

Advanced metaheuristic for bio-medical issues

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Breast Cancer is the most serious disease in the biomedical science and maximum people are dead with the cause of this disease. Mammography is the initial screening assessment of breast cancer. In this work, a new hybrid version of swarm intelligence based technique known as MF-SMA has been proposed by merging the merits of two different robust optimizers such as Moth flame and Slime mould. The main objective of this work is to apply a segmentation technique to detect the cancerous region based on fresh structure of multilayer perceptron (MLP) neural network using MF-SMA algorithm. In this version, the exploitation and exploration phases of SMA have been enhanced by MFO method for local optima avoidance and premature convergence. The exclusive motivation for overdue mixing modifications in SMA is to advantage the process to evade immature convergence and to steer the search in the way of the possible exploration or search area in a faster direction. To test the performance of the proposed technique different set of experiments have been performed and results are compared with various

recent metaheuristics. To demonstrate the robustness of the proposed technique results have been taken on five bio-medical datasets such as XOR, Balloon, Iris, Breast Cancer and Heart. All the results are in the favour of proposed technique.

Biography

Narinder Singh, PhD from Punjabi University, Patiala, Punjab, India is senior desk and researcher position in Punjabi University Patiala. He has published about 35 research papers in journals of international repute with various international professors. He has teaching and research experience of 14 years. His areas of interest include Swarm Intelligence, Computational Intelligence and large-scale applications. He is a reviewer of several well reputed journals such as Springer, Elsevier, Hindawi, Recent Science, IEEE and many more. And he has also taken part in different international levels of conference as an Organized Committee member, International Advisory Committee member and Scientific Committee member. Additionally, he has organized three special sessions on Nature inspired algorithms at the international level such as Egypt, Morocco and Romania. He is a life member of various learned bodies. He has attended several national and international conferences and delivered several lectures and talks.

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Received Date: April 25, 2022; **Accepted Date:** April 28, 2022; **Published Date:** July 29, 2022

Production and partial characterization of thermal and surfactant stable extracellular keratinase from *Bacillus pumilus* NM03 and its potential in dehairing

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A *Bacillus pumilus* NM03 newly isolated, feather-degrading bacterial strain was investigated for its ability to produce keratinase on feather keratin. Maximum keratinase production was achieved at pH 8.5 and 37°C after 72h of incubation. Optimum inoculum concentration and age of inoculum was 4% and 24h respectively. Addition of soymeal at 0.5% and glucose at 0.1% concentration to the growth medium affects the activity by means of increase in keratinase secretion. Keratinase was found to be an alkaline, serine protease with pH and temperature optima of 10 and 70°C, respectively and 80-85% stability. A 2.35 fold increase in keratinolytic activity was observed after precipitation and dialysis. Three bands of molecular weight 91.4, 57, 22.1kDa were determined by Native PAGE. It was thiol activated with 7.5 and 9.5 fold enhancement of activity by 1mM DTT and β-mercaptoethanol, respectively. In addition, its activity was stimulated in the presence of various surfactants, and oxidizing agents where a nearly 81 and 43% enhancement was

observed in presence of Triton X 100 and H₂O₂ respectively. The enzyme activity was significantly inhibited by FeCl₃ and partly inhibited by EDTA and 1, 10 phenanthroline, whereas, Na₂SO₃ enhance the enzyme activity by 89% more. In addition, native chicken feather was completely degraded at 48h of incubation. The results obtained showed that isolated strain *Bacillus pumilus* NM03 could be used as a potential source for removal of proteinaceous stains from cloths and removal of hairs from hide for leather industries.

Biography

Neetu Manglani is an experienced Principal Scientist with a demonstrated history of working in the Intas Pharmaceuticals Industry. Skilled in biotechnology, clone and upstream process development, scale-up, tech transfer, Process characterization of therapeutic molecule, Regulatory dealing, Cell bank and LCM support towards global filing with knowledge of analytical technique.

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Received Date: June 03, 2022; **Accepted Date:** June 07, 2022; **Published Date:** July 29, 2022

Transgenic cotton (*Gossypium hirsutum L.*) showed resistance against cotton leaf curl virus

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Cotton leaf curl disease (CLCuD), a major factor resulting in the enormous yield losses in cotton crop, is caused by a distinct monopartite begomovirus in association with Cotton leaf curl Multan betasatellite (CLCuMB). Micro (mi)RNAs are known to regulate gene expression in eukaryotes, including antiviral defense in plants. In the present work, effect of *Gossypium arboreum*-encoded miRNAs on the genome of CLCuMuV and CLCuMB was investigated in planta. Two computationally predicted cotton-encoded miRNAs (miR398 and miR2950) that showed potential to bind multiple Open Reading Frames (ORFs; C1, C4, V1, and non-coding intergenic region) of CLCuMuV, and (β C1) of CLCuMB were selected. Functional validation of miR398 and miR2950 was done by overexpression approach in *G. hirsutum* var. HS6. A total of ten *in vitro* cotton plants were generated from independent events and subjected to biological and molecular analyses. Remarkably, expression of pre-miRNAs was shown up to 5.8-fold higher in the transgenic (T0) lines. The virus resistance was monitored following inoculation of the transgenic cotton lines with viruliferous whitefly (*Bemisia tabaci*) insect vector. After inoculation, four of the transgenic lines remained apparently symptom free. While a very low titre of viral DNA could be detected, betasatellite responsible for symptom induction

