAs V-shaped valence band quantum wells. The iterative solutions of the density matrix approach in the framework of a two-level system were used to investigate the changes in the optical absorption coefficients and refractive index. This study considered the influences of the electric field, the half-width of the well, and antimony content on the optical properties of the quantum well under intense laser fields. The first-order linear and third-order nonlinear optical responses were obtained under one-photon resonance conditions. Optical transitions appeared in Gaussian-like distributions and maximum-to-minimum schemes for linear optical absorption coefficients and refractiveindex changes, respectively. The nonlinear results revealed an inverse Gaussian-like and minimum-to-maximum scheme due to the negative contribution of nonlinear functions. Optical features exhibited a redshift along with an increase in the magnitude as a result of a decrease in the energy difference, and an increase in the overlap of the wavefunctions corresponding to the ground and the first-excited bound states with increasing intense laser fields. However, blueshifts and decreased magnitude were detected upon increasing the energy difference and decreasing the overlap when the electric field and the well half-width were enhanced. The results indicated that linear and third-order nonlinear optical properties remained constant due to the intent electronic characteristics by altering the antimony content.

Biography

Dr. Amin Attarzadeh

Assistant Professor of Academic Center for Education,

Culture and Research, ACECR, Ahvaz, Iran.

My interest in study of material in nano dimensions and made the appropriate model to simulate electronics and optical features.

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A study on optical properties, classification, and transport of aerosols during the smog period over South Asia using remote sensing

Anum Liaqut[1], Salman Tariq[2,3] and **Isma Younes[1]**

[1]Department of Geography, University of the Punjab, Pakistan
[2]Remote Sensing, GIS and Climatic Research Lab (National Center of GIS and Space Application), University of the Punjab, Pakistan
[3]Department of Space Science, University of the Punjab, Pakistan

Over the past few years, South Asian region has experienced frequent and thick smog events because of rapid population growth and enhanced anthropogenic activities, particularly in the Indo-Gangetic Plain (IGP). Therefore, the present study investigates aerosol properties such as aerosol optical depth (AOD) (500 nm), Angstrom exponent (AE) (440–870 nm), single scattering albedo (SSA), fine-mode fraction (FMF), absorption aerosol optical depth (AAOD), and absorption aerosol exponent (AAE) over selected AERONET sites namely Bhola (2012–2021), Dhaka (2012–2021), Jaipur (2011–2021), Kanpur (2011–2021), Karachi (2011–2021), Lahore (2011–2021), and Pokhara (2011–2021) in the IGP during the smog period (October, November, and December). Additionally, different aerosol types were categorized using AERONET direct sun (AOD, AE) and inversion products (VSD, SSA, RI, FMF, and ASY). The monthly mean AOD, AE, and FMF varied from □0.33 to 1.07, □0.3 to 1.4, and 0.6–0.9 μm over all selected AERONET sites during the smog period. Moreover, the outcomes revealed the dominance of biomass-burning and urban/ industrial aerosols over Lahore, Karachi, Dhaka, and Bhola during the smog period. Contrary to this, dust and mixed aerosols were abundant over Jaipur and Karachi, respectively. Furthermore, HYSPLIT cluster analysis is used to trace the transmission paths and potential sources of aerosols over selected sites.

Biography

Greetings! I am Anum Liaqut, a dynamic researcher who has recently completed my remarkable PhD thesis on 'An assessment of Aerosol over South Asia using Geo-Spatial Techniques.' With a portfolio of 15 published papers, including my latest work on the optical properties and transport of aerosols during the smog period over South Asia, I am constantly pushing the boundaries of knowledge.

Currently serving as an Assistant Director GIS/RS in the esteemed Ministry of Planning and Development, Pakistan, I contribute to strategic decision-making using my expertise in Geographic Information Systems (GIS) and Remote Sensing (RS).

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Development of a growth chamber for cryptogams: A step toward ex situ conservation

Aveek Samanta[1], Subir Samanta[2], Pradipta Panchadhyaee[3], Tilak Raj Maity[4] and Atanu Bhowmik[1]

[1]Department of Botany, Prabhat Kumar College, India
[2]Department of Botany, Aghorekamini Prakash Chandra Mahavidyalaya, India
[3]Department of Physics (UG & PG), Prabhat Kumar College, India
[4]Department of Biotechnology, Haldia Institute of Technology, India

Acclimatization is a physiological process of an organism. In this process, an organism can survive in a new environment which is different from the original environment. Adaptation and acclimatization are related to each other. Adaptation may occur with the help of the acclimatization process. Organism acclimatized to a new environment may show vigorous growth. Northern parts of West Bengal especially hilly region contain rare and endangered plants. Among these plants, some plants are used for laboratory specimens for a practical purpose. A low-cost plant growth system has been developed to acclimatize and study of those plants. Different types of cryptogams are used as laboratory specimen can also be grown in the system. Comparative studies of macro and micro anatomical features of the preserved specimen and growing specimen have also done to observe any difference. Antioxidant enzyme assay also have been done among the in situ and ex situ grown plants in an comparative basis to assess any content difference, The plant growing system is run by solar energy and maintained by some simple apparatus for maintaining temperature, humidity, light etc. The water source is used from the preserved rainwater throughout the year. This process of acclimatizing of cryptogams in a system could be a noble approach toward endangered plant conservation.

Biography

Dr. Aveek Samanta is an assistant professor of the Department of Botany, Prabhat Kumar College, Contai, West Bengal. He has qualified NET and GATE examination in 2010 and completed PhD in 2015. He has awarded as Young Scientist Award in Indian Plant Science Congress, Chennai in 2019. He is a life member of Indian Science Congress. He has been teaching Botany from the past ten years and working as a project co-ordinator of Mushroom cultivation training centre and acting as a SPOC of SWAYAM-NPTEL local chapter of Prabhat Kumar College, Contai. He has published 05 books and 04 book chapters and 21 international publications. Now he has two project from IISC, Bangalore and IIT Madras. He has awarded for prototype development from WBSCST, Dept of Science and Technology in 2023 . He has registered two patents and one trademark and one copyright. He has done special training in on IP practical aspects patent drafting and filing, treadmark and copyright filing from IIT Kgp in 2021.

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The effect of the sub-structure of railway track on building vibrations, numerical study

Aynalem Mekonnen

School of Civil Engineering, Ethiopia Institute of Technology-Mekelle, Mekelle University, Ethiopia

Train-induced building vibration problems have been studied by many authors, but there is limited research focusing on the effect of railway track substructures. Through finite element as the main methodology, this paper conducts a numerical investigation and presents the effect of railway track sub-structure components (i.e., ballast, sub-grade, and ground) on building vibrations caused by passing trains. I start by modeling all the track components and the nearby 2-story building. It is shown that when the embankment, ballast, and ground stiffness are increased from poor to stiff, the building vibration levels are decreased by 47%, 29%, and 69%, respectively. Furthermore, the slab track causes a significant decrease in building vibration levels compared to ballasted track (34%). Moreover, the presence of an embankment with a height of 2.5 m decreased building vibration levels compared to no embankment by 10%.

Biography

Aynalem Mekonnen: Received B.Sc. degree in civil engineering from Aksum University, Aksum, Tigray, Ethiopia, in 2013 and M.Sc. degree in geotechnical and material engineering from Ethiopia Institute of Technology-Mekelle, Mekelle University, Mekelle, Tigray, Ethiopia, in 2017. Now he serves as lecturer at Ethiopia Institute of Technology-Mekelle, School of Civil Engineering. His current research interest is on railway dynamics.

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A novel construction of substitution boxes through modular polynomial transformation with application in image encryption

Aysha Saleem and **Abid Mahboob**

Department of Mathematics, Division of Science and Technology University of Education Pakistan

One of the biggest issues created by the rapid growth of data through electronic interaction is protection of data carried over the internet from unauthorised access. Modern cryptosystems use substitution boxes (S-boxes) to help with data security. These S-boxes ensure the cryptosystem's cryptographic security and make it nonlinear. A novel technique is proposed to generate substitution boxes using bijective dynamic modular polynomial transformation. The generation of substitution boxes by using this transformation contains two simple steps. Firstly, we choose a quantic modular polynomial transformation as an example to construct the preliminary S-box, while permutations of a symmetric group are used in the second step to increase the nonlinearity of the initial S-box and generate the proposed S-box whose average nonlinearity is 111.75, which is better than most of the S-boxes present in the literature. Some other algebraic properties of the S-box such as linear approximation probability, bit independence criteria, strict avalanche criteria and differential probability are used to check the validity of the proposed S-box, and the outcomes of these analyses indicate that the projected S-box is strong against linear and differential attacks. Some statical analyses (Majority logic criteria) such as entropy, contrast, energy, homogeneity and correlation were conducted in order to evaluate the suitability of the proposed S-box for image encryption. The quality of the encrypted image was measured through experimental analysis. The values of MSE, PSNR, UQI, SSIMI and other tests are quite good when compared with other S-boxes. All of these analyses revealed very encouraging results, proving that the generated S-box meets all the criteria for being reliable for secure communication and image encryption.

Biography

Aysha Saleem was born in Garha More, Multan, Punjab, Pakistan in 2000. She did ICS from Superior College for Girls 3-KM Burewala Road Vehari in 2017 and received BS degree in Mathematics from the University of Education, Lahore in 2021. Now, she is student of last semester of MS Mathematics at the University of Education, Lahore, Pakistan. Her research interest in Cryptography and abstract algebra. She has published three research papers in well reputable journals.

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Global digital divide and environmental degradation in Africa

S. Azeem and **S. Rameen**

The Urban Unit, Pakistan

ICTs and access to Internet use are considered vital for the achievement of sustainable development goals. So, this study explored the effect of the global digital divide, trade openness, renewable energy consumption, and forestation on greenhouse gas (GHG) emissions in 42 high-income countries (HICs) and high-middle-income (HMICs), low-income countries (LICs), and low-middle-income countries (LMICs) of Africa from 1990 to 2018. The Dumitrescu-Hurlin causality results confirmed a unidirectional causality from GHG emissions to the global digital divide (HICs and HMICs), global digital divide to GHG emissions (LICs), and GHG emission to trade openness (LICs and LMICs). Moreover, the long-run results of the autoregressive distributed lag (ARDL) model showed an increase in GHG due to an increase in the global digital divide in all three panels. Further, ARDL results showed reduced GHG emissions due to increased trade openness in LIC and LMICs, renewable energy consumption, and forestation in all three panels. Thus, to encounter pollution from Internet use, the government should start environment-friendly projects through public and private investment in smart and modern environment-friendly technology and reduce the taxes and tariffs on them. Moreover, the governments of African countries should create public awareness through print and electronic media for raising the forestation area.

Biography

I am an Agro-Economist with more than 10 years of experience in research, extensive field surveys, policy and planning in the areas of Agriculture, Livestock, Food Security, Climate Resilient Agriculture, Water Resource Management, Disaster Risk Management, Institutional and Value Chain Analysis and Spatial Planning & Development. I am currently working for Urban Unit, Lahore as Senior Program Manager (Agricultural Development), and focal person on Agriculture, Food Security and Livestock Development. I have been part of multiple policy and planning initiatives including Punjab Spatial Strategy (2047), Punjab Growth Strategy, CPEC and Cholistan Strategy, which aims to transform agriculture & livestock sectors for better inclusivity, food security, economic growth and prosperity. In addition, I have also worked on multiple World Bank projects, supporting climate-resilient policy actions in Punjab. My portfolio also includes extensive research work with 10 publications.

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Therapeutic role of mesenchymal stem cells and platelet-rich plasma on skin burn healing and rejuvenation: A focus on scar regulation, oxido-inflammatory stress and apoptotic mechanisms

Bakinam M H Tammam[1], Ola A Habotta[2], Manal El-Khadragy[3], Ahmed E Abdel Moneim[4] and Mohga S Abdalla[1]

[1]Chemistry Department, Molecular biotechnology Division, Faculty of Science, Helwan University, Egypt
[2]Department of Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, Mansoura University, Egypt
[3]Biology Department, Faculty of Science, Princess Nourah Bint Abdulrahman University, Saudi Arabia
[4]Zoology and Entomology Department, Faculty of Science, Helwan University, Egypt

Cell-based therapies have enormous potential for enhancing and speeding up the healing of burn wounds. Scaling up their competency is becoming more and more necessary to meet clinical demands. In this work, platelet-rich plasma (PRP) and bone marrow mesenchymal stem cells (BMSCs) were investigated on the healing of generated burn wounds in a mouse model. Rats were given injections of BMSCs and/or PRP in the burn region after the induction of thermal injury. Our research showed that, compared to the untreated group, local treatment of burnt skin with BMSCs and/or PRP gave significant results after 4 weeks post-burn. Burns injected with BMSCs and/or PRP had a faster rate of wound contraction and less burn area and epithelization time. After receiving BMSC and/or PRP therapy, significant increases in VEGF along with decreases in MMP-9 and TGF-1 were seen in charred areas, indicating enhanced angiogenesis and re-epithelization. Furthermore, SOD, CAT, and GSH levels increased and MDA, IL-6, TNF-, NF-B, NO, and iNOS levels decreased, indicating that both MSCs and PRP modified the burn's oxidative and inflammatory milieu. Burnt skin that received both treatments simultaneously showed notable rises in Bcl-2 levels and falls in Cas-3 and Bax levels. It's interesting to note that the histopathological analysis supports the healing potential of BMSCs and/or PRP. Together, BMSCs and PRP have developed promising therapies for use in clinical burn healing that may work through antioxidant, anti-inflammatory, and anti-apoptotic pathways in addition to controlling angiogenesis and scar formation.

Biography

My name is Bakinam Tammam, I'm 26 years old, My lovely work in beauty field, i have my own clinic working with the skin problems and scars solving, I'm graduated from Biotechnology faculty, that targeting to solve the problem from the level of cells , that is more specific from organs or tissues

My goals now to take my PhD degree and to take a certificant for injections for Human with all types of injection (like PRP, adipose stem cells, filler, and botox) all this types also to solve the problems of skin and make the Human more beauty

And my achievements in obtaining a master's degree and open my own place my own clinic to work in the field that i love.

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Antimicrobial analysis of honey against isolates from wound, ADMET properties of its bioactive compounds

Bebia, Glory Philemon[1] and **Uwem, Edet**[2]

[1]*University of Calabar, Nigeria*
[2]*Arthur Jarvis University, Nigeria*

Background: One of the main challenges of wound healing is infection with multi-drug resistant (MDR) bacteria such as Staphylococcus aureus. The spectrum of antibiotics used to treat them is declining; thus, there is a need for alternatives. Our study was designed to evaluate the antimicrobial properties of honey, its pharmacokinetics (ADMET) properties and in-silico analysis of its bioactive compounds against dihydropteroate synthase of S. aureus using trimethoprim as control.

Method: Standard protocols were employed in collection and preparation of samples, generation of canonical strings, and conduction of microbiological analyses. Bioactive compounds' ADMET properties were evaluated using the SWISSADME and the MCULE toxicity checker tools. The MCULE one-click docking tool was used in carrying out the dockings.

Result: The gas chromatography-mass spectrophotometry revealed twenty (20) bioactive compounds and was dominated by sugars (> 60%). A total of 47 S. aureus isolates were gotten from the wound samples. At lower concentrations, resistance to trimethoprim (95.74 to 100.00%) was higher than honey (70.21 to 96.36%). Only seven (7) isolates meet Lipinski's rule of five and ADMET properties. The docking scores of the bioactive compounds ranged from -3.3 to -4.6 while that of trimethoprim was -6.1, indicating better binding or interaction with the dihydropteroate synthase. The bioactive compounds were not substrates to P450 cytochrome enzymes (CYP1A2, CYP2CI9 and CYP2D6) and p-glycoprotein, indicating better gastrointestinal tract (GIT) absorption.

Conclusion: The favourable docking properties shown by the bioactive compounds suggest they could be lead compounds for newer antimetabolites for management of MDR S. aureus.

S/N	CID	GI Absorbtion	BBB Permeability	PGP Substrate	CYP 1A2 Inhibitor	CYP2C19 Inhibitor	CYP2C9 Inhibitor	CYP2D6 Inhibitor	Logkp (cm/s)
1	N,N-Diethylurea	High	No	No	No	No	No	No	-7.17
2	1,3- Cyclohexanediol	High	No	No	No	No	No	No	-6.86
3	6-Methyl-2-heptyne	Low	Yes	No	No	No	No	No	-4.71
4	N- Acetylethylenediamin	High	No	No	No	No	No	No	-7.92
5	Cyclopropanecarboxamide	High	No	No	No	No	No	No	-7.10
6	N-Acetyl-L-methionine	High	No	No	No	No	No	No	-7.43
7	Succinic acid	High	No	No	No	No	No	No	-7.44
8	Thrimethoprim	High	No	Yes	No	No	No	No	-7.75

Biography

Name: Bebia, Glory Philemon

Date of Birth: 25th December, 1989

Qualification: BMLS, MLSCN, AMLSN, M.sc

Occupation: Lecturing

Affiliation: University of Calabar

Department: Medical Laboratory Science

Specialty: Medical Microbiology/Parasitology

Designation: Lecturer 2

RESEARCH CARRIED OUT

1. A Bacteriological of make-up tools used in Calabar Metropolis, Cross-River State, Nigeria
2. Antimicrobial analysis of honey against Staphylococcus aureus isolates from wound, ADMET properties of its bioactive compounds and in-silico evaluation against dihydropteroate synthase
3. Antibiogram of bacterial isolates obtained from infants and children at the University of Calabar Teaching Hospital (UCTH)
4. Prevalence of malaria and intestinal parasitic co-infection among diabetic patients in Calabar
5. Antimicrobial potentials of Lantana Camara montevidensis leaf extract on wounds infected with Candida isolates

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Investigating the behavior of steel shear wall consisting of two flat sheets and one corrugated sheet with LYP steel

Leila Hosseinzadeh and **Behnam Babaei**

Department of Civil Engineering, Islamic Azad University, Iran

In this article, in order to compare the behavior of steel shear walls, different configurations of flat and wave plate combination were modeled using finite element software, and also to study the effect of steel yield stress on the seismic behavior of steel shear walls of the mentioned samples with two Normal steel type (A36) and steel with low yield stress (LYP) were analyzed. The results of the research showed that it is possible to improve the seismic behavior of the steel shear wall system by changing the arrangement of flat and corrugated sheets. Changing the type of steel from A36 to LYP causes a 50% increase in the final strength on average, and at the same time as the hardness increases, it also experiences an increasing increase in energy absorption.

Biography

My name is Behnam Babaei, PhD student at Azad University of Tabriz/Iran. I am 27 years old and one of my dreams is to be the best in my field. We were not born in a rich family and this has been a problem for me all along.

Thank you very much for inviting me to this conference.

Virtual Event

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Advances in Medicinal Chemistry and Pharmacology

Preliminary phytochemical screening and antibacterial effects of root bark of Ferula communis (Apiaceae)

Betelihem Yirdaw and **Temesgen Kassa**

Assosa Agricultural Research Centre, Ethiopia
Holeta Agricultural Research Centre, Ethiopia

Introduction: Plants are widely used in traditional medicine because they contain a high concentration of antimicrobial agents, serving as the foundation for medicines. The aim of this study was preliminary identification of phytochemicals and assesses the antimicrobial activity of extracts of Ferula communis root bark.

Methods: Plant was collected, and standard qualitative procedures were conducted. The plant samples were extracted with 99.9% methanol and 80% ethanol. To identify phytochemicals found in plants, a preliminary phytochemical analysis was performed. Agar diffusion tests, minimum inhibitory concentrations (MICs) and minimum bactericidal concentrations (MBCs) were performed to evaluate antibacterial activity.

Result: The preliminary phytochemical analysis of the ethanol and methanol extract revealed positive results for flavonoids, coumarins and tannins. Terpenoids and anthraquinones were detected only in the methanol extract. The extract of Ferula communis showed an antibacterial effect on both gram-negative and gram-positive bacteria in a concentration-dependent manner. The average zone of inhibition for gram-positive bacteria was 11 mm, whereas for gram-negative bacteria, it was 9 mm. The MIC and MBC values also varied with the type of bacteria. In all bacterial species tested, the mean MBC value was similar to the MIC.

Metabolites tested	Ethanol extract	Methanol extract
Flavonoids	+	+
Tannins	++	+
Coumarins	+	+
Terpenoids	-	+
Saponins	-	-
Cardiac glycosides	-	-
Steroids	-	-
Anthraquinones	-	+

+ indicates present, - indicates absence and ++ indicates availability of phytochemical in large amount

Table 2: The MIC and MBC (in mg/ml) of the methanol and ethanol extract

Tested bacterial strain	Plant extract			
	Methanol		Ethanol	
	MIC	MBC	MIC	MBC
Escherichia. coli	47.33±1.76	47.33±1.76	48.67±2.44	48.67±2.44
Salmonella. typhi	32.33±2.84	32.33±2.84	33.3±2.66	33.3±2.66
Staphylococcus aureus	18.66±1.33	18.66±1.33	16.67±1.76	16.67±1.76
Kelbesela pneumonia	42.67±3.25	42.67±3.25	44±2.33	44±2.33
Citrobacter	78.67±2.33	78.67±2.33	76±3.5	76±3.5
Pseudomonas erogenous	50.67±3.25	50.67±3.25	70±1.15	70±1.15

Biography

The author, Betelihem Yirdaw Getie, was born in Quarit, Gebezemariam on July 10, 1995, from her father Ato Yirdaw Getie and her mother W/ro Ehetnat Esyneh. She completed her secondary and preparatory education at Quarit Secondary and Preparatory School. Then, from October 2012 to June 20, 2018, she joined Gondar University and graduated with a Doctorate degree in Veterinary Medicine. In September 2019, she joined the Ethiopian Institute of Agriculture and served as an Assistant researcher at Asosa center. Subsequently, in September 2020 she joined Addis Ababa University, College of Veterinary Medicine and Agriculture, Department of Clinical study for MVSc Program in veterinary Epidemiology. She completed her MVSc Program in veterinary Epidemiology in October 2021. Then, again back to Ethiopian Institute of Agriculture and served as an Associate researcher at Asosa center.

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Positivity rate, trend and associated risk factors of mother-to-child transmission of HIV among HIV-exposed infants

Birra Bejiga and **Gadisa Gutema**

Ethiopian Public Health Institute, Ethiopia

Background: Mother-To-Child-Transmission (MTCT) of Human Immunodeficiency Virus (HIV) occurs during pregnancy, delivery and breastfeeding, and cause infection among several new-born. However, there is limited recent evidence on the burden of MTCT of HIV in Ethiopia from a large-scale data. Thus, this study aimed to determine the positivity rate, trend and associated risk factors of MTCT among HIV-exposed infants.

Methodology: A cross-sectional study was conducted among 5,679 infants whose specimen referred to Ethiopian Public Health Institute HIV referral laboratory for Early Infant Diagnosis (EID) from January 01, 2016, to December 31, 2020. Data were extracted from the national EID database. Frequencies and percentages were used to summarize the data on characteristics of infants. Logistic regression analysis was employed to identify factors associated with positivity rate of MTCT of HIV. Level of significance was set at 5%.

Results: The mean age of the infants was 12.6 (± 14.6) weeks with an age range of 4 to 72 weeks. Half of the infants (51.4%) were female. The positivity rate of MTCT decreased from 2.9% in 2016 to 0.9% in 2020 with five-year average positivity rate of 2.6%. HIV test after six weeks (Adjusted odds ratio (AOR) = 2.7; 95% confidence interval (CI): (1.8–4.0,)); $p < 0.001$), absence of prevention of mother-to-child-transmission (PMTCT) service (AOR = 4.6; 95% CI: (2.9–7.4)); $p = 0.001$), nevirapine prophylaxis not received (AOR = 2.0; 95% CI: (1.3–3.2)); $p < 0.001$), and unknown ART status of the mother at delivery (AOR = 11; 95% CI: (5.5–22.1)); $p < 0.001$) were significantly associated with MTCT of HIV.

Conclusion: The positivity rate of MTCT of HIV was showing declining tendency gradually in the study period. Strengthening PMTCT service, early HIV screening and starting ART for pregnant women, and early infant diagnosis are required to reduce the burden of HIV infection among infants exposed to HIV.

Biography

I am a senior researcher of Epidemiology and Biostatistics. I have more than 7 publications on reputable journal and active reviewer for different journals. Recently, I have been working at Ethiopian Public Health Institute, as a project coordinator, Central research supervisor, surveillance and survey of disease investigations, Data manger, Data analyst, health program monitoring and evaluation with over 10+ years working Experiences. Besides, I served as an advisor and lead for national HIV Spectrum Estimate in collaboration with UNAIDS and CDC Ethiopia, Data Manager for National HIV Case Based Surveillance, as a Central Research coordinator on a Covid-19 national cohort study. I engaged in Surveillance data Analysis, Surveillance system evaluation, outbreak investigation and disaster narration. I have an experience of conducting both qualitative and quantitative research in different settings. I have considerable experience in research, data analysis using advanced statistical models such as Classical Regression Models, Generalized Estimating Equations (GEE), Random Effect Regression Models, Multilevel Regression Models, Structural Equation Modeling (SEM) and Meta-analysis Models.

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Analysis of COVID-19 vaccinations and symptom mapping diagnostic technique for viral diseases: Using data analytics, machine learning and artificial intelligence

Chikezie K. Kalu

Department of Management Sciences and Engineering, Jiangsu University, China

Background: The increasing challenge of modern medicine to continually improve to meet up with the evolving viruses, viral diseases and other forms of human diseases; requires urgent and a thorough approach for the good of humanity. Therefore, innovative measures must be applied in vaccination production and distributions, which have been identified as a most potent method to curb viral diseases and of current interest, the Corona Virus.

Objective: To analyse and measure the COVID-19 vaccination outlook in a developing country as Nigeria; and the non-clinical analysis, diagnosis, treatment and management of COVID-19 and other viral diseases, using Data/Machine Learning(ML)/Artificial Intelligence (AI) tools and Methodologies.

Methods: Using current and historical data from validated open source data stores, analysis was carried out on COVID-19 vaccination and related economic, demographic and geo-climatic data for a developing country, Nigeria and selected countries from all Continents of the World. The methodical and data-driven analyses were carried out using the following Data/Artificial Intelligence (AI) methodologies and algorithms: Multivariate Regression Analysis, Symptom Mapping Analysis, and Grey System Analysis.

Results: The COVID-19 vaccinations expectedly does reduce the number of active covid cases and the amount or number of vaccinations for a developing country as Nigeria is affected by a good number of economic, demographic and geo-climatic factors; and so COVID-19 vaccinations strategies must be unique to a Country and take into account influencing factors not only limited to number of active covid cases.

Conclusion: Medical practitioners can provide even more efficient diagnosis and treatment of viral diseases; and also patients can carry out personalised cost effective diagnosis and treatment/management of viral diseases, with also the advises of medical practitioners.

Biography

Mr. Chikezie Kennedy Kalu is currently a PhD Student at the Department of Management Science and Engineering, School of Management; Jiangsu University, China. His field of research is Technology and Innovation Management. He is from Nigeria and has a B.Eng. in Electronics Engineering from The University of Nigeria Nsukka; Enugu State, Nigeria (UNN) and a Masters (with Distinction) in Communication Engineering from The University of Manchester, UK. He has also had professional work experiences cutting across the Industries of: Telecom Engineering, Retail, Education, Oil and Gas, ICT and Logistics.

His research interests includes AI, Data Science/Analytics, Mathematical and Algorithms designs, Wireless Communications Systems and Electronics Engineering research and applications in various fields(including Health) for the good of humanity.

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SARS-CoV-2 infections, clinical characteristics, and related risk factors: The first 8months surveillance study conducted in Southwest Ethiopia

Dassalegn Muleta, Asnake Simieneh, Tadesse Duguma, Eyob Tekalign, Teshale Worku, Gizachew Ayele, Yayeh Melaku, Abdulrezak Nuri, Murtii Teressa, Adinew Belay and **Mengistu Abayneh**

Mizan Tepi University, Ethiopia

Coronavirus disease 2019 (COVID-19) is caused by a severe acute respiratory syndrome coronavirus (SARS-CoV-2) and became pandemic after emerging in Wuhan, China, in December 2019. We aimed to investigate the prevalence, clinical characteristics, and risk factors for SARS-CoV-2 infections in districts of southwest Ethiopia. A study was conducted on COVID-19 surveillance data in the diagnostic center of the southwest district of Ethiopia from July 1, 2020, to February 30, 2021. A total of 10 618 nasopharyngeal specimens were tested for SARS-COV-2 using the detection of unique sequences of virus RNA by reverse transcriptase PCR. Data were entered into Epidata version 3.1 and analyzed using SPSS version 25. Logistic regression was used to determine the relationship between COVID-19 and risk factors, with a significance level of P = 0.05. A total of 10 618 individuals were tested for SARS-CoV-2. Of these, 419 (3.9%) patients tested positive for SARS-CoV-2. Among a total of 419 patients who tested positive for SARS-CoV-2, 80.2% were asymptomatic, 264 (63.0%) were males, and 233 (55.6%) were aged 19 to 35 years. Comorbidity was present in 37 (8.8%). The risk of getting SARS-CoV-2 infections was increased with male sex (AOR= 1.248; 95% CI: 1.007, 1.547), health workers (AOR = 3.187; 95% CI: 1.960, 5.182), prisoners (AOR = 2.118; 95% CI: 1.104, 4.062), and comorbid conditions (AOR = 2.972; 95% CI: 1.649, 5.358), such as diabetes (AOR = 4.765; 95% CI: 1.977-11.485) and other respiratory problems (AOR = 3.267; 95% CI: 1.146-9.317). Despite the fact that overall laboratories confirmed prevalence of SARS-CoV-2 infections in the study area was low and dynamic, it was spread to all zones of the study area. This highlights the importance of implementing the most effective public health strategies to prevent the further spread and reduce the burden of SARS-CoV-2 infections.

Biography

I was graduated in Bachelor of medical laboratory science/ technology in 2015 and Masters in medical microbiology (Masters Research), on Feb, 2019 from Jimma University, Ethiopia. My primary goal as health professional expert is to see peoples of the world have better well-being and health through the most effective public health intervention. Currently I am Lecturer and Researcher at Mizan Tepi University.

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Famous traditional Mongolian medicine Xieriga-4 (Turmeric-4) decoction: A review

Dulan[1] and **Wang**[2]

[1]*Tong Liao City Hospital, China*
[2]*Inner Mongolia Minzu University, China*

Xieriga-4 Decoction, composed of dried rhizomes of Curcumae longae, barks of Phellodendron chinense or Phellodendron amurense, fruits of Cardenia jasminoides, and fruits of Tribulus terrestris, is a famous prescription of traditional Mongolian medicine for the treatment of urinary system diseases such as frequent urination, urgent urination, urine occlusion, hematuria, bladder irritation and pain. This paper reviewed Xieriga-4 Decoction from the aspects of historical description, prescription principle, chemical components, pharmacology, clinical application and quality control.

Biography

Dulan, female, Mongolian nationality, attending physician, Education:Dr. of Mongolian medicine, member of the first branch of Health Science Popularization of Traditional Chinese Medicine, Her research interests include Mongolian medicine, clinical integration of Mongolian and western medicine, Mongolian medicine, Mongolian medicine pharmacology, etc.

Wang Huan, female, Mongolian, Professor, doctoral supervisor of Inner Mongolia Minzu University. Her main research interests include the establishment of Mongolian medicine disease model and research on etiology and pathogenesis based on the basic theory of Mongolian medicine, the research on the pharmacological mechanism of Mongolian medicine and prescriptions explained by modern scientific research methods, the research on the toxicological mechanism of Mongolian medicine and prescriptions explained by modern scientific research methods, and the research on the material basis of Mongolian medicine and prescriptions.

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Relation of parenting child abuse based on attachment styles, parenting styles, and parental addictions

Tahmine Bahmani, NaziaSadat Nasseri and **Elham Fariborzi**

Department of Educational Sciences, Mashhad Branch, Islamic Azad University, Iran

The purpose of this study was to complete the cycle of recognizing these relationships. In this regard, the effect of parenting styles, attachment styles, and the mediating variable of addiction was investigated on child abuse (CA). Multi-stage random sampling and sample size were selected based on the sample size estimation software (510 people) and according to the 20% probability of a drop in the number of subjects, 530 people (265 boys and 265 girls) and 1060 parents were selected. The available method was selected from a sample of 530 people who were selected based on the Addiction Severity Index(ASI) and answered Baumrind's Parenting Styles Questionnaire(PSQ), Childhood Trauma Questionnaire (CTQ), and Adult Attachment Scale (AAS). Data were assessed by analysis of variance, mediator analysis, and path analysis. The results showed that differences in parenting styles cause differences in attachment styles. The results supported only the relationship between the two components of parental affection and control with the attachment avoidance index, and no relationship was observed between these components and the anxiety index. Perceived emotional abuse, mediates the relationship between parental parenting components and the child attachment avoidance index. Finally, it was achieved to a model that shows how the two factors of affection and control simultaneously affect the avoidance index, mediated by parental addiction.

Biography

Assist.Prof. Dr Elham Fariborzi joined the Department of Computer Sciences in 1998 and has been actively involved in teaching and research since then. She taught, supported and supervised students in different universities. Her PhD is Multimedia Based Teaching & Learning and an interdisciplinary field permits her to work in Education, Information Technology, and Computer Sciences Departments. She published 25 books. She participated and presented in various national and international symposia/conferences and has chaired various sessions. Now, she is the head of the Educational Sciences Faculty at Islamic Azad University -Mashhad Branch- Mashhad- IRAN.

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A Bayesian actor-oriented multilevel relational event model with hypothesis testing procedures

Fabio Vieira[1], Roger Leenders[1,2], Daniel McFarland[3] and **Joris Mulder[1]**

[1]Tilburg University, The Netherlands
[2]Jheronimus Academy of Data Science, The Netherlands
[3]Stanford University, United States

Relational event network data are becoming increasingly available. Consequently, statistical models for such data have also surfaced. These models mainly focus on the analysis of single networks; while in many applications, multiple independent event sequences are observed, which are likely to display similar social interaction dynamics. Furthermore, statistical methods for testing hypotheses about social interaction behavior are underdeveloped. Therefore, the contribution of the current paper is twofold. First, we present a multilevel extension of the dynamic actor-oriented model, which allows researchers to model sender and receiver processes separately. The multilevel formulation enables principled probabilistic borrowing of information across networks to accurately estimate drivers of social dynamics. Second, a flexible methodology is proposed to test hypotheses about common and heterogeneous social interaction drivers across relational event sequences. Social interaction data between children and teachers in classrooms are used to showcase the methodology.

Biography

Fabio Vieira is a fourth-year PhD candidate at the Department of Methodology and Statistics at Tilburg University, the Netherlands. His research focuses on multilevel model and statistical tests, with the main interest being Bayesian statistics and its computational aspects. Currently, he works with network dynamics and social interactions. He is also interested in Biostatistics and Machine Learning.

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Enlightening the unseen: Using GradCAM with Resnet152 model for enhanced early detection of Alzheimer's disease on the ADNI MRI Dataset

Faizal Hajamohideen, Noushat Shaffi, Subramanian Karthikeyan and **Viswan Vimbi**

University of Technology and Applied Sciences, Oman

Early detection of Alzheimer Disease (AD) is essential for an effective management of disease and establishing the treatment plan treatment. The prognosis and diagnosis of AD by clinicians are less progressive in predicting the evaluations of brain neurological symptoms. The use of Artificial Intelligence (AI) methods along with XAI framework tries to bridge the gap in achieving accurate prediction and trustworthy explanations.

This study uses ResNet models to train and predict samples from the ADNI MRI dataset for a four-way classification of Alzheimer's disease (AD). The significant characteristics of the explainer GradCAM in deploying optimal weights to the brain regions in the prediction demonstrated in producing heatmaps responsible for AD. The heatmaps from the XAI framework, GradCAM, bridges the gap between computer and medical professionals by imbibing understandability and clinical fidelity.

In particular, the experiment uses the Resnet152 model to train and predict different classifications - CN, EMCI, LMCI, and AD. The model is optimized and trained using the categorical_crossentropy method, and the final layer of the model was applied to GradCAM to envisage the brain region.

In conclusion, using the XAI tool, GradCAM, can enhance the accuracy and reliability of AD detection. The research experiment also features the importance of understanding the AI model's decision-making process through interpretability techniques.

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Removal of remazol black b, cationic brill red-x and acid erionyl yellow dyes from aqueous solutions using chitosan grafted copolymres

Fariborz Azizinezhad

Department of Chemistry and Chemical Engineering, Islamic Azad University, Iran

Chitosan(CTS) graft copolymers were synthesized using a mixture of monomers, itaconic acid (IA) - methacrylamide (MAm) and a mixture of itaconic acid (IA) - methacrylamide (MAm) - bentonate in the presence of primer 4, 4 Azobis 4-cyanovalric acid (ACV) and ethylene glycol dimethacrylate (EGDMA). Characterization of both copolymers was accomplished by XRD, FTIR and SEM methods. The copolymers were used for adsorbtion of acid erionyl yellow (AEY), cationic brill red-x (CBR) and remazol black b (RBB). For all dyes, the important adsorption parameters including pH, adsorption time, adsorbent concentration and adsorbent amount were optimized. The results showed that the tendency to absorb CBR and RBB dyes is more than AEY dye. The best adsorption conditions were recorded for CBR (pH = 2.0, time = 60 min, [CBR] = 300 mg/L, adsorbent = 0.03 g, qmax = 538 mg/g). The important and well-known Langmuir isotherm models and the pseudo-second-order model were well consistent in the CBR adsorption study.

