National Conference on

"Bioinnovation & Enterprenuership NCBE – 2022"

12th Februarary, 2022

Organized by
Department of Biotechnology
K L University
Greenfields, Vaddeswaram, Guntur District, Andhra Pradesh-522 502

About Department of Biotechnology, K L University

The Department of Biotechnology at K L University was established in the year 2002-03 with an aim to provide scientific and technical solutions to mankind. Biotechnology is a congregation of science and technology which embeds basic principles of Physics, Mathematics, Chemistry and Biology. The Department went for accreditation by NBA of AICTE for the first time in 2007, and was accredited for three years. The department also attracts foreign students from Middle east, African counties, Nepal and Bhutan.

The Department offers a fouryear undergraduate engineering degree in Biotechnology with specializations in Medical Biotechnology, Bioinformatics, Industrial Biotechnology and Genetic Engineering. The department offers a post graduate program in Biotechnology, which is embedded withoneyear project in an industry/research organization. The Department offers PhD programs in vivid specializations on a full time and part time basis.

The strength of the department is its very rich treasure of faculty who were drawn from reputed National and International Academic and research organizations. Faculty with good industrial experience and exposure are also a part of our team at the Department of Biotechnology. Faculty with post doctoral research experience and faculty with more than 15 years of experience are feathers in the cap of our department.

The faculty of the department is extensively involved in quality Research and Development. The Department over the last three years has acquired projects worth more than 3 crores in the areas of Biofuels, Biomedical research, Genomics, Proteomics, Bioinformatics and food biotechnology in vivid fields of biotechnologyfunded by prestigious research organizations like DBT, DST, UGC and ICMR. The department also has a couple of women scientists working under DST funded projects. The Department has filed patents with IPO in collaboration with industry and a few from sponsored projects.

The Department has 7 well furnished and fully equipped state of the art laboratories along with 4 research centres. The department also has its own computer center with latest molecular modelling and drug design software purchased from Schrodinger LLC, USA.

As a part of student centric learning various measures and initiatives are taken to improve the skills of students. These include exposure to guest lectures, industrial training and tours, communication and soft skills, Mini Projects, paper presentations in national level paper contests, class room seminars, placement opportunities, academic and career counseling, certificate courses, live projects in industry, exposure to journals and so on.

Another area of concentration for the faculty is Research consultancy. The department has signed MoU’s with various Industries and research organizations for faculty and student training and collaborative research. The department of Biotechnology is collaborating with AIT, Thailand for initiating collaborative research in various areas of Biotechnology.

ORGANIZING TEAM

Convenor
Dr.K.Giridhar
Head of the Department, KLU

Co Convenor
Dr.V. Praveen Kumar
Alternate Head, KLU

Treasurers

Dr.M. MaheshwaraReddy, Assistant Professor, KLU
Dr.G. Siva Reddy, Assistant Professor, KLU

Coordinators

Dr.K. Shrinivasulu, Professor, KLU
Dr. B. Jayakumar Singh, Professor, KLU
Dr. B. VLS Prasad, Professor, KLU
Dr. M. Janaki Ramaiah, Professor, KLU

Dr.M. Sudhamani, Associate Professor, KLU
Dr. Nadeem Siddiqui, Associate Professor, KLU
Dr. Ashish Runtala, Associate Professor, KLU
Dr.S. Karthikeyan, Associate Professor, KLU
Dr.C. Arun, Associate Professor, KLU
Dr.C.S. Felice, Assistant Professor, KLU
Dr.M.S.R. Krishna, Assistant Professor, KLU
Dr.P. Rajasekhar, Assistant Professor, KLU
Dr.C. Chandrasekhar, Assistant Professor, KLU
Dr.Y. V Rajesh, Assistant Professor, KLU
Dr. K. Naga Chaitanya, Assistant Professor, KLU
Dr.G. Koteswara Reddy, Assistant Professor, KLU
Dr. SaradaPrasanna, Assistant Professor, KLU
Dr. Pritam Kumar Dikshit, Assistant Professor, KLU

Associate Members

Ms.UVijayalaksmi, Lab Manager
Ms.Y N Lakshmi, Lab Manager
Mr.Ch Kiran Kumar, Lab Manager
Ms.TSwathi, Lab Manager
Ms. K Ramalakshmi, Lab Manager
Mrs. Nagamani, Office Assistant

Er.KoneruSathyanarayana
President, K L E F

Message

Warm and Happy greetings to all.

I am immensely happy that Department of Biotechnology of our K L University is organizing an **National Conference on " Bioinnovation & Enterprenuership NCBE - 2022" on 12th February 2022**and is going to discuss on a collection of technical papers in the proceedings.

Department of Biotechnology, K L University continues to march on the way of success with confidence. On this occasion, I wish all the very best.

I congratulate HOD, staff members, students of Department of Biotechnology, Delegates and Participants from different parts of the country and nations for their efforts in participating in this conference and wish the conference all the success.

K. Sathyanarayana

Sri Koneru Raja Hareen
Vice-President

Message

I am glad to learn that Department of Biotechnology, K L UniversityUniversity is organizing an **National Conference on " Bioinnovation & Enterprenuership NCBE - 2022" on 12th February 2022**. It is heartening to know that the national NCBE -2022 is being organized with the objectives to strengthen the current national and international scenario of Biopharmaceuticals; scaling up from research to production and their usage; thereby prevention and protection from many deadly diseases/ disorders.

I wish the conference all success.

K. Raja Hareen

Dr.K. Giridhar
Head, Department of Biotechnology
Convenor, NCBE-2022

Message

I, on behalf of the Faculty of Biotechnology feel proud in is organizing an **National Conference on " Bioinnovation & Enterprenuership NCBE - 2022" on 12th February 2022**. During the conference, participation of people from different disciplines is expected to take place on common platform and hence there would be sharing of views with eminent speakers from all over the world wherein exchange of their knowledge and skills in Biotechnology will happen. This conference will help the students, researchers and academicians to interact with professionals.

I wish the conference a grand success.

K.Giridhar

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Causes of Bovine Mastitis Infection

Ankita[1], Dr.Manjusha Tyagi[2]

[1]Research scholar, Department of Microbiology, SGRR School of basic and applied sciences, SGRR University Dehradun-248001, (ankitaak85@gmail.com)
[2]Associate Professor,Department of Microbiology, SGRR School of basic and applied sciences, SGRR University Dehradun-248001, (manjushatyagi2008@gmail.com)

Abstract:
Dairy Industry is very much affected by a mastitis disease. Mastitis is defined as an infection of the udder, mainly caused by bacterial pathogen entering the quarter through the teat end. During mastitis infection cow shows an inflammation of the mammary glands and udder tissue. Mastitis infection results in 30% less productivity in dairy Industry. The economic losses of India due to mastitis infection is increased about 115 fold in last five decades. Mastitis pathogens are of two types i.e. contagious and environmental organisms. Contagious mastitis pathogen exists in udder skin and lesions of teat for a long time and they are transmitted from milking machine.The contagious mastitis is caused by *S. aureus* and *Streptococcus agalactiae*. *Streptococcus dysgalactiae* is an example of environmental pathogen. Environmental mastitis pathogens are found in the digestive tract of cattle, soil, manure that includes *E. coli, K. pneumoniae* and *Streptococcus uberis* etc. For the prevention of mastitis infection commonly antimicrobial therapy is used but there has been an increase in bacterial resistance against such antibiotics. Many bacteria are showing resistance to several antibiotics like *E.coli* to cephalosporins, *K. pneumoniae* to cephalosporin and carbapenems, *Staphylococcus aureus* to beta lactam antibacterical drug.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Green synthesis, characterization and antimicrobial activity of ZnO nanoparticles from Moringa oleifera Lam.

Mrunal Damle, Farida Inamdar, Suryakant Wadkar and Prajkata Choudhari

Smt. Kasturbai Walchand College, Sangli, Maharashtra.