could not be detected in any of the healthy looking transgenic lines. In this study for the first time, efficacy of the host (*G. arboreum*)-encoded miRNAs against CLCuD symptoms was experimentally demonstrated through overexpression of miR398 and miR2950 in *G. hirsutum* var. HS6. Computational prediction of miRNAs targeting virus genome and cleavage-based suppression of viral mRNA via overexpression could help in generating virus resistant plants.

Biography

Mohammad Akmal has completed PhD from Hamdard University, New Delhi in 2011 in Biotechnology. His work was on the development of the transgenic *Brassica juncea* L. plant having high affinity sulfur transporter gene for higher sulfur uptake and efficiency. He also had gotten very prestigious Dr. DS Kothari Postdoctoral Fellowship from UGC (2012) and completed it from Jamia Millia Islamia, New Delhi in 2015. His work was on the development of Cotton Leaf Curl Virus resistant plants of cotton. He is currently Assistant Professor in MLK (PG) College, Balrampur, UP, India, in Department of Botany. He changed the area of research and currently worked on the use of new herbal drugs for the treatment of rheumatoid arthritis and associated inflammation. He is in the starting of his career, and has published several scientific papers and chapters in peer reviewed journals and books and has 124 citations.

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Received Date: June 20, 2022; **Accepted Date:** June 23, 2022; **Published Date:** July 29, 2022

Antiviral effects of Elwendia persica with special reference to Rajasthan, India

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Elwendia persica or Black cumin belongs to Angiosperms, Eudicots, family Apiaceae. Indian spices such as Elwendia persica (Shahi Jeera), Trachyspermum ammi, Syzygium aromaticum, Syzygium polyanthum, Zingiber officinale, Coriandrum sativum, Elettaria cardamomum (Green cardamom or small cardamom or true cardamomum), Amomum subulatum Trigonella foenum graec, Piper longum, Piper nigrum, Terminalia chebula, Capsicum annum, have potent antiviral properties.

Ajmer is located in the center of Rajasthan (INDIA) between 25 0 38 "and 26 0 58 "north 75 0 22" east longitude covering a geographical area of about 8481sq km surrounded all sides by Aravalli hills. Ajmer is famous for Dargah and Pushkar. Elwendia persica has Insecticidal, Antimicrobial, Antifungal, Anticancer, Antiobesity, effects. It is also used to treat leprosy, chicken pox, measles, asthma, respiratory diseases, ulcer and skin diseases. Elwendia persica belongs to Angiosperms, Eudicots, family Apiaceae.

Introduction:

Elwendia persica (Black jeera) also known as Bengal Jeera, Hill Jeera, Brown Cumin, Shahi Jeera, Winged Cumin, Indian Cumin, Kerala Cumin is perennial herb belongs to family Apiaceae. It corrects Alimentary Canal disorders. It is also taken to Cure Malaria and Jaundice.



Classification of Elwendia persica:

Kingdom - Plantae

Clade - Tracheophytes

Clade - Angiosperms

Clade - Eudicot

Clade - Asterids

Family - Apiaceae

Genus - Elwendia

Species – persica

Methods: Two groups of 10-10 persons were made persons suffering from Flu.

1. Group I: 10 persons were not given
2. Group II: 10 persons were given 2 gram per day Elwendia persica powder for 2 weeks. Group II persons suffering from Influenza recovered faster than group I .

Observations and Results: Group II where Elwendia persica was given recovered Faster and fewer incidences of viral diseases. So it is concluded that Elwendia persica has antiviral qualities. Active compound is Elwendic acid.

Conclusion: Cold and influenza and Alimentary canal diseases were observed and treated with Elwendia persica were effective antiviral medicine in most viral diseases. Other antivirals are zingiber officinale, Piper longum , Ocimum sanctum are other antivirals .

Biography

Rashmi Sharma is Associate Professor Samrat Prithviraj Chauhan Government College, India. She has 28 years teaching and Research experience. She has published more than 30 papers in International journals. She has attended more than 70 International and national conferences. 8 students have completed MPhil under her guidance. 5 Students are doing PhD under her guidance. 2 completed under her guidance. 1 candidate Awarded PhD degree under guidance. She is author of 20 books.