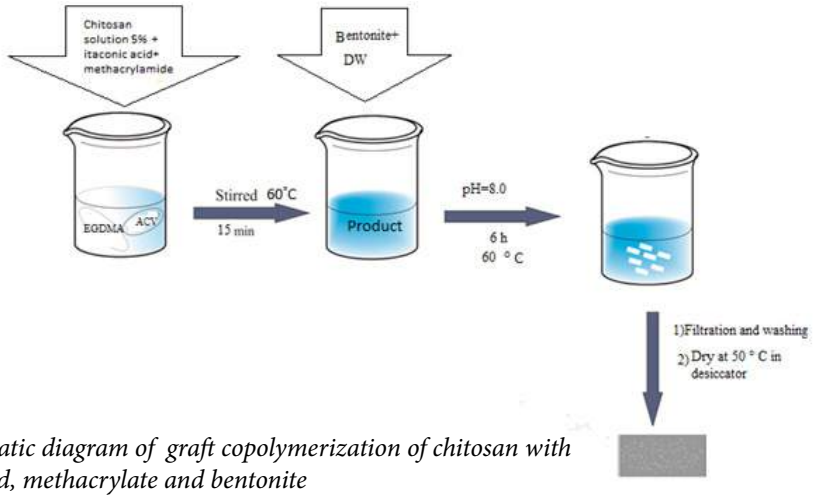

Fig1.Schematic diagram of graft copolymerization of chitosan with itaconic acid, methacrylate and bentonite

Biography

I graduated in applied chemistry in 1992 and in 1997 I graduated in master degree in polymer and worked on PET fiber grafting and completed my PhD in 2 fields of fiber grafting and surface chemistry. I participated in various international congresses such as PPS-21, 22, 26, 27 and.... I have published more than 63 articles and I have guided many students in master's and doctorate degrees. My activities are related to the synthesis and characterization of new polymers and MIPs, surface chemistry and surface adsorption, kinetics and mechanisms of polymer reactions, and I work as a member of the scientific faculty of chemistry and chemical engineering.

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The effect of Astaxanthin and Metformin on oxidative stress in granulosa cells of BALB/C mouse model of polycystic ovary syndrome

Fatemeh Ebrahimi, S. Rostami and **F. Amidi**

Department of Anatomy, School of Medicine, Tehran University of Medical Sciences, Iran

Reactive oxygen species (ROS) are implicated in the development of polycystic ovary syndrome (PCOS) and are key players in follicle and granulosa cell (GC) apoptosis. Our aim was to investigate the antioxidant effects of AST and metformin, both separately and combined, on GCs in a PCOS mouse model. We studied 48 prepubertal female BALB C mice, aged 25-30 days and weighing 12-14 g. The PCOS model was induced by subcutaneous injection of the dehydroepiandrosterone (DHEA) hormone in eight BALB C mice for 20 consecutive days. Apoptosis and ROS levels were evaluated in GCs of the ovaries using flow cytometry. AKT protein activity was measured by western blot, and GC viability was assessed using spectrophotometry. Ovarian tissue sections were prepared, stained with H&E, and their morphology examined. Statistical analysis was performed using one-way ANOVA with SPSS v22.0 software. Our findings indicate that AST administration significantly reduces oxidative stress ($P<0.01$) and consequently leads to a significant decrease in the rate of apoptosis ($P<0.01$). The expression of AKT was significantly increased in the AST group ($P<0.05$), but it decreased in the metformin group, although it remained significantly higher than in the control and PCOS groups. Ovulation was confirmed in both the metformin and AST groups. Further studies are needed to confirm the effectiveness of AST and to establish it as a complementary therapeutic agent in PCOS.

Biography

My name is Fatemeh Ebrahimi, and I am 40 years old. I was born and currently live in Tehran, Iran. I hold an M.Sc. in Anatomical Sciences from the School of Medicine at Tehran University of Medical Sciences (TUMS). For the past 15 years, I have been working as a radiologist at Dr. Shariati Hospital. My master's thesis in Anatomy examined the impact of Astaxanthin on polycystic ovary syndrome (PCOS). The resulting manuscript, titled "The Effect of Astaxanthin and Metformin on Oxidative Stress in Granulosa Cells of BALB C Mouse Model of Polycystic Ovary Syndrome," was published in the Journal of Reproductive Sciences in April 2021.

Virtual Event

5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

The antioxidant activity of Betanin protects MRC-5 cells against cadmium induced toxicity

Fatemeh Rajabian[1], Arezoo Rajabian[2,3] and Zahra Tayarani Najaran[1,4]

[1]Department of Pharmacodynamics and Toxicology, School of Pharmacy, Mashhad University of Medical Sciences, Iran
[2]Medical Toxicology Research Center, Mashhad University of Medical Sciences, Iran
[3]Department of Internal Medicine, Mashhad University of Medical Sciences, Iran
[4]Targeted Drug Delivery Research Center, Pharmaceutical Technology Institute, Mashhad University of Medical Sciences, Iran

Cadmium (Cd) can induce both acute and chronic effects in the lungs depending on the time and the exposure route. Betanin is a component derived from the roots of red beets and it is well-known for its antioxidant and anti-apoptosis effects. The current study aimed to survey the protective effects of betanin on cell toxicity induced by Cd.

Different concentration of Cd alone and in combination with betanin was assessed in MRC-5 cells. The viability and oxidative stress were measured using resazurin and DCF-DA methods respectively. Apoptotic cells were assessed by PI staining of the fragmented DNA and western blot analysis detected the activation of caspase 3 and PARP proteins.

Cd exposure for 24 h declined viability and increased ROS production in MRC-5 cells compared to the control group ($p < 0.001$). Also, Cd (35 µM) elevated DNA fragmentation ($p < 0.05$), and the level of caspase 3-cleaved and cleaved PARP proteins in MRC-5 cells ($p < 0.001$). Cotreatment of cells with betanin for 24 h significantly enhanced viability in concentrations of 1.25 and 2.5 µM ($p < 0.001$) and 5 µM ($p < 0.05$) and declined ROS generation (1.25 and 5 µM $p < 0.001$, and 2.5 µM $p < 0.01$). As well as, betanin reduced DNA fragmentation ($p < 0.01$), and the markers of apoptosis ($p < 0.001$) compared to the Cd-treated group.

In conclusion, betanin protects lung cells against Cd-induced toxicity through antioxidant activity and inhibition of apoptosis.

Biography

I recently graduated from the School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran with a Ph.D. degree in Toxicology. I worked on several herbal compounds including betanin, γ-oryzanol, crocetin, crocin, silymarin, osthole, rutin, berberine, and baicalein for the prevention or treatment of some toxic substances in the environment, industry, and diet or adverse effect of a drug. In the current research, we demonstrate betanin has a protective effect against Cd toxicity in lung cells. I am thrilled to present as a virtual speaker, share information, and discuss my paper at this conference.

Virtual Event

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Advances in Medicinal Chemistry and Pharmacology

Exploring the potential of natural products: A source of bioactive compounds for drug discovery and development

Zeinab Rezvani and **Fatemeh Rezvani**

Department of Biosystems Engineering, Faculty of Agriculture, Shahid Bahonar University of Kerman, Iran

Natural products are organic compounds derived from natural sources such as plants, animals, and microorganisms. They have been used for centuries in traditional medicine and continue to play a crucial role in drug discovery and development. Natural products possess diverse chemical structures and exhibit a wide range of biological activities, making them valuable resources for the pharmaceutical industry.

This abstract provides an overview of natural products, highlighting their significance and potential applications. It explores the various sources of natural products and the methods employed to isolate, characterize, and study their chemical and biological properties. The rich biodiversity of our planet offers a vast array of natural products with therapeutic potential, including antimicrobial, anticancer, anti-inflammatory, and antioxidant activities.

Furthermore, the abstract discusses the importance of natural product research in drug discovery, emphasizing the potential of natural products as leads for the development of new drugs or as inspiration for the synthesis of novel drug candidates. The exploration of natural product libraries and the use of innovative techniques such as high-throughput screening and combinatorial chemistry contribute to the identification and optimization of bioactive compounds.

In conclusion, natural products represent a valuable and renewable source of chemical diversity with immense potential for the development of novel therapeutics. Their exploration and utilization in drug discovery continue to provide exciting opportunities for the development of effective treatments for various diseases.

Biography

I am Zinab Rezvani. I obtained my Ph.D. from Shahid Bahonar University of Kerman. I have been fortunate enough to be invited to the University of California for research opportunities. Currently, I am proudly serving as a professor at Shahid Bahonar University of Kerman, where I contribute to the academic community and mentor students in my field of expertise.

Virtual Event

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Advances in Medicinal Chemistry and Pharmacology

Lawsonia inermis improves sperm parameters and testicular tissue changes caused by lipopolysaccharide

Fatemeh Shahidpour and **Majid Pourentezari**

Yazd Neuroendocrine Research Center, School of Medicine, Shahid Sadoughi University of Medical Sciences and Health Services, Iran

Objective: Infertility is a common problem, with around 50% related to men. Causes of male infertility include oxidative stress and testis inflammation. This study examined the impact of Lawsonia inermis on testicular tissue and sperm after lipopolysaccharide administration.

Methods: In this project, 40 mice were divided into four equal groups: (1) sham: Tween 1% gavage, (2) Tween 1%+LPS (1 mg/kg; IP) and 3 and 4) L. inermis extract (300 and 500 mg/kg) along with LPS. After 7 days of the experimental period, the animals were anesthetized, and immediately, general sperm analysis was performed. Serum testosterone level, total antioxidant capacity and testicular histological changes were also investigated.

Results: In examining the quality of sperms, it was observed that the number, motility and viability of sperms in the LPS group are significantly reduced compared to the sham group. Relative improvement in sperm parameters was observed in the LPS group treated with a dose of 500 mg/kg L. inermis extract.

LPS lipopolysaccharide group, LPS+EXT the group receiving lipopolysaccharide and L. inermis extract. a: difference between sham and LPS, b: difference between sham and LPS+EXT 300, c: difference between sham and LPS+EXT 500, d: difference between LPS and LPS+EXT 300, e: difference between LPS and LPS+EXT 500 and f: difference between LPS+EXT 300 and LPS+EXT 500.

The percentage of inhibition of oxidants (DPPH) was significantly decreased in the LPS group compared to the sham group. L. inermis extract increased the level of DPPH in the LPS group.

Serum testosterone level was significantly decreased in all LPS and treatment groups. Histological examination also showed abnormality in the germinal epithelium and a decrease in the number of sperm cells in the seminiferous tubules in the LPS group. In the group treated with 500 mg/kg L. inermis extract, the number of sperms increased, and the layers of germ cells became better organized. In other cell lines in the germinal epithelium and Leydig cells, no difference was observed between the groups.

Conclusion: This study shows that LPS damages sperm quality and testicular tissue. However, the extract of L. inermis can improve their quality, probably through antioxidant function.

Table 1 Sperm analysis: Data are expressed as mean±SD (10 samples in each group)

Variables	LPS	Sham	LPS+EXT 300	LPS+EXT 500	P-value
Sperm count (106)	104±6.87	70.28±3.63	74.42±4.64	80±4.58	0.00 a b c 0.005 e
Progressive motility (%)	49.42±4.35	34.85±4.56	37.14±3.93	43.28±2.98	0.00 a b0.039 c f0.003 e
Non-progressive motility (%)	37.28±5.08	36.71±8.71	34.42±2.93	29.85±4.52	
Immotile sperm (%)	13.28±5.7	28.28±9.28	28.42±4.79	26.57±2.43	0.001 a b0.002 c
Viability (%)	91±4.93	77±3.55	79.71±4.07	85.57±3.45	0.00 a b0.003 e

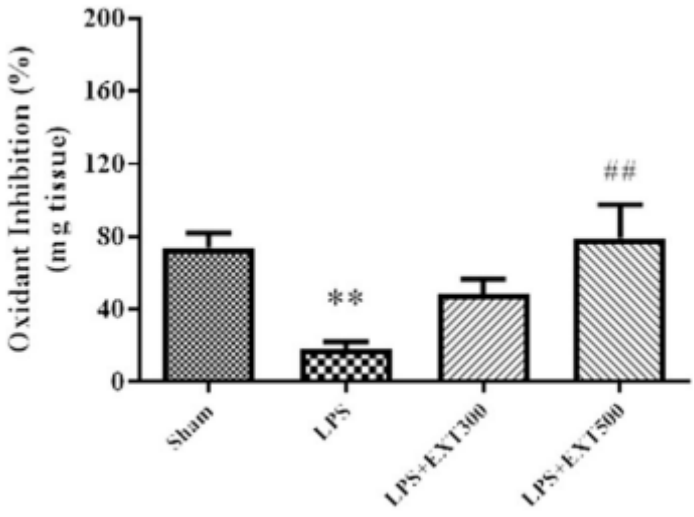

*Fig. 1 The level of DPPH or percentage of inhibition of oxidants in the testis tissue. **P<0.01 vs sham group, ##P<0.01 compared to the LPS group. Data are expressed as mean±SD (10 samples in each group).*

Biography

My name is Fatemeh Shahidpour. I was born in 1989. I obtained my bachelor's degree in anesthesia. In 2017, I entered Shahid Sadoughi University of Medical Sciences in Yazd to pursue a master's degree in medical physiology. Alongside my studies, I started researching traditional medicine as well. I have always been interested in combining traditional, herbal medicine with the latest advancements medicine to provide innovative solutions for treating diseases. Currently, I am a PhD student in tissue engineering at Mashhad University of Medical Sciences. I believe that tissue engineering is the future of medicine, and I am passionate about integrating tissue engineering with traditional and herbal medicine, along with basic sciences, to offer new treatment approaches for patients. My ultimate goal is to witness a world where people from all walks of life can benefit from the latest therapeutic methods to solve their health problems.

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DSPVR: Dynamic SFC placement with VNF reuse in fog-cloud computing using deep reinforcement learning

Fatemeh Zahedi, Mohammadreza Mollahoseini Ardakan and **Ahmad Heidary-Sharifabad**

Islamic Azad University, Iran

The advent of Network Function Virtualization (NFV) has enabled the flexible provisioning of services on Fog-Cloud Computing-based Networks (CFCN) and has facilitated the implementation of 5G networks. NFV transforms hardware mid- dleboxes into sets of software-based Virtual Network Function (VNF) that can host the growing demand for latency-sensitive services at the FCCN. Latency-sensitive and complex services can be provided by composing multiple VNF instances in the Service Function Chain (SFC). VNF instances can be deployed as virtual machines on FCCN components. In general, finding the optimal solution for placement of SFC requests based on VNF instances on FCCN is known as an NP-Hard problem. Dynamic placement of SFCs by reusing VNF instances can improve resource utilization and save time. In this paper, Dynamic SFC placement with VNF reuse (DSPVR) algorithm in FCCN using Deep Reinforcement Learning (DRL) is proposed. DSPVR is a dynamic planning model for SFC placement based on the preliminary VNFs reuse that can recon- cile between Quality of Service (QoS) and service costs under FCCN onstraints. DSPVR is based on DRL and has been developed with the purpose of maximizing long-term cumulative reward (LTCR). In addition, the DSPVR includes an SFC queue network for efficient distribution of VNFs required over time, which can affect the routing of future requests placement. The simulation results show the superiority of the proposed DSPVR algorithm compared to state-of-the-art methods such as DRL-SFCP and DDQP. The DSPVR outperforms the DRL-SFCP by 4.9% and 9.2% by DDQP in terms of monetary cost. Keywords Fog-Cloud Computing · Virtual Network Function · Service Function Chain · VNF reuse · Deep Reinforcement Learning.

Biography

I am Fatemeh Zahedi, born in September 1986 in Iran-Shiraz, I have completed my bachelor's and master's degrees in software engineering, and currently, I am a doctoral researcher in software engineering. In 2020, I obtained the EPT language certificate with a score of 810/1000.

I have about 13 years of work experience in the field of education and research in various universities and higher education institutions and so far I have managed to publish a book on the review of optimization algorithms and several articles in various magazines and publications. I am currently working at Shiraz University and Apadana Institute of Higher Education as teacher and researcher. I want to choose my future career in the field of research, and for this reason, these days, I have focused all my efforts on my doctoral thesis.

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Bencao (herbal) small RNA Atlas for treating human diseases

Fengming Huang

State Key Laboratory of Common Mechanism Research for Major Diseases, Department of Biochemistry, Institute of Basic Medical Sciences Chinese Academy of Medical Sciences, School of Basic Medicine Peking Union Medical College, China

Cross-kingdom herbal miRNA was first reported in 2012. Using a modified herbal extraction protocol, we obtained sequences by RNA-seq from more than 200 traditional Chinese Medicine (TCM). We constructed a Bencao (herbal) small RNA (sRNA) Atlas (http://bencao.bmicc.cn), which contained more than 20 million unique sequences, and created a nomenclature system for Bencao sRNAs. All human genes might be regulated by sRNAs from the Bencao sRNA Atlas, part of the predicted human target genes was experimentally validated. We established roadmaps for oligonucleotide drugs development and optimization of TCM prescriptions. We propose a Bencao (herbal) Index, including small-molecule compounds (SM), protein peptides (P), nucleic acid (N), non-nucleic and non-proteinogenic large-molecule compounds (LM) and elements from Mendeleev's periodic table (E), to quantitatively measure the medical effects of botanic medicine. The Bencao sRNA Atlas is a resource for developing gene-targeting oligonucleotide drugs and optimizing botanical medicine, and may provide potential remedies for the theory and practice of one medicine.

Biography

Fengming Huang, associate professor of biochemistry department at Peking Union Medical College and Chinese Academy of Medical Sciences (PUMC/CAMS). She obtained her B.S from Perking University, and PhD at PUMC/CAMS. Her research focuses on the diseases related to lung injury and the drug developments. She published peer-reviewed journals including Cell Discovery, Cellular & Molecular Immunology, Molecular Psychiatry, National Science Review, Nature Communications, Sci China Life Sci, PLOS Pathogens, mSystems, Scientific reports. Web of Science citation more than 1700.

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Decomposition of the decoupling of CO2 emissions from economic growth in Ghana

F. A. Asaki and **E. F. Oteng-Abayie**

Kwame Nkrumah University of science and Technology, Ghana

The study analysed the relationship between CO_2 emissions and economic growth in Ghana, specifically by analysing Ghana's decoupling status from 1990 to 2018. The Tapio elasticity method and the logarithmic mean Divisia index decomposition technique were used in the study to find out what causes CO_2 emissions in Ghana to change over time. The analysis revealed that CO_2 emissions and economic growth have increased over the study period, with economic growth driven mostly by the services and industrial sectors in the last decade. The decoupling index analysis shows that weak decoupling status dominated the period 1990–2018, interspersed with strong decoupling and expansive negative decoupling status. Economic structure and energy intensity, instead, were found to promote the decoupling of CO_2 emissions and economic growth. From the decomposition analysis, CO_2 emissions in Ghana are driven on the average by economic activities, emission factors, and population growth. To achieve the Sustainable Development Goal 13, the study suggests that policies to cut CO_2 emissions should focus on economic activities, factors that affect emissions, and population growth. Also, to decouple CO_2 emissions from economic growth, the implementation of policies that change the structure of the economy and energy intensity towards renewable sources should be intensified in Ghana.

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Potential of Halophilic cellulolytic and ethanologenic bacteria for non-aseptic lignoethanol fermentation

F.Tabssum[1] and **J. Qazi**[2]

[1]*University of Education, Bank Road Campus, Pakistan*
[2]*Institute of Zoology University of the Punjab, Pakistan*

One of the major expenditure incurred in bio-converting the cellulolytic wastes to fuel ethanol in the cost of sterilization and managing the familiar monoseptic/biseptic fermentations. And when such fermentations are scaled up the cost become unaffordable considering the current prices of fossil fuels. A solution to this issue resides in exploiting extremophiles for accomplishing the both processes of saccharification as well as ethanol fermentations in essentially non aseptic reactors wherein due to extreme conditions mesophilic microbes fail to thrive.

In Pakistan large reservoirs of natural salt had been exploited by human since before Christ. The salt range mining location called Kallar Kahar. Form the mine waste brine is being drained in heavy amounts. It is proposed that from the said area halophiles and/or ethanologenic microorganisms may be isolated and the wastes brine might than be used to process the lignocellulosic wastes for saccharification and ethanol fermentation with salt tolerant ethanologenic yeasts. As solar insolation illuminates the days well throughout the year in this country, the fermented bioethanol can be distilled by solar heat; a step that will further economize the process of bioethanol production. The fermentation reside rich in single cell protein and salt may find its utilization as animal feed supplement.

Biography

I am Dr. Fouzia Tabssum Assistant Professor (Zoology) at UE Bank Road Campus. I completed my postgraduate education from Institute of Zoology University of Punjab, Lahore with First position in M.phil and University of the Punjab awarded me DPCC scholarship during my M.phil studies. Thereafter I was awarded HEC indigenous Ph.D. scholarship as well as IRSIP (International Research Support Initiative) for University of Wisconsin-Madison (USA). I completed my Ph.D. in 2018. I have been able to publish 20 research/review articles and 1 chapter in a book. My impact factor is 20 whereas Google scholar citations have become 264. I have attended 15+ international/national scientific conferences/ symposium. I joined University of Education BRC Lahore in September, 2020. My current initiatives include writing up of research project to promote research culture in graduate students and faculty members as well in Pakistan. My current projects are on low cost biofuel fermentation employing microorganisms and administrations of probiotics and its effects on living organisms.

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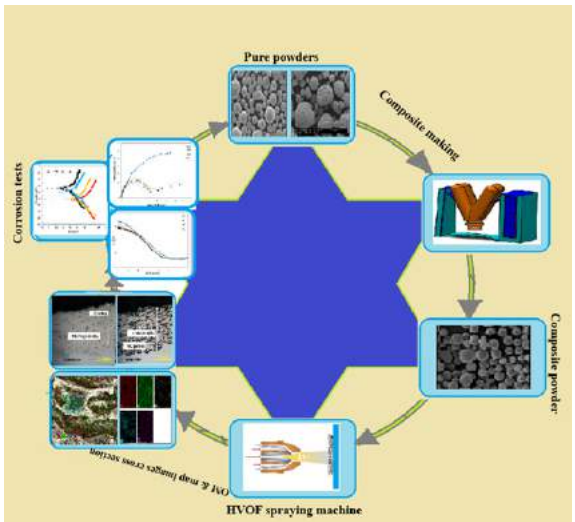
An investigation on microstructural and electrochemical characteristics of NiCrBSi/WCCoCr composite coatings in 3.5% NaCl solution

Freshteh Sadaat Keshvari Tabatabaei[1], Behrooz Ghasemia, Omid Mirzaeea, Mahboobeh Azadi[1] and Seyed Saeed Keshvari Tabatabaei[2]

[1]Faculty of Materials and Metallurgical Engineering, Semnan University, Iran
[2]Department of Mechanical Engineering, Faculty of Engineering, Arak University, Iran

In this paper, the electrochemical behavior of NiCrBSi coatings reinforced by WCCoCr particles in 3.5% NaCl solution is investigated. These coatings were made by the High-velocity oxygen fuel spraying (HVOF) process. The content of reinforcement particles was a variable that affected the characteristics of composites coatings. The microstructural evaluations were done by utilizing the field emission scanning electron microscopy (FESEM) and optical microscopy (OM) techniques. The electrochemical tests were used to study the corrosion behavior of these composite coatings. The FESEM images showed that WC particles were distributed homogeneously in the matrix that contained the different sizes of stretched splats. Based on Tafel polarization results, NiCrBSi coatings reinforced by 15% wt WCCoCr particles showed lower corrosion rates with respect to other coatings. When the content of reinforcement particles increased in the matrix the corrosion current densities increased. This event was due to the increase in the porosity of coatings. The electrochemical impedance spectroscopy (EIS) test result showed that the increase in the corrosion resistance of composite coatings was about 23.4-75.2%. This behavior was due to the increase in the chromium and cobalt phase in the matrix which formed the oxide layers and acted as a passive layer in the corrosive solution.



Biography

I am a master's student in materials engineering from Semnan National University. Since 2011, I have 3 years of experience in various scientific fields, including nanotechnology. I had the honor of being the vice president of supervision and planning, as well as being a member of the board of directors of the Central Province Nanotechnology Research Institute, and in 2014, I won the 6th national rank in the 5th National Nanotechnology Competition. I am also a member of the Club of Young Researchers and Elites.

In line with the aforementioned research activities, my master's thesis is an idea to solve the problem of wear and corrosion of parts of various industries, such as oil, gas, petrochemical and refinery. Since 1995, the project has been defined in the petrochemical industry, and finally, after passing all the experimental tests and obtaining positive results, the plan was implemented in the same industry, and after 7 years, positive feedback has been obtained. In this regard, in 1998, the mentioned project was selected as one of the selected projects of the vice president's technology department, and with the support of this respectable institution, it reached the commercialization stage. A private company under the name of Iranian Coating Industry Company was registered with registration number 16582 in 1400 and I am the CEO and chairman of the board of this company, and currently the company is in the process of registering knowledge base.

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Between guidelines and clinical trials: Evidence-based advice on the pharmacological management of non-specific chronic low back pain

Filippo Migliorini[1,2], Raju Vaishya[3], Gaetano Pappalardo[4], Marco Schneider[5,6], Andreas Bell[7] and Nicola Maffulli[8,9,10]

[1]Department of Orthopaedic, Trauma, and Reconstructive Surgery, RWTH University Hospital of Aachen, Germany
[2]Department of Orthopaedic and Trauma Surgery, Academic Hospital of Bolzano (SABES-ASDAA), Italy
[3]Department of Orthopedics, Indraprastha Apollo Hospitals Institutes of Orthopaedics, India
[4]Department of Spine Surgery, Germany
[5]Department of Medicine and Dentistry, University of Witten/Herdecke, Germany
[6]Department of Arthroscopy and Joint Replacement, MVZ Praxisklinik Orthopädie Aachen, RWTH University Hospital Aachen, Germany
[7]Department of Orthopedics, Eifelklinik St. Brigida, Germany
[8]Department of Medicine, Surgery and Dentistry, University of Salerno, Italy
[9]Barts and the London School of Medicine and Dentistry, Queen Mary University of London, England
[10]School of Pharmacy and Bioengineering, Keele University Faculty of Medicine, England

The pharmacological management of nonspecific chronic low back pain (NCLBP) aims to restore patients' daily activities and improve their quality of life. The management of NCLBP is not well codified and extremely heterogeneous, and residual symptoms are common. Pharmacological management should be considered as co-adjuvant to non-pharmacological therapy, and should be guided by the symptoms reported by the patients. Depending on the individual severity of NCLPB, pharmacological management may range from nonopioid to opioid analgesics. It is important to identify patients with generalized sensory hypersensitivity, who may benefit from dedicated therapy. This article provides an evidence-based overview of the principles of pharmacological management of NCLPB.

Biography

Gaetano Pappalardo is a chief resident doctor for orthopedics at the Oberlinklinik in Potsdam (Germany). He graduated MD at the "Catholic University of Sacred Heart" in Rome. His clinical and research activity is focused on spine pathologies.

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The evaluation of the antiviral therapeutic action of "Armenikum" in SARS-CoV-2

Arthur K Melkonian[1] and **Gagik V. Hakobyan**[2]

[1]*Promtest, Armenia*

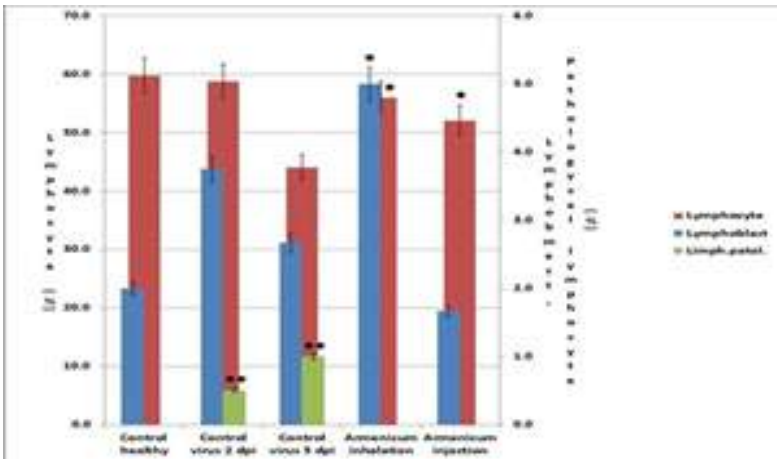
[2]*Oral and Maxillofacial Surgery, University of Yerevan State Medical University, Armenia*

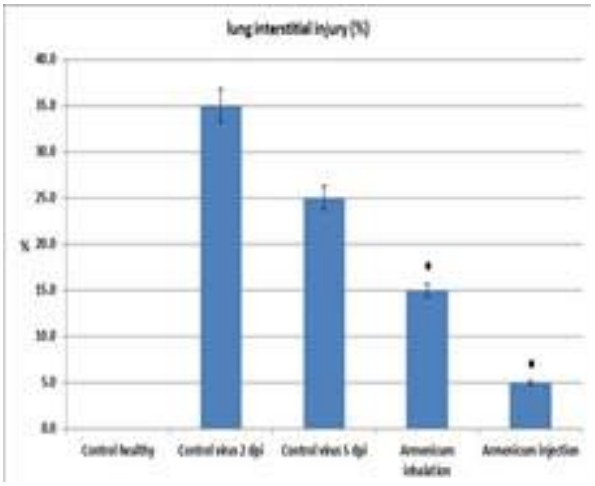
To study the possible direct antiviral effect of "Armenicum" on SARS COV-19, an *in vitro* study on the SARS COV-19 encephalomocarditis virus and the antiviral therapeutic effect of "Armenicum" *in vivo* on the model of Syrian hamsters were carried out.

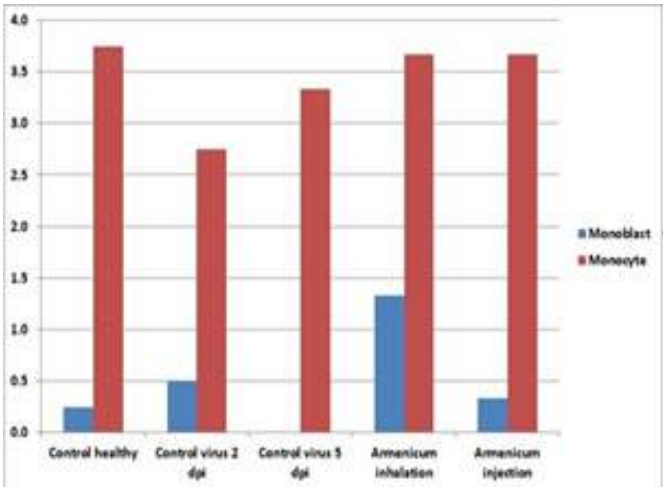
After intranasal infection, the virus replicates in the upper and lower respiratory tracts and infects the lungs. Human coronavirus SARS Cov-2 (delta strain) was used as the virus. Two groups of 4-specimen hamsters were used to study the therapeutic activity of the drug during 48 hours after infecting. For this purpose, one group received an "Armenikum" intramuscularly at a dose of 0.1 ml/kg and the other a similar dose as inhalation.

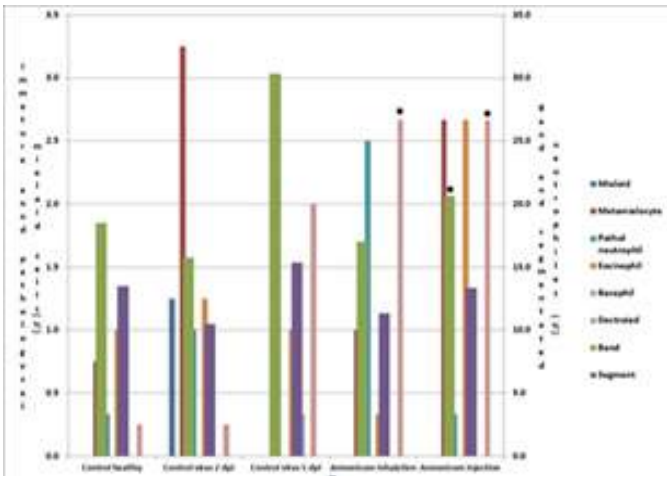
One group of hamsters (4 of them) served as positive control and was infected with the virus at a similar dose as experimental one and was used as a control of pathology induced by the viral infection till the end of the experiment. Another group of hamsters (4 of them) was injected physiological solution and was used as a control. The Syrian hamsters underwent a clinical blood test and CT.

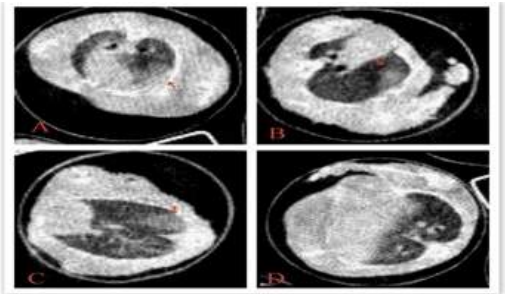
"Armenikum" in the form of an injection has a significant antiviral effect on the human coronavirus SARS Cov-2 (delta strain), credibly reducing the titers of the virus and the time of its elimination from the Syrian hamsters, significantly mitigating the viral infection. Inhalation preparation "Armenikum" has no antiviral effect on human coronavirus SARS Cov-2 (delta strain), but is able to reduce the virus content in nasal samples.




lung interstitial injury (%)
Control healthy
Control virus 2 dpi
Control virus 5 dpi
Armenicum inhalation
Armenicum injection


Monoblast
Monocyte
Control healthy
Control virus 2 dpi
Control virus 5 dpi
Armenicum inhalation
Armenicum injection

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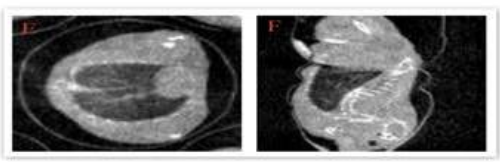
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Stem cell-based combinatorial therapies for spinal cord injury: A narrative review of current research and future directions

Nicholas Aderinto[1], Muili Opeyemi Abdulbasit[1] and **Gbolahan D. Olatunji[2]**
[1]Ladoke Akintola University Teaching Hospital, Nigeria
[2]University of Ilorin, Nigeria

Spinal cord injury (SCI) is a devastating condition that can result in lifelong disability. Despite significant progress in SCI research, current treatments only offer limited functional recovery. Stem cell-based combinatorial therapies have emerged promising to enhance neural repair and regeneration after SCI. Combining stem cells with growth factors, biomaterials, and other therapeutic agents can improve outcomes by providing a multifaceted approach to neural repair. However, several challenges must be addressed before these therapies can be widely adopted in clinical practice. Standardisation of stem cell isolation, characterisation, and production protocols ensures consistency and safety in clinical trials. Developing appropriate animal models that accurately mimic human SCI is crucial for successfully translating these therapies. Additionally, optimal delivery methods and biomaterials that support the survival and integration of stem cells into injured tissue must be identified. Despite these challenges, stem cell-based combinatorial therapies for SCI hold great promise. Innovative approaches such as gene editing and the use of neural tissue engineering may further enhance the efficacy of these therapies. Further research and development in this area are critical to advancing the field and providing effective therapies for SCI patients. This paper discusses the current evidence and challenges from the literature on the potential of stem cell-based combinatorial therapies for SCI.

Biography

Gbolahan Olatunji is a medical graduate of the University of Ilorin. He is a practicing physician and the joint founder of an emerging researcher network that attracts researchers within and outside Nigeria. He currently has 23 publications in reputable peer-reviewed international journals. His research interests lie at the intersection of clinical medicine, public health, infectious diseases, and emerging therapies. He seeks to contribute tangibly to the improvement of health across these spheres and beyond.

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Rare Earth Elements-associated hormesis: Concentration-related adverse effects to stimulation

G. Pagano and **M. Trifuoggi**

Federico II Naples University, Department of Chemical Sciences, Italy

Rare earth elements (REEs) are indispensable components in a number of technological devices, with steadily growing literature since the 1950s. The published data highlight both favorable and adverse effects, as far as REEs, like other xenobiotics, follow hormetic concentration-related trends, implying stimulatory or protective effects at low levels, then adverse effects at higher concentrations. Thus, it is important to investigate REEs in different matrices to evaluate the risks or benefits of these emergent contaminants. REE mixtures have been used in Chinese agriculture as fertilizers for more than 30 years to improve crop yields. Furthermore, REE supplementation positively affects both animal growth and feed conversion efficiency (FCE) in pigs, broilers and cattle, and egg production in laying hens. More recently, the use of REE-based fertilizers and feed additives has been prospected to a number of other countries outside China.