Abstract:
Plant mediated nano particle synthesis is a cost-effective technique without any negative impact on environment and that has wide range of applications in agriculture, food industry and medicine. In this study green synthesis of ZnO nanoparticles was carried out by using leaf and seed extracts of *Moringa oleifera* Lam. and its antimicrobial potential was evaluated against two Gram positive organisms *Bacillus subtilis*, *Staphylococcus aureus* and two Gram negative organisms *Escherichia coli*, *Pseudomonas aeruginosa* while two fungal cultures *Penicillium notatum* and *Aspergillus niger*. Using UV spectroscopy (370 nm) and SEM (50-60 nm) studies were used for confirmation ofZnO nanoparticles synthesis. Well diffusion assay ofZnO NPs of leaf and seed extract exhibited excellent antibacterial activity against all selected test bacterial cultures. Leaf extract ZnO NPs(1000 µg/ml) showed better activity against MDR *Pseudomonas aeruginosa* (18 mm ± 02mm) in comparison with seed extract ZnO NPs (15 mm± 02mm). The MIC were also determined to check efficacy of ZnO NPs against test organisms. MIC value for *E. coli*(400, 500 µg/ml), *S. aureus*(300, 500 µg/ml), *P. aeruginosa*(500, 600 µg/ml)and for*B. subtilis*(400, 500 µg/ml)whilefor both fungal cultures(700, 800 µg/ml) for both leaf and seed ZnO nanoparticles respectively. Such a nanoparticles will open new dimensions in the field of nanomedicine and pharmaceutics especially against MDR bacterial strains.

Key words – MDR, MIC, ZnO NPs, SEM

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Nanotechnology a new trend in Cancer Treatment

R.Ushasri , D.PoojaRani, Sraya Saseendran.

Department of Microbiology, Justice Basheer Ahmed Sayeed College for Women
rushasri@gmail.com

Abstract:
Cancer therapies are limited to three methods namely surgery, radiation, and chemotherapy. The three methods damage normal tissues and ineffective treatment.. Nanotechnology provides an effective and reliable method to combat cancer as an alternate way by enhancing efficacy of cancer treatment. The aim of this review study was to implement Nanotechnology a new trend in Cancer treatment. Nanoparticles play an important role in drug delivery system. Nanoparticles encapsulate small molecular drug compounds enhancing drug delivery in tumor cells. The relatively large surface area of nanoparticle can be functionalized with ligands, including small molecules, DNA or RNA strands, peptides, aptamers or antibodies. These ligands can be used for Cancer treatment The theranostic action is applied which includes combination drug delivery based on physical properties of Nanoparticles.. The nanoparticle mediated chemotherapy is an innovative strategy. Nano materials including carbon nanotubes, polymeric micelles and liposomes are used in cancer drug design which exhibits pharmacokinetic and pharma codynamic benefits in cancer diagnosis and treatment.

Key words: Nanotechnology, Liposomes, Cancer, Drug delivery,

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

A review study of Pharmocogenomics of anticancer drugs

R.Ushasri, S.Seethalakshmi & R.Swetha

Department of Microbiology
Justice Basheer Ahmed Sayeed College for Women
rushasri@gmail.com

Abstract:

Cancer therapy involves non specificity, toxicity and inefficient therapy among Cancer populayion. Pharmocogenomics elucidates the genetic inheritance effects of patient. The genetic factors namely polymorphism are responsible for variations. Pharmocogenomics is of greater importance in the field of oncology.. The gene and anticancer drug interaction study has led to the discovery of novel anticancer drugs I leading to number of genetic tests prior to administration of drugs. The genomic technology is most economically feasible and reliable. The aim of this review study was to enhance efficacy and drug safety. Drugs for cancer therapy are small molecule inhibitors monoclonal antibodies (mAbs), interfering RNA molecules and microRNA. and improves pharmokinetic action. The identification of individual Pharmocogenomics plays an important role in treatment strategies. Pharmocogenomics plays an important role in detection of toxicity and resistance of anticancer drugs.. Pharmacogenetic and Pharmocogenomics determines variants which involves five stages. Determining the role of genetics in drug response; screening and identifying genetic markers, validating genetic markers; clinical utility assessment; and pharmacoeconomic impact

Keywords: Anticancer drugs Pharmocogenomics, Oncology, micro RNA

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

"Antimicrobial Assessment on Various Solvent Extract of Different parts of Nyctanthes Arbortristis"

Shrishti Raturi[1*], Dr. Deepak Som[2]

[1]Research scholar, Department of Microbiology, SGRR School of basic and applied sciences, SGRR University Dehradun-248001, (srishtiraturi20@gmail.com)
[2]Associate Professor, Department of Microbiology, SGRR School of basic and applied sciences, SGRR University Dehradun-248001, (somdeepak978@gmail.com)

Abstract:
Medicinal plants are widely being used either as a single drug or in combination for the health care system. *Nyctanthes arbor tristis* commonly known as night jasmine or Harshringar and also widely known as Parijata. Extracts of various parts of *Nyctanthes arbor tristis* plantare used for the treatment and management of various diseases and been revealed as useful in sciatica, arthritis, fever, asthma, diabetes, cancer, etc. while Leaves are used in cough reduction. The seeds are used as anthelmintics and in alopecia. It is antibilious, expectorant and is also useful in bilious fevers. The powdered seeds mixture is used to cure scurfy affections of scalp, piles and skin diseases. Plants contain different phytoconstituents which belongs to the categories of alkaloids, glycosides, tannins, essential oils, etc.

Individual parts of plant are being examined and supported towards its activities like antifungal, antibacterial, antipyretic, immuno modulatory, antioxidant and hepato protective properties. Different parts of the plant like seeds, leaves, flowers, bark and fruits have been explored for their remarkable pharmacological activity. It is a rich source of biologically active compounds, which would attract the attention of drug discovery groups, in the near future, to discover novel bioactive molecules for safer and effective treatment of various diseases.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Bio-Impedance Modeling for Interdisciplinary Applications

Kolla Bhanu Prakash,

Koneru Lakshmaiah Education Foundation,
Vaddeswaram, Guntur(DST), A.P, India
drkbp@kluniversity.in

Abstract:

Bio-impedance circuit modeling is a very big innovation in the modern day research used for biotechnology scientists for fitting the spectral impedance data for living tissues. The variations in impedance magnitude at different frequencies reflect implicit biophysical and biochemical changes. Sensing environmental changes is one very good application. Biological tissues have resistive and inductive behaviors. In general bio-impedance models can be divided into two families each with three impedances. Bio-impedance can be used on animals and humans; sometimes when the organ is still alive and functioning and some other times when the organ is resected. Both human and plant tissues can be taken into consideration. Direct methods depend on measuring bio-impedance using an impedance analyzer to obtain both the magnitude and phase of the impedance. The AD5933 is one of the solutions used for such cheap portable devices. However, this chip has many limitations. Due to various applications in agriculture, multi-frequency multi-source bio-impedance measurement technique can be used. Model parameters were extracted using the measured magnitude response only resulting from step-current excitation. The main advantage of using oscillators is that two measurements only are needed to extract all unknown model parameters with the tissue embedded in an oscillator. After a circuit model is selected, we need to find its optimal parameter value that minimizes the error in magnitude and phase with respect to the measured data which ultimately becomes an optimization problem.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Source of Vitamin D from Mushrooms

AmosPhiri, Mounika, Ranjitha, Dr.C. ARUN

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.carun@kluniversity.in

Abstract:
Vitamin D is a fat soluble Vitamin that naturally present in few food s and available as a dietary supplement. For most adults, the recommended dietary allowance (RDA) is 400 - 600 IU. Sufficient amount of vitamin D is produced by body when exposed to Uv radiation from sun. If Sunlight exposure is limited, vitamin D can be obtained through various sources like Mushrooms, Leafy vegetables, fatty fishes, dairy products, fish liver oils, Egg yolk, cheese, beef liver. Vitamin D provide calcium and phosphorus that prevents deficiencies related to Skeletal system, Cancer, cardiovascular diseases, neuro degenarative diseases, etc. The maindietary forms of Vitamin D are