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Received Date: May 26, 2022; **Accepted Date:** May 30, 2022; **Published Date:** July 29, 2022

Energies alterations and chakras' energies deficiencies as the main cause of rhinitis

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Introduction: According to Western medicine, allergic rhinitis is an inflammatory disorder of the nasal mucosa induced by allergen exposure triggering immunoglobulin-mediated inflammation. It can also be associated with comorbid conditions as asthma, atopic dermatitis, and nasal polyps. According to traditional Chinese medicine (TCM), the basic pathogenesis is inadequate functioning of Lung Qi caused by external or internal pathogenic factors, often accompanied by the Qi insufficiency of Spleen and Kidney. Purpose: To demonstrate that patients with rhinitis have energies imbalances and chakras' energies deficiencies that is causing the rhinitis symptoms and the corrections of these energies imbalances are very important to treat the root of the problem and not just the symptoms.

Methods: Four cases report, two men's patients with a history of 20 and 13 years of rhinitis symptoms (itchiness, runny nose) respectively, one woman (40 years-old) that had rhinitis since 2010 and was responding poorly to the treatment using antihistamine and others medications and the last patient was a 4 months' baby that was having swelling, itching and a runny nose since birth. They searched for another kind of treatment and the medical doctor diagnose them with Kidney Yin and Yang deficiency. They were submitted to radiesthesia procedure and discovered that all their chakras were in the minimum level (1 out of 8) with the exception of the seventh chakra that was normal, rated in eight, for the cases report one to three. The treatment consisted in Chinese dietary counseling, auricular acupuncture with apex ear bloodletting and replenishment of the chakras' energies centers using homeopathy according to the theory Constitutional Homeopathy of the Five Elements based on Traditional

Chinese Medicine and crystal based medications.

Results: All four patients improved their condition of rhinitis in the first two weeks of treatment, only the first patient needs to do surgery indicated by otolaryngologist and all four patients are still in treatment until nowadays.

Conclusion: Patients with rhinitis have energies alterations and chakras' energies deficiencies. The rebalance of the internal energy (using Chinese dietary counseling, auricular acupuncture with apex ear bloodletting) and replenishment of the chakras' energies centers using highly diluted medications according to the theory Constitutional Homeopathy of Five Elements Based on Traditional Chinese Medicine and crystal based medications were important tools to treat the rhinitis symptoms at the root level.

Biography

Huang Wei Ling, born in Taiwan, raised and graduated in medicine in Brazil, specialist in infectious and parasitic diseases, a General Practitioner and Parenteral and Enteral Medical Nutrition Therapist. Once in charge of the Hospital Infection Control Service of the City of Franca's General Hospital, she was responsible for the control of all prescribed antimicrobial medication and received an award for the best paper presented at the Brazilian Hospital Infection Control Congress in 1998. Since 1997, she works with the approach and treatment of all chronic diseases in a holistic way, with treatment guided through the teachings of Traditional Chinese Medicine and Hippocrates. Researcher in the University of São Paulo, in the Ophthalmology department from 2012 to 2013. Author of the theory Constitutional Homeopathy of the Five Elements Based on Traditional Chinese Medicine. Author of more than 100 publications about treatment of variety of diseases rebalancing the internal energy using Hippocrates thoughts..

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Received Date: May 31, 2022; **Accepted Date:** June 02, 2022; **Published Date:** July 29, 2022

Perspectives in neurodegeneration: Genistein-loaded transferosomes as a new adjuvant therapy in oxidative stress-related neurodegenerative diseases

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The antioxidant and neuroprotective effect of the soy-derived isoflavone genistein (GEN) has been described by numerous authors. Encouraging results have been acquired both *in vitro* and *in vivo* studies, but several obstacles such as low oral bioavailability and rapid metabolism/excretion influence GEN's clinical applications. In this study, we tested different genistein-loaded transferosomes (GEN-TFs) in order to overcome the previously mentioned difficulties and to use GEN-TFs as a potential therapeutic or preventive strategy in neurodegenerative diseases. All the experiments were carried out on the dopaminergic PC 12 cell line. The cell culture have been treated with different GEN-TF complexes and the genistein effect were tested on H₂O₂-induced oxidative damage by means of MTT, LDH and flow cytometer assay. All drug delivery system showed to enhance GEN uptake in PC12 cells, reducing the amounts of apoptotic cells and ROS increase generated by H₂O₂ treatment, and improving the neuroprotective effect of GEN. Among all

the GEN complexes studied, GEN-TF2 showed the most encouraging results in terms of antioxidant activity and oxidative stress reduction in our *in vitro* model. On the basis of the obtained results, GEN-TF2 seem to be a promising strategy that could be used as adjuvant therapy in oxidative stress-related neurodegenerative diseases.

Biography

Rossana Migheli has completed her PhD in Pharmacology and Toxicology in 1995 from Sassari University. She is a researcher of Sassari University School of Medicine, and she is the group leader of the cellular laboratory of Pharmacology. She has published over 60 publications in peer reviewed journals that have been cited over 1600 times, and her publication H-index is 28. In recent years, her research has mainly focused on the neurochemistry of natural and synthetic antioxidant molecules in neuronal models of oxidative stress, both *in vitro* and *in vivo*. She used different technologies in order to evaluate new strategies for the administration of drug therapies.

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Received Date: February 11, 2022; **Accepted Date:** February 15, 2022; **Published Date:** July 29, 2022