Our on-going study of REE-associated hormetic effects relies on a recent investigation on sub-micromolar cerium (Ce), lanthanum (La) and their equimolar concentrations on sperm fertilization success and offspring quality of Sphaerechinus granularis sea urchins, with the prospected effects of sperm of Paracentrotus lividus sea urchins. The current results assessed an increase in sperm fertilization success and an improvement of offspring quality following sperm exposure to sub-micromolar concentrations of Ce, La, or their combination. Previous data showed different toxicities in a set of REE analogues, thus a working hypothesis is raised about extending this comparative dataset among several REEs in terms of hormetic effects.

Biography

Previously staff biologist at the Italian National Cancer Institute (1972 to 2005).

After retirement, currently research contractor at ACELAB, Department of Chemical Sciences, Federico II Naples University.

Research in Environmental Toxicology since 1980's to present, focused on several subjects such as: metals; organic contaminants, complex mixtures from several industrial facilities. Since 2007, studies of REE toxicity and, recently, hormesis.

Over one hundred-twenty articles in peer-reviewed journals, mostly as first or corresponding author; 22 book chapters, 11 contract reports, over 40 meeting presentations, and international lecturing. Editor of two recently published books.

ResearchGate score: 38.69

Citations: 3,872

h-index: 36

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Tenofovir alafenamide plus dolutegravir as a switch strategy in HIV infected patients: a pilot randomized controlled trial

Golbarg Alavian[1], Ladan Abbasian[2,3], Hossein Khalili[4], Seyed Ahmad Seyed Alinaghi[5], Malihe Hasannezhad[6], Masoumeh Farrokh Ashtiani[6] and **Seyed Ali Dehghan Manshadi[2]**

[1]Department of Clinical Pharmacy, Tehran University of Medical Sciences, Iran
[2]Iranian Research Center for HIV/AIDS, Iranian Institute for Reduction of High-Risk Behaviors, Tehran University of Medical Sciences, Iran
[3]Department of Infectious & Tropical Diseases, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Iran
[4]Department of Clinical Pharmacy (Pharmacotherapy), Faculty of Pharmacy, Tehran University of Medical Sciences, Iran
[5]Iranian Research Center for HIV/AIDS (IRCHA), Tehran University of Medical Sciences (TUMS), Iran
[6]Department of Infectious Diseases, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Iran

Background: Currently, two-drug antiretroviral regimens are the emerging fields in life-long treatment in people living with HIV.

Objectives: This randomized non-inferiority open-label controlled trial was designed to compare the 48-week efficacy and safety of tenofovir alafenamide plus dolutegravir versus the standard triple therapy in virologically suppressed people living with HIV. To the best of our knowledge, this combination has not been studied before.

Methods: This open-label randomized controlled trial was conducted in treatment-experienced peoples with HIV who had HIV-RNA <47 copies/mL for at least two years. Patients received either tenofovir alafenamide plus dolutegravir combination (26 patients) or a standard three-drug regimen (29 patients). The primary outcome was the proportion of patients maintaining HIV-RNA <47 copies/mL during 48 weeks, and the secondary outcomes were CD4 cells count changes, the adherence rate, and adverse drug reactions, all over 48 weeks of study.

Results: HIV viral load remained undetectable (HIV-RNA < 47 copies/mL) during the 48 weeks of the study in both arms. The absolute CD4 cells count change was not significant between the two groups. The overall proportion of adverse effects in each group was comparable. The rate of adherence to the treatment was acceptable in both groups and no significant difference was observed.

Conclusions: Treatment simplification with tenofovir alafenamide plus dolutegravir regimen as maintenance therapy was non-inferior in terms of efficacy and safety compared to the standard triple therapy.

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Mechanical, barrier and antimicrobial properties of anchote (Coccinia abyssinica) starch films containing cellulose nanocrystals and rosemary essential oil

Habtamu Shebabaw Kassa[1,2] , S Anuradha Jabasingh[1], Shegaw Ahmed Mohammed[1], Soo-Young Park[2] and **Seung-Yeop Baek[2]**

[1]School of Chemical and Bio-Engineering, Addis Ababa Institute of Technology, Addis Ababa University, Ethiopia
[2]School of Applied Chemical Engineering, Polymeric Nano Materials Laboratory, Kyungpook National University, Republic of Korea

In this research, the mechanical, barrier and antimicrobial properties of anchote (Coccinia abyssinicca) starch films containing different concentrations of anchote cellulose nanocrystals (AnchCNC) (1, 3, and 5%) and rosemary essential oil (REO) (2, 4, and 6%) were investigated. The thickness, moisture content, water solubility, water vapor permeability, mechanical properties and antimicrobial properties of films were analyzed. Films containing (3% AnchCNC; 2% REO) and (5% AnchCNC; 2% REO) were chosen based on better tensile strength and water vapor permeability, and their Fourier transform infrared, thermal, and morphological characteristics were examined. Films were prepared by the solution casting method, using water as a solvent and glycerol as a plasticizer. The tensile strength and water vapor permeability of anchote starch films were both dramatically improved by increasing the amount of AnchCNC. A significant reduction in the water vapor permeability of films was seen when the amount of rosemary essential oil was increased. The tensile strength property of the films was found to decrease the concentration of rosemary essential oil was increased. The tensile strength of the anchote starch (control) film was 9.42 MPa. Films containing (3% AnchCNC; 2% REO) and (5% AnchCNC; 2% REO) had shown the highest tensile strength values of 23.41 MPa and 23.44 MPa, respectively. With the addition of 5% AnchCNC and 6% REO, the water vapor permeability of anchote starch film was decreased from 8.72 to 3.11 x 10-11 gH2O/Pa.m.s. The films showed satisfactory antimicrobial efficiency against E. coli, Staphylococcus aureus, and Listeria monocytogenes. Both REO and AnchCNC contributed to the film's antibacterial effectiveness, but REO's contribution was higher. A sample containing the highest percentage—5% AnchCNC and 6% REO—recorded the highest antibacterial efficiency. TGA results showed films containing (3 % AnchCNC; 2% REO) and (5 % AnchCNC; 2 % REO) had better thermal properties than the control (anchote starch) film. The findings implied that the film would have significant potential for active packaging to increase food products' shelf lives with good mechanical and barrier capabilities.

Biography

My name is Habtamu Shebabaw Kassa. I have BSc in Industrial Chemistry, MSc in Chemical Engineering (Food Process Engineering). I will complete my PhD program in Chemical Engineering (process Engineering) after 2 months. Currently I am a teacher and researcher at Addis Ababa Science and Technology University, Ethiopia at the department of Chemical Engineering. I am interested in bio engineering and chemical engineering.

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

On computing some degree based topological indices for Polythiophene networks

Hafiz Muhammad Bilal[1] and **Sarfraz Ahmad**[2]

[1]*Lahore Garrison University, Pakistan*

[2]*Comsats University Islamabad, Pakistan*

Graph theory is a mathematical framework that studies relationships between objects using nodes and edges. It finds applications in diverse fields, from computer science to social networks, by modeling connections and solving problems like routing, optimization, and data analysis. Chemical graph theory encompasses various aspects of graph theory applied to diverse fields within chemistry, including organic, mathematical, theoretical, and computational chemistry, as well as computational biology and bioinformatics. A topological descriptor, a mathematical outcome applicable to any graph representing molecular structures, can be employed to analyze numerical properties and compute physicochemical attributes of molecules. This approach offers an efficient alternative to resource-intensive and time-consuming laboratory experiments. Topological descriptors are numerical values that reflect its topology and generally do not change the graph. Topological descriptors are used as a part in the progress of quantitative structure-activity relationships, where biological action or other molecular aspects are linked with their chemical arrangement. Graph theory finds versatile applications in chemistry, aiding in the analysis and understanding of molecular structures, reactions, and properties. It models molecules as graphs with atoms as nodes and bonds as edges, enabling the prediction of chemical reactivity, molecular conformation, and stability. Graph theory also assists in studying complex networks within chemical systems and in designing efficient molecular databases. Polythiophene is a conjugated polymer used in electronics due to its semiconducting properties and versatility. The degree-based descriptors are partitioned into two forms namely, connection and degree number. In this talk, we defined the degree based Banhatti, Sombor, KG Banhatti, Banhatti-Sombor indices for polythiophene and subdivided polythiophene networks.

Biography

I am Hafiz Muhammad Bilal, hailing from Gujranwala, Punjab, Pakistan. My current pursuit involves a PhD in mathematics from the Lahore campus of COMSATS University Islamabad. Concurrently, I am engaged in instructing mathematics at Lahore Garrison University. Notably, I clinched the Best Teacher Award in 2021 and the Best Researcher Award in 2022 at the same institution where I presently serve as a mathematics lecturer. Furthermore, I had the privilege to present my research at the Conference on Graph Theory, Combinatorics, and Applications (GTCA 2022) hosted by the United Arab Emirates University in November 2022. My mathematical journey has unveiled two captivating domains of expertise: algebraic structures and chemical graph theory. Just as algebraic equations interlace variables, my enthusiasm lies in unearthing concealed connections within abstract algebra. Simultaneously, within the realm of chemical graph theory, I delve into how mathematical principles elucidate the structural complexities of molecules, fostering novel revelations in the realm of chemistry. Together, we embark on a voyage to grasp and unveil the allure existing at the crossroads of mathematics and science. My focal point lies in Combinatorial Commutative Algebra and Chemical Graph Theory, a realm where I have contributed with the publication of 05 research papers spanning both domains.

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Notes on culturable endophytic microorganisms isolated from 14 medicinal plants in Vietnam: A diversity analysis to predict the host-microbe correlations

Hanh My Tran, Dung Thuy Thi Nguyen, Ngan Thi Mai, Hien Thi Do, Thanh Kim Thi Nguyen, Thao Kim Nu Nguyen, Marc Muller, Huy Quang Nguyen and Hai The Pham

Vietnam National Universiy, Vietnam

Endophytes can generate a cornucopia of marvelous bioactive secondary metabolites useful for mankind but their biodiversity and associations with host plants are still elusive. In this study, we explored the culturable endophytic microorganisms associated with 14 medicinal plants that are of high socio-economic value and/or reportedly endemic to northern Vietnam. Specifically, we isolated the endophytic microorganisms by applying surface sterilization methods and identified them based on morphological and rDNA sequence analyses. Agglomerative Hierarchical Clustering (AHC) and Principal Component Analysis (PCA) were used to analyze the correlations between the taxonomic affiliations of the culturable endophytes and the characteristics of their hosts. Most of the culturable endophytes obtained were bacteria (80), and few of those were actinomycetes (15) and fungi (8). Many of them are reported to be endophytes of medicinal plants for the first time. A number of plants (5) are also reported for the first time to contain microbial endophytes, while some plants with powerful pharmaceutical potential harbor unique endophytes. Furthermore, our results reveal a strikingly close relation between the compositions of bacterial and fungal isolates from plants having anti-bacterial activity and those from plants having anti-inflammatory activity, or between the compositions of the microbial endophytic isolates from plants having anti-cancer activity and those from plants having antioxidant activity. Altogether, the results provide new findings which can be inspiring for further in-depth studies to explore and exploit the relationships between medicinal plants and their associated endophytes in northern Vietnam and world-wide.

Biography

Hai The Pham is currently working at Faculty of Biology – VNU University of Science, where he is also serving as the Dean. He earned his Bachelor Degree in Biotechnology upon completing his study at VNU University of Science in 2001. He received his Master degree from Korea Instiute of Science & Technology (KIST, Korea) and his PhD degree from Ghent University (Belgium) in 2009. From 2009 to 2011, he worked on bacterial physiology and genetic engineering at Department of Biology, University of Utah in the United States, before returning to Vietnam. Hai The Pham has published over 35 research and review articles in ISI-indexded journals during his career. His research group has received more than 10 national and international research grants thus far. The research topics that the group is focusing on include: (i) bioelectrochemical systems and their applications, (ii) novel environmental biotechnologies, (iii) and natural products associated with microorganisms.

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Advances in Medicinal Chemistry and Pharmacology

The role of ChatGPT in medical research: Progress and limitations

Hamza Ashraf and **Haider Ashfaq**

Allama Iqbal Medical College, Pakistan

Objective: Exploring the utility of ChatGPT in the field of medical research and writing, while identifying its strengths and limitations.

Scope: Investigating the capabilities of ChatGPT as a natural language processing tool for generating text responses in medical contexts, along with assessing its potential role in supporting medical practitioners and students.

Methods Used: The research involved posing questions to ChatGPT in the domain of medical research, noting its responses, and analyzing instances of accurate and inaccurate information. A test case was conducted to observe its behavior when presented with a basic study-related question, as well as a question about the influence of phytochromes on gene expression.

Results: The study reveals that while ChatGPT can provide general and simplified information, it has limitations such as inaccuracies in references (non-existent references), lack of critical thinking, and inability to access the scientific databases. Its text has a robotic and impersonal nature. Due to its knowledge cutoff in September 2021, ChatGPT cannot provide the latest scientific information. ChatGPT has a unique robotic voice and the text it produces is often shallow, bland, dry, and lacking a distinctive 'human voice,' similar to typical scientific writings.

Biography

Dr. Hamza Ashraf, a proficient male medical professional from Allama Iqbal Medical College, Lahore, is a driven researcher with a diverse skill set. Graduating with an MBBS from AIMC, he excels in bio-statistics, content writing, and moderate-level graphics designing. His dedication is evident through his reviewer role at the Annals of Medicine and Surgery Journal and memberships in prestigious societies like the European Society of Cardiology and the American College of Cardiology. Dr. Ashraf's research spans significant areas, from ChatGPT's impact on medical research to the effects of economic crises on Pakistani food consumption. He actively participates in workshops, volunteers for medical initiatives, and boasts achievements beyond medicine, like being an Ambassador of UET Lahore and securing awards in mathematics competitions. Dr. Hamza Ashraf's innovative research and multidisciplinary proficiency make him a valuable asset in advancing medical sciences.

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Advances in Medicinal Chemistry and Pharmacology

Immunohistochemical study of insulin-like growth factor 1 in calcifying epithelial odontogenic Tumor and Ameloblastoma: Experimental research

Haya Alkutifan, Amirah Alnour and **Mumdouh Almohareb**

Department of Oral Histology and Pathology, Faculty of Dentistry, Damascus University, Syria

Background and aim of the study: Several studies have indicated that increased levels of Insulin-like Growth Factor 1 (IGF- I) or altered levels of its binding proteins are associated with an increased risk of the most common cancers, including cancers of the colorectal, lung, breast and prostate. The aim of this study is to investigate the expression of IGF-1 in both calcifying epithelial odontogenic tumor (CEOT) and ameloblastoma.

Methods: The research sample consisted of 23 paraffin blocks from Oral pathology Department, faculty of dentistry, Damascus University, including six biopsies of calcifying epithelial odontogenic tumor, two biopsies of the plexiform ameloblastoma and 14 biopsies of the follicular ameloblastoma. All specimen were prepared and immunostained with rabbit polyclonal antibody to IGF-1. Immunostaining was assessed according to German-semi quantitative scoring system, and then the results were aggregated and statistically analyzed using SPSS version 13.0 (Student's test for two independent samples, one way ANOVA, Kruskal-Wallis test and Mann-Whitney U test), the significance level P-value < 0.05 was considered statistically significant.

Results: All calcifying epithelial odontogenic tumor and ameloblastoma samples were positive for IGF-1 staining, except for one sample of ameloblastoma, which was negative. The results showed that there were no statistically significant differences between calcifying epithelial odontogenic tumor and ameloblastoma in the values of IGF-1 expression (P=0.993) and IGF-1 expression rates (P=0.874) and in the frequency of IGF-1 expression (P=0.761) and IGF-1 staining intensity score (P=0.731).

Conclusion: IGF-1 plays an important role in the growth of odontogenic tumors and there are no differences in IGF-1 expression between CEOT and ameloblastoma.

Biography

Haya Alkutifan has been a dentist since 2017. She received her master's degree in Oral Histology and Pathology from Damascus University in 2023.

This is her first presentation at Adv. Med Chem conference. Haya currently lives in Damascus, Syria.

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Advances in Medicinal Chemistry and Pharmacology

Assessment of synergistic anti-microbial and anti-oxidant activities of essential oils extracted from peels of citrus reticulata, citrus sinensis and citrus lemon

Hifza Rashid

University of Veterinary and Animal Sciences, Pakistan

Nature provides a variety of drugs and medicinal agents derived from different parts of plants. Citrus plants have different medicinal properties. Essential oils extracted from peels of different citrus fruits are used to treat number of diseases like bacterial, fungal, insecticidal and diabetic etc. The present study was conducted to check the antibacterial and antioxidant properties of essential oils extracted from peels of Citrus reticulata, Citrus sinensis and Citrus lemon and their mixture. The composition of the essential oils was determined by GC/MS. GC/MS was done for identification of compounds present in the samples of essential oil which showed that limonene, manitol, pinene and pyrazinoic acid were dominant among others. Their antibacterial activity was checked against Staphylococcus aureus, E. coli and Salmonella enteritidis. Well diffusion assay was performed to check the antibacterial activity. Citrus lemon was found active against Staphylococcus aureus while mixture showed highest antibacterial activity against all microbes. Minimum inhibitory concentration for mixture of essential oils was also checked against E. coli, Salmonella enteritidis and Staphylococcus aureus. 5mg/ml of essential oils of mixture showed antibacterial activity against Salmonella enteritidis and E. coli while 10mg/ml of essential oil showed antimicrobial activity against Staphylococcus aureus. Their antioxidant activity was checked by DPPH assay. Different concentrations (20-100µg/ml) were used for evaluating antioxidant potential. 100µg/ml of sample showed highest antioxidant activity while using ascorbic acid as standard.

Biography

I am HIFZA RASHID from AZAD KASHMIR, PAKISTAN. I have done my M.Phill in 2022 from University of Veterinary and Animal Sciences, Lahore. Currently, I am pursuing my career as a LECTURER. Hailing from remote area, I found this opportunity to explore my skills in area of research.

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Salmonella meningitis, an unusual complication of salmonella species: A case report from Nepal

Himal Bikram Bhattarai[1], Sushil Rayamajhi[2], Madhur Bhattarai[3], Sujata Bhandari[4], Suryakiran Acharya[1], Manish Uprety[5], Sapana Yonghang[1], Gareema Kadel[1], Sandhya Bhusal[1] and **Sajeev Joshi[6]**

[1]Gandaki Medical College, Teaching Hospital and Research Center, Nepal
[2]Swacon International Hospital, Nepal
[3]Tribhuvan University, Institute of Medicine, Nepal
[4]Nobel Medical College and Teaching Hospital, Nepal
[5]Kathmandu University School of Medical Science, Nepal
[6]Scheer Memorial Hospital, Nepal

Introduction: Salmonella meningitis, caused by a gram-negative bacillus of the Enterobacteriaceae family, is an uncommon but serious complication of Salmonella infection that can result in high mortality rates, significant neurological damage, and a high relapse rate, and has become a leading cause of Gram-negative bacterial meningitis in the developing world.

Case Presentation: A 16-year boy presented with high grade fever and altered sensorium for two days associated with vomiting, headache, and photophobia.

Case Discussion: After invading the abdominal barrier, Salmonella can enter bloodstream and rarely present with meningitis. CSF analysis and culture supported with other investigations can diagnose bacterial meningitis and its causative agent. Adequate treatment is essential to completely cure and prevent relapse.

Conclusion: Given its invasive nature and potential serious consequences, such as relapse and antibiotic resistance, prompt, and appropriate treatment of Salmonella meningitis is essential.

Biography

ECFMG Certified International Medical Graduate, American Medical Association,04/2022

Gandaki Medical College,Pokhara,Nepal: Bachelor of Medicine and Bachelor of Surgery(MBBS),

Current Affiliation: General Physician, Dubai London Hospital, United Arab Emirates

Research Affiliation: Senior Research Associate, Ehealthy Info, Charlotte, North Carolina, United States

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Netrin-3 gated pain inducing sensory axon sprouting in peripheral neuropathy

Huaqing Liu

Zhejiang University City College, China

Diabetic neuropathic pain (DNP) is the most common disabling complication of diabetes. Emerging evidence has linked DNP pathogenesis to the aberrant sprouting of sensory axons into the epidermal area, however, the underlying molecular events remain poorly understood. Here we found that an axon guidance molecule, Netrin-3 (Ntn-3), was expressed in the sensory neurons of mouse dorsal root ganglions (DRGs). Downregulation of Ntn-3 expression was highly correlated to the severity of DNP in the diabetic mouse model. Genetic ablation of Ntn-3 increased the intra-epidermal sprouting of sensory axons and worsened the DNP in diabetic mice. In contrast, the elevation of Ntn-3 levels in DRGs significantly inhibited the intra-epidermal axon sprouting and alleviated DNP in diabetic mice. Above all, our studies identified Ntn-3 as an important regulator of DNP pathogenesis by gating the aberrant sprouting of sensory axons, indicating Ntn-3 could be a potential druggable target for DNP treatment.

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Acceptorless cross-dehydrogenative coupling for C(sp^3)-H heteroarylation mediated by a heterogeneous GaN/ketone photocatalyst/ photosensitizer system

Hyotaik Kang, Lida Tan, Jing-Tan Han, Chia-Yu Huang, Hui Su, Aleksei Kavun and **Chao-Jun Li**

McGill University, Canada

Sustainable chemical transformations are critical for a greener future and are a growing topic of interest. Photoactive heterogeneous catalysts can provide a path towards a sustainable reaction due to its ability to be recycled and harness solar energy. Here we describe gallium nitride (GaN) as a non-toxic, recyclable, heterogeneous photocatalyst to enable alkyl C(sp3)-H in conjunction with the catalytic use of a simple photosensitizer, benzophenone, to promote the desired alkyl radical generation. We demonstrate the activation of C(sp3)-H via hydrogen atom abstraction (HAT) of various alkanes, which are naturally abundant chemical building blocks, without the use of excessive oxidants that can impede reaction scope. The dual photocatalytic cycle enables cross-dehydrogenative Minisci alkylation under mild and chemical oxidant-free conditions.

Biography

Hyotaik Kang obtained his B.Sc. (honors) chemistry at the University of Manitoba. Following this, he moved to McGill University and joined Dr. Chao-Jun Li's group. He completed his M.Sc. under Dr. Chao-Jun Li working on the conjugate addition reaction using hydrazones as a carbanion equivalent. He continued his Ph.D. with Dr. Chao-Jun Li where his current research focus is in developing effective and efficient photoactive heterogeneous catalysts for greener and sustainable organic reactions.

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Advances in Medicinal Chemistry and Pharmacology

On the discovery and development of fractal biomarkers

Jibitesh Mishra

Odisha University of Technology and Research, India

Over the past two decades, medical image analysis has become a vital tool in the field of life sciences. Amongst other descriptors, fractal-based parameters have been used profusely for early diagnosis and detection of various diseases. In this paper, the importance of fractal biomarkers and its discovery for some of the potential diseases such as Dementia, Alzheimer or neuro-degeneration and stroke is discussed. An empirical study is made to make precise decision using which the disease can be predicted early. Though human motor activity that has a robust, intrinsic fractal structure, which significantly gets distorted with aging, the analysis of brain and retinal images over time gives a much better diagnosis that in-fact helps to take precaution for the patient. Higuchi Fractal Dimension has been used as a biomarker by many researchers, but there are much-improved descriptors for the purpose. Fractal-based descriptors were used for easy fractal-based pattern extraction that can be combined with the original image for futuristic prediction. Many improved box-counting techniques can be used for such purposes. This article gives an account of development of potential fractal biomarkers in certain diseases more particularly for potential dementia patients. Earlier EEG biomarkers were used as the first line of diagnosis as neuroimaging were more expensive. But today with the growth of low cost machines and much faster and accurate deep learning techniques, pattern analysis using fractal descriptors results in potential biomarkers.

Biography

Dr. Jibitesh Mishra has interests in Research, Consultancy, Working on new technologies, Projects. He has worked in association with various IT industries such as Infosys and Tech Mahindra. He has written many books and published papers in journals of repute. After completing his PhD in the year 2001, he has worked with State Govt of Odisha in various projects. His research interests are in fractal graphics and software engineering. He started introducing the concept of Web Engineering in India in 2006 after organizing the International Conference on Web Engineering & Applications (ICWA2006). In the social front, he coordinated the training program for SC & ST graduate engineers in the year 2008. He was on Sabbatical leave during 2008 to 2010 at King Khalid University, Abha, Saudi Arabia. Currently he is the head of the School of Computer Sciences in OUTR and nodal officer of Center of Excellence in Artificial Intelligence. His current research initiatives are in the area of Data Analytics, Immersive and haptic experience, Engineering the Mobile Apps and Ontology Engineering.

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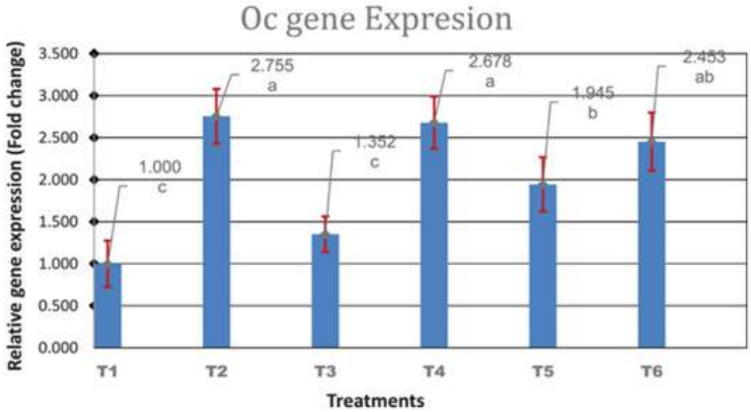
Rare earth elements are essential nutrients for animals: Strontium and cerium as an example

Payam Sadiq and **Kamaran Abduljalil Abbas**

Salaheddin University, Iraq

This study was conducted to investigate the effect of SrR, CeO, and their combinations on tibia quality in broilers. A total of 384 one-day-old Ross chicks were divided into six treatments, with four replicates per treatment (16 birds per replicate). The control group was fed a standard diet, and other groups were fed SrR at levels 450, 900 mg/kg feed, CeO at levels 300 and 600 mg/kg feed and a combination of 450 SrR + 300 CeO mg/kg feed. Bone mineral density (BMD), bone mineral content (BMC), bone strength (BS), tibia area, tibia weight, bone Length, bone diameter, minerals in tibia bone of male broilers, alkaline phosphatase gene (ALP) and osteocalcin gene (OC) in male broilers were analyzed. The results showed that the addition of SrR and CeO had no significant influence ($p > 0.01$) on BMD, BMC, BS, bone weight, bone length and bone diameter. While there was a significant interaction between sex and treatments, especially in the com- bination group, BS in females significantly ($p < 0.01$) increased compared to the control group. Generally, females were found to be more responsive to treatments than males. Significant increases in gene expression were noticed in OC with the addition of low levels of SrR and CeO and mixed group compared to the control. The gene expression of ALP was increased significantly only in a combination group compared to the control group. It is concluded that SrR and CeO can be used as beneficial additives in the feed to improve the tibia quality of broilers.



Biography

I Borned in 1963/ Musul city of Iraq. My High education (BSc) was obtained in Musul University/ Agriculture College/ Department of Animal Resource (1985). The MSc in poultry production was obtained at Salahaddin University (2002). And the PhD in poultry nutrition was at Slovak Agricultural University in Nitra/ Slovak Republic (2009). I currently work as assistant professor lecturer in the Department of Animal Resource/ College of Agriculture/ Salahuddin University in Erbil/ Kurdistan Region of Iraq since 1998. Also externally work as nutritional consultant with many feed mill companies in Iraq.

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Contemporary breakthroughs in healthcare: Existing technologies and prospects for the future

Karandeep Kaur

Lovely Professional University, India

In recent years, the field of healthcare has experienced a rapid and transformative evolution, driven by groundbreaking advances in technology, research, and patient care. These advancements have not only revolutionized how we approach medical diagnosis and treatment but have also fundamentally altered the way we perceive and manage health and wellness. This presentation provides a glimpse into some of the most remarkable recent developments that are shaping the landscape of healthcare.

Advances in medical technology have paved the way for more precise and individualized approaches to patient care. From the development of cutting-edge wearable devices that continuously monitor health metrics to the integration of artificial intelligence and machine learning in diagnostics, the healthcare sector has witnessed a convergence of innovation that is enhancing the accuracy, efficiency, and accessibility of medical services.

As we delve deeper into the intricacies of recent healthcare advances, it becomes clear that these developments are not isolated phenomena but interconnected threads that together form the fabric of a new era in medicine. This era is characterized by unprecedented collaboration between scientific disciplines, an unwavering commitment to patient-centric care, and an unyielding determination to harness the power of technology for the betterment of human health and quality of life. This presentation reviews current and prospective healthcare technologies and their progress toward clinical application.

Ethical considerations and patient privacy have remained central in these advancements, prompting discussions about responsible AI usage, data security, and equitable healthcare access. Striking a balance between innovation and safeguarding patient well-being has become a critical aspect of the ongoing healthcare narrative. Thus finally, we discuss challenges faced in the current healthcare ecosystem and areas for future research and development that will transform the field and contribute to enhance the quality of life for everyone.

Biography

Name: Karandeep Kaur

Current Position: Assistant Professor in the Department of Computer Engineering at Lovely Professional University, Jalandhar

Research Affiliation: Pursuing research in the Department of Computer Engineering at Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab

Educational Background:

- Bachelor's degree in Computer Science and Engineering (2015)
- Master's degree in Computer Science and Engineering from Guru Nanak Dev University, Amritsar, Punjab (2017)
- Research Interests:
- Healthcare Systems
- Wearable Sensors
- Internet of Things (IoT)
- Cloud Computing
- Physiological Parameters Signal Processing

Karandeep Kaur's academic journey and research interests suggest a focus on leveraging technology to advance healthcare through the integration of wearable sensors, IoT, and cloud technologies, with a specialization in processing physiological parameter signals. This area of research has the potential to contribute to the development of innovative healthcare solutions and improve patient well-being.

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Minimization of torque pulsations by using a novel fuzzy controller in SRM drives for EV applications

Vijayalakshmi Karunakaran and **Srinivas Kandadai Nagaratnam**

SRM IST, India

In recent years, the applications of switched Reluctance Motors have expanded, from control system stepping motors to high torque E-vehicle applications. High-speed operation and a light-weight driving motor are required for an effective electric vehicle design. Switched reluctance motor (SRM) is ideal for use in electric vehicles due to its low torque-to-weight ratio and magnet-free rotor design. The increased torque ripple is the most serious issue with switching reluctance motors. The optimization technique is used to optimize switching controllers in this study, and a comparison is made between a sliding mode controller (SMC) with a modified reaching law and a new fuzzy controller (FC). The magnitude of torque ripple is simulated and compared for both controllers using a MATLAB simulink model. The proposed innovative fuzzy controller model significantly improved torque performance and reduced torque ripples based on simulation results.

Biography

Vijayalakshmi Karunakaran obtained her BE in Electrical and Electronics Engineering in Rajalakshmi Engineering College in 2009 and Master of Engineering in Embedded System Technology from Anna University, Chennai in 2012. Currently, she is working as an Assistant Professor in the Department of Electrical and Electronics Engineering in SRMIST. She is also a research scholar under the supervision of Dr. Srinivas in the same department, focusing on the research of electric machines and controllers for the application of electric vehicles, with particular use of finite element analysis. Published a paper in "Reduction of torque ripple, vibration and noise in switched reluctance motors focusing on electric vehicle applications: a survey." International Journal of Vehicle Noise and Vibration.

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Advances in Medicinal Chemistry and Pharmacology

Web-based medical information systems

Kholoud Alkayid

Mit-Melbourne Institute of Technology-Sydney, Australia

Information and communications technologies (ICT), together with the growth of the World-Wide Web, have brought about immense changes that provide new opportunities for processing information and supporting communication. These opportunities can be exploited through innovative information systems in important areas such as the one addressed in this paper namely, the use of web-sites to link expert professionals with the general public. The particular focus of the research reported here is the field of health, where medical outcomes can be improved by various modes of information exchanges between healthcare professionals and the public.

Biography

Dr Kholoud Alkayid is an academic staff and researcher with expertise in strategic transformation, Management, Business Data Analysis, Entrepreneurship, e government, and Green IT across local, national, and international contexts. Recognised for excellence in delivering constructive leadership and strategic planning to provide a positive learning environment that fosters academic achievement in students and professional growth with more than 10 years' experience at the Australian universitas.

More recently, Kholoud is an assistant professor with the School of Business and an academic board member at MIT University in Australia. Kholoud is a trainer and consultant for Hamdan Bin Mohammad Smart University in UAE. Her research is focused on methodological approaches to complex socio-technical systems design, e business and strategic transformation.

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Modelling diseased functions of drug targets and physiological effects of acetylcholine augmentation treatment of an Alzheimer's Neurodisease patient

Kingsley Abhulimen[1] and **Awwal Oladipupo**[2]

[1]*Department of Chemical Engineering University of Lagos, Nigeria*

[2]*University Technology System Syntechsys Corporation USA*

This paper presents effects of physiological diseased pressure and insulin effects of an Alzheimer Neuron diseased Patient (Patient X) resulting from acetylcholine enrichment. Patient X clinical data was supplied by caretaker at the time of research study was seventy six years old female diagnosed with severe Alzheimer's neuron and vascular dementia diseased impairment. Current medication administered to patient target acetyl cholinesterase inhibitors and neuron transmitters and A β clearance and tau protein ant-inflammation. However preclinical simulation diagnosis studies show that neuron antibodies targets from diseased functions from lowered concentrations of acetylcholine (ACH) could be responsible for the Alzheimer's Patient neuron degenerative disease state. Based on simulated data disease functions show acetylcholine antibodies enrichment could boost α -*Enzyme Secreatase* to prevent formation of extracellular deposits of β-amyloid peptide (Aβ), known as senile plaques in AD patients.

Biography

Dr Kingsley E. Abhulimen is a senior lecturer at the Department of Chemical Engineering University of Lagos and a Director of Technology and Innovation at the University Technology System Limited. He has worked with several multinational and national energy companies and has peered reviewed for several leading publishing journal like Annals of Biomedical Engineering, Springer, Journal of Food Engineering, Elsevier and is providing leading research solutions in the delivery of software in health care solutions and drug design targets. He holds a PhD from the department of Chemical Engineering and has published several research works in leading journals on several topics including production of clean energy solutions, life cycle analysis, immunotherapy's and disease diagnosis. His work on solutions in disease diagnosis and treatment has also been read in internal conference and published in several leading journals.

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Expected value of K Banhatti indices in random chains

Kiran Naz and **Sarfraz Ahmad**

Comsats University, Pakistan

Chemical graph theory deals with all conditions of the properties of graph theory in various fields of chemistry like organic, mathematical, theoretical and computational chemistry, as well as in computational biology and bio-informatics. Graph-theoretic invariants of molecular graphs are known as topological indices, which have accepted to be powerful tools for studying the chemical and physical properties of compounds. A topological descriptor is a mathematical result that can be tested to any graph that design some molecular arrangement. From this descriptor, it is feasible to analyze mathematical numbers and further calculate some physio-chemical results of the molecule. It is therefore an effective method to avoid costly and time-taking lab experiments. There are currently many topological descriptors, some tested in chemistry. They can be classified according to the architectural results of the graphs used to calculate them. For example, there is the Hosoy index, which is determined by counting mismatched arcs in a graph. In 1947, it was stated and used by Harold Wiener to help him in the comparison of boiling points of alkane isomers. The Poly-Phenyl chain with hexagons are graphs of aromatic organic compounds. The basic of this talk is to define the expected results of K Banhatti and Hyper K Banhatti indices of this category of organic compounds with the help of probability technique. The average value of the K Banhatti and Hyper K Banhatti indices for the collection of arbitrary poly-phenyl and spiro chains have been calculated. At the end, the general and graphical ratio between the expected results of K Banhatti and Hyper K Banhatti indices for polyphenyl and spiro chain, have been resolved.

Biography

I am Kiran Naz from Lahore, Pakistan. Currently I'm doing PhD mathematics from Comsats university Islamabad, Lahore campus. As a fresh girl in high school, I was unsure of what kind of career path I wanted to pursue. After talking with my parents and teachers, I decided to start college as an undeclared major. After two years of exploration, I settled on a double major of mathematics and physics. My area of research is chemical graph theory. I am finding chemical and physical properties of molecules with the help of graphical technique. Chemical graph theory captivates by unveiling the hidden mathematical elegance within molecular structures. It intertwines mathematics and chemistry, elucidating molecular properties through graph theory's abstract lens. By representing atoms as vertices and bonds as edges, this field unveils insights into molecular connectivity, symmetry, and reactivity. Its algorithms decipher complex patterns, aiding in drug design, material discovery, and reaction prediction. Chemical graph theory's allure lies in its ability to bridge mathematics and the tangible world of molecules, facilitating innovation and breakthroughs in the realm of chemistry and beyond. I usually spend my leisure time reading books or playing badminton.

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The Coulomb–Mohr law and the change in the stress–Strain state of a landslide prone mass

G. P. Postoyev, Co. A. I. Kazeev and **Co. M. M. Kuchukov**

Sergeev Institute of Environmental Geosciences of Russian Academy of Sciences, Russia

The stresses at the points of the ground mass are determined and distributed according to the Coulomb–Mohr law in the main stresses, under compression conditions. The influence of the slope and the development of slope processes cause in the mass a decrease in stresses at points in accordance with the processes of dissipation. The results of experimental investigations (laboratory, model and full-scale) indicate that the regular processes of stress reduction at the points of the mass cause deformation of soils already at the pre-limit stage of the mass state. But they can be a cause of cracks in the bearing structures of constructions and the occurrence of hazardous unregular settling of foundations.