1.D2: found in fungi

Yeast2.D3:found in Animals

3.lessamount of D3and D4 :found in fungi

When commonly consumed mushroom species are exposed to a source of ultraviolet (UV)radiation, such as sunlight or a UV lamp, they can generate nutritionally relevant amounts of vitamin D. The most common form of vitamin D in mushrooms is D2, with lesser amounts of vitamins D3 and D4, while vitamin D3 is the most common form in animal foods. Although the levels of vitamin D2 in UV-exposed mushrooms may decrease with storage and cooking, if they are consumed before the 'best-before' date, vitamin D2 level is like lytore main above 10µg/100g fresh weight, which is higher than the level in most vitamin D-containing foods and similar to the daily requirement of vitamin D recommended internationally. This review examines the current information on the role of UV radiation in enhancing the concentration of vitamin D2 in mushrooms, the effects of storage and cooking on vitamin D2 content, and the bioavailability of vitamin D2 from mushrooms

Keywords: vitamin D; mushroom;UV radiation;buttonmushroom,Ergosterol

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Analyzing COVID-19 research through Bibliometric mapping techniques

Sana Habeeba, Maram Sai Keerthee Reddy, Vadla Abishek, Kadiyala Goutham Pradeep, Venkata Rajesh Yella*

Department of Biotechnology, Koneru Lakshmaih Education Foundation, Green Fields, Vaddeswaram, Guntur, Andhra Pradesh 522502 India.
yvrajesh_bt@kluniversity.in

Abstract:
Corona virus disease 2019 (COVID-19) has quickly spread all over the world. The number of studies in this field being performed and published is increasing day by day. This study aims to analyze the publications in the field of COVID-19withthehelpofbibliometric methods. After bibliometric analysis, the second aim is to investigate the relationship between the number of publications in countries and the number of total cases. The data in the study were taken from the Web of Science (WOS) site. Analysis and mapping processes were performed using VOS viewer. The words "COVID-19", "Novel Corona virus", "2019-nCoV", "SARS-CoV-2" were used as keywords for analysis. The data include publications from 2019 to 2021 (January 10). We also tried to go across the S-protein and analyze its variants and the authors who have worked on it across the globe and give its related data with the help of VOS Viewer software and PubMed search engine.

Keywords: COVID-19; Corona virus, Bibliometric analysis, VOS Viewer, S-protein.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Analyzing a next generation multi-epitope based peptide vaccine candidate against SARS-CoV-2 using computational approaches

Safa Haadiya,Abhinaya J,Susmitha T,
K C krishna sarayu & Dr. B.V.L.S Prasad

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. pburra@kluniversity.in

Abstract:
COVID-19 caused by SARS-CoV-2 was declared a global pandemic by World Health Organization (WHO) in March 2020. Among the SARS-CoV-2 target proteins, Spike (S) glycoprotein (a.k.a S Protein) is the most studied and interested target known to trigger strong host immune response. A detailed analysis of S protein-based epitopes interests us to study a novel B-cell-derived T-cell Multi-epitope-based peptide (MEBP) vaccine candidate. This involves an advanced potential systematic and comprehensive computational protocol consisting of prediction of dual-purpose epitopes and designing an MEBP vaccine construct. This will be followed by 3D structure prediction, and validation. The dual-purpose epitope prediction protocol must be designed such that the same epitope elicits both humoral and cellular immune response unlike the earlier designs.

Keywords: COVID-19, Docking, In silico, Multi-epitope, Simulation.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Cervical Cancer

**J.Maryedna, P.Sai Dheeraj,V.Sai akshitha,
V.Lasyasri,V.Sai Nadh & Dr. C S Felice**

**Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. felicebt@kluniversity.in**

Abstract:

Cervical cancer is a type of cancer seen in walls of cervix. Various stains of Human Pailloma Virus (HPV) is the main reason involved in causing cervical cancer. It is seen in middle age group women. As per the recent studies every year 1,32,00 Indian women are diagnosed with cancer and 74,000 die of the disease. World health Organization aims at eliminating 50,000 cervical cancer cases in India by 2050.

Our current study is aimed at analyzing the various reasons that are contributing in causing this problem, their age group and other parameters that could develop cervical cancer. A data analysis is done taking different age groups, their work conditions health & Hygiene conditions in to consideration through questionnaire from the affected. Based on the study the measures to reduce risk of developing cervical cancer is proposed and suggested to have regular screening tests and vaccination against HPV infection.

Key Words: Cervical Cancer, Human Papilloma Virus

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Production of Ethanol from Rice Grains

B.Swarna, P.Sasi Priya, A.Neha, K.Lakshmi Pravallika, K.Navya Vineesha & Dr Chandra Sekhar C

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. chandrasekharchanda02@kluniversity.in

Abstract:
Ethanol from renewable resources has been of interest in recent decades as an alternative fuel to the current fossil fuels. Lignocellulosic biomass like wood and agricultural crops residues, *e.g.*, straw and sugar beet pulp are potential raw materials for producing several high-value products like fuel ethanol and biodiesel. A rice straw - cellulose utilizing mold was isolated from rotted rice straw residues.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Lignocellulose-based materials and their application in industrial wastewater treatment.

K.Kumidwati, M. Leela Kumari, Tembo Mwiza,Adithi S, Dr . Dikshit

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. biotech.pritam@kluniversity.in

Abstract:

The search for new technologies and eco-sustainable materials for wastewater treatment has been increasing, and adsorption technology stands out because of its simple and low-cost process. This review discuss adsorbents based on lignocellulosic biomass (LB) because of their availability in nature, attractive chemical composition (lignin, cellulose and hemi cellulose) and structural composition (various functional groups capable of capturing molecules of organic dyes in aqueous solution). LB allows for the elaboration of a diverse range of efficient, reusable, economical and environmentally friendly lignocellulosic materials (LM) that may present competitive dye adsorption abilities. In addition, this review also discuss the stabilization of metallic nanoparticles or metallic oxides in lignocellulosic matrices or their derivatives and their ability to degrade the organic dyes previously adsorbed in the material has attracted considerable scientific attention due to their simplicity, reusability, and high catalytic activity and because they do not generate byproducts that pollute the environment.

Keywords: lignocellulosic biomass, organic dyes, lignocellulosic matrices.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Macrophages or Monocytes phenotypes in various infections

Nair Aayush Sasi Kumar, Srujan Reddy, B Hari Sai Prakash, L Venkata Lakshmi & Dr. Giridhar Kanuri

Department of Biotechnology, Koneru Lakshmaiah University
Green Fields, Vaddeswaram, Guntur, Andhra Pradesh, 522502
giridharkanuri@kluniversity.in

Abstract:

Macrophages & monocytes are cells that play a vital role in the defense mechanism towards a particular disease and are the first responders to an injury. These macrophages and monocytes have particular subsets expressed in a higher concentration during certain diseases which leads to an increase of pathogenicity. Monocytes can be classified into 3 specific types: - Classical ($CD14^{++}$& $CD16^{-}$), intermediate ($CD14^{+}$& $CD16^{+}$)& non-classical ($CD14^{+}$& $Cd16^{++}$). Macrophages can be divided into M1, M2 & Mox macrophages. But in the case of Covid-19, the alveolar and interstitial macrophages play a central role. Through understanding the role of these macrophage or monocyte sub sets we can prepare a chart on the basis of which we could identify a certain list of diseases like tuberculosis, atherosclerosis, Covid-19, Leprosy co-infected HIV patients, Rheumatoid arthritis, Ulcers &Cancer. Specific markers are present for each disease like Arg1 for macrophage detection in Covid-19. By detecting these macrophages and monocytes with the help of the biomarkers from a blood sample, we can predict the diseases.

Keywords: -Macrophages, Monocytes, Classical, Intermediate& Non-classical monocytes, M1, M2, Mox, interstitial& alveolar macrophages, tuberculosis, atherosclerosis, Covid-19, Leprosy co-infected HIV patients, Rheumatoid arthritis, Ulcers & Cancer.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Studies of phospholipase A2(cPLA2α) inhibitors

P.Lavanya, K.Monyasree, G.Sarvani & Dr. M. Janaki ramaiah

Department of Biotechnology, Koneru Lakshmaiah University
Green Fields, Vaddeswaram, Guntur, Andhra Pradesh, 522502
janakiramaiah@kluniversity.in

Abstract:

Phospholipase A2 is an enzyme, and it is also known as cPLA2α. This enzyme was first identified and purified from cobra and rattlesnake venom and later from the mammalian pancreas, hydrolyses membrane phospholipid on the sn-2 position releasing FFFs and LPLs. It is involved in eicosanoid synthesis and highly expressed in many cancers such as AML, (M.M), breast etc... More cPLA2leads to less cancer patient survival. Cytosolic phospholipase A2 α is a rate limiting enzyme .Haematological malignancies H.M in blood, bone marrow, lymph nodes at 8% of all cancers. It shows Very high expression of cPLA2 in blood cancers particularly multiplemyeloma. As for now scientists had already identified some drugs to inhibit pla2. Treatment options are thalidomide, bortezomib, AVX002 (Thiazoles), AVX235. Although these drugs are effective, but they are not completely inhibiting the enzyme. There is still so much chance of reoccurrence of the cancer cells. So here we are doing this project to make a complete study on these drugs and effect of cPLA2αinhibitors on several types of cancer cells.

Keywords:cPLA2α,thalidomide,bortezomib,AVX002,Haematologicalmalignancies,Cytosolicphospholipase.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Production of Bio Hydrogen from agricultural wastes

V Sai Neeraj Krishna, M Pardhu & Dr. S. Karthikeyan

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. karthikeyan@kluniversity.in

Abstract:

Hydrogen is a clean fuel that, when consumed in a fuel cell, produces only water. Hydrogen can be produced from a variety of domestic resources, such as natural gas, nuclear power, biomass, and renewable power like solar and wind. These qualities make it an attractive fuel option for transportation and electricity generation applications. It can be used in cars, in houses, for portable power, and in many more applications. Hydrogen is an energy carrier that can be used to store, move, and deliver energy produced from other sources. Today, hydrogen fuel can be produced through several methods. The most common methods today are natural gas reforming (a thermal process), and electrolysis. Other methods include solar-driven and biological processes. Biological processes use microbes such as bacteria and microalgae and can produce hydrogen through biological reactions. In microbial biomass conversion, the microbes break down organic matter like biomass or waste water to produce hydrogen, while in photo biological processes the microbes use sunlight as the energy source.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Design of Novel Thermophilic Peptides

G Moulyaa, Jyothsna Shaik Salmai Pradumana Y Manasa & Dr. G. Koteswara Reddy

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, Indiakoteswarareddy@kluniversity.in

Abstract:

Thermophilic microorganisms are of special interest as a source of novel thermo stable enzymes. Many thermophilic microorganisms possess properties suitable for biotechnological and commercial use. There is, indeed, a considerable demand for a new generation of stable enzymes that are able to withstand severe conditions in industrial processes by replacing or supplementing traditional chemical processes. This manuscript reviews the pertinent role of thermophilic microorganisms as a source for production of thermostable enzymes, factors affecting them, recent patents on thermophiles and More so their wide spectrum applications for commercial and biotechnological use.

Organisms with an optimum temperature for growth between 60 and 80 Care generally designated as thermophiles, while those growing optimally above 80 C are referred to as hyper thermophiles Chemical stability: thermophilic organisms are able to grow at high temperature due to the chemical stability of their membrane lipids Thermophiles have shown tremendous promise in terms of their applications in modern biotechnology Inducing.

Thermophilic enzymes into peptides which turns into thermophilic peptides which are biologically and medically much more important molecules these are lab synthesized compounds and gets active when induced into body.

***Keywords:ThermostableenzymesThermophilicpeptides,microorganisms,polypeptides*.**

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Preparation and characterization of Biomimetic Membranes Embedded with AQPZ

Ch.Nikhitha, k.Venkata Suneela,M.Mahammad Ejaz, K. Sai Sri Samyutha ,K.RaviKumar Reddy & Dr. M S RKrishna

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.msrkrishna@kluniversity.in

Abstract:

Aquaporins are membrane protein water channels present in cells, and they restrict the passage of contaminants including bacteria, viruses, minerals ,proteins DNA, dissolved gases, salts, detergents, and even protons without preventing the passage of water. Small molecules such as urea and boric acid, the removal of which is in efficient by conventional membranes are also rejected. Bio mimetic membranes, an innovation in water filtration technology attempts to replicate a natural process occurring at the cell level; specifically, the highly-selective and efficient transport of different molecules across a cell membrane. Therefore, aquaporins have received worldwide attention because of their potential to form biomimetic membranes with highflux and selectivity for water treatment applications. However, challenges involved in the incorporation of aquapor in proteins in membranes limit their applicability. One of them is to attach a quaporins to the membranes without chemically alteringor damaging the aquaporins during the binding to the membrane. The second challenge is to design and prepare an assembly that allows biomimetic membranes with aquaporins to sustain hydraulic water pressure gradients without losing their integrity and performance. Membranes modified with unaltered aquaporins displayed lower flux declines and higher flux recovery values after back wash as compared to unmodified PBI membranes. Also, modified membranes showed improved rejection values for both protein and salt solutions of different concentrations. However , a leakage ofions was observed between the channels of the modified membranes as aquaporins didn't acquire the entire surface filtration area of the membrane for the feed to pass through. In order to make water flow occur through the channels to reject sprotons, ions and other impurities more efficiently, the channels of the aquaporins need to be aligned with the direction of water flow. Therefore, aquaporin channels were aligned with the direction of flow. Functional groups were installed on AqpZ for covalent attachment to the polymer matrix so that the proteins could be immobilized to the membranes and aligned in the direction of the feed flow. Membranes modified with aligned aquaporins showed preliminary results with high initial flux, lower flux decline and higher flux recovery.

Keywords:AqpZ,Biomimeticmembranes,Aquaporin,Waterpurification,E.coli

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Bioinformatics in Field of Cancer

S.Lakshmi prasanna,Sahil Shaik, A.Sarvani,N.Jayanth &
Dr . Maheswara Reddy

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.mahesh_bt@kluniversity.in

Abstract:

Cancer is a disease determined by several genetic and epigenetic alterations. The uncontrolled growth of abnormal cells is generally determined by the alterations in genes and epigenetic factors. Oncological research is undergoing a drastic revolution due to advanced technology improvement in exploring the relationship of molecules which make a unit cell of an organism. Molecular biologists are more aware about the genomic, trans criptomic, and proteomic data because of the obvious technology advancement in the area of molecular medicine. This has further led to the development of novel potential targets for drug development and also establishment of molecular markers for unified treatment and therapy against cancer. Numerous cancer studies have been carried out using altered protocols, samples, and data from multiple sources in order to com-pare and validate new strategies with the convention alones. Few bioinformatics methods used here are SLAMS, COPA, Microarray Technology, Module Maps, DATA REPOSITORIES, STANDARDS, AND ANALYSIS TOOLS. Bioinformatics helps to develop new methods and advancing trends in order to develop therapeutic and diagnostic protocols in the area of cancer research.

Keywords:epigeneticalterations,genomic,transcriptomic,proteomic,molecular markers.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Bio Materials for Bone tissue regeneration

Y Vandana, G Vineetha, G Sai Ganesh,
V Srimanth & Dr. Nadeem Siddiqui

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.pburra@kluniversity.in

Abstract:
Tissue defects are due to several reasons such as accidents, injury and trauma etc. In treating these tissue defects, biomaterials in combination with stem cells and Growth factors are playing a vital role. Wide variety of polymers can be used to prepare scaffolds for tissue remodeling. Bone is the basic supporting tissue for different organs, which not only protects from injuries but also helps in maintaining quality and healthy life. Damage to this bone degrades the life style of an individual. Round the globe lakh of people are getting affected due to bone injuries and the number may rise in near future more rapidly. Donor crisis is also one of the important reasons in limiting the usage of organ transplantation. In this context, to restore the structure and function of damaged bone, we focus to prepare and characterize scaffolds from natural polymers (chitosan from crustacean shells) using a method known as Salt Leaching. Further, the prepared scaffolds will be subjected for surface modification so as to improve the cellular responses proving the biocompatibility of scaffolds. Thus, the prepared scaffolds will function as a promising biomaterial for bone tissue repair.