The results of theoretical and experimental studies indicate that already at the stage of the prelimit state of the bedrock mass, the influence of the slope is carried out as the first stage of dissipation in the form of a change in the stress–strain state at the points of the mass and the occurrence of plastic deformations of soils in them. In the conditions of urban development, these processes can lead to deformations of buildings and structures that fall into the zone of influence of the slope.

Further development of slope processes, in particular, the formation of the lower boundary of dissipation due to the impact of the geological process (the formation of a deep base of slippage, technogenic undercutting, etc.) can lead to the emergence of dissipative geological structures (the second stage of dissipation), the onset of the limit state of the mass, and destructive deformations in the form of separation of a landslide block.

Methods for monitoring the processes of change in the SSS of the soil mass are used in the area investigation. In particular, it should be taken into account that the influence of slopes and slope processes is manifested primarily as stress relief at the points of the mass. The consequence of this is soil deformations extending to tens of meters from the edge of the slope with the capture of existing buildings and structures. Protective measures should ensure the stabilization of stresses at the points of the soil foundation of buildings and in the mass of the marginal part of the plateau adjacent to the dynamic slope.

Biography

My name is Marat. I am 28 years old. I was born in the Caucasus. I've been living and working in Moscow, Russia for 11 years. I received my bachelor's degree at the Lomonosov Moscow State University, then I got my master's degree at the Gubkin Russian State University of Oil and Gas, after that I studied at the graduate school of the Sergeev Institute of Environmental Geosciences of Russian Academy of Sciences, where I'm currently working.

Our scientific research is carried out under the direction of German Pavlovich Postoev, a respected and well-known doctor of science in Russia and abroad, whose interests include any constructions and he pays special attention to the study of landslides. Andrey Igorevich Kazeev, Deputy Director for Innovation Activities of the Institute, also works in our team. Many talented scientists, who are well known for their successful works, also work at our institute. Our institute has a long history and its own laboratories, where studies of federal significance are conducted.

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Proximate composition and selected phytochemical component of Dawrach (Raphanus raphanistrum L.) as affected by blanching temperature

Abebe Yimer, Hayat Hassen and **Kumsa Negasa**

Department of Postharvest Management, College of Agriculture and Veterinary Medicine, Jimma University, Ethiopia

Dawrach (Raphanus raphanistrum L.) is an underutilized wild edible plant belonging to the Brassicaceae family. Dawrach is widely regarded as a weed, and there is a lack of information about its nutritional profile such as, proximate, antioxidant properties, health-promoting vitamins, minerals and significant phytochemicals. The plant also contains anti-nutrients which need a pretreatment to be minimized and deteriorating enzymes that should be inactivated to make shelf stable products. Blanching temperature is the most critical factor that needs great attention during the blanching process to minimize the anti-nutrients and minimize the loss of desirable components of Dawrach such as, proximate and phytochemical contents and antioxidant activity. Thus, this study aimed to investigate the influence of blanching temperatures on the proximate, phytochemicals and antioxidant activity of Dawrach leaves. The parameters were evaluated following standard analytical methods and procedures. Dawrach leaves were blanched at 50, 60, 70, 80, and 90 °C temperature for 3 min, and raw or unblanched Dawrach was used as a control. Blanching temperature significantly affected the proximate, phytochemicals, antioxidant activity and anti-nutrients of the Dawrach. As a result, the moisture content of raw and blanched at 90 °C was 10.77 and 7.69 g/100g, respectively. Thus, blanching decreases the moisture content of Dawrach to the recommended safe moisture level for the products. Moreover, there was a significant decrease in the values of antioxidants activities, beta carotene, and l-ascorbic acid as the blanching temperature increased from 50 to 90 °C. Besides, as blanching temperature increased, there was a reduction in oxalate and tannin of the Dawrach leaf.

Biography

I am an enthusiastic, self-motivated, reliable, responsible and hard working person. I am a mature team worker and adaptable to all challenging situations. I am able to work well both in a team environment as well as using own initiative. I am able to work well under pressure and adhere to strict deadlines. As an enthusiastic Lecturer, I'm dedicated to enabling growing young minds to achieve their goals. I'm confident in my experience and teaching style can make me an asset to your organization.

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Microcos paniculata exhibits anticonvulsive activity by altering the GABA content and antioxidant profile in acute seizure mice

Latifa Bulbul[1], S M Kamruzzaman[2], Md Zahir Alam[1] and Md Mostafizur Rahman[3]

[1]Department of Pharmacy, Noakhali Science and Technology University, Bangladesh
[2]Department of Horticulture, Sher-e-Bangla Agricultural University, Bangladesh
[3]Department of Chemistry, National University, Bangladesh

Seizure disorders pose a significant challenge to global public health, necessitating the exploration of novel therapeutic approaches. Microcos paniculata (MP), a traditional medicinal plant, has shown promise in the management of seizures, but the underlying mechanisms remain poorly understood. We orally administered different parts of MP extracts at doses of 100, 200, and 400 mg/kg body weight for seven days. Mice were subjected to electroshock and chemically-induced seizures and evaluated for seizure severity, duration, and mortality rates. Additionally, we assessed GABA levels and antioxidant enzyme activities, including superoxide dismutase (SOD), catalase (CAT), lipid peroxidation (LPO), and reduced glutathione (GSH) content in whole-brain homogenates. Polyphenolic compounds were identified in MP leaf and stem extracts using ultra-performance liquid chromatography. Our behavioral studies revealed a significant dose-dependent reduction in seizure duration following MP treatment, accompanied by a lower mortality rate compared with seizure inducer groups. Interestingly, we observed a positive correlation between the dose of MP extract administered and both GABA levels and antioxidant enzyme activities. Specifically, higher doses of MP leaves and stem extracts led to elevated GABA content and increased SOD, CAT, LPO, and GSH levels in the brain tissue. Furthermore, six polyphenolic compounds were identified, with epicatechin and quercetin being identified in the highest amounts in MP leaf and stem extracts. In conclusion, our study sheds light on the multifaceted mechanisms underlying the anticonvulsive potential of MP. Our findings suggest that the anticonvulsive activity of MP may be mediated, at least in part, by enhanced GABAergic neurotransmission and reinforced antioxidant defenses.

Biography

Professor Dr. Latifa Bulbul is an integrative pharmacist and neuroscientist working at Noakhali Science and Technology University, Bangladesh. She received her PhD in neuroscience from the University of New South Wales, Australia, studying the central control of autonomic function. She completed her B.Pharm and M.Pharm degrees from Jahangirnagar University, Bangladesh. Her lab is focused on elucidating the molecular mechanisms underlying the beneficial actions of natural bioactive products on brain function and neurological disorders. She has an interest in neurotransmitter signaling within the brain neural circuits in response to physiological stimulus.

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Study on modification effect and mechanism of Pulse Detonation-Plasma Technology treatment on T8 steel

Lei Lu[1], Ming-ming Zhang[1,2], Jiu-ming Yu[1], Xiao-na Hu[1], Lin-Wei Zhang[1], Jin Liu[1], Feng-feng Luo[1], Le-ping Chen[2], Qing-feng Fu[1] and **De-ping Lu[1]**

[1]*Institute of Applied Physics, Jiangxi Academy of Science, China*
[2]*School of Aeronautical Manufacturing Engineering, Nanchang Hangkong University, China*

T8 steel was selected as the experimental material for the pulse detonation-plasma technology (PDT) treatment. The hardness and wear resistance of the PDT treated samples were tested and found to be 2.57 times harder and 72.1% more wear resistant than the matrix part, respectively. To investigate the reasons for this increase in hardness and wear resistance performance, the phase composition and histomorphology of the treated samples were examined using x-ray diffractometer, scanning electron microscopy, and field transmission electron microscopy. The surface of the samples showed melting and the formation of tungsten (W) droplets. The surface layer changed from lamellar pearlite to a mixture of fine-grained martensite and residual austenite, and the W elements penetrated the modified layer, with many dislocations and lattice distortions.

Biography

Lu Lei, Professor, deputy director of the Institute of Applied Physics, Jiangxi Academy of Sciences, director of Lab of Jiangxi Provincial Engineering Laboratory of Metal Surface Strengthening Technology recent research areas He's mainly engaged in the research of material forming and high-energy modification of metal surfaces, including pulsed explosion plasma, spraying and forming of copper and tungsten alloy powder.

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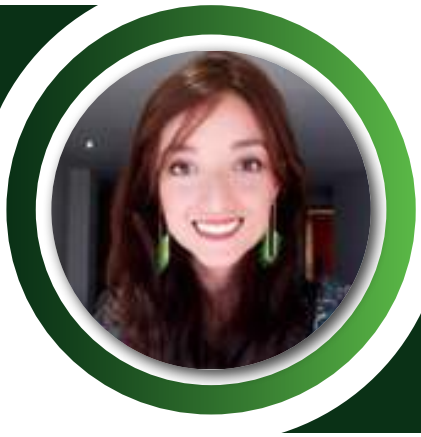

Adherence to guidelines on the use of amoxicillin for treatment of ambulatory pneumonia in children younger than 5 years, Colombia, 2017–2019

Luisa Moyano Ariza[1], Brindis Ochoa[2], Hemant D. Shewade[3], Jeffrey K. Edwards[4], Julián Trujillo Trujillo[1], Claudia M. Cuellar[1], Jaime Rodríguez[5], Katrina Hann[6] and **Mauro Sanchez[7]**

[1]Ministry of Health and Social Protection, Colombia
[2]Pan American Health Organization, United States of America
[3]ICMR-National Institute of Epidemiology, India
[4]University of Washington, United States of America
[5]Pedagogical and Technological University of Colombia, Colombia
[6]Sustainable Health Systems, Sierra Leone
[7]University of Brasilia, Brazil

Objectives: To determine the level of adherence to clinical guidelines in prescribing amoxicillin to children younger than 5 years with pneumonia in outpatient settings in Colombia from 2017 to 2019, and assess the factors associated with adherence.

Methods: This was a cross-sectional study of secondary data from the Colombian Integrated Social Protection Information System database. Adherence was defined as prescription of oral amoxicillin for bacterial and unspecified pneumonia and non-prescription for viral pneumonia. Variables examined included: age (< 1 year, 1–4 years) of child; sex; cause of pneumonia (bacterial, viral, unspecified); region (Andean, Amazonian, Pacific, Caribbean, Insular, Orinoquian); and payment mechanism (without prior authorization, capitation, direct payment, pay per case, pay for event).

Results: Of 215 925 cases of community-acquired pneumonia reported during 2017–2019, 64.8% were from the Andean region, 73.9% were bacterial pneumonia and 1.8% were viral pneumonia. Adherence to guidelines was observed in 5.8% of cases: this was highest for children diagnosed with viral (86.0%) compared with bacterial (2.0%) pneumonia. For children diagnosed with bacterial pneumonia, 9.4% were prescribed any antibiotic. A greater proportion of children covered by capitated payments (22.3%) were given treatment consistent with the guidelines compared with payment for event (1.3%).

Conclusion: In this first study from Colombia, adherence to guidelines for outpatient treatment of children with bacterial pneumonia was low and was better for viral pneumonia. Further qualitative studies are needed to explore the reasons for this lack of adherence and why bacterial pneumonia was the most commonly reported etiology.

Biography

I am Luisa, a 38-year-old woman from Bogotá, the youngest daughter of Cecilia and Said, I am a Master in Public Health from the National University of Colombia, with a Specialization in Economics and Health Management from the Jorge Tadeo Lozano University, Specialization in General Epidemiology of El Bosque University and undergraduate study in Bacteriology and Clinical Laboratory at the Colegio Mayor de Cundinamarca University. I have more than 15 years of professional experience, focused on the elaboration, implementation, monitoring and follow-up of public health policies for local and national development, including knowledge management processes and capacity building of sectoral and intersectoral actors. Interested in leading or accompanying plans, projects and programs for social and health development, from their planning to the evaluation of results.

I love public health research because it implies learning from other sectors, other perspectives, and other paradigms.

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Assessment of postharvest practices of tuna sold at the Honiara fish market in the Solomon Islands

Madeline Kili Solo[1], Jimaima Lako[2], Francis Mani[3] and Gilianne Brodie[4]

[1]Department of Fisheries Studies, Solomon Islands National University, Islands
[2]School of Applied Sciences, Fiji National University, Fiji Islands
[3]School of Agriculture, Geography, Environment, Oceans & Natural Resources, The University of the South Pacific, Fiji Islands
[4]Institute of Applied Sciences, The University of the South Pacific, Fiji Islands

The study aims at assessing the impacts of post-harvest handling practices on the quality and safety of tuna sold at the Honiara Fish Market (HFM), Solomon Islands. Two major approaches were adopted; 1) face-to-face interviews of 60 participants using questionnaires and physical observations of the supply chains and post-harvest handling practices; and 2) determination of time-temperature, quality index, histamine and microbial load of tuna and contact surfaces. Sampling was conducted on both wet season (WS) and dry season (DS), of which 36 samples from both batches of fresh tuna (FT) and brined tuna (BT) were analyzed. Three Critical Control Points (CCPs) were identified in the supply chains of both FT and BT, where samples were obtained for scientific analyses. The average body temperature for WS tuna exposed for 9-10h with low or no ice after catch were 3 oC for FT and 15 oC for BT, while DS samples were 26 oC and 31 oC for FT and BT respectively. The quality index (QI) for WS showed a significant difference ($P<0.05$) at 0 for FT and 8 for BT, while both DS showed a significant increase at 16 for BT and 5 for FT. Histamine levels for all the samples increased across the three CCPs, however with levels <50 mg/L, while microbial load for both seasons and for both samples were within the required specifications. However, contact surfaces for both seasons revealed high levels of microbial contamination. This study reveals that poor handling practices along the tuna supply chains of fish sold at the HFM were observed, however, all the tuna was safe for consumption when cooked properly.

Biography

Madeline Kili Solo holds a Master's of Science in Marine Science specializing in Seafood Safety and Postharvest Fisheries, Post-Graduate Diploma in Marine Science, Bachelor of Arts in Food and Nutritional Studies and a Diploma in Education. Madeline is also an educationist by profession and a Seafood Safety and Quality specialist known for her ability to teach, train and conduct research in her specialized fields both in formal and informal education settings. She achieved this through participatory, training and academic achievements in different levels of her education. Having served in the education sector for more than ten years, Madeline delivers research leadership, education and capacity strengthening in all her work.

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Dextrose can increase such as decrease the range of joint movement!!

Mai A. Haggag, Fouad A. Al-Belasy and **Wael M. Said Ahmed**

Faculty of Dentistry, Mansoura University, Egypt

To assess the efficacy of dextrose prolotherapy on the clinical signs and symptoms of patients having disc displacement with reduction (DDWR). This prospective, randomized, double-blind clinical study included thirty patients suffering from bilateral DDWR. The patients were randomly divided into two equal groups. After induction of local anesthesia, each joint was injected in two sites; one in the superior joint space and the other in the retrodiscal tissue, using 25% dextrose solution in group I and normal saline in group II. Pain intensity, maximal interincisal opening (MIO), and joint sounds (JS) were evaluated preoperatively, 1 week after each injection, and 3 months and 6 months after the last injection. Patients in group I showed significant improvement in pain and MIO, and higher satisfaction with treatment than patients in group II. Compared to saline injection, dextrose injection resulted in an improvement in JS but without significant difference within and between groups. Intra-articular injection of 25% dextrose is effective in the treatment of pain and dysfunction of TMJ DDWR as shown by significant improvement in pain and MIO and patient satisfaction. The technique is simple, easy to do, safe and should be adopted whenever appropriate.

Biography

Mai Haggag (Associate Professor of Oral and Maxillofacial Surgery) has completed her PHD at the age of 30 years from Mansoura University, Egypt. She is a lecturer, surgeon, researcher, pre-graduated students' examiner, post-graduated students' supervisor for obtaining Master and Doctoral Degrees of Science in Dentistry, Oral and Maxillofacial Surgery. Also, she is an academic coordinator of Year-5 Manchester Program at the same faculty. She has over 16 publications that have been cited over 40 times and over 1,500 reads.

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Evaluation of freshwater heavy metals accumulation efect on oxidative stress, Metallothionein biosynthesis and histopathology of Procambarus clarkii (Girard,1985) collected from three locations in the Delta region, Egypt

Mai L. Younis, Mahy M. Mona and **Aalaa I. Atlam**

Zoology Department, Faculty of Science, Tanta University, Egypt

Background: In this study, the efect of heavy metals accumulation infuence was evaluated on adult crayfsh Procambarus clarkii (Decapoda, Astacidea) collected from three diferent Governmental locations (Kafr El-Shaikh, El-Menofya, and El-Gharbiya) of the Egyptian Delta. The activity of super oxidase dismutase (SOD), catalase (CAT), and glutathione peroxidase (GPX) of gills, hepatopancreas, and muscle tissue were measured. SDS Polyacrylamide gel electrophoresis (SDS-PAGE) and West blotting technique were performed to detect MT Protein expression.

Results: The results revealed that Kafr El-Shaikh refected the highest Superoxide dismutase (SOD), Catalase, and Glutathione S-transferase (GST) activity levels (97.2 u/100 mg, 28.5 u/100 mg, and 8.3 nmol mg (-1) protein min (-1) respectively. Superior protein polymorphism % (30%) remarked collected Freshwater crayfsh P. clarkii from Kafr ElShaikh location. Varied protein polymorphism % was shown between collected crayfsh from El-Menofya, and El-Gharbiya locations (5.5 and 6.2 respectively) Increasing Metallothioneins intensity (15.4%) for collected Freshwater crayfsh Procambarus clarkii from Kafr El-Shaikh Location.

Conclusion: Heavy metal stress infuences antioxidant status and also induces increasing Metallothioneins intensity, especially samples that were collected from the Kafr El-Shaikh area.

Biography

Experienced zoologist and lecturer with expertise in invertebrate biology, aquatic biology, and environmental monitoring. Committed to academic excellence, quality assurance, and creative teamwork. Proven record of research contributions, including international publications on topics like heavy metal accumulation and bioactivity of invertebrates. Strong IT skills and ability to work effectively under pressure. Bilingual in Arabic and English, actively improving English proficiency. Eager to make a lasting impact in zoology and biology education. Had my Ph.D. in Comparative Anatomy (Invertebrates) (Class of 2018) titled: "Marine, Edible Invertebrates- Derived Bioactive Compounds: Antibacterial and Antitumor Activities", Master of Science (M.S.) in Invertebrates Zoology (Class of 2014) titled: "Impact of Probiotics and Immunostimulants on Some Biological Aspects of the Freshwater Crayfish Procambarus clarkii". I'm a member, Quality Assurance Committee, a member in Program Accreditation Team, and a member, Academic guidance committee for students in the Zoology Department Faculty of Science, Tanta University.

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Rationally designed lapatinib nanocrystals with improved antiproliferative potential

Manu Sharma and **Priyanka Kumari**

Department of Pharmacy, Banasthali Vidyapith, India

The aim of present study was to prepare lapatinib loaded nanocrystals to improve its solubility, cellular uptake and anti-proliferative activity for treatment of multidrug resistant breast cancers. Lapatinib nanocrystals were prepared by high pressure homogenization method using poloxamer-407 as stabilizer. Nano-crystallization improved the dissolution rate and saturation solubility of lapatinib. The superior anti-cancer activity of lapatinib nanocrystals at lower dose against MCF-7 breast cancer cells was observed. The improved cellular uptake of lapatinib from optimized formulation confirmed by confocal laser scanning microscopy and quantitative method, facilitated higher apoptotic potential compared to free drug against MCF-7 cells. Tumor regression study conducted in 4T1 cells induced breast tumor in female BALB/c mice indicated remarkable decrease in tumor burden and increase in survival in lapatinib nanocrystal treated group compared to pure drug. Thus, lapatinib nanocrystals present a strategic approach to reduce the dose and dose associated toxicity with great potential for treating multi drug resistant breast cancer.

Biography

Dr Manu Sharma cherishes her 18 years of research experience in the area of pharmaceutical product development. She has been deeply involved in research concerning the applications of nanotechnology and chemical engineering processes to biological processes for design and evaluation of formulation of proteins, biomolecules and synthetic active pharmaceutical ingredients.

Currently working as an Associate Professor at Department of Pharmacy, Banasthali Vidyapith, is spearheading research efforts into various application aspects of biomolecules. Dr Sharma and her team have been working hard to develop a cheap alternative for asthma and sepsis management. Her creation, the biodegradable polymer particles encapsulated with drugs along with antibiotics, can be self-assembled in a single-step at room temperature, and can be used immediately for asthma and sepsis treatments.

Apart from publishing 4 patents, 37 research papers and 12 chapters, Dr Sharma holds 1 book in her area of expertise. Among the numerous awards conferred on her, the major ones include the Research excellence award by Indus Foundation INC., USA. Dr Sharma has also been associated with various committees and panels.

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Assessment of cooking methods and freezing on health risks of heavy metals in four fish species consumed in Douala, Cameroon

Manz Koule Jules Christophe, NSOGA Valery Jean François and **Ndomou Mathieu**

Laboratory of Biochemistry, Faculty of Science, University of Douala, Cameroon

This study aimed to assess the effect of cooking methods and freezing on health risks of heavy metals in four fish species consumed in Douala. Fish samples from Cyprinus carpio, Arius parkii, Ethmalosa fimbriata and Polydactilis quadrifilis were collected at the Douala sea port, carried to the laboratory, washed with distilled water and processed (smoked, boiled and frozen). Heavy metals analyse was performed using AOAC standard methods. Estimated Daily Intake (EDI), Targeted Hazard Quotient (THQ), Hazard Index (HI) and Carcinogenic Risk (CR) were used to estimate the human health risk. Results showed that heavy metals contents appeared as followed Zn>Cu>Hg>Cd>Pb>As and smoking increased significantly ($P<0.05$) heavy metals contents compared to boiling and freezing. EDI and THQ values of cadmium and mercury in all species fish smoked and fish (raw and processed) respectively were not acceptable for human. HI suggested a non-carcinogenic and CR for cadmium and arsenic suggested a carcinogenic health risk respectively for all fish and Arius parkii (smoked and boiled). Boiling was the best cooking method compared to smoking.

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A survey on the usage of decellularized tissues in orthopedic clinical trials

Masafumi Itoh[1,2], Junya Itou[1,2], Shinya Imai[1], Ken Okazaki[2] and Kiyotaka Iwasaki[1]

[1]Tokyo Women's Medical University - Waseda University Joint Graduate School, Waseda University, Japan
[2]Department of Orthopedic Surgery, Tokyo Women's Medical University, Japan

Objectives: Orthopaedic surgery requires grafts with sufficient mechanical strength. For this purpose, decellularized tissue is an available option that lacks the complications of autologous tissue. However, it is not widely used in orthopaedic surgeries. This study investigated clinical trials of the use of decellularized tissue grafts in orthopaedic surgery.

Methods: Using the ClinicalTrials.gov (CTG) and the International Clinical Trials Registry Platform (IC TRP) databases, we comprehensively surveyed clinical trials of decellularized tissue use in orthopaedic surgeries registered before 1 September 2022. We evaluated the clinical results, tissue processing methods, and commercial availability of the identified products using academic literature databases and manufacturers' websites.

Results: We initially identified 4,402 clinical trials, 27 of which were eligible for inclusion and analysis, including nine shoulder surgery trials, eight knee surgery trials, two ankle surgery trials, two hand surgery trials, and six peripheral nerve graft trials. Nine of the trials were completed. We identified only one product that will be commercially available for use in knee surgery with significant mechanical load resistance. Peracetic acid and gamma irradiation were frequently used for sterilization.

Conclusion: Despite the demand for decellularized tissue, few decellularized tissue products are currently commercially available, particularly for the knee joint. To be viable in orthopaedic surgery, decellularized tissue must exhibit biocompatibility and mechanical strength, and these requirements are challenging for the clinical application of decellularized tissue. However, the variety of available decellularized products has recently increased. Therefore, decellularized grafts may become a promising option in orthopaedic surgery.

Biography

Employment history

- 2003: Joined the Department of Orthopaedic Surgery at Tokyo Women's Medical University
- 2007: Assistant Professor of Orthopaedic Surgery at Tokyo Women's Medical University (current position)
- 2023: Visiting Associate Professor at Waseda University School of Science and Engineering (current position)

Specialty

- Knee surgery (Joint replacement, Around the knee osteotomy, ligament and meniscus surgery)
- Research and development of decellularized grafts used in the field of orthopaedic surgery.

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Whole genome characterization and diagnostics of prunus necrotic ringspot virus (PNRSV) infecting apricot in India

Md Salik Noorani[1,3], Mirza Sarwar Baig[2,3], Jawaid Ahmad Khan[3] and Pravej Alam[3,4]

[1]Department of Botany, School of Chemical and Life Sciences, Jamia Hamdard (A Deemed-to-be University), India
[2]Department of Molecular Medicine, School of Interdisciplinary Sciences, Jamia Hamdard (A Deemed-to-be University), India
[3]Plant Virus Laboratory, Department of Biosciences, Jamia Millia Islamia (A Central University), India
[4]Biology Department, College of Science and Humanities, Prince Sattam bin Abdulaziz University (PSAU), KSA

Prunus necrotic ringspot virus (PNRSV) is a viral pathogen that causes serious economic losses by infecting Prunus species all over the world. This study describes the whole genome of PNRSV obtained from apricot using one and two-step RT-PCR and multiplex RT-PCR. It also utilized computational approaches to investigate the regulatory motifs and domains of the Replicase1, Replicase2, MP, and CP. PNRSV's tripartite genome was amplified using a single degenerated reverse and three forward oligo primers. RNA1, RNA2, and RNA3 were found to be 3.332 kb, 2.591 kb, and 1.952 kb in size, respectively, according to sequencing analysis. The Sequence Demarcation Tool (SDT) analysis determined a percentage pair-wise identity ranging between 91 and 99% for RNA1 and 2, and 87–98% for RNA3. Interestingly, the phylogenetic analysis revealed that closely related RNA1, RNA2, and RNA3 sequences of PNRSV strains from diverse geographical locations of the world are divided into discrete clades or groups. This is the first report characterizing the whole genome of PNRSV from India, which serves as a foundation for further studies on the molecular evolution of this virus. The findings of this study are expected to be useful in molecular diagnostics and management of diseases caused by PNRSV.

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Green synthesis and characterization of zirconium nanoparticles for dental implant applications

Mohammad Asaduzzaman Chowdhury and **Md. Helal Hossain**
Department of Mechanical Engineering, Dhaka University of Engineering and Technology, Bangladesh

Green synthesis is a promising and cost-effective technique to synthesize nanoparticles from plant extract. The present study shows the green synthesis of zirconium nanoparticles using the extract of ginger, garlic, and zirconium nitride. The obtained nanoparticles were studied for potential dental implant applications. The synthesized nanoparticles were characterized by Fourier Transform Infrared Spectroscopy (FTIR), Field Emission Scanning Electron Microscopy (FESEM), Energy Dispersive X-Ray Spectroscopy (EDX), X-Ray diffraction analysis (XRD), and antibacterial analysis. FTIR analysis confirmed the presence of various organic compounds in the synthesized nanoparticles. The synthesized nanoparticles were spherical, triangular, and irregular, with varying sizes confirmed by FESEM analysis. The nanoparticles synthesized from the combination of garlic and ginger, and zirconium exhibited potent antibacterial activity against S. aureus. Anti-biofilm, anti-microbial activity, bio-integration formation, and cell mechanism survival are also mentioned. Thus, the synthesized nanoparticles can be a good candidate for a dental implant because of their excellent antimicrobial properties.

Result and Discussions: The FTIR spectra of the synthesized zirconium nanoparticles were represented in Fig. 5. The spectrum of the nanoparticle synthesized from Garlic (Fig. 5a) shows a broad spectrum at 3266 cm 1 which is attributed to the strong stretching of carboxylic acid O–H. The FTIR peaks at 2939 cm 1 and 2360 cm 1 indicate the presence of strong stretching amine salt (C–H) and carbon dioxide (CO2) respectively. Peak located at 1627 cm 1 and 1051 cm 1 denotes medium stretching conjugated alkene (C– – C) and primary alcohol (C–O). Strong stretching nitro compound (N–O), alcohol (O–H), and alkyl aryl ether (C–O) are attributed at 1542 cm 1, 1396 cm 1, and 1237 cm 1 respectively. In the FTIR spectra of the nanoparticle synthesized from Ginger (Fig. 4b), Zr, Garlic, Ginger (Fig. 5c), and Zr (Fig. 5d), a shift in the peaks was observed from 3266 to 3274, 2939 to 3941, 2360 to 2361, 1627 to 1637, 1626 and 1634, 1542 to 1534 and 1540, 1396 to 1388, 1051 to 1058, 1050 and 1048 cm 1. Some new peaks were also observed at 3343, 3291, and 1341 cm 1 corresponding to strong stretching alcohol (O–H), strong stretching alkyne (C–H), and medium bending phenol (O–H) respectively. Similar findings can be observed in the literature [29–33]. Table 1 shows the presence of bio-compounds in the synthesized nanoparticles.

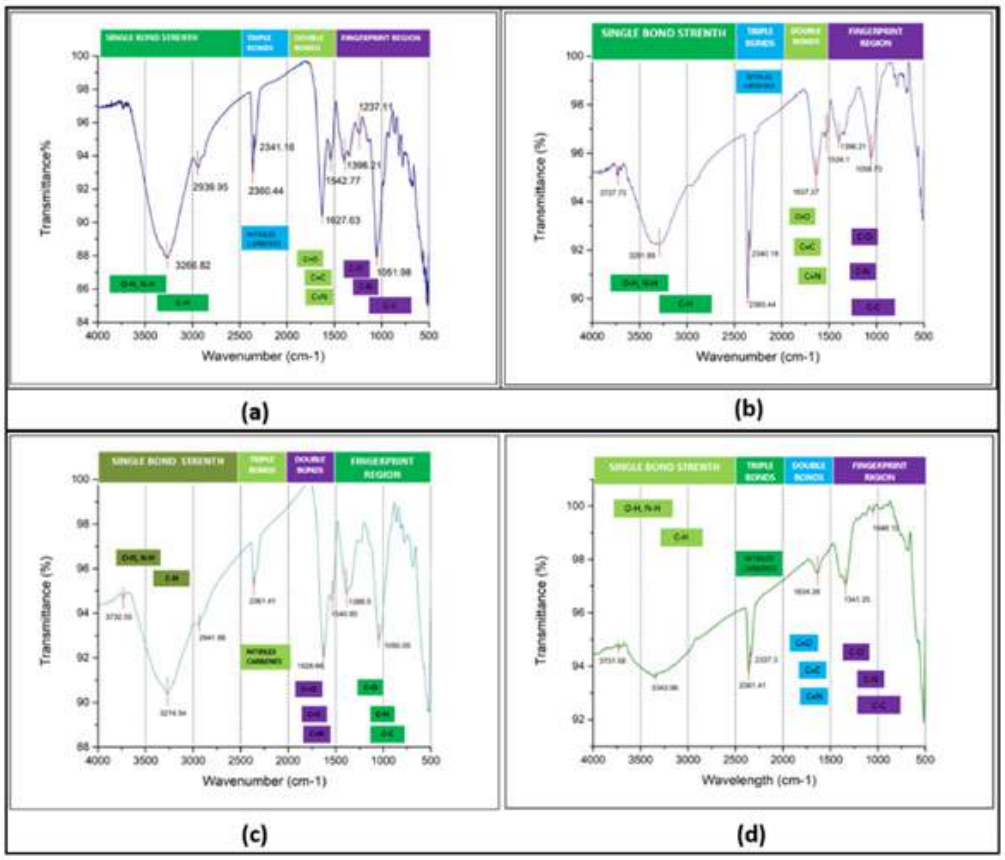

Fig. 5. FTIR analysis of the synthesized (a) Garlic added Zr-N nanoparticle, (b) Ginger added Zr-N nanoparticle, (c) Garlic and Ginger added Zr-N nanoparticle (d) Zr-N nanoparticle.

Table 1
FTIR analysis data table of the synthesized nanofibers membrane.

Band (cm^{-1})	Functional class	Assignment	Vibration type
Garlic added ZrN nanoparticle			
3266	Carboxylic acid	O-H	Strong stretching
2939	Alkane	C-H	Medium stretching
2360	Carbon dioxide	O=C=O	Strong stretching
1627	Conjugated alkene	C=C	Medium stretching
1396	Alcohol	O-H	Medium bending
1237	Alkyl aryl ether	C-O	Strong stretching
1051	Primary alcohol	C-O	Strong stretching
Ginger added ZrN nanoparticle			
3291	Alkyne	C-H	Strong stretching
2360	Carbon dioxide	O=C=O	Strong stretching
1637	Conjugated alkene	C=C	Medium stretching
1396	Alcohol	O-H	Medium bending
1058	Primary alcohol	C-O	Strong stretching
Garlic and Ginger added ZrNnanoparticle			
3274	Carboxylic acid	O-H	Strong stretching
2941	Alkane	C-H	Medium stretching
2361	Carbon dioxide	O=C=O	Strong stretching
1626	Conjugated alkene	C=C	Medium stretching
1388	Aldehyde	C-H	Medium bending
1050	Primary alcohol	C-O	Strong stretching
ZrNnanoparticle			
3343	Alcohol	O-H	Strong stretching
2361	Carbon dioxide	O=C=O	Strong stretching
1634	Conjugated alkene	C=C	Medium stretching
1341	phenol	O-H	Medium bending
1046	Primary alcohol	C-O	Strong stretching

Biography

I graduated from Dhaka University of Engineering and Technology in Mechanical Engineering. My research field is material science. I have been working as a Research Assistant center for materials and manufacturing at DUET. I have published three research articles.

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Risk factors of clonally related, multi, and extensively drug-resistant Acinetobacter Baumannii in severely ill COVID-19 Patients

Meqdad Saleh Ahmed[1], Zirak Faqe Ahmed Abdulrahman[2] and **Zanan Mohammed Ameen Taha[3]**

[1]College of Veterinary Medicine Department of Pathology and Microbiology, University of Duhok, Iraq
[2]College of Education, Department of Biology, Salahaddin University-Erbil, Iraq
[3]College of Veterinary Medicine Department of Pathology and Microbiology, Duhok Research Center, University of Duhok, Iraq

Background: The secondary infection of multi and extensively drug-resistant "Acinetobacter baumannii" in severely ill COVID-19 individuals is usually associated with extended hospitalisation and a high mortality rate. The current study aimed to assess the exact incidence rate of A. baumannii coinfection in severely ill COVID-19 patients admitted to intensive care unit (ICUs), to identify the possible mechanism of A. baumannii transfer to COVID-19 patients and to find out their resistance rate against different antibiotics. Methods. Fifty severely ill "COVID-19" individuals on respiratory support were selected with samples being collected from the pharynx. In addition, another 60 samples were collected from the surrounding environment. Bacterial isolates were diagnosed by microbiological cultures and confirmed by "Vitek 2 system" and real-time PCR. The "Vitek 2 Compact system" was used to evaluate these isolates for antimicrobial susceptibility. The recovered isolates' DNA fingerprints and genetic similarities were performed using ERIC-PCR. Results.Twenty-six samples were tested positive for A. baumannii (20 out of 50 samples taken from patients, 40%; 6 out of 60 swabs from a nosocomial setting, 10%). All A. baumannii strains isolated from the nosocomial sites were clonally related (have the same genetic lineage) to some strains isolated from patients. However, the majority of the patients' strains were categorised as belonging to the same genetic lineage. Furthermore, "the multi and extensively drug" resistance patterns were seen in all isolates. In addition, total isolates showed resistance to the most commonly tested antibiotics, while none of them was found to be resistant to tigecycline. Conclusion. Secondary "A. baumannii" infection in severely ill "COVID-19" patients is a serious matter, especially when it has one spot of transmission in the ICU as well as when it is extensively drug-resistant, necessitating an immediate and tactical response to secure the issue.

Biography

PhD student in Vet. Biotechnology:

- Started the PhD in Biotechnology since 1st of November 2020 Master of Science (Biotechnology)
- 2012-2013 Master of Science (Biotechnology) at Swinburne University of Technology, Faculty of Life and Social Science, Hawthorn campus, Melbourne, Australia.

Projects Achieved during study:

1. Molecular characterization of presumptive Listeria Monocytogenes Isolates from a Food Processing Environment (As major research project)
2. Comparative Methods for Detection of Small DNA Fragments.

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Recent advances of magnetic gold hybrids and nanocomposites, and their potential biological applications

Mirza Muhammad Faran Ashraf Baig

The Hong Kong University of Science and Technology, China

Magnetic gold nanoparticles (mGNP) have become a great interest of research for nanomaterial scientists because of their significant magnetic and plasmonic properties applicable in biomedical applications. Various synthetic approaches and surface modification techniques have been used for mGNP including the most common being the coprecipitation, thermal decomposition, and microemulsion methods in addition to the Brust Schiffrin technique, which involves the reduction of metal precursors in a two-phase system (water and toluene) in the presence of alkanethiol. The hybrid magnetic–plasmonic nanoparticles based on iron core and gold shell are being considered as potential theragnostic agents. Herein, in addition to future works, we will discuss recent developments for synthesis and surface modification of mGNP with their applications in modern biomedical science such as drug and gene delivery, bioimaging, biosensing, and neuro-regenerative disorders. I shall also discuss the techniques based on my research related to the biological applications of mGNP.

Biography

My research work mainly focuses on the construction and function of DNA nanomachines, which are cutting-edge and challenging topics. I designed and constructed unique DNA motifs using a short circular DNA nanotechnology technique and functionalized these probes with fluorophores, gold nanoparticles, small molecular drugs, and peptide ligands. To achieve plasmon resonance effects, I achieved nano-specific precision in organizing plasmonic nanoparticles on the nano DNA frameworks. My work on the DNA nanomachines provided an efficient fluorescence resonance energy transfer mechanism that realizes the bio-imaging, detection of biological events, and functions of the biomolecules. I have also been working on multilayered hybrid magnetic nanoparticles for applications in nanomedicine for the last three years.

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Application of geophysical techniques for shallow groundwater investigation using 1D-lateral constrained and 2D inversions in Ras Gara area, Southwestern Sinai, Egypt

Mohamed A. Genedi[1] and **Mohamed A. S. Youssef**[2]

[1]*Department of Geology, Faculty of Science, Mansoura University, Egypt*
[2]*Exploration Division, Nuclear Materials Authority, Egypt*

There is an urgent need for greater water resources to support sustainable development in Ras Gara area of southwestern Sinai. Determining the water-bearing zones of the shallow Quaternary aquifer of the Araba Formation in the study region is therefore the main objective of the research. This will be done by using a variety of geophysical techniques, such as DC resistivity sounding and shallow seismic refraction surveys. Using the Schlumberger array (max. AB=1200 m), the DC data were gathered at 27 VES locations along fve primary profles. At the same locations, 27 spreads totaling 115 m in length of seismic data were also performed. One-dimensional laterally constrained (1D-LCI) inversion is only applied to the DC data in order to generate a best-ft model, whereas 2D inversion is applied to other datasets. The area is divided up into fve geo-electrical layers based on the results of 1D-LCI inversion of DC data, and the aquifer is classifed into fresh (third layer) and saline bearing-zones (fourth layer). The resistivity values of the fresh-zone range from 8.7 to 26.7 Ω.m, with only low values (5–7.5 Ω.m) found at some VES sites, while the resistivity values of the saline-zone range between 0.9 and 3 Ω.m, except for (14.4 Ω.m) at VES-04. At depths of (2.4–15.6 m) and (8.7–28.5 m) for the fresh and saline zones, respectively. In this region, the shallow low resistive (about 10–100 Ω.m) and intermediate high conductive (<10 Ω.m) layers of the 2D-DC inverted model represent the fresh and saline zones of the aquifer, respectively. The basement rocks were represented by a deep, extremely high resistive layer that can reach 40,000 Ω.m. Three subsurface layers are identifed from the results of the 2D inversion of seismic data (VP1=400–1100 m.s−1, VP2=1200–1900 m.s−1 and VP3=2400–5400 m.s−1). The saturated zone of this aquifer is represented by the second layer (depth, 3.7–20.5 m). The basement rocks are also refected in the last layer of high velocity. The inversion results and the previously available hydro-geological map data show a good degree of concordance. In the eastern portion of the study area, additional water wells could be drilled for additional water resources.

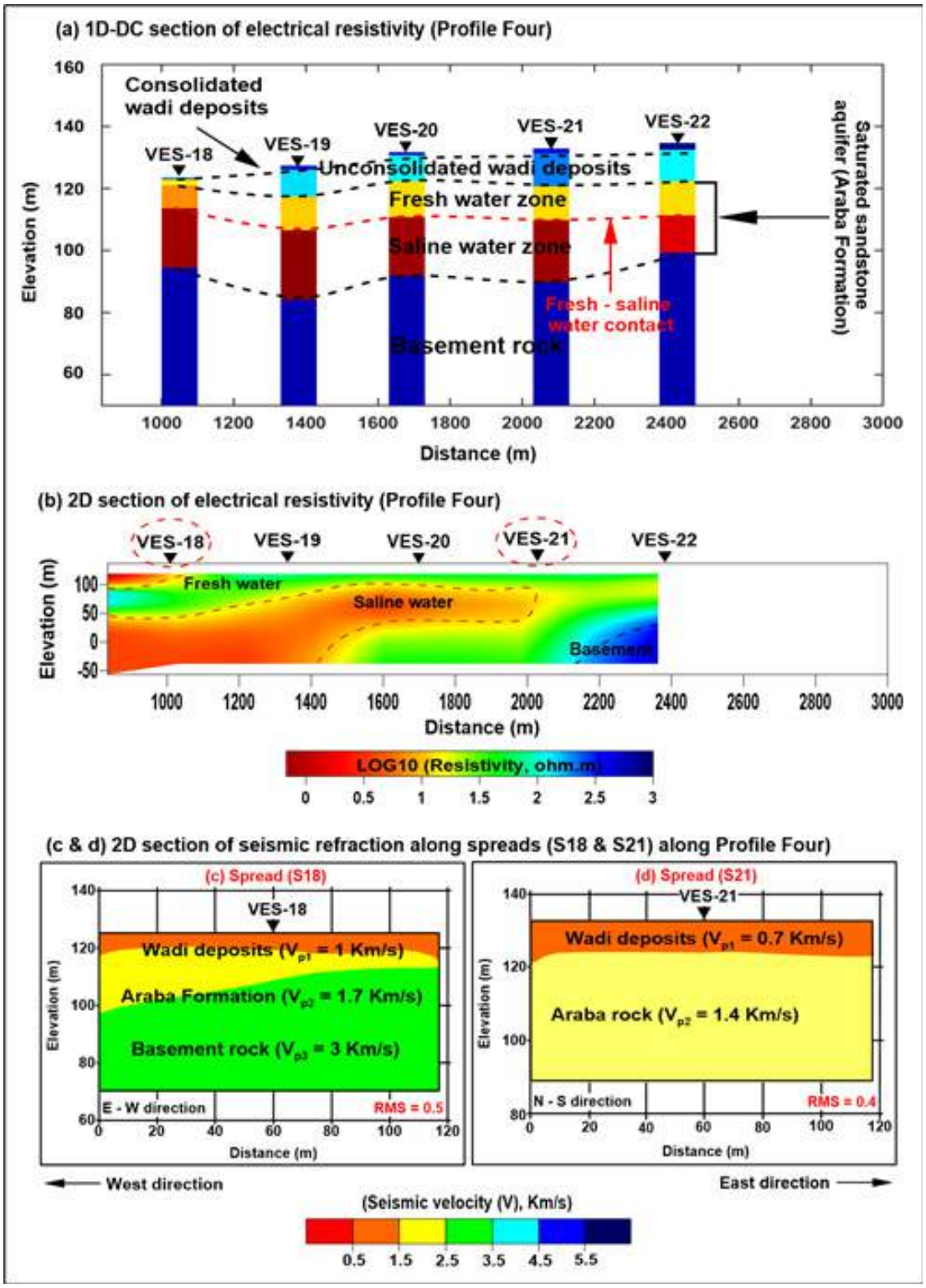

Figure (1): 1D-LCI and 2D inversion results of DC resistivity data along profile four (a and b). 2D inversion results of seismic refraction data along two spreads at the center of two VES sites (VES-18 & VES-21) on the same profile (c and d).

Biography

My name is Mohamed Adel Mohamed Genedi. I am Lecturer of applied geophysics, Geology Department, Faculty of Science, Mansoura University, Mansoura, Egypt. I was born in Karlsruhe, Germany. My date of birth is 30-5-1991. My nationality is Egyptian ad my religion is Muslim. I am married and have two children. I attended three conferences, one of them is the international conference in Halten, Germany.

I have a broad experience in the field of geophysical data analyses such as DC resistivity, time-domain electromagnetic (TDEM) and magneto-telluric (MT). I highly interest in searching about ground water aquifers especially in Egyptian deserts.

From August 2019 to February 2021: I completed practical side of the work related to Ph.D research at the Institute of Geophysics and Meteorology, Cologne University, Germany according to Egyptian scientific mission Fellowship as Channel System between Egypt and Germany. November, 2021 until November 2021: I held the position of deputy Director of the Intellectual Property and Patent Office at Technology Innovation Commercialization Office (TICO) at Mansoura University, Egypt. From 2022 until know, I am quality Coordinator at the Department of Geology and a member of the Quality Committee at the faculty of Science, Mansoura university, Egypt.

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Transvaginal repair of anterior vaginal wall prolapse with polyvinylidene fluoride (PVDF) mesh: An alternative for previously restricted materials?

Mohammad J. Eslami, Mahtab Zargham, Farshad Gholipour and **Mohammad Reza Hajian**

Department of Urology, Isfahan University of Medical Sciences, Iran

Introduction and Hypothesis: To study the mid-term safety and functional outcomes of transvaginal anterior vaginal wall prolapse repair using polyvinylidene fluoride (PVDF) mesh (DynaMesh®-PR4) by the double trans-obturator technique (TOT).

Methods: Between 2015 and 2020, we prospectively included women with symptomatic high-stage anterior vaginal wall prolapse with or without uterine prolapse or stress urinary incontinence (SUI) in the study. The patients underwent transvaginal repair of the prolapse using PVDF mesh in two medical centers. We followed all patients for at least 12 months. We recorded the characteristics of vaginal and sexual symptoms, urinary incontinence, and prolapse stage pre- and postoperatively using International Consultation on Incontinence Questionnaire-Vaginal Symptoms (ICIQ-VS), International Consultation on Incontinence Questionnaire-Urinary Incontinence-Short Form (ICIQ-UI-SF), and Pelvic Organ Prolapse Quantification (POP-Q) system, respectively.

Results: One hundred eight women were included in the final analysis with a mean follow-up time of 34.5 ± 18.6 months. The anatomical success was achieved in 103 (95.4%) patients. There was a significant improvement in patients' vaginal symptoms, urinary incontinence, and quality of life scores postoperatively ($p < 0.0001$). Only six patients (5.5%) had mesh extrusion, five of whom were managed successfully. The total rates of complications and de novo urinary symptoms were 21.3% and 7.4%, respectively. Significant pain was reported in 17 cases (15.7%).

Conclusion: Our findings show that using PVDF mesh in the double TOT technique for anterior vaginal wall prolapse repair is a safe procedure with high anatomic and functional success rates and acceptable complication rates in mid-term follow-up.

Biography

Mohammad Javad Eslami is an accomplished MD researcher known for his significant contributions to research in the fields of Urology and Covid-19. With five years of experience in medical research, he has conducted impactful researches. His research focuses on the application of synthetic mesh materials in pelvic organ prolapse repair surgery.

He has published extensively in reputable journals, contributing valuable insights and findings to the scientific community. Additionally, he has had the privilege of presenting his work at esteemed national and international conferences, where he has shared his expertise with fellow researchers and professionals.

Mohammad holds an MD degree from Isfahan University of Medical Sciences, one of the finest medical universities in Iran and the middle east. He is dedicated to continuous learning and strives to stay at the forefront of advancements in medical research.

As a speaker at the upcoming conference, Mohammad is humbled and excited to share his knowledge and insights with fellow professionals. His presentation will provide a valuable perspective on the behavior of PVDF mesh as a new material in the surgical repair of high-grade anterior vaginal wall prolapse in midterm close follow-up, fostering discussion and collaboration among attendees.

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Effects of opium inhalation on physical and biochemical parameters of stray dogs in Kabul city, Afghanistan

Mohammad Monir Tawfeeq[1], Asadullah Hamid[2], Jahid Zabuli[1], Sayed Abdul Jalil Hashimi[1], Mohammad Khalid Formuli[1],Shahpoor Rahmati[1] and **Mohammad Bayer Darmal[3]**

[1]Department of Clinic, Faculty of Veterinary Science, Kabul University, Afghanistan
[2]Department of Preclinic, Faculty of Veterinary Science, Kabul University, Afghanistan
[3]Department of Clinic, Faculty of Veterinary Science, Nangarhar University, Afghanistan

Afghanistan is one of the biggest opium producing country and provides a highest percentage of opium poppy in the world. There are more than a million drug addicts in the country, which most of them are living in public places. Stray dogs who lives with drug addicts are at highest risk of inhaling drugs. The aim of this study is to evaluate changes in physical and biochemical parameters of stray dogs living in close contact with drug addicts and inhaling drugs. Total of 12 dogs were assigned into two groups of healthy and infected (stray dogs who inhale drugs) dogs. Physical and biochemical parameters such as glucose, alkaline phosphatase (ALP), alanine aminotransferase (ALT), aspartate aminotransferase (AST), blood urea nitrogen (BUN), creatinine, triglyceride (TG), cholesterol, and total protein (TP) of both groups were evaluated. Subjective evaluation showed clinical changes such as congestion of conjunctiva in infected group. Biochemical examination showed significantly higher level of glucose ($P<0.05$) and total protein ($P<0.01$) in infected group compared to healthy group. The ratio of other biochemical parameters was slightly decreased as compare to healthy dogs. It can be concluded that inhalation of opium smoke may alter the physical and biochemical parameters of stray dogs living in close contact with drug addicts.

Biography

In 2002 Dr. Tawfeeq earned his undergraduate degree (DVM), from veterinary faculty of Kabul University. Later, he completed his master degree in environment conservation at Tokyo University of Agriculture and Technology. Following that, he completed his PhD degree in veterinary science (Veterinary Internal Medicine) at Gifu University. From graduation (2014) up to now he is working in Department of Clinical Science, Faculty of Veterinary Science, Kabul University, as Associate Professor of Veterinary Internal Medicine. He publishes many research and review papers related veterinary internal medicine in different national and international journals. Now his research focus on pet animal, especial stray dogs.

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Mechanical, environmental, and economic assessment of sustainable cement mortar using Afghan natural pozzolan as a partial replacement for cement

Mohammad Najim Wahedy[1], Mohammad Kazem sharbatdar[2] and **Omid Rezaifar[2]**

[1]Kabul Polytechnic University, Afghanistan
[2]Semnan University, Iran

Using natural pozzolan to produce cement-based mortar is one of the suitable solutions to reduce cost, energy consumption, and environmental impacts. In this experimental study, the paste replacement methodology (replacement of partial cement wt% with supplementary cementitious material) is used. Natural pozzolan, as vernacular material with high silicate aluminate originating in Afghanistan, is replaced (6, 13, and 20%) with cement in mortar. Various tests such as slump, compressive strength, tensile strength, water absorption, freezing-thawing cycles, relative length change, pull-off test, and microstructure analysis have been performed to study the properties of fresh and hardened mortar. The findings showed that the use of natural pozzolan containing a high level of silicate and aluminate as a replacement of cement in mortar improved 56 days compressive and tensile strength of mortar by 2.2 and 6%, respectively, water absorption was reduced by 1.6%, and the resistance to the freezing and thawing cycles was increased 10.7% as well compared to the reference samples. In addition, the results of economic analysis and sustainable development indicators assessment of mortar showed that using this replacement methodology was economically acceptable and reduced the potential of global warming and energy consumption by 13% of the production of one ton of cement using standard technology. The optimum replacement percentage was selected at 13% without compromising the mechanical properties of mortar.

Biography

Mohammad Najim Wahedy is born in an open minded and educated family in 1986 and he is form Kabul, Afghanistan. He studied primary and secondary school at Habibia high school (kabul) in 1992. He received the B.Sc. and M.Sc. degrees in Civil and Industrial Construction from Kabul Polytechnic University in 2009 and 2015 respectively, and his Ph.D. in Construction Management from Semnan University in 2022. He worked as civil Engineer in national and international projects in Afghanistan from 2009 to 2015. He is working as an assist. prof. in the Department of Construction Engineering Management at Kabul Polytechnic University since 2015. His areas of research are Construction Management, Sustainability and concrete technology.

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Various medical imaging transmission over mobile and wireless healthcare services

M. Atia[1] and **M. A. M. El-Bendary**[2]

[1]*Faculty of Engineering, Future University, Egypt*
[2]*Faculty of Education and Technology, Helwan University, Egypt*

Wireless Body Area Network (WBAN) is a low-power wireless network dedicated for human healthcare purposes. This object oriented Low-Power Wireless Network (L-PWN) is considered specialized sub-category form Wireless Sensor Networks (WSNs). In this paper, comparison between various medical inspection imaging have been presented. There are different scenarios have been proposed for enhancing the Quality of Service of medical inspection images transmission over the mobile wireless healthcare networks. X-ray radiography, X-ray Computed Tomography (CT), Magnetic Resonance Imaging (MRI) medical images are used in the computer simulation experiments. The velocity of mobile terminal is considered in this paper. Unequal Error Protection technique is proposed for improving the error performance of medical images transmission with sufficient transmission rate. The wireless link of medical services must be secured, robust and resist the different types of attacks. The presented error protection technique has been merged with powerful image security tools to provide reliable wireless link for the remote healthcare service. The results show that the quality of the extracted medical images with secured UEP technique for producing encoded packets is better than the recent published related research papers, also, the security tool merging with different error control schemes employing with the image enhances the extracted image and its quality. On the other hand, there are some challenges in the WBAN applications, such as the resources constraints and security challenges. The power constraint in the WBANs applications limits and reduces the utilizing of error protections and security techniques. The trade-off between the amount of consumed power and security/error performance requirements is considered in the proposed scenarios.

Biography

Mohsen A. M. El-Bendary received his BSc. degree in Electrical Communications, Faculty of Electronic Engineering, Menoufia University, May 1998. MSc. In Communications Engineering from Faculty of Electronic Engineering, Menoufia University, 2008. PhD. in Communications Engineering, Faculty of Electronic Engineering, Menoufia University, 2012. His research is the area of Wireless networks 'QoS, specially, the wireless personal communications such as WPANs, WSN, and WBANs, Image Processing: Enhancement of restoration of degraded and noisy images, multi-channel image processing, error of image concealment, color image processing, image watermarking, encryption, and data hiding).

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Vibration measuring infant's neonate healthcare unit utilizing additional group of sensors

E. Shahat, M. Atia and **M. A. M. El-Bendary**

Faculty of Education and Technology, Helwan University, Egypt

Due to the vital role of the healthcare unit of infants (incubators) for saving the neonates' life, this paper presents improving scenarios utilizing the additional sensors group. This proposed of sensors group includes the vibration, noise, accessing sensors in addition the traditional sensors. Most of the models of incubators around the world have major defects; these models do not include tool to measure the vibration which can be generated from the external/internal equipments in the incubators. On the other hand, the vibrations and noise are dangerous and have bad effects on the neonates. This research paper presents effective method for improving the monitoring and controls the different models of incubators. Utilizing the WSN concept for remote control and monitoring the infants. Overview of different incubator models in Egypt with its advantages and disadvantages comparison is presented. The Wireless Actuator/Sensor Networks (WA/SN) is employed for decreasing the noise level by playing audio within the Hood such as the womb sound or quite music based on the noise level> 30 dB. According to the practically experiments for testing and evaluating the proposed design, the external equipment increases the vibration and noise in the Hood. Also, the various practical experiments prove the capability of the proposed unit design to measure the noise in the Hood due to the surround environment. The vibration and noise monitoring are ignored in the different incubators model. The proposed unit can be used for testing and measuring the suitability of the various incubators models and capturing the defects.

Biography

Mohsen A. M. El-Bendary received his BSc. degree in Electrical Communications, Faculty of Electronic Engineering, Menoufia University, May 1998. MSc. In Communications Engineering from Faculty of Electronic Engineering, Menoufia University, 2008. PhD. in Communications Engineering, Faculty of Electronic Engineering, Menoufia University, 2012. His research is the area of Wireless networks 'QoS, specially, the wireless personal communications such as WPANs, WSN, and WBANs, Image Processing: Enhancement of restoration of degraded and noisy images, multi-channel image processing, error of image concealment, color image processing, image watermarking, encryption, and data hiding).

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Assessing the role of green supply chain management in enhancing Pakistan manufacturers' performance

Muhammad Ibrahim Tariq

Superior University, Pakistan

The purpose of this study is to explore the impact of success factors of Green Supply Chain Management (GSCM) dimensions (i.e., green purchasing, internal environmental management, cooperation with customers, eco-design, and investment recovery) and their impact on the Organizational Performance of Manufacturers in Pakistan on three pieces of levels of execution (i.e., Environmental Performance, Economic Performance, and Operational Performance), whereas GSCM practices in developing countries like Pakistan need to be explored. Data was collected from managers of 220 business firms in Pakistan through survey questionnaires with a purposive sampling technique. The target population consisted of managerial employees (business experts and executives) from private business firms, and partial least square-structural equation modeling was used for analysis. All GSCM dimensions were found significant in at least one of the performances, except eco-design on environmental performance and green purchasing on economic performance, either clearly or indirectly. The proposed model assembles and provides the respondents' distinctive working areas: electronic gadgets, automobile process and machinery sectors. Moreover, the appraisal of the connection between five developments of GSCM practices and three builds with the effect of the green distribution of authoritative execution in the Pakistan assembling setting offers an extraordinary theoretical commitment to exploring the green supply chain management field. First, this research is done by studying the green supply chain management dimensions of different performances of manufacturing firms in Pakistan, which has never been done before. Second, it contributes to the existing literature on critical success factors of GSCM. Manufacturing firms should implement GSCM practices to improve all three types of performance, i.e., environmental, economic, and operational.

Biography

I, Mr Muhammad Ibrahim Tariq am one of the main corresponding authors of this paper. I completed an MPhil in Business administration and worked in the travelling industry as a travel counsellor in a private organization. I used to be a teacher's assistant during my tenure at MPhil. I'm passionate about the aviation industry and automobile industry and also have the bachelors degree aviation management which gives me uniqueness and key component for getting knowledge of time management easily.

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Biochemistry of the Thrombin-Like enzyme and Its Purification from Iranian Echis Carinatus snake venom: Its interaction with platelet receptors

Nafiseh Nasri Nasrabadi, Hossein Vatanpour[2] and Nasser Mohammadpour[3]

[1]Pharmaceutical Sciences Research Centre, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Iran
[2]Department of Toxicology, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Iran
[3]Department of Venomous Animals and Anti-venom, Razi Vaccine and Serum Research Institute, Agricultural Research, Education and Extension Organization, Iran

Snake venoms are rich in valuable substances that have medical potential in the diagnosis and treatment of hemostatic diseases. The present research work was aimed at the purification and functional characterization basis of a thrombin-like enzyme and its role in the function of the coagulation cascade and platelet aggregation pathway. A thrombin-like serine protease was purified from the Iranian Echis carinatus venom (TLIEC) employing a one-step chromatographic procedure. This peptide was collected in high yield and purity by a single chromatographic step using RP-HPLC equipped with a C18 column. This peptide showed a 3000 Da molecular weight in gel-electrophoresis. Evidence in the SDS-PAGE gel has confirmed high recovery of fraction in optimal terms. Subsequently, this peptide was identified via its intact molecular mass and peptide mass fingerprint (PMF) using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS). Multiple sequence alignments were performed by ClustalW, BioEdit software. Molegro Data Modeller (MDM) 3.0 software was used to predict the putative tertiary structure of peptide. The enzyme possessed fibrinogenolytic, procoagulant and aggregation inducer properties. SDS-PAGE (12.5%) electrophoresis gel was applied to examine fibrinogenolytic function. The purified enzyme degraded the Aα chain of fibrinogen while the Bβ and γ chains were not digested. According to that the deficient human plasma in factor X and normal human plasma was also coagulated by TLIEC, it takes part in the common and intrinsic routes of the coagulation cascade. These findings showed TLIEC is a serine protease identical to procoagulant thrombin-like snake venom proteases, but it specifically releases the Aα chain of bovine fibrinogen. Because of its function to make up the deficiency of factor X and its platelet aggregation inducer property, TLIEC could be considered a molecular impact to reveal the hemostasis mechanisms.

Biography

Name: Nafiseh

Family name: Nasri Nasrabadi.

Data & Place of Birth: 02.05.1984, Esfahan-Iran

Nationality: Iranian

Citizenship: Iranian

Sex: Female

Education:

2016 – AUG 2023 - PhD of Toxicology and Pharmacology (PhD research), Pharmaceutical Sciences Research Center (PSRC) -Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

2010-2013 – M.Sc. Student Toxicology, Student Research Committee, Mazandaran University of Medical Sciences, Sari, Iran.) GPA: 17.18 out of 20.

2003-2007 - B.S. in Animal Biology at Esfahan University. Esfahan, Iran.

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Dispersion of ultrafine particles in the wake of a square back Ahmed body

Namamoudou Sidiki Keita[1,2], Amine Mehel[2], Georges Fokoua[2], Frédéric Murzyn[2], Anne Taniere[3], Boris Arcen[3] and Badié Diourte[1]

[1]Physics Department, Faculty of Science and Technology Bamako, Mali
[2]Department of Mechanical and Environmental Engineering, Air Quality and Depollution Group, France
[3]LEMTA, University of Lorraine, France

Nanoparticles released from tailpipes of ground vehicles are a major contributor to air quality worsening. As it is question of small sized solid particles, they can cause important damages, particularly to human health. The dynamics of these ultrafine particles (UFP) is strongly related to the characteristics of the airflow. The present work focused on a numerical study of a two-phase flow (air and UFP) developing in the wake of a simplified vehicle (square back Ahmed body). The goal is to get a better understanding of the dynamics of these UFP in order to prevent their infiltration in a following vehicle. Two cases are analyzed corresponding to two different upstream velocities (U_∞ =10 *and* 15 *m/s*). A URANS model coupled with a tracking Lagrangian particle approach was used to predict the two-phase flow. Results show a decrease of the UFP concentration with the distance to the emission point. In addition, the concentration profiles show a highly dissymmetrical shape in the near wake recirculation region, which can be explained by the off-centered position of the exhaust pipe and the impact of the large coherent structures. In the far wake, the particles concentration profiles tend to homogenize. Furthermore, dispersion increases with the distance to the vehicle and its speed due to the dispersion process.

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Two plus one port laparoscopic assisted Continuous Ambulatory Peritoneal Dialysis (CAPD) insertion modified technique

Nanda Daniswara

Dr. Kariadi General Hospital, Diponegoro University, Indonesia

Background : CAPD is one of modality for renal replacement therapy in patients with Chronic Kidney Disease (CKD) stage 5. There are various technique and modification but there is no main reference of laparoscopic catheter insertion. One common complication related to CAPD is malposition of Tenckhoff catheter. In this study, we present a modified laparoscopic technique insertion which can prevent malpositioned of the tenckhoff catheter by using two plus one port.

Methods : A retrospective data from medical record at Semarang Tertiary Hospital were identified between 2017 until 2021. Demographic, Clinical, Intra operative and Post operative complication data were collected with one year follow up after CAPD procedure.

Results & Discussion : This study is including 49 patients with mean age 43.2 ± 13.6 years and diabetes is the main causes (51.02%). This modified technique showed no complications intraoperatively. The postoperative complications was found including 1 cases of haematoma (2.04%), 8 cases of omental adhesion (16.3 %) and 2 cases of peritonitis (4.08 %). Malpositioned of the tenckhoff catheter was not found in 1 year after procedure.

Conclusion : The two plus one port modified laparoscopic assisted CAPD technique could prevent malpositioned of the teckhoff catheter because already fixated in the pelvic. A randomized control study is required to standarize this technique to other laparoscopic technique.

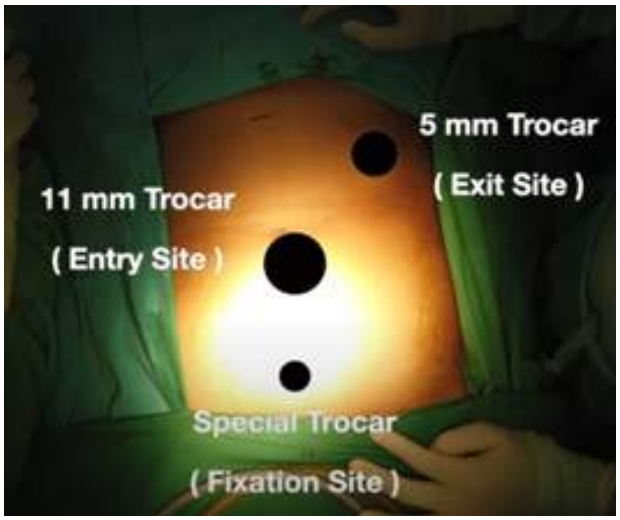

Figure 1. Trocar Site

Postoperative Complication		
Malposition of catheter	No cases	0 %
Hematoma	1 case	2.04 %
Peritonitis	2 cases	4.08 %
Hernia	No cases	0 %
Omental adhesion	8 cases	16.3 %
Exit-site Infections	7 cases	14.28 %

Biography

Nanda Daniswara, MD - Consultant in Trauma and Urological Reconstruction.
Born in Klaten, January 11st 1987

Education :

2010 - Medical Faculty in Diponegoro University
2016 – Urology

Fellowship :

2018 - Mulibhai Patel Urological Hospital, India
2018 - Kitasato University Hospital, Japan
2018 - Reconstructive Urology Team UCLH-NHS, UK
2020 - Consultant in Trauma & Urological Reconstruction, Indonesian College of Urology

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Models Predictions for the transverse momentum spectra of Strange particles produced in "pp" collisions at √s= 7 TeV and 13 TeV

Naseebullah[1], Yasir Ali[2] and **Imran Khan[1]**

[1]Department of Physics, University of Science and Technology Bannu, Pakistan
[2]Department of Physics, COMSATS University Islamabad, Pakistan

In this article the comparative study of ALICE and models has been reported about the production of primary strange hadrons i.e., and multi-strange hyperons and at mid rapidity |y|<0"\." 5,in most central (0-5%) proton-proton (pp) collisions at √S=7 TeV and 13 TeV. EPOS-LHC, EPOS-1.99 and PYTHIA 8307 Monte-Carlo simulation models have been used for comparison. In case of 7 TeV, mesons produced via using all three models predictions overestimated the ALICE data at low p_T. The same behavior is also observed in case of 13 TeV, but in this case models outcomes are very near to that of ALICE. PYTHIA 8307 showed very good findings as compared to other models. In case of hyperons at 7 TeV, PYTHIA 8307 works well as compared to EPOS models predictions at low p_T. At 13 TeV, all three models describe ALICE data very well up to p_T≤4"\." 3 "GeV" /c. In case of all models failed to follow the data. PYTHIA 8307 works well in case of, as compared to other two models. It is concluded that PYTHIA 8307 gives good overall predictions of ALICE data for and hyperons at both energies.

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Horizontal inequalities, sectarian identities, and violent conflict: The case of Gilgit-Baltistan

Nayyar Abbas[1], Ayesha Nazuk[2], Fariha Tahir[3] and **Muhammad Makki[4]**

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[2]Department of Economics, School of Social Sciences and Humanities, National University of Sciences and Technology (NUST), Pakistan
[3]Department of Development Studies, School of Social Sciences and Humanities, National University of Sciences and Technology (NUST), Pakistan
[4]Centre for International Peace & Stability, National University of Sciences and Technology (NUST), Pakistan

Sectarian-based violent extremism has long been a security concern for the Government of Pakistan. Despite the perseverance of state authorities in countering violent extremism, a discourse centred on horizontal inequalities as the determinant of violent extremism and conflict remains lacking. This paper highlights the importance of an empirical study in understanding the nexus between HIs and sectarian-based violent extremism in Gilgit Baltistan (GB). By analyzing the responses from Shia/Sunni sectarian identities, the study contextualizes violent conflict and elucidates how horizontal inequalities intersect with sectarian identities in the capital city of GB. In doing so, socio-economic and cultural inequalities have been evaluated. The study relies on a multistage random sample of 212 respondents through a structured questionnaire. The findings reflect significant socio-economic inequalities between the sectarian identities and suggest a linear relationship in which horizontal inequalities generate identity-driven 'us' vs 'them'.

Biography

Nayyar Abbas has participated in foreign academic programs, online leadership courses, internships, and community development activities. During his Master's internship, he worked in the Parliamentary Sustainable Development Goals Secretariat in the National Assembly of Pakistan. He has started volunteering for Students for Liberty. Through this opportunity, he was able to take courses and attended seminars and conferences. Student for Liberty has selected him for the Prometheus Fellowship, where he worked with professionals who taught and coached him in professional and leadership abilities.

He is an alumnus of the Fund for American Study's international academic program at Charles University Prague.

He works as a District Coordinator at Interactive Research and Development where he supports the Regional Manager in the implementation and execution of the School-based Deworming Program in Islamabad. He builds liaisons between the federal government and World Health Organization.

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Spatiotemporal modeling of the value of carbon sequestration under changing land use/land cover using InVEST model: A case study of Nour-rud Watershed, Northern Iran

Nematollah Kohestani[1], Shafagh Rastgar[1], Ghodratolla Heydari[1], Shaban Shataee Jouibary[2] and **Hamid Amirnejad[1]**

[1]Sari Agricultural Science and Natural Resources University, Iran
[2]Gorgan Agricultural and Natural Resources University, Iran

The current paper aims to assess the effects of landscape change in a mountain river basin in the north of Iran through quantifying, mapping, and assessing carbon storage. The analyses were performed based on previous alterations in land use and land cover (LULC) (1988–2018) and on expected changes determined by three LULC alteration setups for 2048. The Landsat imagery from 2018, 2008, 1998, and 1988 was used for evaluating and predicting the spatiotemporal distributions of LULC changes. The future LULC image prediction has been generated using Land Change Modeler (LCM) module of TerrSet software for the years 2028, 2038, and 2048. Validation was carried out by overlaying the actual and projected to 2018 map. We integrated the Markov Chain and InVEST Carbon Storage and Sequestration models for simulating the ecosystem carbon storage and the long-term monetary valuation. In this process, we considered social costs/economic value because of the area's loss and gain of stored carbon. The results showed that forests and rangelands with good and poor conditions decreased by 631.2, 10,374, and 10,254 ha, respectively, from 1988 to 2018. Overall LULC changes showed a descending trend in forests (0.66%), agriculture (0.1%), and rangelands (4.1%) in 2048. Carbon storage has already been lost by 9.9 million tons (76.98 ha−1) from 1988 to 8.8 million tons (68.86 ha−1) in 2018 and is expected to have an 8.4 million tons (65.25 ha−1) loss by 2048. Monitoring the economic value of carbon storage from 1988 to 2018 shows a loss of $US 15684338 (121.8 ha−1) and estimates a loss of $US 6972622 (54.18 ha−1) by 2048. This consideration causes reduction the uncertainty of estimated models and also increases the continuous cost of those changes. This will help government and decision makers for long-term and accurate carbon sequestration strategies for ecosystem. Reduction of carbon sequestration due to climate change and increase in destruction of natural resources, increase in air pollution and as a result more spread of diseases as well as increase in medicine and treatment costs.

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Voices from the Patients: A Qualitative study of the integration of tuberculosis, human immunodeficiency virus and primary healthcare services in O.R Tambo District, Eastern Cape, South Africa

Ntandazo Dlatu[1], Kelechi Elizabeth Oladimeji[2], and **Teke Apalata[3]**

[1]Department of Public Health, Faculty of Health Sciences, Walter Sisulu University, South Africa
[2]College of Graduate Studies, University of South Africa, South Africa
[3]Department of Laboratory Medicine and Pathology, Faculty of Health Sciences and National Health Laboratory Services (NHLS), Walter Sisulu University, South Africa

Tuberculosis (TB), a disease of poverty and inequality, is a leading cause of severe illness and death among people with human immunodeficiency virus (HIV). In South Africa, both TB and HIV epidemics have been closely related and persistent, posing a significant burden for healthcare provision. Studies have observed that TB-HIV integration reduces mortality. The operational implementation of integrated services is still challenging. This study aimed to describe patients' perceptions on barriers to scaling up of TB-HIV integration services at selected health facilities (study sites) in Oliver Reginald (O.R) Tambo Municipality, Eastern Cape province, South Africa. We purposely recruited twenty-nine (29) patients accessing TB and HIV services at the study sites. Data were analyzed using qualitative content analysis and presented as emerging themes. Barriers identified included a lack of health education about TB and HIV; an inadequate counselling for HIV and the antiretroviral drugs (ARVs); and poor quality of services provided by the healthcare facilities. These findings suggest that the O.R Tambo district needs to strengthen its TB-HIV integration immediately.