Keywords: Natural Polymer, Bone Tissue, Tissue remodeling and Bio materials.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Microalgae waste water treatment

Varsha G, Sai Ajay, Sai Priya & Sindh &Dr Naga Chaitanya

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. nckavuri@kluniversity.in

Abstract:

Current global environmental issues raise unavoidable challenges for our use of natural resources. Supplying the human population with clean water is becoming a global problem. Numerous organic and inorganic impurities in municipal, industrial, and agricultural waters, ranging from micro-plastics to high nutrient loads and heavy metals, end anger our nutrition and health. The development of efficient waste water treatment technologies is becoming increasingly important. The biomass production of microalgae using industrial waste water offers the possibility of recycling industrial residues to create new sources of raw materials for energy and material use. This review discusses algae-based wastewater treatment. Micro algae-based wastewater treatment relies on the ability of phototrophic microorganisms to supply oxygen to aerobic organic pollutants degraders and enhance the removal of nutrients and pathogens. Microalgae photosynthesis also boosts biomass productivity, thereby providing new capabilities for the recovery of energy and nutrients and climate change mitigation. Micro algae-based engineering requires optimisation of light supply and biomass recovery. full-scale implementation is currently only realistically achievable in shallow, well-mixed raceway ponds. full-scale experience is limited, implementation is increasing and supported by vigorous research efforts worldwide.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Immunological Characterization of Immunoglobulin Y and Immunoglobulin G towards House Dust Mite Allergens

Yochana B, Sai BhumikaReddy B, Keerthika O, Sahithi M, Sai SahithiRama Gayathri V & Praveen Kumar Vemuri*

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.vemuripraveen_bt@kluniversity.in

Abstract:
To elucidate which proteins from dust particles have been extracted and thus could contribute to immunological activity, will be subjected to SDS-PAGE analysis by various staining methods and dot blot method will be conducted to know the cross-reactivity between the allergens Later, the allergens will be screened for their activity against immunoglobulins for allergic responses by using ELISA technique, which may capable of triggering immunological responses by IgY. To further understand the functions of allergen, FTIR, MS/MS tandem spectroscopy and HPLC studies will be carried out since which are powerful tools for the identification and characterization of pollens. Therefore, it may determine that IgG and IgY plays a critical role in a variety of allergic responses.

Keywords: Allergen, IgY, IgG, ELISA, FTIR, HPLC

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Use of natural ligands in FoxP3 T-cell receptor inhibition involved in tumor progression

P. Kavya sri, M. Sree Lakshmi,K. Sri harsha& Dr. Sarda Prasanna

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.yourssarada@kluniversity.in

Abstract:

Regulatory T cells (Tregs) are a specialized subpopulation of T cells that act to suppress immune response. It has been shown that Tregs are able to inhibit T cell proliferation and cytokine production. The FOXP3 gene provides instructions for producing the fork head box P3 (FOXP3) protein. The FOXP3 protein attaches (binds) to specific regions of DNA and helps control the activity of genes that are involved in regulating the immune system. Transcriptional factor foxp3 serves as lineage specification factor for Treg cells Specifically, regulatory T cells (Tregs) have been found to promote primary tumor progression, Tregs may promote metastasis and metastatic tumor growth. Using of natural ligands which inhibit tumour invasion. Sources of natural ligands are(plants, spices, grains) these ligands will bind to foxp3 receptors and supress foxp3 function which results in reduction of tumor progression

Keywords: Regulatory T cells (Tregs), Fork head box P3, Transcriptional factor, tumor progression,lineage specification factor, natural ligands.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Edible Coating on Fruits

Lakshmi Saatvika M, S Vasavi Radha, D prakhyat, J Gowtham Akanksh, B Tiru Vivek & Dr. Kamma Shrinivasulu*

Department of Biotechnology, Koneru Lakshmaih Education Foundation,
Vaddeswaram, Guntur, Andhra Pradesh 522502 India.
nikhi_bt@kluniversity.in

Abstract:

Now a days fruits are highly demanded in the market because of its nutritional value. Fruits have short shelf life due to its perishable nature. About 30% fruits are affected or damaged by insects, microorganisms, pre and post harvesting conditions during transport and preservation. Preservation of nutritional value of fruits is a big challenge for world. Edible coating is an effective method to solve this problem. It provides protective edible covering to fruits. It is beneficial for consumers and environment. Today edible coatings are used as a nutraceutical and beneficial for consumer health. Edible coatings are of different types such as hydro-colloids, lipids and plasticisers. These have good barrier properties to O2, CO2, moisture and water vapor.

Keywords: Hydro-colloids, lipids, comezin film.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

A Comparitive Study and Isolation of Bioethanol From Oryza sativa (Rice) and Triticum(Wheat)

Keerthi.M, Prashanth.K ,Shahanaz.Sk, Sathwika.M

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.

Abstract:

Bio ethanol became a sour subject nowadays which is used as an alternative fuel. Among all the cheap and renewable sources, Rice and wheat are more attractive sources due to higher presence of cellulose and hemi cellulose content. They can be easily hydrolyzed into fermentable sugars. The other main reason to choose rice and sprouted wheat is they are an alluring lignocellulosic material for bio ethanol creation since they're quite possibly the most sustainable resources. There are many projects on the production of bio ethanol(focusing on the pretreatments, post treatments and using different feedstock).But our aim is to focus on the minimal percentage of starch required to produce bio ethanol.

Keywords: cellulose, hemicellulose, feedstock

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Green synthesis of silver nanoparticles using of Ginkgo biloba and Withaniasomnifera

P. Immanuel raju, V. Likhita, P. Dhanusri, M. Thelma Aradhya, & Dr. K. Srinivasulu

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. nikhi_bt@kluniversity.in

Abstract:

Green synthesis of nanoparticles is an large amount gigantic area in the space of nanotechnology, which has fiscally sharp and climate that has well disposed advantage over physical and designed frameworks. The current review bases on arrangement of silver nanoparticles through green course utilizing leaves of Ginkgo biloba, and roots of With aniasomnifera. The consolidated silver nanoparticles were portrayed by XRD. The results are been observed in the test results from FTIR (Fourier Transform Infrared Spectroscopy), UV-Vis (Ultraviolet-visible) and XRD (X- Ray Diffraction).

Crystallographic structure was attested by XRD and normal molecule size of blended silver not settled forever which was viewed as of 15.72 nm. The antibacterial advancement of these planned silver nanoparticles against pathogenic bacterium Escherichia coli (E. coli) has shown the most raised ZOI of 2.45 cm at 30 ppm.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Solid State Fermentation for the Preparation of soda free Gultem free and Less Calorie Bakery Items

N. Bala Kumari, M. Ramya Reddy, P. Sony, S. Niharika & Dr. Suresh Chandra Phulara

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India, sphulara@kluniversity.in

Abstract :

This project deals with the enzymes, Probiotics and fermentation process of it. Probiotics are a combination of live beneficial bacteria and or yeast that naturally live in your body. Bacteria is viewed negative as that something that makes us sick.2 types of bacteria are present that is good bacteria and bad bacteria. Probiotics are made up of good a bacterium that helps us in body to keep healthy and working well. This good bacterium helps us in many ways such that it can fight with bad bacteria. When, we are sick that the bad bacteria enter your body and increase in their number. Good bacteria fights, with the bad bacteria and restore the body within our body. Good bacteria keep our immune function and controlling inflammation. This Probiotic function may vary from one person to another person. We can increase the number of good microbes through foods and drinks and supplements. Fermented foods are in particular are home to a host of good bacteria that benefits of our body. These foods can introduce in our daily diet. By taking them regularly we may not realize that they contain probiotics.