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Impact of environmental laws, policies and regulations on medicinal chemistry, pharmacology and environment

O.J. Oyebode

Civil and Environmental Engineering Department, Afe Babalola University Ado-Ekiti, Nigeria

Environmental laws and regulations must be enacted for the sustainability of the environment and to assist advances in medicinal chemistry, pharmacology and public health. This paper analyzes and articulates the impact of environmental governance, policies, laws, and regulations on public health and the environment. It identified various environmental challenges confronting medicinal chemistry, pharmacists, Healthcare Providers, and justification for regulation. This focused on strategies that will increase the efficiency of environmental regulation and ensure the optimal maximization of social and environmental welfare. There is a need to embrace Computer Aided Drug Design, Drug Metabolism, Pharmaceutical Biotechnology, Precision Medicine, economic analysis of legal rules, Artificial Intelligence and Machine Learning in Drug Discovery and Development. Organic matter constitutes about 60% to 80% of a total waste stream along with plastics, scrap metals and nylon as major recyclable constituents. Environmental degradation has continued to generate unpleasant challenges for health and economic development in Nigeria. Some of these problems include deforestation, pollution, global warming and improper pesticides. The use of environmental laws by different enforcement agencies in Nigeria, the methods of enforcement these agencies invoke, and the challenges they face in enforcing the relevant laws. These challenges include low-level constitutional provision for environmental protection, incessant contamination of drugs, pollution, environmental injustice, poor formulation and implementation of environmental, conflicts in environmental management and undue adherence to legalism. Toxicological studies, photochemical analyses, characterization and biological investigations are very vital in establishing safety and efficacy of drugs. The paper concluded by proffering practical regulatory techniques that can challenge policymakers to improve environmental governance in Nigeria. The study recommends the encouragement of private and public interest litigation, the creation of procedures for enhancing public participation in Nigerian environmental protection, the creation of environmental emergencies and the establishment of environmental courts.

Biography

Oluwadare Joshua OYEBODE is a seasoned, multi-faceted, visionary, dynamic and innovative Civil Engineer that combines teaching, research, and community development with Professional practice. He is currently a lecturer in the Civil Engineering department, at Afe Babalola University, Ado-Ekiti (ABUAD). His research interest is in Water Resources and Environmental Engineering, Energy Technology Management, Hydraulics and Hydrological Studies, Construction Management, Solid Waste Management, Pollution abatement of surface water, Simulation and Optimization of Wastewater Treatment facilities. He had published over 100 articles in conference proceedings, and reputable local and international journals. His achievements and antecedents in all facets of the profession are testaments to his visionary and undiluted commitment to societal development. He distinguished himself by winning many awards. He has a high sense of industry, integrity, character and ability to handle challenges and multi-task which derives from his excellent planning, strategic management and organizational endowment. He is happily married with children.

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Gas discharge source of flows of pulsed UV radiation and silver nanoparticles based on gas vapor mixture & O2–Ag2S

Oleksandr Shuaibov, Oleksandr Minya, Antonina Malinina, Roksolana Hrytsak, Oleksandr Malinin, Roman Holomb and **Zoltan Homoki**

Uzhhorod National University, Ukraine

The results of the study of the characteristics and parameters of the plasma source of time-synchronous UV radiation streams of silver atoms and ions and silver-based nanoparticles (silver sulfide and oxide) are given. A nanosecond atmospheric pressure discharge was ignited in oxygen between silver sulfide (Ag2S) electrodes. Silver sulfide vapors were introduced into the gas-vapor mixture "O2 - Ag2S" due to the ectonic mechanism.

Based on the solution of the stationary kinetic Boltzmann equation for the electron energy distribution function (EEDF), numerical modeling of plasma transport parameters was performed.

The maximum pulsed power of the discharge observed at p(O2) = 101 kPa reached 1.1 MW (at t = 75 ns). The energy of a single electric pulse at atmospheric oxygen pressure reached 50.3 mJ. The maximum value of the average intensity density of UV plasma radiation was obtained at the maximum frequency f = 1000 Hz and a charging voltage of 20 kV in the range of the UV-C spectrum (76.5 mW/cm2). The UV part of the spectrum was dominated by radiation at the transitions of the atom and the singly charged silver ion. The resonance spectral lines of the silver atom at 328.06 nm Ag I and 338.28 nm Ag I were the most intense.

Modeling of the plasma parameters established that for reduced electric field strengths of 286 Td and 143 Td, the average electron energies were 7.89 and 4.95 eV, respectively. The value of the concentration of electrons in the discharge was in the range of 3.4·1019 - 1.67·1020 m-3. The developed source can be used in medicine, biochemistry and biophysics both for treatment (in the spectral range of 300-350 nm) and as an anti-microbial source (200-300 nm), in which the effect of UV radiation is enhanced by silver nanoparticles.

Biography

Shuaibov Oleksandr Kamilovich

Honored Worker of Science and Technology of Ukraine, Honored Professor of Uzhgorod National University, Professor of the Department of Quantum Electronics of Uzhhorod National University (UzhNU) was born on April 19. 1951 in the village of Yasin, Rakhiv district, Transcarpathian region.

In 1987 he defended his candidate's thesis, in 2004 he defended his doctoral thesis on the topic "Optical diagnostics of active media of electric discharge sources of radiation on atoms of inert gases and their halides." Since 2004, O.K. Shuaibov works as a professor at the Department of Quantum Electronics.

Field of scientific interests: UV-UV exciplex lasers, gas discharge lamps based on inert gas and mercury halides, physics and technology of gas discharges, synthesis of nanostructures by methods of gas discharge electronics.

OK. Shuaibov is the author of about 500 scientific works, 15 educational manuals and 50 protective documents for Ukrainian inventions.

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Potential of targeted 1H-NMR detecting honey fermentation of the Ecuadorian stingless bee *Scaptotrigona vitorum*

Patricia Vit[1], Jane van der Meulen[2], Gina Meccia[1] and **Silvio Loayza[3]**

[1]APIBA, Universidad de Los Andes, Venezuela
[2]QSI, Germany
[3]Meliponario Nativa, Ecuador

A set of active metabolites in the sugary matrix of intelligent pot-honey are of microbial origin, given the probiotic nature of this nest material used for immunonutrition. Ethanol in Apis mellifera honey is considered a spoilage indicator whereas its production is favored in postharvest of stingless bee honey to increase healing properties. Scaptotrigona vitorum, named Catiana in El Oro province, is kept for meliponiculture, selected among the 200 Ecuadorian stingless bee species. This research on targeted 1H-NMR-based profiling for pot-honey metabolomics approach explored 36 metabolites with multiparametric analysis of 10 sugars, hydroxymethylfurfural, ethanol, 10 aliphatic organic acids, 8 amino acids, and 6 botanical markers, using Bruker's Bio Spin GmbH Honey-ProfilingTM, and 27 of them were quantified. The sugar content was lower than Apis mellifera because moisture of meliponine honey is higher. Fructose (33.13 g/100g) and glucose (26.80 g/100g) were the major sugars of honey, fructose + glucose 59.93. Sugar concentrations decrease during fermentation, while total aliphatic organic acids (AOA) (1.65 g/kg) and ethanol (2.07 g/kg) increased. Lactic acid (9.59 g/100 g) and acetic acid (5.94 g/100 g) were the major AOA, produced by lactic acid bacteria (LAB) and acetic acid bacteria (AAB), and ethanol by a yeast associated to S. vitorum. Major concentrations of botanical markers were 2,3-butanediol (0.77 g/100 g) and 3-phenyllactic acid (0.56 g/100 g). The 2,3-butanediol was a major volatile organic compound of bacterial origin, and the Lactobacillus crustorum phenolic acid was more concentrated than lactic acid in Chinese pickles. These two metabolites beside ethanol, acetic acid and lactic acid were considered markers of fermentation in S. vitorum pot-honey. Multiparametric analysis of targeted 1H-NMR are useful for pot-honey application testing the quality and for chemical characterization; thus, proposed for follow-up transformations inside the honey pots in the nest and during post-harvest after extraction from the pots.

Biography

Patricia Vit is a Biologist, MSc Food Science; PhD, Cardiff University, UK. Professor, Food Science Department, Faculty of Pharmacy and Bioanalysis at Universidad de Los Andes, Mérida, Venezuela. Honorary Associate Medical School, University of Sydney, Australia (2011-2019). Prometeo-Senescyt Universidad Tecnica de Machala, Ecuador (2014-2015). ACFIMAN Caracas Women in Science Award 2023, Health Science. Executive Council Member of the International Bee Research Association IBRA since 2023. Springer books by Vit, Pedro & Roubik, eds.: Pot-honey. A legacy of stingless bees (2013), Pot-pollen in stingless bee melittology (2018), and by Vit, Bankova, Popova & Roubik, eds. Stingless bee cerumen and propolis (2023) in press. Google Scholar h-index 32. Three new species were named after her, the Venezuelan stingless bee Partamona vitae Pedro & Camargo, 2003; the bee-floral yeast Starmerella vitae ARO Santos, PB Morais, Lachance & CA Rosa, 2018; and with her family, the Ecuadorian stingless bee Scaptotrigona vitorum Engel, 2022.

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High molecular weight adiponectin and abdominal subcutaneous adipose tissue may independently protect against type 2 diabetes regardless of body mass index

Pieu Adhikary, Mainak Banerjee and **Subhankar Chowdhury**

Institute of Post Graduate Medical Education and Reseach, S.S.K.M. Hospital, India

Objectives: High molecular weight (HMW) adiponectin, the most abundant adipokine, is a potential biomarker of T2DM. Dual energy X-ray absorptiometry (DEXA) scan is a simple safe imaging technique to distinguish between abdominal visceral adipose tissue (VAT) and subcutaneous adipose tissue (SCAT). To investigate whether additional measurement of adipokines, andabdominal fat distribution is clinically meaningful to predict metabolic risk, we aimed to examine their independent association with T2DM irrespective of body mass index (BMI). Furthermore we also aimed to collect these two fat depots from these subjects to study the expression pattern of potential marker of T2DM

Methods: Subjects aged 26-65 years with newly detected treatment naive T2DM (n=81; females, n=41) were included. Age, gender, BMI-matched healthy volunteers (n=81; females, n=40) were systematically recruited. VAT, SCAT were measured using (DEXA)-scan. ELISA was used to measure fasting insulin, HMW-adiponectin, tumor necrosis factor (TNF)-α, interleukin (IL)-6 levels. Fat biopsy samples were obtained from 65 subjects (40 non T2DM and 25 T2DM) who underwent for abdominal surgery. Isolated adipocytes from both the tissue were cultured and HMW adiponectin secretion was measured using ELISA.

Results: VAT was significantly higher in T2DM versus BMI-matched healthy subjects; whereas SCAT, HMW adiponectin were significantly lower in T2DM. In linear regression analysis only abdominal SCAT had significant ($p=0.01$) positive association with HMW-adiponectin levels in both genders. HMW-adiponectin ($p<0.001$), and abdominal SCAT ($P<0.01$) not waist circumference or VAT were independently associated with T2DM. HMW adiponectin secretion significantly reduced from visceral and subcutaneous adipocytes of T2DM group, in addition to that in both the non T2DM and T2DM subjects visceral adipocytes secrete lower HMW adiponectin compared to subcutaneous adipocytes.

Conclusions: HMW-adiponectin and DXA-derived abdominal SCAT may independently predict metabolic risk irrespective of BMI. While HMW-adiponectin might act as surrogate for VAT, the role of abdominal SCAT needs to be further explored.

Biography

Pieu Adhikary is currently a Ph.D scholar in the Dept. Of Endocrinology and Metabolism at Institute Of Post Graduate Medical Education and Research (IPGME&R) under University of Calcutta. Her area of interest is on adipose tissue biology to find out their possible changes in Type 2 diabetes. She has 6 years of research experience in primary cell culture of human preadipocyte and adipocyte, microscopy, gene expression analysis by RT-PCR and ELISA. She is also able to use dual-energy X-ray absorbtiometry to measure compartmentalised body fat. Her work is not only limited to Type 2 Diabetes, she is also enthusiastically and actively involved in studies on PCOS, Gestational diabetes and Grave's disease. Currently she has two publications in peer reviewed journals regarding the issues on type 2 diabetes and Gestational diabetes. She loves to grow her knowledge on molecular biology of endocrine associated disorders as well as rare human disorders.

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Safety and efficacy of the FAKHRAVAC compared with BBIBP-Corv2 against SARS-CoV-2 in adults: A non-inferiority multi-center trial

Masoud Solaymani-Dodaran[1], Pouria Basiri[1], Milad Moradi[2], Kimiya Gohari[1], Ali Sheidaei[1], Mohammadreza Ahi[1], Farzad Ghafoori Naeeni[2], Akram Ansarifar[1], Zahra Rahimi[1], Fatemeh Gholami[1], Ahmad karimi Rahjerdi[3], Ramin Hamidi Farahani[4], Kosar Naderi saffar[2], Soheil Ghasemi[3], Ali Shooshtari[3], Mohsen Honari[3], Ali Mozafari[3], Samane Khodaverdloo[3] and **Mohsen Forooghizadeh[5]**

[1]Clinical Trial Center (CTC) of Iran University of Medical Sciences, Iran
[2]Stem cell Technology Research Center (STRC), Iran
[3]Milad Daro Noor Pharmaceutical (MDNP) Company, Iran
[4]AJA University of Medical Sciences, Iran
[5]Malek Ashtar University of Technology, Iran

Background: We compared Fakhravac and BBIBP-Corv2 vaccines in a phase III trial.

Method: We conducted a multicenter, parallel-group, active-control, non-inferiority clinical trial assessing the safety and efficacy of Fakhravac and BBIBP-Corv2 vaccines. We started with two randomized double-blind arms and added two non-randomized open-label arms because of slow recruitment. The adult population received 0.5 ml (10 µg per dose) intramuscular injections of Fakhravac or BBIBP-Corv-2 vaccines 21 days apart. The primary outcome was the occurrence of PCR-positive symptomatic Covid-19 disease 14 days or more after the second injection. A 10% non-inferiority margin to the reported 72.8% efficacy of BBIBP-Corv2 was assumed. Cox proportional hazard modeling was used to estimate hazard ratios and their 95% confidence intervals.

Result: We enrolled 24056 adults in four groups. All observed local and systemic adverse reactions were generally self-limited and resolved completely. We observed similar Serious Adverse Event (SAE) rates in the BBIBP-Corv2 and Fakhravac groups; none of which were related to the vaccines received. We recorded 9815 Medically Attendant Adverse Events (MAAE), 736 of which were categorized as somehow related. The rate of related MAAE in the Fakhravac was similar to the BBIBP-Corv2 groups in the randomized and considerably higher in the non-randomized arms.

We observed 129 events of PCR+ symptomatic Covid-19 during four months of active follow-up in the randomized arm, demonstrating that those receiving the Fakhravac vaccine were significantly less likely to be diagnosed with PCR+ symptomatic Covid-19 compared with those receiving BBIBP-Corv2 vaccine. After adjusting for type I error using the O'Brien Fleming method, the Fakhravac vaccine was non-inferior to the BBIBP-Corv2. In the non-randomized arm, the results were inconclusive. We observed 5 cases of hospitalized Covid-19 in the randomized arm, none of which occurred in the Fakhravac vaccine group. Those receiving the Fakhravac vaccine were four times less likely to go to the hospital because of a Covid-19 diagnosis. The vaccine efficacy of the Fakhravac vaccine is estimated to be 81.5% (95% CI; 81%-82.4%).

Conclusion: Fakhravac inactivated SARS-CoV-2 vaccine has comparable safety and efficacy to the BBIBP-Corv2 vaccine.

Biography

My name is Pouria Basiri and I was born in Tehran, Iran. I am a General Practitioner. I received my medical degree from Alborz University of Medical Sciences. Since 2020 I have been involved in RCT studies specially the studies about Covid19 vaccines for the past few years.

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Traditional medicinal plants from North Central Western Ghats of India for Rural Health care

Pramod J Hurkadale

KLE College of Pharmacy, KLE Academy of Higher Education and Research, India

The North Central Western Ghats of India, renowned for its rich biodiversity, has been a treasure trove of traditional medicinal plants for centuries. Local communities residing in this region have relied on these plants to meet their healthcare needs, incorporating them into their traditional healing systems, such as Ayurveda and folk medicine. This abstract highlight some of the prominent traditional medicinal plants from the North Central Western Ghats, which play a pivotal role in rural healthcare.

Tulsi (Ocimum sanctum), known as Holy Basil, holds a revered status for its versatile healing properties, addressing ailments ranging from respiratory disorders to fevers. Neem (Azadirachta indica) is celebrated for its antibacterial and antifungal attributes, while Aloe Vera (Aloe barbadensis miller) soothes and heals various skin conditions. Ashwagandha (Withania somnifera) is an adaptogenic herb employed for stress relief and overall vitality enhancement.

Ginger (Zingiber officinale) and Turmeric (Curcuma longa) find extensive use in treating digestive issues, inflammation, and joint pain. Punarnava (Boerhavia diffusa) supports kidney and liver health as a diuretic, while Brahmi (Bacopa monnieri) enhances cognitive function. Arjuna (Terminalia arjuna) is integral to heart health, and Haritaki (Terminalia chebula) aids digestion and detoxification.

Amruthaballi (Tinospora cordifolia) strengthens immunity and reduces inflammation, and Guggul (Commiphora wightii) manages cholesterol levels and arthritis. Beleric (Terminalia bellirica), a component of Triphala, supports digestive health. Vasaka (Adhatoda vasica) is beneficial for respiratory ailments, and Cassia (Cassia angustifolia), also known as Senna, serves as a natural laxative.

These traditional medicinal plants are vital to rural healthcare in the North Central Western Ghats, offering accessible and cost-effective solutions to various health challenges. However, their utilization should be guided by the expertise of qualified healthcare professionals, and sustainable harvesting and conservation practices are imperative to preserve these invaluable resources and their ecosystems for future generations.

Biography

Dr. Pramod J. Hurkadale, Professor, Department of Pharmacognosy, KLES College of

Pharmacy, Belagavi, Karnataka, India has completed his B. Pharm degree from Kuvempu University, Shivamogga obtained his M. Pharm degree with distinction from Rajiv Gandhi University of Health Sciences. Bangalore. He

has been awarded Ph.D. in Pharmaceutical Sciences from Rajiv Gandhi University of Health Sciences, Bengaluru under AICTE sponsored quality improvement program and also Diploma in Clinical Research from Catalyst Clinical Services Ltd, New Delhi. Dr. Pramod has put-up Twenty-Two years of teaching and research experience in UG, PG and guided 10 scholars for their Ph. D programs under KLE University. He has published and presented research papers in national and international journals/conferences and authored a book in Elsevier publishers, CBS publishers and book chapter in Studium Press, USA. He also been invited as speaker for international conferences at Malaysia, South Africa, Dubai, Brunei, Singapore, Thailand, Srilanka, Nepal, Egypt, Saudi Arabia, Bangladesh and Japan. He has been awarded Best of the Batch Award from Zydus-Indon Cadila Health Care Ltd, Ahmedabad, Best Paper in International & National Conferences and Best Teacher Award. He is also the Member for various professional bodies APTI, ISP, SFE, KSPC etc. He has also worked as Secretary to organize several workshops/ conferences National and International which was sponsored by ICMR, AICTE, UGC, IPA, etc. and currently EC Member & Coordinator, Society of Pharmacognosy, India and Co-ordinator for society for Ethnopharmacology for Belagavi Chapter. His areas of research interest are, herbal formulations /excipients, biosurfactants, traditional medicines, ethnomedicinal plants and their screening for various pharmacological activities and jointly collaborated with National Institute of Traditional Medicine, ICMR, Belagavi on tissue culture studies of Medicinal Plants from Western Ghats region.

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Optimizing Diagnostic Criteria

Preeti Kamra

Dav College Amritsar, India

Exploring the role of swarm intelligence in the diagnosis of behavioral disorders is an interesting and emerging research area. How can swarm intelligence algorithms help in optimizing the diagnostic criteria for various behavioral disorders, taking into account evolving clinical knowledge? How do swarm intelligence-based approaches compare to traditional methods (e.g., clinical assessments, questionnaires) in terms of accuracy, efficiency, and reliability?

Biography

Astt. Prof. Preeti Kamra is an B.Tech (CSE), M.TECH(CSE) and has submitted a PhD Thesis for final evaluation. Her Research is under her maiden name Preeti Monga. Her research topic is "Design and Analysis of Machine Learning and Swarm-Intelligence based Meta-Heuristic Techniques for Diagnosis of Behavioural Disorders". She has more than 14 years of teaching experience. She is working in the area of Machine Learning and Soft Computing with a specialization in the diagnosis of diseases. The thrust area is to design an artificial intelligence based Clinical Decision Support System for the effective management of major human psychological disorders. Her research articles are limited but indexed in Top Journals like "International Journal of Social Psychiatry", "Journal of King Saud University - Computer and Information Sciences" and "Electronic Systems and Intelligent Computing: Proceedings of ESIC 2021. Singapore: Springer Nature Singapore, 2022. 85-99."

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5th Global Summit on
Advances in Medicinal Chemistry and Pharmacology

Optimization of the production of xylooligosaccharides by native and recombinant xylanase using chicken feed substrates, and toxicity testing

P.Dhaver[1], B.Pletschke[2], B.Sithole[3,4] and R. Govinden[1]

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[2]Enzyme Science Programme (ESP), Department of Biochemistry, Rhodes University, South Africa
[3]Biorefinery Industry Development Facility, Council for Scientific and Industrial Research, South Africa
[4]Discipline of Chemical Engineering, University of KwaZulu-Natal, South Africa

Poultry production faces several challenges, with feed efficiency being the main factor that could be influenced through the use of different nutritional strategies. Proper use of exogenous enzymes, such as xylanases, could improve feed conversion, gut health and growth performance, and improve environmental problems as fewer undigested nutrients are excreted. Xylooligosaccharides (XOS) are functional feed additives that are attracting growing commercial interest owing to their excellent ability to modulate the composition of the gut microbiota. This study aimed to apply crude and purified fungal xylanases from Trichoderma harzianum as well as a recombinant glycoside hydrolase (GH) family 10 xylanase (XT6), derived from Geobacillus stearothermophilus T6, as additives to locally produced chicken feeds. Box Behnken Design (BBD) experimental design was used to optimize enzymatic hydrolysis of feed to monosaccharides and xylooligosaccharides (XOS). Response Surface Methodology (RSM) revealed that reducing sugars were higher (8.05 U/ml) for the starter feed treated with the crude fungal xylanase compared to the treated grower feed (3.11 mg/ml). Treatment with the purified fungal xylanase however, produced higher reducing sugar for the starter feed (2.81 mg/ml) compared to the grower feed (2.41 mg/ml). The recombinant xylanase resulted in higher reducing sugars from the treatment starter feed (2.98 mg/ml) compared to the grower feed (2.62 mg/ml). The study included analysing the hydrolysis products and performing toxicity assays. Thin-layer chromatography (TLC) and High-performance liquid chromatography (HPLC) analysis showed that the enzymes hydrolysed the chicken feeds, producing a range of monosaccharides (arabinose, mannose, glucose, and galactose) and XOS, with xylobiose being the predominant XOS. Toxicity studies showed that the higher the dilutions of the enzyme-treated feed samples the more viable cells were available thus the enzymatic treatments were not toxic to HEK293 cells. Therefore, xylanases from T. harzianum and recombinant XT6 xylanase could potentially be utilized for the production of prebiotics and anti-inflammatory XOS from chicken feed. These results show promising data for future studies as additives to poultry feed.

Biography

I am currently in my last semester (Writing) as a candidate for PhD in Microbiology at University of Kwa-Zulu Natal (Westville), having completed my BSc degree in biochemistry and microbiology in 2018 and BSc honours in biochemistry in 2019 at Rhodes university. My Master's degree was upgraded to a PhD in 2022 due to the quality and abundance of skills and results obtained. My success in my studies are a result of being level-headed, dedicated and passionate about my future. I believe I demonstrate the ability to methodically structure and prioritize my work to deal confidently with any challenges that come my way.

My commitment to sound analysis and decision-making proficiency enables me to work independently and I believe that my self-motivation and strong collaborative focus will be an asset. I am eager to be apart of this congress as that will grow my professional growth and discipline.

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Pomological analyses, physicochemical properties, antioxidant activities, and microbial inhibition of Pistacia lentiscus berries during ripening

R. Ayad[1], N. Amessis-Ouchemoukh[1] and Khodir Madani[1,3]

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[2]Laboratoire de Biochimie appliquée, Faculté des Sciences de la Nature et de la Vie, Université de Bejaia, Algeria
[3]Centre de recherche en Technologie des Industries Agro-alimentaires, Algeria

Pistacia lentiscus L. belongs to the family Anacardiaceae. Its fruits are a source of vegetable oils traditionally consumed in Algerian and Tunisian diets. In this study, the physicochemical composition, antioxidant activity (reducing power, FRAP, CUPRAC, TAC, DPPH, ABTS, and ferrozine), and antimicrobial inhibition of P. lentiscus berries are determined at two periods of maturation. Pomological analyses were also evaluated. Red berries showed a preponderance in polyphenol and flavonoid content, while black berries were found to be rich in carotenoids and vitamin C. Furthermore, total sugars decreased, while all identified secondary metabolites reached their highest values at maturity. Moreover, a direct relationship between the content of phenolic compounds and antioxidant and antimicrobial activities was shown. On the other hand, analysis of the mineral composition of macro- and micro-elements indicated higher contents of magnesium, zinc, and copper in mature fruits than in immature ones, which are richer in iron. The obtained results may facilitate the selection of the most interesting harvest periods for producers and consumers and guarantee good quality berries with high nutritional values.

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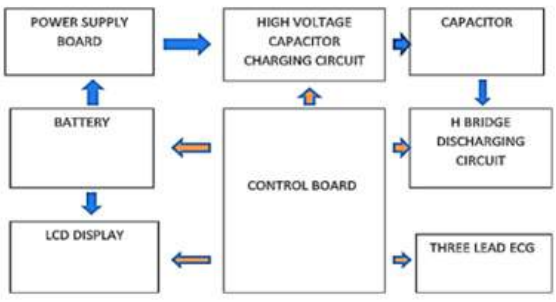
Development of portable cardiac defibrillator for sudden cardiac pain management

Rahul G Nath, S. Manikandan and **Manoj G S**
SCTIMST, India

Chest pain is discomfort in the chest that can appear in many forms, ranging from a dull ache to a sharp stab. can last for several minutes or come and go. It can be a sign of a serious condition, like a heart attack. Sudden chest pain and without treatment on the same on the first golden time leads to death. So the pain should be properly managed whether it happens in a situation where no one can enter in to the life savers. There needs a cardiac defibrillator which analyse the pain whether it is on cardiac arrest or not using the patient Electro Cardiogram (ECG). The same scenario comes in to an operation theatre or patient admitted in surgery room, whether a sudden pain is related to the cardiac, the clinicians need to check the heart rhythm taking a considerable time. At present patients/persons suffering from cardiac arrest especially outside the hospital settings has high mortality of 70% or more. As per American Heart Association guidelines, early defibrillation within minutes is the prime treatment to improve the survival. In a country like India, defibrillators are not available and it may take hours for a victim to reach appropriate centres for defibrillation causing loss of life. However, defibrillators are currently expensive, not readily available. In a vast country, it is difficult for patient to access the major hospitals, lack of beds and other facility causes delay in treatment and death of patients. The aim of the development behind a device that can both manage the pain also the arrest management is development of a low-cost portable disposable defibrillator for the management of cardiac arrest victims. The casing will have a facility to view the heart rhythm such as VF and sinus rhythm via small display. Rhythm on the casing can easily identify whether the pain or cardiac arrest is needed for a next level of management. The design consists of an encasing a portable battery with capacitor which stores and delivers biphasic shock of 50 J for paediatric and 150 J for adult via two paddles attached to the assembly. Up to 6 shocks can be delivered with the stored energy.



Block diagram of developed system for Cardiac arrest and pain management using Portable defibrillator

Biography

Mr. Rahul G Nath, working as a Senior Research Fellow in the Division of Clinical Engineering, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Kerala, India. Completed the graduation in Electrical and Electronic engineering from CUSAT and Post graduate degree in Power and Control from K.T.U. From 2020 working in various biomedical device development projects funding by Govt of India as Research engineer in hardware and software sections. Designed and developed many technologies in the area of cardio-Neuro critical care areas and are successfully transferred to various industries for the last couple of years. Special interest in the wearable devices, Biomedical critical care devices, Electronics design and inventions needed for environment and society. There are number of patents and publications on the same field and recognized one of the Research excellence Award holder form InSC 2022.

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An assessment of the performance of the National Health Research System in Mauritius

A. Nundoochan, L. Musango, J.M. Kirigia and **Y.Ramful**

World Health Organization, Mauritius

Background: The goal of universal health coverage (UHC) is that every individual has access to high-quality health services without running the consequences of financial hardship. The World health report 2013 "Research for universal health coverage" states a performant National Health Research Systems (NHRS) can contribute by providing solutions to challenges encountered in advancing towards UHC by 2030. Pang et al. define a NHRS as the people, institutions, and activities whose primary aim is to generate and promote utilization of high-quality knowledge that can be used to promote, restore, and/or maintain the health status of populations. The WHO Regional Committee for Africa (RC) adopted a resolution in 2015 urging member states to strengthen their NHRS to facilitate production and utilization of evidence in policy development, planning, product development, innovation, and decision-making. This study aimed to calculate NHRS barometer scores for Mauritius in 2020, identify the gaps in NHRS performance, and recommend interventions for boosting the Mauritius NHRS in the pursuit of UHC.

Methods: The study used a cross-sectional survey design. A semi-structured NHRS questionnaire was administered and complemented with a review of documents archived in pertinent Mauritius Government Ministries, universities, research-oriented departments, and non-governmental organizations websites. The African NHRS barometer developed in 2016 for countries to monitor the RC resolution implementation was applied. The barometer consists of four NHRS functions (leadership and governance, developing and sustaining resources, producing and utilizing research, financing research for health [R4H]), and 17 sub-functions, e.g., existence of a national policy on research for health (R4H), presence of a Mauritius Research and Innovation Council (MRIC), existence of knowledge translation platform.

Results: In 2020, Mauritius had an overall average NHRS barometer score of 60.84%. The four NHRS functions average indices were 50.0% for leadership and governance, 77.0% for developing and sustaining resources, 52.0% for producing and utilizing R4H, and 58.2% for financing R4H.

Conclusion: The performance of NHRS could be improved through the development of a national R4H policy, strategic plan, prioritized agenda, and national multi-stakeholder health research management forum. Furthermore, increased funding for the NHRS may nurture the human resources for health research capacities, hence the number of pertinent publications and health innovations

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IL-17A and F gene polymorphism is found in cases of RDPV

Samar El Tahlawy[1], Alia Ramadan[1], Olfat Shaker[2] and Rana Hilal[2]

[1]Department of dermatology, Kasr Al Ainy Teaching Hospital, Faculty of Medicine, Cairo University, Egypt
[2]Department of Biochemistry, Faculty of Medicine, Cairo University, Egypt
[3]Department of Dermatology, Kasr Al Ainy Teaching Hospital, Faculty of Medicine, Cairo University, Egypt

Background: Recurrent and Disseminated Pityriasis versicolor (RDPV) is a clinically disfiguring fungal infection, encountered in a relatively large number of patients, distressed by its recurrent nature. Research is required to provide more insight to the pathogenesis of RDPV.

Objective: IL-17A and F gene polymorphism is tested in cases of RDPV.

Methods: 100 cases of RDPV and 100 age and sex matched controls were included in the study. Serum samples were taken for Single nucleotide polymorphism.

Results: The study showed a significantly high rate of IL-17A (rs2275913) and F (rs763780) polymorphism among cases.

Conclusion: IL-17A and F gene polymorphism could explain the higher risk and recurrence of RDPV among some patients.

Biography

Rana Hilal has completed her MD degree in 2013 from Cairo University, Egypt. She is currently holding the position of Assistant professor as faculty staff and has published over 15 papers in reputable international journals.

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Antenatal ultrasonographic diagnosis of Rhizomelic Chondrodysplasia Punctata

Reza Gerami and **Shoresh Barkhordari**

Army University of Medical Science (AJA University of Medical Science), Iran

Background: Rhizomelic chondrodysplasia punctata (RCDP) is a rare autosomal recessive inherited subtype of a family of congenital anomalies known as chondrodysplasia calcificans punctate. Because of the rare rate of occurrence this cases are very challenging to diagnosis and given that the presence of chondrodysplasia is an indication for legal abortion in Iran, its diagnosis is very critical.

Case presentation: A 27-year-old white multipar was referred for obstetric ultrasonography at 17 weeks and 6 days of gestation because an ultrasonographic study performed at an outside institution revealed a short femur length. Due to the positive family history of the patient for chondrodysplasia, she was underwent a targeted sonography for checking the anomaly of the bone and cartilage. The key finding in sonography was short bone for gestational age.

Conclusion: The important clue in finding this patient was its family history that made the gynecologist to request an ultrasound to prevent the birth of a child with a congenital disorder. Genetic test usually used on amniocentesis samples. Due to the fact that the presence of chondrodysplasia is an indication for legal abortion in Iran, finally the patient underwent legal abortion after amniocentesis and genetic tests.

Biography

Dr. Reza Gerami: Born in 1980 in the city of Tabriz in Iran, a radiologist and fellowship in fetal heart echo and anomaly scan from Tehran University of medical science, where I am currently an assistant professor at the Army University of Medical Sciences.

Dr. Shoresh Barkhordari: Born in 1994 in Kurdistan, Iran, I am a radiologist, currently resident of radiology at the Army University of Medical Sciences.

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Glycyrrhiza Glabra: A potential plant for phytopharmaceutical product development

Ritu Tiwari[1], Gaurav Pratap Singh Jadaun[1] and **Rajeev Singh Raghuvanshi[1,2]**

[1]Indian Pharmacopoeia Commission, Ministry of Health & Family Welfare, Government of India, India
[2]Central Drugs Standard Control Organisation, Ministry of Health & Family Welfare, Government of India, India

Researchers have always been interested in herbal products to find lead compounds that can be developed into new drugs. With the rise of drug-resistant microbial strains and multi-targeting diseases like diabetes, scientists are now focusing on combined drug therapies. However, the emergence of multi-drug resistant strains and severe adverse effects on patients have made the search for effective treatments more difficult.

India, with its diverse flora and fauna, has a wealth of knowledge on traditional medicinal systems like Ayurveda. To promote and make herbal medicines compatible with modern treatments, the Indian government has created a new drug category called Phytopharmaceutical drugs, which is now recognised globally. In this context, we conducted a preliminary study on a well-known medicinal plant called Glycyrrhiza glabra, which is known for its pharmacological properties that target multiple health issues like diabetes and hypertension.

Our study focused on developing a standardized purified fraction from the plant that has both anti-diabetic and anti-hypertensive potential. We used a simple, methodical enrichment process that utilised different chromatographic techniques, leading to the targeted enrichment of four phytoconstituents: Liquiritin, Glycyrrhizin, Formononetin, and Glabridin. We conducted in silico tests on the four compounds to evaluate their anti-diabetic activity by conducting molecular docking on suitable proteins. Additionally, we performed *in vitro* a-amylase evaluation on the enriched fraction to confirm the in silico findings. The study was concluded with the characterization and quantification of the compounds by HPTLC, HPLC, and NMR, fulfilling the criteria of a Phytopharmaceutical drug.

Biography

Dr. Ritu Tiwari is an experienced professional in the field of phytochemistry and herbal medicines with over 28 years of experience. She is currently deputed at the Phytopharmaceuticals Division at the Indian Pharmacopoeia Commission, which is under the Ministry of Health & Family Welfare, Government of India. During her tenure, she has successfully contributed to seven phytopharmaceutical monographs in Indian Pharmacopoeia 2022 and also in herbal monographs since 2018. Her valuable contributions have been noted in different divisions as well as in the Indian Pharmacopoeia since 1998. She has several noted research publications on herbal medicines, quality control, and phytopharmaceuticals. Additionally, she is also a NABL assessor at the national level.

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Modern approaches in the development of biocompatible titanium alloys for Endoprosthetics

Roman Selin[1], Mykhailo Voron[2] and Serhiy Schwab[1]

[1]The E.O. Paton Electric Welding Institute of National Academy of Sciences of Ukraine, Ukraine
[2]Physico-technological Institute of Metals and Alloys of National Academy of Sciences of Ukraine, Ukraine

The use of titanium alloys in endoprosthetics has been very intensified over the past thirty years due to their unique biocompatibility and for its combination of mechanical and biomechanical properties. The study of titanium and its alloys as materials for endoprosthetics has achieved excellent results, which is proven by many years of positive experience in their use. At the same time, new alloys are constantly being developed, which are better in terms of their operational properties than the existing ones. Solving the problem of finding optimal titanium compositions of alloys for endoprostheses allows to significantly improve most types of endoprostheses - reduce the risk of rejection, reduce toxicity, increase service life, adjust mechanical properties, etc. In this work, we show the main aspects of developing titanium alloys for biomedical applications with superior complex of operational characteristics – biocompatibility and mechanical properties. For the development it was important to follow modern condition of ensuring the minimum elasticity modulus of the alloy for endoprosthesis, which significantly increases the safety and durability of its exploitation. We determined that the best biocompatibility and mechanical properties are met, when using Ti-Nb-Zr and Ti-Nb-Zr-Sn systems: Ti-13Nb-13Zr, Ti-24Nb-12Zr and Ti-(24-26)Nb-(4-8)Zr-(7-8Sn). Their tensile strength is at the level of 800–1000 MPa, and elasticity modulus is at the level of 45–65 GPa. Approaches and methods of additional reduction of elasticity modulus with simultaneous increase of strength are considered. The most effective ways are based on intensive plastic deformation, grain refining after recrystallization and heat treatment, which includes hardening and short-term aging.