Keywords: Yakult, Rajgira flour, Water chestnut, Buckwheat flour,donuts cakes and cookies.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Study of Sars-CoV-2Varaints

T.Padma, R.Priyanka, D.Bhavya &Dr. B V L S Prasad

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. pburra@kluniversity.in

Abstract:

Sars-CoV-2(severe acute respiratory syndrome corona virus 2) has spike protein which is a trimer it contains an receptor binding site. Receptor domain interaction between ligand spike protein and receptor ace2. The interaction will be like a lock and key where the ligand bind with the receptor. Rna enters into the host system where replication occurs which sometimes leads to mutation creates variants. There are many variants found to date they are alpha, beta, gamma, delta, kappa, etc. When variants are formed to check virulence we tried to correlate the virulence with the region it occurred first, climatic conditions, and food habits, etc, and tablet this and draw linear regression to quantify it. Change the mutated sequence and generate energy stimulation and 3 d modeling.

Keywords: variants, mutations, modeling, chimera, SPD viewer

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Bio Enzyme from Citrus Peel Used for The External Treatment of Fungal and Bacterial Based Human Skin Diseases

J Vineeth Anand, S V S Dheeraj, M Susmita Sri & Dr. C Arun

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. carun@kluniversity.in

Abstract:

This project analysis the action of Eco enzyme on the fungus which effects the humans and causes skin diseases. The Eco/ Bio/Garbage enzyme is prepared from the citrus peel along with organic constitutes such as water and sugar. Major skin diseases causing fungus like Trichophytonrubrum which is responsible for 85% of total skin diseases, Aspergillusniger which causes aspergillosis, lesions on skin and Mucor which causes Mucormycosis were selected. Agar plate disk diffusion method is used to test the anti-fungal activity. A bacterial strain Serratia is also selected as it causes cellulitis. Same Agar plate disk diffusion method is used to test the anti-microbial activity. This project determines weather in-lab prepared bio enzyme is effective on the selected strains or not and if it can be used further for pharmaceutical products like 100% organic skin ointments to treat ringworm, aspergillosis, mucormycotic and cellulitis respectively.

Key words: Trichophytonrubrum, Aspergillusniger, Mucor, Serratia, cellulitis, aspergillosis, mucormycotic

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Measurment of Volumeeteric Mass Transfer Cofficient of Microorganisms in different Fermenters

P. Preethi , M. Krishnaveni & Dr. G.SivaReddy .

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.carun@kluniversity.in

Abstract:

The volumetric mass transfer co efficient is used to compare the efficiency offermenters. There are many dynamic methods for measuring the volumetric mass transfer coefficient. The gas out and gas in method which can directly determine the volumetric mass transfer coefficient in a fermenter and provide estimates of the volumetric microbial oxygen uptake rate and the average oxygen saturation concentration at the gas-liquid interface. The errors on these parameters are large if the dissolved oxygen probe response time is not considered. For reliable measurements, deconvolution of the oxygen probe measurements must be made. The aim of this work is to measure the volumetric mass transfer coefficient of microorganisms by using different fermenters such as CSTR(continuous stirred tank reactor) , PFR (plug flow reactor) and air lift reactors .

Keywords:volumetricmasstransfercoefficient,oxygenuptake,rateproberesponsetime,dynamic gasout-gasinmethod, airliftreactorsanditwasplacedforinoculation.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Production of Levan using Agri Residues

Gnanasree Boppana , Bhavana Potluri, Sri Sarvani Vemuri & Dr. G. Siva Reddy

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Guntur, AndhraPradesh,India, gsivareddy@kluniversity.in

Abstract

Levanis an exo polysaccharide composed of fructose residues, which has been used as a stabilizer, carrier of flavors, and thickener for food sand many other applications. Levan just as insulins are the two fructans dismissing the diverse synthetical arrangement. Sugarcane water as an outcome beta treacle of their national elucidates the call for substrates in the compatibility of Levan yielding. Optimized conditions for the Levan production are necessary to increase its industrial application. This project aims to optimize the production of Levanusing Agri residues as the primary carbon source using various micro organisms. The original carbon source Sucrose was replaced with Sugarcane (Saccharumofficinarum) and Molasses. The bacterial cultures were grown in the medium containing the Agri residues as the carbon sources. The Structural characterization of synthesized Levan using FTIR and TLC was performed followed by a comparison of the extracted levan with the commercially produced levan.

Keywords:Levansynthesis,Agriresidues,exopolysaccharideextraction, carbonsources

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Validation pf Hemoglobin Levels by Utilizing Low cost point of Care

P. Jahnavi, M. Roshni, B. Haritha & Dr. Giridhar Kanuri

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. giridharkanuri@kluniversity.in

Abstract:

The Hemoglobin is the important substance in the human blood, which deficiency leads to Anemia. Most of the anemic people in India are children and women. All over the world also women and children are facing serious anemic problems. Knowing the Hb level of theirs is important now a days for every individual in the world. Regular blood test is required for every individual to detect the anemia levels in the blood. Here we are focusing on the Hb levels and HCT levels of the individuals in the sample size, by using point of care device and Medonic device. The point of care device here used is Haemospark. Here the methodologies of both the devices are used for the estimation of hemoglobin levels of every individual. Both the devices need to draw the blood sample from the patient using manual pricking method. All these are carried out in the laboratory. After the collection of blood samples using several methods and algorithms the Hb levels are analyzed from both devices and the result gives the standard ratio of the device.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Organic Solutions for fish growth

D.S. Madhav, M.V.S. Raju, K. Akhil, G. Sriraman & Dr. S. Karthikeyan

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. karthikeyan@kluniversity.in

Abstract:

Aquaculture is generally provided with controlled cultivation of aquatic organisms such as copepods and algae. Mimicking the nutritional value of these organisms, organic solutions are obtained through the development of liquid organic formulations of which help in more growth at low cost in less time while simultaneously improving disease resistance. To maintain consistent fish growth, de-oiled rice bran and groundnut flakes (regular daily feed) have been given as the feed for rohu (LabioRohita) fishes at the rate of 3-5g/tank. This present study deals with the qualitative and quantitative efficacy of diluted organic solutions for fish growth and water quality. The experiment was carried out with four different tanks, based on dilute environments created by jeevamrutham, panchagavya, bio-enzymes and control. These growth environments were maintained at a capacity of 30L/ tank for 60 days, while each tank was supplied with 6 fish. Other growth parameters such as pH, dissolved oxygen (DO) and concentration showed a promising development upon adding the solutions. This proved to be a significant factor in this study about our source of water having a basal pH value of 9-9.5 which was a deterrent to fish growth, since pH ranges between 7.5- 8.5 were achieved upon adding the solutions. Conditions such as temperature dissolved oxygen and total dissolved solvents were maintained at a constant level at 30^0 C, 6mg/L and 313ppm respectively. Fish growth was monitored in terms of length and weight, with the mean growth measuring 0.1cm, 0.2cm, 0.15cm and 0.3cm in terms of size and 0.1g, 0.3g, 0.33g and 0.5g in terms of weight for control, jeevamrutam, panchagavya and bio-enzymes respectively. Bio-enzymes and Panchagavya showed the most significant results.

Keywords: Jeevamrutham, Panchagavya, Bio-enzymes, Rohu.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Identification of novel Dipeptidyl-peptidase- IV inhibitor and In-vivo anti-Diabetic activity of Passiflora edulis

Sibin Nambidi ,V.L Dixitha , Udatha Harsha Vardhan , Gulam Saleem & Dr. M.S.R Krishna

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.carun@kluniversity.in

Abstract:

Natural extracts are a valuable resource for new drug discovery and play a vital role in traditional medicine for the treatment of diabetes mellitus. Dipeptidyl peptidase inhibitors are promising candidates for the treatment of type 2 diabetes mellitus, and the success of certain anti-diabetic extracts of natural origin could be explained, at least in part, by DPP-IV inhibition. The goal of the research is to find a new DPP-IV inhibitor from *Passiflora edullis* using in silico analysis of phytochemicals extracted from plant leaves with the DPP-IV receptor(1NU6) and Ex-vivo analysis using the human serum. The leaf extract included 12 active components, according to the GC-MS study. When compared to the typical DPP-IV inhibitor linagliptin, molecular docking studies revealed that four molecules, namely Pffafic acid, Epigallocatechin, and Catheol, had a better inhibitory effect. The efficacy of the plant's n-Hexane extract to reduce glucose was also examined in an in-vivo anti diabetic investigation. These molecules could be employed as a potential lead molecule for diabetes treatment in the future, rather than the current medications.

KEYWORDS: Dipeptidyl peptidase, Molecular docking, Phytochemicals, Ex-vivo, Anti-diabetes

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Using of Honeycomb to synthesis Polyhydroxyalkonates in Bacillussubtilis

T.Teja , P.Dinesh Sai kumar ,V.Uttej Nandhan ,K.Ayyappa &Dr. Nadeem Siddiqui

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. siddiqui@kluniversity.in

Abstract:

Using sucrose as a carbon source, batch cultures of Bacillus subtil is were investigated for the synthesis of polyhydroxyalkanoate (PHA). Due to its high sucrose content (50 percent), honeycomb was employed as a renewable carbon source in subsequent trials, culminating in the development of a low-cost PHA manufacturing technique. The medium supplemented with 50% honeycomb solution produced the most PHA (1.53 g/100mL) and had the smallest dry cell weight (0.44 g/100mL). The influence of pH on PHA production was also looked at. Maximum DCW was 1.76 g/100mL at pH 5.0, whereas maximum PHA was 1.32g/100mL. The existence of the ester group was confirmed by UV spectral analysis of PHA, which revealed a strong peak between 230 and 240nm (CH3-COO). In the Fourier transform infrared spectra of the generated PHA, the transmission band at wave number 1726 cm-1 is a marker of C=O stretching of the polymer's carbonyl group.

Keywords: Bacillus subtilis, biopolymer, fermentation, PHA, honeycomb solution.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Extraction of cellulose from saw dust and rice husk

N.Sushmitha, S.Shabnoor, N.Geethika , Dr. Sarada Prasanna Mallick

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.yourssarada@kluniversity.in

Abstract:
Saw dust and Rice husk were collected from mechanical laboratory and rice mill respectively and converted into powder. The powder was extracted using various solvents to eliminate the soluble extractive and waxes. The raw cellulose was kept in autoclave to treat with alkaline solution to break the bond linkage. Most polar ingredients like hemi cellulose, lignin and pectin were removed through Ethylene diamine tetra acetate and hydrogen peroxide. The raw cellulose was further purified through acetic acid and nitric acid under mechanical stirring. The cellulose was neutralized by demonized water and treated with ethyl alcohol and incubated for 2 days. The extracted cellulose was analyzed by analytical method like Fourier Transfer Infrared Spectroscopy (FTIR), characterization was performed to identify altered functional groups existing on the surface of raw sample and pure cellulose together from each step of extraction. It measures the range of wavelengths in the infrared region that are absorbed by a material. Broad peaks of OH stretching found in all spectra were assigned to the presence of phenolic OH and aliphatic structures for extractive and aromatic structures of lignin. It was revealed that aromatic functional groups were mainly found in the extractive, while water, carbonyl and ether were the dominant groups in cellulose, and methyl, methylene, carbonyl and carboxyl groups were enriched in lignin. The extracted cellulose has highly crystalline, thermal constancy and good mechanical properties.

Keywords: ***Sawdust, Rice husk, Cellulose, Autoclave, Hemicellulose, Lignin, Pectin.***

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Prediction of Origin Rediction of Origin of Replication using Deep Learning

M. K. Swetha, B Srivallika, P. Chaturya, G. Tejaswini & Dr. Y.V. RAJESH

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.yvrajesh_bt@kluniversity.in

Abstract:

The primary goal of our project is to predict the origin of replications in the target sequence by using the recent technology "Deep Learning". Deep Learning: It is a branch of machine learning and artificial intelligence. It emulates the human brain. Deep Learning may be supervised, or semi supervised or unsupervised. A real-life example of Deep Learning is Driverless Cars. Here, the algorithms are initialized in such a way that the cars are trained to identify the signals and obstacles in such a way that the human brain does and then take the decisions as per the identification. If the signal is Red, the cars are trained to stop. If the signal is green, the cars are trained to move forward. If there is a rock as an obstacle, the cars are trained to apply break or take a diversion and move forward by avoiding the obstacle. All the traffic signals are trained to the cars. Here, the cars themselves act like the human brain and takes the decisions like humans. This technology is known as Deep Learning. Here, the sequence used is of the Yeast. After training the origin of replication is predicted and the positive result is given as the output.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Constructing the functionally improved nudF of Bacillus Subtilis

A.Devi Prasanna,K.Himavarshini,J.Charishma,P.Sahitya & Dr.ASHISH RUNTHALA

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. ashish@kluniversity.in

Abstract:

NUDF genes have manipulative active sites which can bind to any active sites. These genes limits the glycogen production. After the completion of MEP pathway NUDF genes acts with IPP and DMAPP through phosphorylation gives isoprenoids, for this we had conducted a bioinformatic study by using different bioinformatic tools like MEME, clustal omega, CDD,swissprot and consurf server. By using NCBI, NUDF gene sequences in bacillus subtilis were retrieved. For the above sequences multiple sequence alignment using Clustal omega was performed. With the reference of nudix motif sequence which was obtained by CDD database a motif was found similar to the reference motif on one of the similar bacillus sequence using MEME software. A structure was constructed for the retrieved sequences using swissprot, when this structure was placed in consurf server a conserved structure was obtained. The location of the motif was identified on the structure using chimera. The main aim of the project is to increase the quantity of isoprenoids production. For this identification of efficient ligand among IPP and DMAPP, the bond distance between the ligand and the active site need to be predicted. The ligand which is having high binding efficiency is considered to be the best in production of high quantity of isoprenoids among them. If the ligand with low binding efficiency is blocked, and the other ligands in a huge number which are with high binding efficiency are allowed to bind with active site the quality and quantity of isoprenoids may increase.

Keywords: Bacillus subtilis, Isoprenoids, Phylogeny, MEME, CDD.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

To check the compatibility between drug and Phytochemical in Alkaptonuria

N.L.Deepthi,P.V.N.Tejaswi,Md.Munwar,S.Harini &Dr.P.Rajasekhar

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.pinnamaneniraj@kluniversity.in

Abstract:

The main objective of our project is to test the interaction between Drug and Phyto chemical in Alkaptonuria using various Bioinformatics tools. Alkaptonuria is a black urine disease or a disease of the skeletal system. It is a rare genetic disorder of congenital phenylalanine (Phe) and tyrosine (Tyr) metabolism. An autosomal recessive condition in which a mutation or mutation in the HGD gene results in a deficiency of the enzyme homogentisate dioxygenase. This causes a buildup of homogentisic acid in the bones, cartilage and urine. HGA is a link to the breakdown of amino acids in the curbs cycle. To examine the correlation between drug and phytochemical in alkaptonuria. Since alkaptonuria is a lifelong condition with no specific treatment and on the market there is only one drug called NITISINONE, it has shown some promises that a person can cope for sometime Asurine-like symptoms darkenin the face ofurination and osteo arthritis, dark spots on the sclera of the eye, flexibility of the ear and black ear canal and heart valves are affected by HGA accumulation, blue-green and black spots on the skin..To examine the correlation between natural "phytochemical" and synthetic "drugs" we took two species of plants called Hordeum vulgare and Musaparadisiaca namely, barley and bananas and found that they resembled phenols. In this case we need to take protein by ligand through a data bank and we need to visualize it in order to find active ligan d sites. As such, we need to compare both and see which drug and phenol will bind to the active site of the enzyme. If phenolbinds in the same way asnitisonine we may think it will show the same effect as the drug shows the disease.