Biography

My Name is Roman Selin and I'm a specialist in field of welding of titanium and high-strength titanium alloys. My researches are dedicated to a development of a new high-strength titanium alloy, investigation of properties and structures of welded joints from high-strength titanium alloys, biomedical titanium alloys, welding using fluxes, etc. In 2016 defended Ph.D dissertation called : "Structure, mechanical properties and weldability of welded joints of high-strength complexly alloyed (α+β)-titanium alloys". Currently, I'm continuing researches on high-strength titanium alloys wire arc additive manufacturing of biomedical titanium alloys.

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Rare and heterogeneous manifestations of leucocyte adhesion deficiency type 1: Report of two cases with diagnostic dilemmas and novel ITGB2 mutation

Sabiha Anis[1] and **Sabahat Sarfaraz**[2]

[1]*Department of Pathology and Medicine & Allied, Section: Immunology, The Indus Hospital and Health Network (IHHN), Pakistan*
[2]*Department of Pathology, Dow International Medical College, Dow University of Health Science, Pakistan*

Background: Primary immunodeficiency disorders (PID) are rare disorders with heterogeneous manifestations, overlapping with other diseases such as autoimmunity, malignancy, and infections. This makes the diagnosis very challenging and delays management. Leucocyte adhesion defects (LAD) are a group of PIDs in which patients lack adhesion molecules on leukocytes needed for their emigration through blood vessels to the site of infection. Patients with LAD can present with diverse clinical features including severe and life-threatening infections, early in life, and the absence of pus formation around infection or inflammation. There is often delayed umbilical cord separation, omphalitis, late wound healing, and a high white blood cell count. If not recognized and managed early, can lead to life-threatening complications and death.

Case Presentation: LAD 1 is characterized by homozygous pathogenic variants in the integrin subunit beta 2 (ITGB2) gene. We report two cases of LAD1 with unusual presentations (post-circumcision excessive bleeding and chronic inflammation of the right eye) which were confirmed by flow cytometric analysis and genetic testing. We found two disease-causing ITGB2 pathogenic variants in both cases.

Conclusions: These cases highlight the importance of a multidisciplinary approach to recognizing clues in patients with uncommon manifestations of a rare disease. This approach initiates a proper diagnostic workup of primary immunodeficiency disorder leading to a better understanding of the disease, and appropriate patient counselling, and helps clinicians to be better equipped to deal with complications.

Biography

Dr.Sabahat Sarfaraz

- Working as Assistant Professor of Pathology (Immunology) at Dow International Medical College, Dow University of Health Sciences(DUHS)
- Established Transplant Immunology at DUHS. Supervising pre & post renal transplant immunological workup, (ABO compatibility, tissue typing, anti-HLA antibody detection, donor & recipient cross matching in order to prevent rejection of transplanted renal graft)

- Received letter of appreciation after 350 successful renal transplants by the Vice Chancellor of DUHS, March 2021.
- Conducting Allergy Clinic at DUHS
- Consulting cases of Autoimmunity and Primary Immunodeficiencies
- Teaching under and post-graduation students of DUHS
- Providing services as Academic Editor for "Medicine ®" (a fully open
- access journal) since 2020
- Reviewing articles for "Medicine ®" , Frontiers Cellular and Infection Microbiology & Journal of the College of Physicians and Surgeons Pakistan
- Oral Presentation on 17th International Congress of Immunology,18-23 October 2019. Organized by the International Union of Immunological Societies (IUIS) and hosted by the Chinese Society for Immunology (CSI).

Member of:

- International Union of Immunological Societies (IUIS)
- Histopathology & Cytology Society of Pakistan (HCSP)/International
- Academy of Pathology (IAP)-Pakistan Division
- Pakistan Allergy Asthma & Immunology Society (PAAIS)
- Pakistan Biological safety Association (PBSA)
- Pakistan Association of Pathologist (PAP)
- Pakistan society for Immunology (PSI)

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Cinnamomum zeylanicum extract and its bioactive component cinnamaldehyde show anti-tumor effects via inhibition of multiple cellular pathways

Sadhna Aggarwal[1], Kanchan Bhadana[1], Baldeep Singh[1], Meenakshi Rawat[1], Taj Mohammad[2], Lamya Ahmed Al-Keridis[3], Nawaf Alshammari[4], Md. Imtaiyaz Hassan[2] and **Satya N. Das[1]**

[1]Department of Biotechnology, All India Institute of Medical Sciences, India
[2]Center for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, India
[3]Department of Biology, College of Science, Princess Nourah Bint Abdulrahman University, Saudi Arabia
[4]Department of Biology, College of Science, University of Hail, Saudi Arabia

Cinnamomum zeylanicum is a tropical plant with traditional medicinal significance that possesses antimicrobial, antifungal, anti-parasitic, and anti-tumor properties. Here, we have elucidated the anti-tumor effects of Cinnamomum zeylanicum extract (CZE) and its bioactive compound cinnamaldehyde (CIN) on oral cancer and elucidated underlying molecular mechanisms. Anti-tumor activities of CZE and CIN were demonstrated by various *in vitro* experiments on oral cancer cells (SCC-4, SCC-9, SCC-25). The cell proliferation, growth, cell cycle arrest, apoptosis, and autophagy were analyzed by MTT, clonogenic assay, propidium iodide, annexin-V-PI, DAPI, and acridine orange staining, respectively. The binding affinity of CIN towards dihydrofolate reductase and p38-MAP kinase alpha was analyzed by molecular docking. Western blot assay was performed to assess the alteration in the expression of various proteins. CZE and CIN treatment significantly inhibited the growth and proliferation of oral cancer cells in a dose-dependent manner. These treatments further induced apoptosis, cell cycle arrest, and autophagy. CZE and CIN inhibited the invasion and cytoplasmic translocation of NF-κB in these cell lines. CIN showed a high affinity to MAP kinase P38 alpha and dihydrofolate reductase with binding affinities of −6.8 and −5.9 kcal/mol, respectively. The cancer cells showed a decreased expression of various PI3k-AKT-mTOR pathways related to VEGF, COX-2, Bcl-2, NF-κB, and proteins post-treatment.

Biography

Dr. Sadhna Aggarwal earned both her B.S. (2007) and M.S. (2009) in Microbiology from the University of Delhi, India. She earned her Ph.D. (2016) and Postdoctoral fellowship (2018) in Cancer and Molecular Immunology from the All India Institute of Medical Sciences (AIIMS), New Delhi, India, and then Dr. Aggarwal worked as an Assistant Professor (till 2022) at IEC University, India. Recently (Feb 2022), Dr. Sadhna Aggarwal joined MD Anderson Cancer Center in Houston, Texas, USA. The intricacies of the immune system have always fascinated her, and she believes that a deeper understanding of immunology can significantly contribute to our knowledge of cell growth regulation and its implications in several diseases, particularly CANCER. She has authored in several reputable international journals, and book chapters, with over 600 citations and an H-Index of 10. Over the years, she has received several national and international awards from renowned international platforms, such as AACR, Chinese Association of Science and Technology, Korean Cancer Association, FOCIS, FIMSA, and ESMO, further highlighting my dedication and contributions to the field. She is an active member of several international scientific societies, including the FOCIS, the Indian Immunological Society (IIS), AACR, and others. Additionally, she serves as an editor and reviewer for prestigious research publishing groups and journals (Frontiers, BMC and MDPI, etc.).

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Astaxanthin ameliorates inflammation, oxidative stress, and reproductive outcomes in endometriosis patients undergoing assisted reproduction

S. Rostami[1] and **F. Amidi**[1]

[1]*Department of Anatomy, School of Medicine, Tehran University of Medical Sciences, Iran*

In a randomized, triple-blind, placebo-controlled clinical trial (RCT) including 50 infertile women with endometriosis stage III/IV candidate for assisted reproductive techniques (ART), we studied the effect of Astaxanthin (AST) on pro-inflammatory cytokines, oxidative stress (OS) markers, and early pregnancy outcomes. Before and after 12 weeks of AST treatment (6 mg per day), blood serum and follicular fluid (FF) samples were collected from all participants. Pro-inflammatory cytokines (IL-1β, IL-6, and TNF-α) and OS markers (malondialdehyde [MDA], superoxide dismutase [SOD], catalase [CAT], and total antioxidant capacity [TAC]) were measured in the serum and FF. ART outcomes were also compared between the groups. Increased serum levels of TAC (398.661 ± 57.686 vs. 364.746 ± 51.569; P = 0.004) and SOD (13.458 ± 7.276 vs. 9.040 ± 5.155; P = 0.010) were observed after AST therapy in the treatment group. Furthermore, serum MDA (14.619 ± 2.505 vs. 15.939 ± 1.512; P = 0.031) decreased significantly following antioxidant treatment. In addition, significantly lower serum levels of IL-1β (4.515 ± 0.907 vs. 6.8760 ± 0.8478; P = 0.000), IL-6 (5.516 ± 0.646 vs. 5.0543 ± 0.709; P = 0.024) and TNF-α (2.520 ± 0.525 vs. 2.968 ± 0.548; P = 0.038) were observed after AST treatment. In addition, AST supplementation led to an improved number of oocytes retrieved (14.60 ± 7.79 vs. 9.84 ± 6.44; P = 0.043), number of mature (MII) oocytes (10.48 ± 6.665 vs. 6.72 ± 4.3; P = 0.041), and high-quality embryos (4.52 ± 2.41 vs. 2.72 ± 2.40; P = 0.024). AST pretreatment can modulate inflammation and OS in endometriosis-induced infertile patients. ART outcomes also improved after 12 weeks of AST therapy. Our results suggest that AST can be a potential therapeutic target for infertile patients with endometriosis undergoing ART.

Biography

My name is Sahar Rostami. I am 32 years old. I was born in Tehran, Iran, and I live in Tehran. I am a Ph.D. Reproductive Biology from the School of Medicine, Tehran University of Medical Sciences (TUMS), Tehran, Iran. I am a member of the National Elite Foundation of Iran and the Association of Brilliant Talent Students of TUMS. I did my master's thesis in Midwifery on breast cancer risk assessment, and I have been working as a research assistant at Iran Cancer Institute for 6 years. I met several cancer survivors who suffered from infertility as a consequence of cancer treatment. This led me to become intrigued by the concept of infertility. I have carried out several experimental and clinical studies on the effect of Astaxanthin on polycystic ovary syndrome (PCOS)- and endometriosis-associated infertility. I am preparing a review on the effect of Astaxanthin on beneficial effects of Astaxanthin on mammalian reproductive system.

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In silico studies for assessing physicochemical, pharmacokinetic and cytotoxicity properties of bioactive molecules identified by LC-MS in Aloe vera leaves extracts

Samira Bendjedid[1] and **Djamila Benouchenne**[2]

[1]*Department of Biology, Faculty of Natural sciences and Life, Research Laboratory of Functional and Evolutionary Ecology, ChadliBendjedid University, Algeria*
[2]*Laboratoire de Génétique Biochimie et Biotechnologies Végétales, Faculté des Sciences de la Nature et de la Vie, Université Frères Mentouri Constantine1, Alegria*

This study aimed to determine the physicochemical and pharmacological properties of the compounds determined in extracts obtained from the Aloe vera leaves. The extraction was realized by maceration using different solvents. The chemical profile was determined by liquid chromatography-mass spectrometry (LC-MS). The pharmacological and toxicologic properties (ADMET) were determined using SWISS ADME server. The cytotoxicity was also determined in silico using online server CLC-Pred. The findings revealed that aloenin B and aloenin 2'-p-coumaroyl-ester didn´t obey to Lipinski rule of five. For pharmacokinetic properties of selected molecules, results indicated that all compounds could be well absorbed in the intestine except aloenin, while all of them could not cross the brain blood barrier. The mitochondria is the oriented organelle for all tested compounds. In the term of metabolism, all molecules excluding aloe-emodin could be potential substrates for the CYP3A4 isoform. The results disclosed that all molecules could be an activator of UGT catalysis. Aloenin B and aloenin 2'-p-coumaroyl ester could be inhibitors of P-glycoprotein. In the elimination step, the data stated that all examined molecules could not inhibit OCT2 and MATE1. While all compounds were inhibitors of OATP1B3, aloenin and aloenin 2'-p-coumaroyl ester could inhibit BSEP and OATP2B. In a toxicity approach, there is no carcinogenicity presented by all molecules. Aloe-emodin could provoke eye irritation, while aloe-emodin, aloin B and aloin A could cause mutagenesis, hepatotoxicity, respiratory, mitochondrial and nephro toxicities. To the best of our knowledge, the current research is the first report about the physicochemical, pharmacokinetic and cytotoxicity effect of molecules determined in Aloe vera leaves extracts.

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Sulfosalicylic acid to detect proteins in urine of pregnant women

Sandra A. Fernández[1], Esperanza Cueva[2], Sonia Fernández[3] and Julio Jimenez[4]

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The objective was: to demonstrate the efficacy of sulfosalicylic acid to determine the protein in the urine of pregnant women, to establish its sensitivity, specificity, positive and negative predictive value. The reagent is used to detect preeclampsia, which is a complication of pregnancy worldwide and one of the main causes of maternal mortality in the Department of Puno-Peru.

Methodology: The research was experimental, analytical, observational. 84 pregnant women who had a diagnosis of Preeclampsia participated; 5 ml of 24-hour urine from the pregnant woman plus 3 gts of 3% sulfosalicylic acid detect the presence of proteinuria, with the data found and using the ROC curves, tables and graphs are created in the free software SPSS.v23.

Results: The presence of proteinuria in 24-hour urine was established, being highly significant (0.000) ($p \leq 0.05$), forming a precipitate of 3 crosses (great turbidity and agglutination) and 4 crosses (dense cloud with a large agglutinated granular mass). 78.3%, specificity of 47.4%, a Positive Predictive Value (PPV) of 47.4% and a Negative Predictive Value (NPV) of 21.7%.

Conclusion: The sulfosalicylic acid test, due to its high sensitivity when detecting proteinuria in the majority of pregnant women diagnosed with preeclampsia, should be implemented at the I level of care in health establishments by professionals in direct contact with pregnant women, for timely referral. to a level of greater complexity and continue researching on the subject.

Biography

Obstetrician Sandra Alejandra Fernández Macedo, postdoctoral fellow and PhD in Educational Sciences from the Enrique Guzmán y Valle University, Master in Health Services Management, Bachelor of Education, from the National University of San Marcos, Former SINEACE professional skills evaluator. Former Director of the Research Unit – Puno, of the Juliaca Postgraduate Research, Unit and of the Research Unit of the Faculty of Health Sciences. Current General Director of the Andean University Headquarters Néstor Cáceres Velásquez-Puno.

Qualified by CONCYTEC with the previous regulations as a RENACYT María Rostworowski Level I. Researcher awarded by CONCYTEC as one of the first 100 researchers in Peru.

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Investigating the potential of lipids for use as biomarkers for glioblastoma via an untargeted Lipidomics approach

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[3]Department of Biochemistry, Faculty of Pharmacy, Afyonkarahisar Health Sciences University, Turkey

The types and functions of lipids involved in glioblastoma (GB) are not well known. Lipidomics is a new field that examines cellular lipids on a large scale and novel aplication of lipidomics in the biomedical sciences have emerged. This study aimed to investigate the potential of blood lipids for use as biomarkers for the diagnosis of GB via untargated lipidomic approach. Gaining a deeper understanding of lipid metabolism in patients with GB can contribute to the early diagnosis with GB patiens and also development of novel and better therapeutic options. This study was performed using blood samples collected from 14 patients (eight females and six males) and 14 controls (eight females and six males). Lipids were extracted from blood samples and quantified using phosphorus assay. Lipid profiles of between patients with GB and controls were compared via an untargeted lipidomics approach using 6530 Accurate-Mass Q-TOF LC/MS mass spectrometer. According to the results obtained using the untargeted lipidomics approach, differentially regulated lipid species, including fatty acid (FA), glycerolipid (GL), glycerophospholipid (PG), saccharolipid (SL), sphingolipid (SP), and sterol lipid (ST) were identified between in patients with GB and controls. Differentially regulated lipids were identified in patients with GB, and these lipid species were predicted as potential biomarkers for diagnosis of GB.

Biography

Assoc. Prof. Dr. Serap Sahin-Bolukbasi completed her Ph.D. studies on Biochemistry at The Sivas Cumhuriyet University. She performed post-doctoral studies at The University of Georgia (UGA) Collage of Pharmacy, Department of Pharmaceutical and Biomedical Sciences. She is an Assoc. Prof. Dr. at the Afyonkarahisar Health Sciences University, Faculty of Pharmacy, Department of Biochemistry since 2021. She has published many research articles in SCI (E) journals and presented more than 80 presentations at national/international conferences. Dr. Sahin-Bolukbasi's research focuses on lipidomic, lipid metabolism in cancer, lipid biomarkers for rare and common diseases, new treatment targets based on lipid metabolism, cell culture, development of biotechnological aptamers in cardiovascular diseases and cancer.

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Evaluation of nanocapsules of Chelidonium Majus L essential oil on Mammary Tumor cell line

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[1]Department of Horticulture Science (Medicinal Plants), Science and Research Branch, Islamic Azad University, Iran
[2]Department of Pathobiology, Faculty of Specialized Veterinary Sciences, Science and Research Branch, Islamic Azad University, Iran
[3]Department of Chemistry, Faculty of Basic Sciences, Science and Research Branch, Islamic Azad University, Iran
[4]Medicinal Plants Research Center, Institute of Medicinal Plants, ACECR, Karaj, Iran
[5]Department of Horticulture Science, Science and Research Branch, Islamic Azad University, Iran
[6]Department of Organic Chemistry, Faculty of Chemical Sciences and Technologies, University of Castilla-La Mancha, Spain

Background: The recent years have witnessed a remarkable surge in reception and attention in herbal medicine. Chelidonium majus L. has been used for treating diseases like infection dermatitis, skin cancer, and preventing kidney stones. Furthermore, nano-structures or nano-based drug delivery systems have been considered as highly efficient for the controlled and slow release of drugs, drug molecular protection, being capable to pass through biological barriers to reach the intended site, higher half-life in the blood flow, targeted drug delivery, and biocompatibility.

Objective: The present study aims to evaluate the anticancer effects of C. majus L. essential oil on breast cancer cell line.

Methods: Essential oils (EOs) of roots and leaves of C. majus L. were extracted, and gas chromatography–mass spectrometry (GC–MS) was used for analyzing them. Then they were loaded into chitosan nanoparticles (CNPs) using emulsion-ionic gelation method. CNPs loaded with greater celandine root essential oil (GCREO) and leave essential oil (GCLEO) were synthesized (size 76.5–115.3 nm) using an emulsion-ionic gelation method. Fourier Transform Infrared (FT-IR), spectroscopy, scanning electron microscope (SEM), and dynamic light scattering (DLS) were used for characterization of the formed NPs.

Results: Good encapsulation efficiency was confirmed for GCREO (62.5%) and GCLEO (69.1%) in CNPs. According to the MTT results, the synthesized NPs showed a dose dependent effect on MCF-7 cell line. The inhibitory concentration (IC50) values for GCREO, GCLEO, CSNRs-GCREO and CNPs-GCLEO samples were 126.4, 90.2, 77.6, and 41.5 µg/mL, respectively. The highest rate of apoptosis was obtained in the CNPs-GCLEO group (63.73%).

Conclusion: The results revealed that the cytotoxicity of CSNRs-GCREO and CNPs-GCLEO against MCF-7 cell line was significantly higher than that of their free form, implying that encapsulation of GCREO and GCLEO in CNPs is an efficient technique for improving their anti-cancer activity against MCF-7 cell line. Clinical trials should perform to evaluate the findings of the present study.

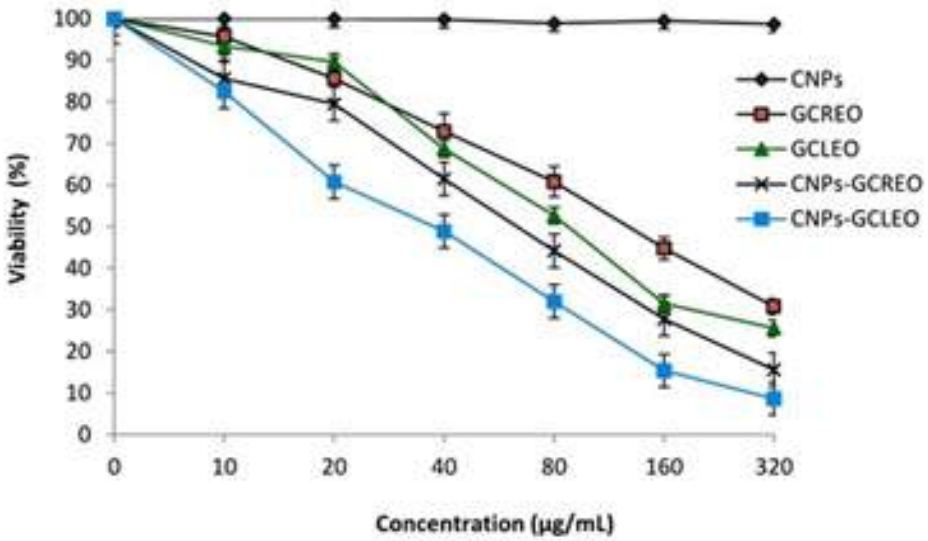

Fig. 1. Viability (%) of MCF-7 cells incubated with CNPs, GCREO, GCLEO, CNPs-GCREO, and CNPs-GCLEO for 24 h using MTT assay

Biography

Doctor of veterinary medicine Tehran University, Iran 1984-1990

Doctor of Veterinary Sciences (DVSc) Tehran University, Iran 1994-1998

Postdoctoral Research Fellowship in Clinical Biochemistry Glasgow University, 1998-1999

Member of Academic Staff Kerman, Iran, 1991-1998 Shahid Bahonar University,

Head of Iranian Veterinary Clinical Pathology Association Since 2014

Director of R &D section and technical manager Behparvar Feed manufacturing company, 2002-2006

Isfahan Mokkamel Feed Production Company, 2007-2009

Lessons taught in different academic levels

(PhD & DVSC)

Biochemistry, Clinical biochemistry, clinical hematology, Cytology, Advanced clinical pathology, Specialized English language, Blood transfusion

DVM, MSc and BSc

General biochemistry, specialized English language, Basics of nutrition

Theses and dissertations Supervising and consulting professor in 75 theses in PhD, DVSc, and DVM
Membership in associations and forums Head of the Iranian Veterinary Clinical Pathology Association
Member of medicinal plant headquarter of Vice-President for Science and Technology
Member of Clinical Pathology Committee of Iranian Veterinary Society
Member of the Board of Directors of the Iranian Laboratory Association
Member of the International Society of Veterinary Clinical Pathology (ISACP)

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Impact of nutrition in prevention of neurodegenerative diseases

Shaimaa El-Sayed Mohammed El-Sayed

Nutrition and Food Sciences Department, Food Industry and Nutrition Research Institute, National Research Centre, Egypt

Neurodegenerative diseases (NDs) are group of heterogeneous progressive neurological disorders that affect neurons in defined anatomical locations. These disorders are characterized by loss of neurons i.e, breaking down or dying of neural tissues, deposition of aggregates of abnormal protein structure, cognitive decline and locomotive dysfunction. Several factors have been implicated as the cause of such disorders includes genetic mutations or environmental factors i.e. oxidative or metabolic stress. Nevertheless, the exact mechanisms responsible for such abnormal aggregation are still under investigation. One of the most important and recent strategies used in reducing the risk and the progression of NDs is nutrition-based approaches. The aim of the present review is to focus on the most important NDs in Egypt and the recent nutritional approaches used for the management and reduction of these neurodegenerative disorders.

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Strategy to diminish Manganese in urban areas through phytoremediation

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Department of Botany, University of Agriculture, Pakistan

Environmental pollution due to heavy metals is one of the top listed problems of the modern world. Most of these metals cause various types of disorders in Biota. An essential trace element, manganese (Mn) has been reported to cause neurological effects on human beings, when present in excess concentrations. The concentration of manganese is almost always higher in urban areas than rural ones due to industrialization and intense traffic load. To avoid harmful effects of manganese its concentration must be minimized. In one such effort a project was undertaken in industrial city of Faisalabad (Pakistan) during 2017-2019. Concentration of manganese was calculated throughout the year in soils from four zones of city using Atomic Absorption Spectrophotometer along with intensity of traffic load in each zone. Manganese existed at high concentrations in soil of all the areas of city ranging from 482-621 mg\kg soil. The concentration was the highest during summer season (749 mg\kg soil) as against 443 mg\kg soil during winter season indicating spatiotemporal heterogeneity. It was calculated to be directly proportional with traffic load of the area seasonal heterogeneity could be attributed to temperature ranges and precipitation levels of particular period falling in the following order summer>autumn>spring>winter. Eight ornamental plant species commonly grown in this region were analysed to note their phytoremediation potential for manganese. The various plant species accumulated from 82-129mg manganese in their leaves. Bismarckia nobilis> Dalbergia sissoo> Bougainvillea spectabilis>Azadirachta indica. proved to be the most powerful phytoremediators for manganese and are suggested to be raised at frequent intervals in urban areas. Efforts to curtail anti-health sources for humans can be a suitable exercise for minimization of diseases including neurological disorders.

Biography

Dr. SHAMIM UMER

Assistant Professor, College of Biological Sciences

Experience:

- University of Agriculture, Faisalabad: Assistant Professor (September 2019 - September 2022)
- University of Education Lahore: Assistant Professor (September 2021- present)

Qualification:

PhD Botany: UNIVERSITY OF AGRICULTURE FAISALABAD (2017 - 2021).

THESIS:

Heavy metal absorbance potential of some plant species grown in Faisalabad city (Pakistan).

MPhil Botany

UNIVERSITY OF AGRICULTURE FAISALABAD, (2015 - 2017).

THESIS:

Eco-Taxonomic Analysis of weed flora in wheat fields of District, Muzaffar-Garh (Pakistan)

BS. (HONS), BAHAUDDIN ZAKARIYA UNIVERSITY, MULTAN (2010 - 2015)

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Motor neuron disease: A rare disease research perspective

Sheetal Barekar

MKSSS's Cummins College of Engineering for Women, India

Rare diseases, also called as orphan diseases, are a heterogeneous group of disorders with an exceptionally low prevalence in the population. Despite their individual rarity, collectively, rare diseases affect millions of people worldwide, presenting unique challenges to healthcare systems, researchers, and patients alike. Rare diseases encompass a wide spectrum of disorders, each with its own genetic or environmental basis. Due to their rarity, diagnosis is often delayed or missed, resulting in significant patient suffering and reduced quality of life. Advances in genetic sequencing technologies have greatly improved our ability to identify the underlying genetic mutations responsible for many rare diseases, enabling more accurate and early diagnosis.

Motor neuron disease (MND), also known as amyotrophic lateral sclerosis, is a group of progressive neurological disorders that affect the motor neurons in the brain and spinal cord. Motor neurons are nerve cells that control muscle movement. When these motor neurons degenerate and die, it leads to a loss of muscle control and ultimately results in muscle weakness, paralysis, and difficulty in speaking, swallowing, and breathing. MND is diagnosed through a combination of clinical examination, electromyography (EMG), nerve conduction studies, and various imaging tests. There is no single diagnostic test for MND, so diagnosis can be challenging. MND is a progressive and incurable disease. The rate of progression varies from person to person. In most cases, it leads to severe disability and can be life-threatening when it affects the muscles used for breathing. MND can be emotionally and physically challenging for both patients and their families. Support from healthcare professionals, support groups, and palliative care services can be invaluable in providing comfort and assistance throughout the course of the disease. Ongoing research is being conducted to better understand the causes of MND and to develop potential treatments and therapies. Advances in genetics and neurology are contributing to our understanding of this complex condition. It also delves into the challenges associated with diagnosing MND due to its diverse clinical presentations and the absence of a single diagnostic test. Advances in genetic research have uncovered a hereditary component to some cases of MND, shedding light on potential genetic markers and pathways for therapeutic intervention.

Furthermore, the abstract discusses the current state of MND research, emphasizing the development of animal models, biomarkers, and innovative therapeutic approaches. It touches upon the emerging role of precision medicine in tailoring treatments to individual patients and the potential of stem cell therapy, gene therapy, and neuroprotective agents in MND management. The abstract concludes by underlining the importance of collaborative efforts

among researchers, healthcare professionals, and patient advocacy groups in advancing our understanding of MND and improving the lives of those affected. As MND remains a rare disease with significant unmet medical needs, continued research endeavours are vital in the pursuit of effective treatments and, ultimately, a cure for this devastating condition. This abstract emphasizes the importance of continued research, awareness, and support for individuals affected by rare diseases, paving the way for a brighter future for those living with these often overlooked and neglected conditions.

Biography

Name : Dr. Shital Sachin Barekar

Designation : Asst Prof

Educational Qualifications : Ph.D (E&TC)

Experience:

- Teaching : 20 Years
- Research : 07 Years
- Industry : 01 Years

Area of Specialization: VLSI, Memory design, Fault detection in static random access memory

Membership of Professional Societies : IEEE

No. of paper published in conferences : 11

No. of paper published in journals : 09

Masters completed : Nov 2009

PhD completed : July 2021

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In vitro vitals monitoring system using a novel flexible body sensor

Sujatha Rajkumar

Vellore Institute of Technology, India

An *in vitro* temperature and pulse monitoring system that records the patient's health in real time, for specific applications post-surgery is proposed by the author. A prototype of a standard *in vitro* temperature monitoring system with an LM35 sensor, which displayed the temperature value in both Celsius and Fahrenheit on a Liquid Crystal Display is developed. A pulse sensor is then added to the existing temperature monitoring system, displaying both vitals on a Liquid Crystal Display, making it a vitals-monitoring system. A highly flexible polymer nanocomposite sheet using multi-walled carbon nanotube (MWCNT) in a poly (dimethylsiloxane) (PDMS) matrix was employed as a flexible body temperature sensor. In addition to these, an alerting system was created on MIT App Inventor to alert the clinician about the patient's vitals. An HC-05 Bluetooth module was used to connect the app to the system. If the temperature of the patient fell below a threshold value of 35 degrees Celsius, the app would call out the condition "Hypothermia". If the temperature of the patient rose above the upper threshold value of 40 degrees Celsius, the app would call out the condition "Hyperthermia". Once the clinician knows about the condition of the vitals, any complications post-surgery can be identified, and the necessary medication can be taken quickly, with an improved response time as the app updates the vitals every second.

Biography

Dr. Sujatha is a Senior Associate Professor in the Department of Embedded Technology, School of Electronics Engineering, VIT University, Vellore Campus. She received her Ph.D. from Anna University, Chennai, in the field of information security. She has 24 years of teaching and research experience at reputed Institutions. Her research interests include Industrial Internet of Things, Artificial Intelligence, Data Engineering in the cloud, and Information Security. She received a speaker Award at the UK Cloud Asia Summit-2019, Cambridge University, UK. Dr.Sujatha has organized remarkable international events such as a symposium on "AI and Cloud Computing" at Purdue University, Indiana Polis, USA and a symposium on "Recent Trends in Engineering" at UTeM, Malaysia, jointly with VIT. She is a senior IEEE member and has organized two series of International conferences titled "AI for IoT"-AIIoT jointly with Malaysian University. She has delivered technical lectures on cutting edge technologies for national, international students and faculty communities. Served as a reviewer for UGC project proposals, Scopus journals, and IEEE conferences. She has published research articles in peer-reviewed national, international journals and conferences. Received a DST SERB CRG grant for IoT-LoRa enabled detection and prediction of pollutants in groundwater in an open dumping yard. Received a seed grant for LoRa enabled water pipeline monitoring and green house management. She is a AWS certified cloud computing practitioner and Nasscom IoT trainer. She has done consulting projects for Samsung Bangalore and for Transcend Solar Systems, Chennai. Currently, involved in developing an IoT enabled wearable device for employees safety monitoring at Mercedes Benz Ltd Industry. Dr.Sujatha is the In-charge and active member of the "Intelligent Industrial IoT and Computing Lab" at the School of Electronics Engineering, VIT, and a faculty representative for the students IoT Club, at VIT. Currently, her focus is on achieving secured long-range data connectivity for Industrial IoT using 5G, LoRa networks and security using Blockchain technology.

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Artocarpus Altilis (breadfruit) contains phytochemicals inhibiting multiple targets of SARS-CoV-2: An in silico study

Sukalyan Kumar Kundu, Md Afif Ullah and **Md Mehedy Hasan Miraz**

Department of Pharmacy, Jahangirnagar University, Bangladesh

COVID-19, the resultant disease of the severe acute respiratory syndrome coronavirus (SARS-CoV-2), showed its first outbreak in December 2019 in the Wuhan city of China. It had drastically hampered the world economy. In the course of time, some drugs got approvals, whereas several drug candidates are under clinical trials. Herbal compounds, besides the synthetic ones, are under investigation to find potential inhibitors of the virus. This computational study attempts, with Artocarpus altilis (breadfruit), to investigate possible inhibitors against certain targets of SARS-CoV-2. We have picked up three target proteins of SARS-CoV-2: the spike protein, the RNA-dependent RNA polymerase (RdRp), and the nsp15 endoribonuclease. Going through a drug-likeness analysis, we sorted out 16 compounds from A. altilis that follow the criteria of being oral drugs. Molecular dockings were employed for all the selected compounds with the three targets. Ceftazidime, remdesivir, and tipiracil were taken as control compounds for the spike protein, RdRp, and nsp15 endoribonuclease, respectively. Cycloartomunoxanthone, cycloartomunin, cycloartobiloxanthone, and isocyclomulberrin, among the test compounds, exhibited the highest binding affinities with the spike protein (−7.7, −7.6, −7.6, and −7.6 kcal/mol, respectively). With the RdRp, the molecules with top binding affinities are artomunoxanthentrione, cyclomorusin, cycloartomunin, and cycloartomunoxanthone (−8.4, −8.4, −8.2, and −8.0 kcal/mol, respectively). Moreover, cycloartobiloxanthone, engeletin, dihydrocycloartomunin, and cycloartomunoxanthone showed the top binding affinities with nsp15 endoribonuclease (−9.8, −9.4, −9.0, and −9.0 kcal/mol, respectively). For the three targets, the binding affinities of the control compounds were observed as −6.4 for ceftazidime with spike protein, −7.3 for ceftazidime with RdRp, and −6.7 for tipiracil with nsp15 endoribonuclease. Afterwards, ADME (absorption, distribution, metabolism, and excretion) and toxicity analyses were executed. This computational study, thus, finds some promising compounds and suggests further investigations to validate the potentiality of these compounds targeting the proteins of SARS-CoV-2.

Biography

I am a professor at the Department of Pharmacy, Jahangirnagar University, Bangladesh, where I have been graduated from. I have been working as a teacher in the same institution for more than 21 years. I also have a work experience in a reputed pharmaceutical company of Bangladesh, namely, Beximco Pharmaceutical Ltd., as a Quality Assurance Officer for around 20 months. I have completed my PhD from Japan on Oral Pathology doing mainly molecular biological research works especially the Immunohistochemistry. Now I am working on natural chemistry, pharmacology, dental science and drug designing. More than 50 students have completed their thesis works under me in their master's level and 1 person has completed his PhD under my supervision. More than 12 persons are now doing M.Phil and PhD under me. I have now a great interest on computer aided drug designing through in silico study and to develop some better antidiabetic treatment regime using natural drugs either in solo or combination treatment.

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Dissecting the immune suppressive human prostate tumor microenvironment via integrated single-cell and spatial transcriptomic analyses

Taghreed Hirz[1,2,3], Shenglin Mei[4], Hirak Sarkar[4], Youmna Kfoury[1,2,3], Shulin Wu[5,6], Bronte M. Verhoeven[7], Alexander O. Subtelny[5], Dimitar V. Zlatev[6], Matthew W. Wszolek[6], Keyan Salari[6,8], Evan Murray[8], Fei Chen[8], Evan Z. Macosko[8,9], Chin-Lee Wu[5,6], David T. Scadden[1,2,3], Douglas M. Dahl[6], Ninib Baryawno[7], Philip J. Saylor[10], Peter V. Kharchenko[2,4,8] and **David B. Sykes[1,2,3]**

[1]Center for Regenerative Me dicine, Massachusetts General Hospital, USA
[2]Harvard Stem Cell Institute, USA
[3]Department of Stem Cell and Regenerative Biology, Harvard University, USA
[4]Department of Biomedical Informatics, Harvard Medical School, USA
[5]Department of Pathology, Massachusetts General Hospital, Harvard Medical School, USA
[6]Department of Urology, Massachusetts General Hospital, Harvard Medical School, USA
[7]Childhood Cancer Research Unit, Department of Women's and Children's Health, Sweden
[8]Broad Institute of Harvard and MIT, USA
[9]Department of Psychiatry, Massachusetts General Hospital, USA
[10]Massachusetts General Hospital Cancer Center, Harvard Medical School, USA

The treatment of low-risk primary prostate cancer entails active surveillance only, while high-risk disease requires multimodal treatment including surgery, radiation therapy, and hormonal therapy. Recurrence and development of metastatic disease remains a clinical problem, without a clear understanding of what drives immune escape and tumor progression. Here, we comprehensively describe the tumor microenvironment of localized prostate cancer in comparison with adjacent normal samples and healthy controls. Single-cell RNA sequencing and high-resolution spatial transcriptomic analyses reveal tumor context dependent changes in gene expression. Our data indicate that an immune suppressive tumor microenvironment associates with suppressive myeloid populations and exhausted T-cells, in addition to high stromal angiogenic activity. We infer cell-to-cell relationships from high throughput ligand-receptor interaction measurements within undissociated tissue sections. Our work thus provides a highly detailed and comprehensive resource of the prostate tumor microenvironment as well as tumor-stromal cell interactions.

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A parametric analysis of AVA to optimise Netflix performance

T.S. Parihar[1] and **D. Rastogi**[2]

[1]*Galgotias University, India*
[2]*Delhi Metropolitan Education, India*

In this research study, researcher tries to understand how Over-the-top platforms like Netflix categorically utilize aesthetic visual analysis (AVA); an image selection tool to reduce time and increase efficacy, through a parametric analysis of AVA to optimise Netflix performance. This research paper tries to answer all the questions related to the how the database of aesthetic visual analysis (AVA), an image selection tool works better or more like humans. To further substantiate the popularity of Netflix, a real time data of 307 respondents who use OTT platforms in Delhi was collected to determine whether Netflix in fact is or not the market leader. 63.8% of them selected Netflix as their top option.

Biography

Dr. Tasha Singh Parihar is currently working as Professor in Department of Mass Communication. She has experience of more than 12 years of teaching Journalism and Mass Communication and has been associated with Galgotias University since 2018. She has worked earlier as Assistant Professor in Amity University, Noida and Project Associate for Nanyang Technology University, Singapore. Her expertise is in quantitative research in ICTs, Game Studies and Social-Media. Her latest contribution is development of three scales namely Social Ethos Scale, Cultural Ethos Scale and Educational Ethos Scale. She is an honorary member in Editorial Board of IJBST Journal Group. In 2021 she was felicitated as Best Media Research Educator of the year by Media Federation of India and Exemplary Academician of the Year Award by Eureka Publications. She is an invited author from the prestigious London Journals Press.

Ms. Divya Rastogi, is a PhD scholar in Galgotias University and Assistant Professor in Delhi Metropolitan Education. Her area of research is online media in specific to OTT platforms and youth.

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$H_3PW_{12}O_{40}$@ Polyacrylamide as an efficiency new hybrid system for oleic acid esterification

Tassadit MAZARI[1,2], Yasmina IDRISSOU[2] and Cherifa RABIA[2]

[1]Laboratoire De Chimie Appliquée Et De Génie Chimique (LCAGC), Université Mouloud Mammeri, Algeria
[2]Laboratoire De Chimie De Gaz Naturel, Alegria

In this study we develop for the first time a new catalytic hybrid systems of nature: Heteropolyacid@ Polyacrilamide for transesterificar. Thus, H3PW12O40 incorporated in/on polyacrylamide (HPW/PAA) was prepared by three methods (M1-3). HPW was introduced by simple diffusion into the PAA (M1), by adding together with the reagents of the PAA synthesis (M2) and by addition dropwise during the PAA synthesis (M3). The resulting systems were characterized by FTIR spectroscopy, XR Diffraction and SEM analysis and tested in the oleic acid esterification at 60 °C in the presence of methanol (methanol/oleic acid molar ratio: 29/1). The swelling capacity of the HPW/PAA systems was studied in aqueous and methanolic mediums and in a methanol/oleic acid (29/1) mixture at 25 and at 60 °C. Methyl oleate, esterification product, was analysed and quantified by gas chromatography. Regardless of the used method, 20% wt HPW/PAA system showed the highest yield of methyl oleate, with 93, 95 and 43% for M1, M2 and M3, respectively.

Biography

Professor Mazari Tassadit was born in 1978 in the high mountains of Kabylia, Algeria. She obtained a doctorate in applied organic chemistry, with a specialization in catalysis, from USTHB university in 2010 and the habilitation to conduct research from UMMTO university in 2013. Since January 2019, she has been a professor at UMMTO. She is responsible of the "Environmental Chemistry" master's specialty and team leader of research group in catalysis "Materials Catalysis Environment". Her fields of interest are: Green Chemistry, Polyoxometallates based materials, organic synthesis, biological and pharmacological molecules, analysis methods, Hybrid systems, atmospheric pollution, energy and environment , Biodiesel, vegetable oil, waste oil, Biginelli reaction, Pechmann protocol, reusability of materials

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Isolation and identification of mycobacteria isolated from raw milk in Tehran based on 16srRNA and hsp65 genes

Tayebeh Hassansoltan Solaghani[1], Nader Mosavari[2], Razieh Nazari[1], Keyvan Tadayon[3] and Mohammad Reza Zolfaghari[1]

[1]Department of Microbiology, Faculty of Basic Science, Qom Branch, Islamic Azad University, Iran
[2]Bovine Tuberculosis Reference Laboratory, Razi Vaccine and Serum Research Institute, Agricultural Research, Education and Extension Organization (AREEO), Iran
[3]Razi Vaccine and Serum Research Institute, Agricultural Research Education and Extension Organization (AREEO), Bovine Tuberculosis Laboratory, Tuberculin and Mallein Research & Production Department, Iran

As an important source of human food, milk can be a carrier of human pathogenic bacteria, including tuberculous and nontuberculous mycobacteria (NTM), in its raw and unpasteurized state. In this research, 175 raw milk samples were collected from traditional dairy stores in 22 regions of Tehran in a 9- month period from August 2019 to May 2020. Samples were prepared and transferred to a specialized laboratory, where they were inoculated in Lowenstein-Jensen (LJ) medium containing glycerol or sodium pyruvate, as well as Herrold's egg-yolk with and without Mycobactin J. to determine the sample's identity of samples. The recommended 16S rRNA (1436 bp) and hsp65 (644 bp) genes fragments from the positive isolates identified in Ziehl-Neelsen (Z-N) staining were amplified and sequenced using PCR and compared with the sequences of the gene fragments of reference strains available in the global GenBank database 16S rRNA SILVA, 16S rRNA RDP and nBLAST NCBI. In case of samples, a total of four bacteria were collected, all of which were found in the genetic differential testing to be NTM, including n=1 Mycobacterium heraklionense, n=2 Mycolicibacterium fortuitum, and n=1 Mycobacterium thermoresistibile. The analysis of the results obtained by isolates sequencing using the 16S rRNA gene showed higher discriminatory power and percentage similarities in the identification of the isolates than the hsp65 gene.

Biography

Tayebeh Hasan Sultan Solaghani, Ph.D. in microbiology, with a history of research in the field of algal ology and its use as a food supplement, relying on the antioxidant property of green algae due to its carotenoids, and a history of research on non-tuberculosis mycobacteria and their pathogenic effects, which It can be transmitted to humans through food and is considered as a neglected global threat.

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IN OVO SOURSOP (Annona muricata L.) LEAF extract improved productive performance of noiler chicks

Timothy T. Kuka[1,3], Batomayena Bakoma[2] and Francisca Kuka[1]

[1]Regional Centre of Excellence in Poultry Science, University of Lome, Togo
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High chick mortality and poor flock performance are serious problems related to chick quality, and have continually challenged efficient poultry production, affecting both hatchery and farm managers. Nevertheless, tropical plants possess several bioactive components that can be harnessed through diverse technologies including in ovo to improve the productive performance of poultry. This study evaluated the effect of in ovo administration of Soursop leaf extract (SLE) on growth performance and intestinal microbes of Noiler chicks. A total of 640 fertile eggs were randomly distributed into four groups: (0.25 µg SLE), (0.5 µg SLE), (0.75 µg SLE) and a non-injected control. Three groups of the egg were injected 0.2 ml of SLE into the air space, on the 18th day of incubation. Hatched chicks were replicated by four and reared in a completely randomized design for ten days to assess feed intake, weight gain, feed conversion ratio (FCR), mortality rate and intestinal microbes. Analysis of variance was used for the data and treatment means were compared using Tukey's HSD at $p<0.05$ in SPSS. Results showed that hatch weight and feed intake were significantly higher ($p<0.05$) in SLE groups while FCR, mortality rate and E.coli count were significantly lower ($p<0.05$) in SLE groups.

Table 1: In ovo effect of soursop leaf extract on growth performance of chicks at ten days

Parameter	Control	0.25 µg	0.50 µg	0.75 µg	SEM	p-value
Average feed intake (g)	71.19^{c}	81.16^{a}	77.44^{b}	73.17b^{c}	1.26	0.00
Average weigh gain (g)	50.71	52.29	55.83	54.44	1.09	0.39
Feed conversion ratio	1.41^{ab}	1.58^{a}	1.39^{ab}	1.35^{b}	0.03	0.03
Mortality rate (%)	5.25^{a}	3.75^{ab}	2.50^{b}	5.00^{ab}	0.41	0.04

Table 2: In ovo effect of soursop leaf extract on intestinal microbes of chicks

Parameters	Control	0.25 µg	0.50 µg	0.75 µg	SEM	p-value
Total coliform (cfu)	4.99	4.99	4.99	4.96	0.07	0.99
E. Coli (cfu)	5.17[a]	5.01[a]	4.93[a]	0.96[b]	0.50	0.00
Clostridium spp. (cfu)	1.78	1.77	1.52	1.07	0.22	0.67
Lactobacillus spp. (cfu)	5.02	5.29	5.18	4.89	0.06	0.14
Streptococcus spp. (cfu)	5.08	5.14	5.24	4.97	0.06	0.42
Bifidobacterium spp. (cfu)	5.13	5.26	5.33	5.06	0.05	0.28

This is because Soursop leaves are rich in antioxidants, antibacterial, gastroprotective properties and aides digestive activities. It was concluded that in ovo injection of SLE improved chick weights at hatch, feed conversion, livability as well as reduced intestinal E.coli count of Noiler chicks. This study should be validated for application in commercial cycles.

Biography

Timothy is a doctoral researcher at the Regional Centre of Excellence in Poultry Science, University of Lome, Togo and a Lecturer at the University of Agriculture, Makurdi Nigeria. His research interest is on, utilization of natural resources and medicinal plants for improved poultry production and environmental sustainability.

Timothy received a bachelor's degree in Animal Production from University of Agriculture, Makurdi and a master's degree in Animal Science from the University of Ibadan both in Nigeria. He is a member of the Nigerian Society for Animal Production (NSAP) and Animal Science Association of Nigeria (ASAN).

Timothy is also a recipient of World Bank scholarship through the Regional Centre of Excellence in Poultry Science, Lome, Togo. He loves research, teaching, networking, and solving problems. His contribution to scientific knowledge has been published I notable journals and books.

He is happily married to Francisca Chizoba

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Synthesis of TiO_2/graphene nanocomposite as an excellent visible-light Photocatalyst based on Chemical Exfoliation method

N.N.T. Ton[1], M.C. Paganini[2], M. Chiesa[2] and T. Taniike[1]

[1]Graduate School of Advanced Science and Technology, Japan Advanced Institute of Science and Technology, Japan
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Titanium dioxide (TiO_2) is a well-known photocatalyst which is widely utilized in a wide range of fields. However, the broad band gap and short lifetime of excited electrons and holes are the main drawbacks of TiO_2 in visible-light photocatalysis. Coupling with graphene is a promising method to diminish these shortfalls of TiO_2. A graphene oxide-free synthetic method has been developed to fabricate TiO_2/graphene nanocomposite with an excellent visible-light photocatalytic activity. Through chemical exfoliation of graphite in titanium tetra-n-butoxide the graphene dispersion was obtained. The dispersion was a subject in a sol/gel reaction with the presence of ammonia and benzylamine as catalysts to afford TiO_2/graphene nanocomposite. With a unique nanolayer in which the TiO_2 nanolayer uniformly and thinly covered graphene sheets, the TiO_2/graphene nanocomposite exhibited an excellent visible-light photocatalytic activity in the degradation of organic pollutants in aqueous media, which was 5 and 15 times higher than TiO_2/reduced graphene oxide and TiO_2-P25. The TiO_2/graphene nanocomposite presented an outstanding ability to absorb organic pollutants, a great extension of absorption edge into the visible light region, a high efficacy to suppress electron-hole separation, and an ability to activate the adsorbed molecular oxygen and subsequently trap the superoxide radicals. To investigate the origin of the outstanding photocatalytic activity of the TiO_2/graphene, we performed radical scavenger tests, electron paramagnetic resonance measurements, and photoluminescence measurements. We have recovered that the excellent ability to activate molecular oxygen and ability to trap superoxide radicals primarily contributed to its outstanding visible-light photocatalytic activity.

Biography

Dr. Ton Nu Thanh Nhan is a Research Assistant Professor at Japan Advanced Institute of Science and Technology. Dr. Ton graduated Master and PhD courses at Japan Advanced Institute of Science and Technology in Material Science. She has achieved many awards like Best Presentation Awards in the 20th International Conference on Heterogeneous Catalysis 2018, MEXT Scholarship for Master and PhD courses, Vallet Scholarship for outstanding student, etc. She specializes in synthesis of visible-light photocatalysts, preparation of high-quality graphene via chemical exfoliation of graphite, synthesis of multimetallic catalysts for cleaning automobile exhaust gases.

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Bioactivities of β-mangostin and its new glycoside derivatives synthesized by enzymatic reactions

Tuoi Thi Le[1], Nguyen Thu Trang[1], Van Thuy Thi Pham[2], Dang Ngoc Quang[3] and Le Thi Phuong Hoa[1]

[1]Faculty of Biology, Hanoi National University of Education, Vietnam
[2]Institute of Microbiology and Biotechnology, Vietnam National University, Vietnam
[3]Faculty of Chemistry, Hanoi National University of Education, Vietnam

Beta-mangostin is a xanthone commonly found in the genus Garcinia. Unlike α-mangostin, to date, there have only been a few studies on the biological activity and derivatization of β-mangostin. In this study, two novel glycosylated derivatives of β-mangostin were successfully synthesized via a one-pot enzymatic reaction. These derivatives were characterized as β-mangostin 6-O-β-D-glucopyranoside and β-mangostin 6-O-β-D-2-deoxyglucopyranoside by TOF ESI/MS and 1H and ^{13}C NMR analyses. Beta-mangostin showed cytotoxicity against KB, MCF7, A549, and HepG2 cancer cell lines, with IC_{50} values ranging from 15.42 to 21.13 μM. The acetylcholinesterase and α-glucosidase inhibitory activities of β-mangostin were determined with IC_{50} values of 2.17 and 27.61 μM, respectively. A strong anti-microbial activity of β-mangostin against Gram-positive strains (Bacillus subtilis, Lactobacillus fermentum and Staphylococcus aureus) was observed, with IC_{50} values of 0.16, 0.18 and 1.24 μg/mL, respectively. β-Mangostin showed weaker activity against Gram-negative strains (Salmonella enterica, Escherichia coli, and Pseudomonas aeruginosa) as well as Candida albicans fungus, with IC_{50} and MIC values greater than the tested concentration (>32 μg/mL). The new derivatives of β-mangostin showed weaker activities than those of β-mangostin, demonstrating the important role of the hydroxyl group at C-6 of β-mangostin in its bioactivity.

bioactivity.

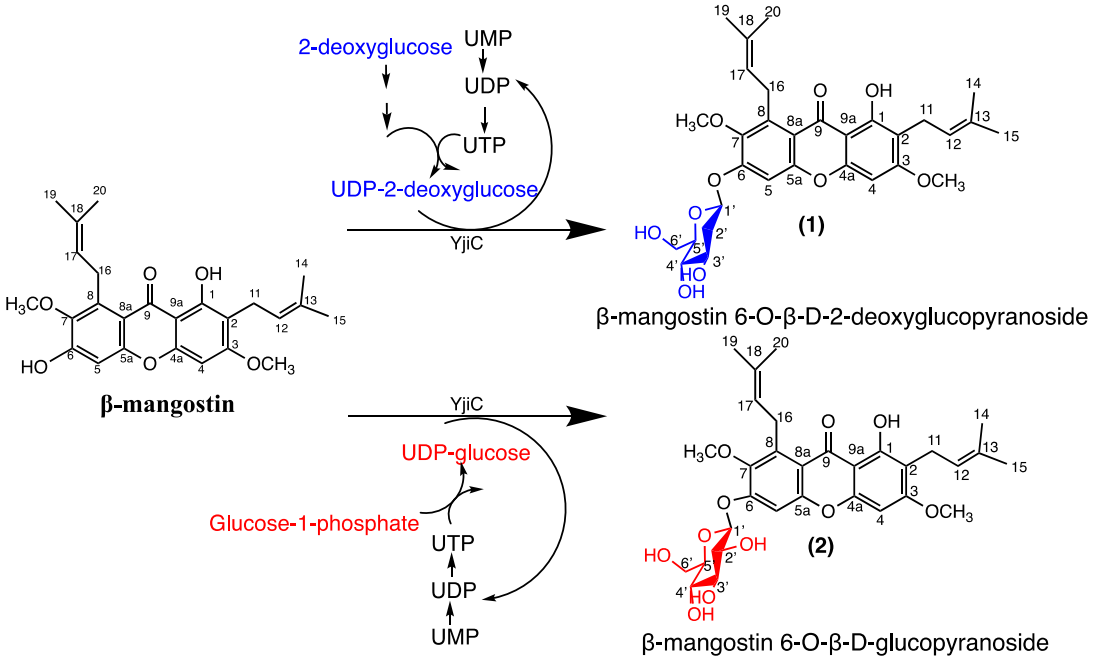

Figure 1. Schematic diagram for the synthesis of new β-mangostin glycosides.

Table 1. Cytotoxicity of β-mangostin and its glycoside derivatives on various cell lines. Values are expressed as mean ± SD for three replicates.

Cell line	IC_{50} (μM)				
	α-Mangostin	β-Mangostin	β–Man2DG (**1**)	β–ManGlc (**2**)	Ellipticine
KB	15.4 ± 1.26	21.13 ± 9.9	59.24 ± 3.87	>50	1.3 ± 0.08
MCF-7	81.9 ± 6.09	18.04 ± 8.1	78.96 ± 7.9	>50	1.67 ± 0.12
A549	22.7 ± 1.21	15.42 ± 5.1	85.4 ± 6.5	>50	1.26 ± 0.08
HepG2	0.24 ± 0.21	18.86 ± 7.6	92.3 ± 2.3	>50	1.67 ± 0.16
HEK293	25.4 ± 1.95	15.6 ± 6.5	84.12 ± 6.3	>50	4.39 ± 0.56

Biography

I am Tuoi Thi Le, lecturer in the Faculty of Biology, Hanoi National University of Education, Vietnam. I haved graduated a PhD course in biochemical engineering from Sun Moon University, Korea. Currently, I am pursuing research on natural products, fermentation, or enzyme technologies to increase the biological activity of medicinal plants for application in the pharmaceutical and cosmetic industries.

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Selective partial hydrogenation of alkynes over metal-free and platinum anchored mesoporous carbon nitrides

Vagif Akhmedov, Vusal Ahmadov and **Dilgem Tagiyev**

M. Nagiyev Institute of Catalysis and Inorganic Chemistry of NASA, Azerbaijan

Selective hydrogenation of carbon–carbon multiple bonds is one of the most important processes widely used in chemical synthesis. We have shown for the first time that graphite-like carbon nitrides are capable of activating hydrogen molecules in the absence of any metals and can be successfully used as solid organic catalyst for the selective hydrogenation of alkynes to corresponding olefins over metal-free mesoporous carbon nitrides. In this presentation, the experimental results of selective hydrogenation of phenylacetylene to styrene and acetylene to ethylene on metal free carbon nitride of mesoporous morphology are discussed. The performance of the metal-free carbon nitride based catalysts in partial hydrogenation of phenylacetylene was studied in the gas phase in the range of temperature 150-250°C and at atmospheric pressure. The mechanism and kinetic model of the hydrogenation reaction are formulated on the basis of the observed changes in the initial reaction rates depending on the temperature, partial pressures of phenylacetylene and hydrogen, and the amount of catalyst. It was also shown for the first time that metal-free carbon nitride of mesoporous morphology exhibits high catalytic activity in the reaction of partial hydrogenation of acetylene to ethylene in the liquid phase in the temperature range of 0–50°C in the presence of polar solvents. Anchoring of platinum on the surface as a cofactor contributes to a significant increase in the hydrogenation activity of catalysts based on carbon nitrides. Pt/mpg-C3N4 has been developed as an effective heterogeneous catalyst for the gas and liquid phase hydrogenation of phenylacetylene. An efficient and versatile approach to the modification of platinum with various organic solvents and ligands for the selective hydrogenation of phenylacetylene to styrene in a flow gas-phase process is presented.

Biography

Prof. Dr. Vagif Melik Akhmedov, Doctor of Chemical Sciences, Professor, Head of the laboratory "Nanocomposite Catalysts", Institute of Catalysis and Inorganic Chemistry, National Academy of Sciences of Azerbaijan.

In 1963 he graduated with honors from the Chemical Faculty of the Baku State University. In 1963 he entered the postgraduate school of the Institute of Organoelement Compounds of the Academy of Sciences USSR (Moscow) and in 1967 defended the Ph.D. thesis. In 1977 he defended his doctoral dissertation, and in 1982 he was awarded the academic title of professor.

He worked as a post-doctoral researcher, professor and scientific consultant in several universities and research centers: Oxford University (England-1973-74), Rome University (Italy-1983), Kansas University (USA-1986-87), Middle East Technical University (Turkey-1994-1997) and KACST (Saudi Arabia-2000-2008).

Scientific interest: Synthesis and investigation of multifunctional metal-complex catalysts; Synthesis and investigation of heterogeneous metal-free organic environmentally friendly nanocomposites with a specific biomimetic catalytic action. Preparation and investication of chemically and biologically active materials on the basis of synthetic and natural polymers.

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Severe pure open dislocation of the Ankle and Flexor Digitorum longus tendon tear: A case report

Yassine Saadi, Alae Neqrachi, Moncif Boufettal, Rida-Allah Bassir, Mohamed Kharmaz and **Mohamed Saleh Berrada**

Orthopaedic Surgery & Traumatology, University Mohamed V, Ibn Sina Hospital, Morocco

Proximal avulsion rupture of the flexor digitorum longus (FDL) tendon associated with an ankle dislocation is extremely rare. We report a case of a 29 years old patient presenting a severe open ankle dislocation with flexor digitorum longus tendon tear after a motorcycle accident. We performed wound debridement, ankle reduction, tendon repair and stabilization with external fixation. At our last follow-up 17 months after the operation, the patient had good functional outcome and returned to work. This report is noticeable as it is, to the best of our knowledge, the third study reporting a case with simultaneous open ankle dislocation and proximal avulsion rupture of the FDL tendon.

Biography

SAADI Yassine, 31 years old, 5th year resident in Orthopaedic and Traumatology department in Ibn Sina university hospital of Rabat, Morocco.

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Myeloid-like hybrid cells facilitate progression of cancer skeletal metastasis

Xinyu Ye, Xin Huang, Jian Zhang and **Yi Lu**

School of Medicine, Southern University of Science and Technology, China

Both cell fusion and cell-cell communication participate multiple physiological processes and pathological conditions including cancer development. Certain cancer types including prostate cancer (PCa), for instance, preferentially metastasizes to the skeleton that resulting in cancer-related high mortality. It has been shown that exosomes from mouse and human lung-, liver-, and brain-tropic tumor cells fused preferentially with resident cells at their predicted distant organs. Others and we have further demonstrated that at the early stage of cancer progression, disseminated tumor cells (DTCs) coexist with bone microenvironment as dormancy/sleeping cells for years until being revoked by certain inducible conditions. However, how do these cells survive within this "hostile" environment and re-activate (wake-up) in the marrow when cancer relapse remains unknow. In our preliminary studies, we found that *in vitro* spontaneous fusion between murine PCa RM-1 cells and monocyte precursors. We thus hypothesize that exosomes derived from the bone microenvironment promotes the cell fusion; and the hybrids may gain the stem cell characteristics and metastatic potential within the pre-metastatic niche. In this study, we used a GFP transgenic murine model to generate hybrids, *in vivo*, with murine RM1 cells and further to test whether the spontaneous cell fusion plays a key role in cancer metastatic process. Our results suggest a novel mechanism for cancer skeletal metastasis and provide a molecular basis for identifying novel therapy. This work was supported by NSFC projects 81972766, 81972420, 82173336, 81773146; Shenzhen Science and Technology Commission Project JCYJ20190809161811237, JCYJ2021032410424040.

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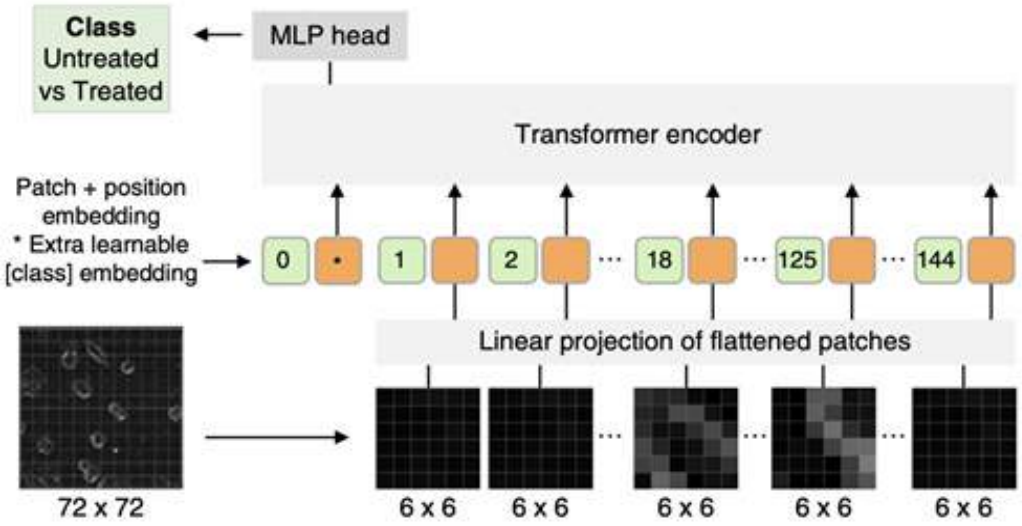
SIC50: Determining drug inhibitory concentrations using a vision transformer and an optimized Sobel operator

Yongheng Wang

Department of Biomedical Engineering, University of California, USA

One in three people will be diagnosed with a type of cancer in their lifetime. The development of cancer therapeutics is expensive, costing approximately $648 million per drug in 2017, partially due to the necessary screening of tens of thousands of chemicals, which can be prohibitively costly. To develop a more affordable method for the efficient evaluation of drug efficacy and the screening of cancer therapeutics, we leverage machine learning and classify phase-contrast images from cells treated with different drugs. As a result, our method can accurately predict the IC50 of drugs without using any reagents (e.g., MTT, CCK-8, etc.). We have validated this method using four drugs and 1,536 well plates and built a web application. We anticipate that this method will assist in the high-throughput screening of chemical libraries (e.g., small-molecule drugs, small interfering RNA, and microRNA).



Biography

Yongheng worked on drug delivery at the Massachusetts Institute of Technology and Yale University and tissue engineering at Harvard University before conducting research in the Department of Biomedical Engineering at the University of California Davis

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3D modeling of *in vivo* MRI guided nano-photothermal therapy mediated by magneto-plasmonic nanohybrids

Zahed Tavangari[1,2]

[1]*Finetech in Medicine Research Center, Iran University of Medical Sciences, Iran*
[2]*Medical Physics Department, Iran University of Medical Sciences, Iran*

Nano-photothermal therapy (NPTT) has gained wide attention in cancer treatment due to its high efficiency and selective treatment strategy. The biggest challenges in the clinical application are the lack of (i) a reliable platform for mapping the thermal dose and (ii) efficient photothermal agents (PTAs). This study developed a 3D treatment planning for NPTT to reduce the uncertainty of treatment procedures, based on our synthesized nanohybrid.

This study aimed to develop a three-dimensional finite element method (FEM) model for *in vivo* NPTT in mice using magneto-plasmonic nanohybrids, which are complex assemblies of superparamagnetic iron oxide nanoparticles and gold nanorods. The model was based on Pennes' bio-heat equation and utilized a geometrically correct mice whole-body. CT26 colon tumor-bearing BALB/c mice were injected with nanohybrids and imaged using MRI (3 Tesla) before and after injection. MR images were segmented, and STereoLithography (STL) files of mice bodies and nanohybrid distribution in the tumor were established to create a realistic geometry for the model. The accuracy of the temperature predictions was validated by using an infrared (IR) camera.

The photothermal conversion efficiency of the nanohybrids was experimentally determined to be approximately 30%. The intratumoral (IT) injection group showed the highest temperature increase, with a maximum of 17°C observed at the hottest point on the surface of the tumor-bearing mice for 300 seconds of laser exposure at a power density of 1.4 W/cm². Furthermore, the highest level of tissue damage, with a maximum value of Ω=0.4, was observed in the IT injection group, as determined through a simulation study.

Our synthesized nanohybrid shows potential as an effective agent for MRI-guided NPTT. The developed model accurately predicted temperature distributions and tissue damage in the tumor. However, the current temperature validation method, which relies on limited 2D measurements, may be too lenient. Further refinement is necessary to improve validation. Nevertheless, the presented FEM model holds great promise for clinical NPTT treatment planning. Fig. 1 presents a graphical overview of the current study.

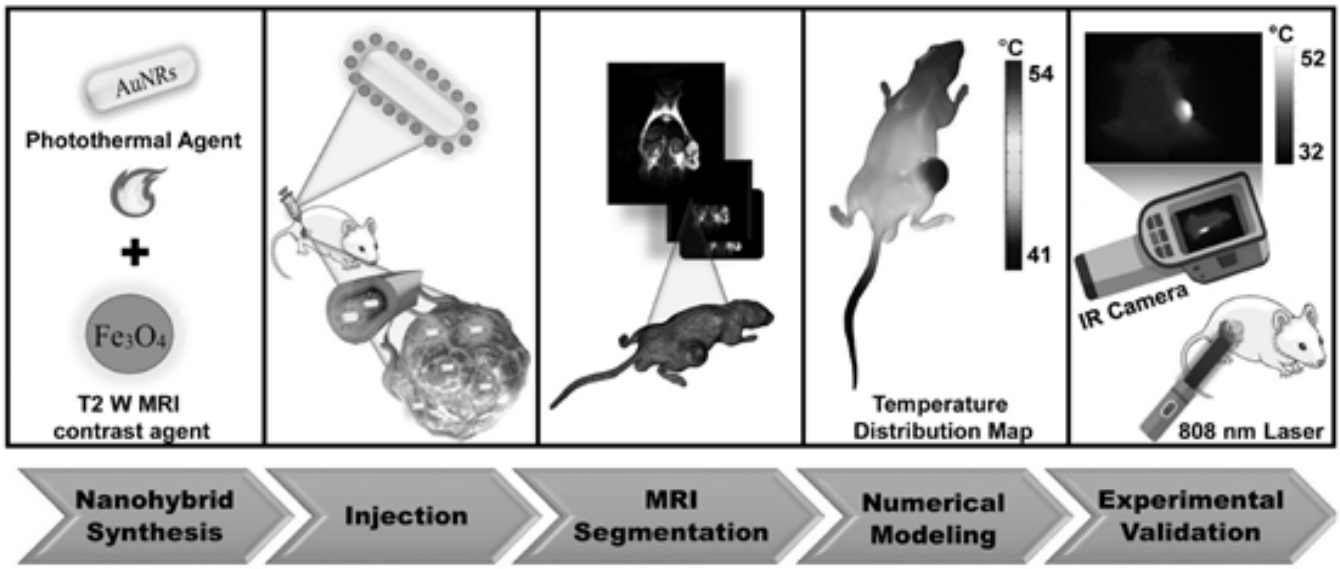

Fig. 1 Schematic illustration of different steps of the present study.

Biography

Zahed Tavangari is a dedicated professional from Tehran, Iran. He holds a Master's Degree in Medical Physics (2018-2022) and a Bachelor's Degree in Physics (2012-2017) from Iran University of Medical Sciences and the University of Kurdistan, respectively. Zahed is currently a medical physicist at Emam Hospital, Tehran University of Medical Sciences, where he contributes significantly to the field. Zahed's expertise spans various areas, including image-guided therapy, hyperthermia, numerical modeling, radiation therapy, and nanomedicine. His passion for research is evident in his publications, which focus on cancer nanotheranostics and MRI-guided therapy. With proficiency in a wide range of hard skills and valuable soft skills like adaptability, confidence, and creativity, Zahed is well-prepared to make impactful contributions to the field of medical physics.

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Inclusion membranes for the facilitated extraction and recovery of Co(II)and Ni(II) ions form acid medium

Zakaria Habibi[1], S. Majid[1], Y. Chaouqi[1,2], M. Hlaibi[1] and **K.Touaj[1]**

[1]Laboratory of Materials Engineering for Environment and Valorization (GeMEV), Faculty of Sciences Chock, University Hassan II, Morocco
[2]Laboratory of Research on Textile Materials (REMTEX), Morocco

The growth of the lithium-ion battery industry requires a secure supply of raw materials and proper management of end-of-life batteries.

Functional recycling of lithium-ion batteries would meet both economic and environmental needs. It would ensure the continued availability of cobalt and nickel for industrial applications and allow waste reduction.

The majority of heavy elements are toxic and harmful to living organisms, even at low concentrations.

For this work, we prepared two Polymer Inclusion Membranes (PIMs), based on the polymer support Polyvinylidene difluoride (PVDF) and two extractive agents: Trioctylphosphine oxide (TOPO) andTrioctyl amin (TOA).

These membranes were characterized and have adopted to achieve the oriented processes for the facilitated extraction and recovery of *Co (II)* ions. The obtained results were used to determine the values of different parameters: macroscopic permeability (P), initial flux (J0) and microscopic apparent diffusion coefficient *(D*)* and association constant (Kass) relating to the substrate movement through the membrane. The influence of several factors, initial substrate concentration, acidity and temperature (C0, pH, T) was studied. The results indicate that the various parameters *(P, J, D* and* K_{ass}*)* vary greatly with the temperature of the medium and the performance of the used membrane increases with temperature factor. Similarly, these studies made it possible to determine the values of activation parameters, *(Ea, ΔH≠ and ΔS≠)*, and to elucidate a mechanism by successive jumps of *Co (II)* ions on fixed sites of the immobilized extractive agent molecules in the membrane phase.

Finally, we treated the filtrate of a type of Li-ion battery because we relied on the same membrane which showed good results in the first experiments.

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l-carnitine downregulate the muscle wasting effect of glucocorticoids in pemphigus patient: A randomized double-blind placebo-controlled study

Zeinab Noormohammadi[1], Hana Arghavani[1], Mohammadhasan Javanbakht[1], Maryam Daneshpazhooh[3] and Mahmood Jalili[1]

[1]Department of Cellular and Molecular Nutrition, School of Nutritional Sciences and Dietetics, Tehran University of Medical Sciences (TUMS), Iran
[2]Department of Public Nutrition, School of Nutritional Sciences and Dietetics, Tehran University of Medical Sciences (TUMS), Iran
[3]Dermatology Faculty, Tehran University of Medical Sciences (TUMS), Iran

Background: Pemphigus Vulgaris (PV) is a blistering autoimmune disease caused by autoantibodies against desmogelin 1 and 3. Treatment options are limited to corticosteroids and immunosuppressants. The myotoxic effect of glucocorticoids is a fact that has been elucidated. So, the development of efficacious treatment approaches to combat muscle wasting is of great importance.

Objective: Considering the adverse effect of glucocorticoid therapy in pemphigus patients and altered muscle metabolism, this study aimed to investigate the effect of L-carnitine supplementation which can be useful in combating muscle-wasting impact of glucocorticoid therapy.

Material and Methods: In this randomized double-blind placebo-controlled trial forty-four pemphigus patients aged from 30 to 65 years, receiving glucocorticoid therapy were selected to evaluate the suitability of L-carnitine (LC) as an anti-wasting substance. Patients were randomly divided into two groups to receive 2 g/d L-carnitine or placebo for 8 weeks; serum markers of muscle metabolism (IGF-1, creatine kinase, myogenin, myostatin) was evaluated before and after the L-carnitine supplementation. Paired T-test was used to analyze the differences between variables before and after the intervention. Therefore, the student's t-test was performed to find any differences in baseline characteristics and dietary intakes between the trial groups.

Result: LC intake led to a significant rise in serum IGF-1 and a reduction in CK and myostatin levels compared to baseline ($P<0.05$) but there were no significant inter-group differences in IGF-1 and CK levels; There was also a significant reduction in myostatin level in LC group ($p<0/05$). Myogenin levels decreased in both LC and placebo groups but the decrease in the placebo group was significant ($p= 0/008$); it means LC prevent the myogenin decreasing trend in the LC group compared to placebo.

Conclusion: In conclusion, LC supplementation beneficially changes the level of IGF-1 and myostatin and improves muscle metabolism and regeneration in PV patients.

Biography

Zeinab Noormohammadi is a nutritionist and researcher from the School of Nutritional Sciences and Dietetics of Tehran University of Medical Sciences. She is pioneer in exploring a nutritional supplement for combating the adverse effect of corticosteroids. She has a keen interest in evaluating the impact of nutritional factors on disease prevention and treatment with the special attention on muscle metabolism. Her experience consists of clinical trials and nutritional physiology research with the attention to provide a solution for disease prevention and treatment.

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