Keywords: Alkaptonuria, Nitisinone, HGA,HGD.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Evaluation of prothrombin clotting time with use of coagulants and anti coagulants among various blood sample

G.Nayanam, Sai Swetha, N . Nikhitha , M. Bhuvaneswari & Dr.V. Praveen Kumar

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. vemuripraveen_bt@kluniversity.in

Abstract:

The main objective of this project is to collect different types of blood samples and to test the duration of prothrombin. Prothrombin is defined as a protein present in blood plasma that is converted into active thrombin during fertilization. Prothrombin time (PT)tests used to help diagnose and diagnose blood clotting or excessive clotting disorders; The international standard (INR) is calculated from the effect of PT .If the PT is high, it takes longer for the blood to clot(for example, 17 seconds). This usually happens because the liver does not produce the right amount of protein to clot in the blood, so the process of digestion takes longer. High PT usually means there is severe liver damage or cirrhosis. A health professional will take a blood sample from a vein in your arm, using as mall needle. After the needle is inserted, a small amount of blood will be collected in a test tube or vial. You may feel a slight tingling sensation as the needle enters or exits. This usually takes less than five minutes. After collecting blood samples and adding all the coagulant and anti coagulant then elisa tests were performed. the enzyme-linked immuno sorbent assay (ELISA) is an analytical biochemistry assay, first described by Engvall and Perlmann in 1971. The test uses a solid type of enzyme immunoassay (EIA)to determine the presence of ligand (usually protein.) In a liquid sample using antibodies targeted at a protein to be measured. ELISA has been used as a tool for medical diagnostics, plant pathology, and biotechnology, as well as for quality control testing in various industries.

keywords:prothrombin,Elisa,bloodsamples,clottingfactors,liverdisease.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Phyto-pharmacological and Ex-vivo DPP-IV inhibitory activity of Boerhavia Diffusa

Phavethra Sago[1] A.L.N Bhavani[2]A.V.V.SatishKumar[3]

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.

Abstract:

Boerhaviadiffusa, a member of the Nyctaginaceae family, has a wide distribution and can be found in many parts of the world. Punarnava is the name given to it in Ayurveda, and it is the principal constituent in many Ayurvedic compositions. It is used as traditional medicine by indigenous peoples in many countries around the world for its anti-inflammatory, anti-prost atichyperplasia, anti-cancer, gastro intestinal problems, anti-arthritis etc. The entire plant is made up of a variety of bioactive chemicals that are responsible for its pharmacological effects. Experiments are being carried out to determine the plant's full potential. Experiments are being conducted to determine the full potential of the plant. The current work focuses on identifying bioactive chemicals and pharmacological activity of *B. diffusa* using GC-MS and FTIR. The plant extract's anti-cancer efficacy was tested on MCF7 and A549 cells, with IC50 values of 88.25 and 78.20 at 25 µg / ml, respectively. The crude extract was subjected to a nanti-coagulation investigation, which revealed that it contains potential anti-coagulant chemicals. Gram-positive and Gram-negative microorganisms were evaluated for antibacterial activity. *Bacillus megatherium*, *Bacillus licheniformis*, and *Bacillus amyloliquefaciencs* were all found to be susceptible to the extract. The study's goal is to encourage additional research and widespread adoption of *B. diffusa*, so that the plant, which has traditionally been utilized by indigenous people for its medicinal benefits, can become a component of major mainstream pharmaceuticals used to treat chronic human illnesses.

KEYWORDS:Boerhaviadiffusa,Anti-cancer,Antibacterial,Anti-coagulation,GC-MS,FTIR

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Studies on Medicinal Properties of *Pleurotus Ostreatus*

Praveen Kumar Vemuri*, Babitha Sri Majeti, Navya Sai Medikonda,
Rohitha Akula, Kavya Sri Arumilli, Sibin Nambidi,
Dhanya Koneru and Prakhyat Dasari

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhra Pradesh-522502, India. vemuripraveen_bt@kluniversity.in

Abstract:

Pleurotus ostreatus is primarily an edible mushroom with high nutritional value and biomedical relevance, as it contains numerous bioactive components that generate the development of the rapeutic effects. The purpose of this study is to determine the phyto pharmacological effects of *Pleurotus ostreatus*. FT-IR analysis revealed the presence ofcycloalkane, nitriles, halogen compounds, aromatic mono substituted compounds, and carboxyl acid. The presence of 12 bioactive compounds was revealed using gas chromatography-mass spectrometry (GC-MS), and components in the extract were identified and quantified using HPLC. The antimicrobial efficacy of *Pleurotus ostreatus* aqueous extract against Bacillus megaterium and Bacillus amyloliquifaciens seems promising. The extract's anticancer efficacy against HeLa and MCF7 at 25 µg/ml and exhibits strong cytotoxicity with an IC50 of 6.8µg/mL and17.5µg/mL respectively.

KEYWORDS:Pleurotusostreatus,anti-cancerousactivity,HPLC,FT-IR,GC-MS

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Production of Alcohol From Rice Husk

Vaka Rakesh, Kasireddy Srujana, Kanneganti Nitin

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.

Abstract

Rice husk is converted into fermentable sugars by hydrolysis with the help of cellulose producing bacteria(*E. coli).*To enhance the sugar production by organisms, rice husk is pretreated by acid and steam explosion. The pretreated husk is separated and dried which is added to the rice chaff media. *E. coli* bacterial culture is inoculated into the rice chaff medium. The media is then centrifuged, and the supernatant is collected to test for the reducing sugars as the microbial culture is added to work on rice husk to produce reducing sugars. Using Baker's yeast and Wyeast 3711(French Saison) the reducing sugars produced from the rice husk are fermented to alcohol. After the completion of fermentation, the samples are then purified using fractional distillation. The percentage of alcohol in the Minimal Salt Rice Chaff medium (MSRC) by *E. coli* with respect to Baker's yeast and French saison (Wyeast 3711) is 3% and 4.6% respectively.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Promoter Prediction Algorithm Using Python

**Shanmukh Chowdary, Venkateswar Reddy,
Jannu Sai Teja & Dr. Y V Rajesh**

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India.yvrajesh_bt@kluniversity.in

Abstract:

Promoters are the regions in the DNA where the transcription initiation takes place. These regions are recognized by the proteins called transcription factors. The transcription starts when RNA polymerase binds to the promoter region. After the transcription, a single strand of RNA is formed from the Double-stranded DNA. Identifying the promoter regions in the DNA is very useful in studying gene regulation and gene prediction. Gene prediction helps in finding the coding regions in the whole genome sequence. Gene regulation studies help in getting information about the usual cellular processes.

Promoter prediction software and algorithms are very useful for finding the promoters in the DNA Sequences. By experimentally promoter finding is done by sequencing the mRNA and identifying the TSS (Transcription Start Site), Where the RNA polymerase binds to the DNA. Experimentally finding the promoter regions in the whole DNA sequence is very difficult, time-consuming, and costly. So various Insilco methods are developed for identifying the promoters. There are various promoter prediction algorithms and methods that are using Machine Learning, Deep Learning Algorithms for the prediction of promoters. But these methods can predict promoters in certain organisms which these models are trained and cannot predict for other organisms.

So, to overcome these limitations an algorithm is developed using python for the prediction of proteins in various organisms' DNA Sequences. It predicts the promoter regions by identifying the various DNA motifs in the sequence based on various properties like free energy, mechanical energy, stiff, twist, persistence, wedge, GC, trx. It is very flexible and works on various organisms for the prediction of promoters. It is developed in such a way that it can predict promoters in various organisms and users can add their known motifs for the prediction.

Keywords: Promoter, motifs , Algorithm, Insilco, Prediction.

International Journal for Innovative Engineering and Management Research
A Peer Reviewed Open Access International Journal
www.ijiemr.org

Plant Growth Promoting Bacteria Effect on Mint Explants

Dhanya Koneru, Srikar V N S N, Yaswanth Kuncha, Venkatesh P &

Dr. G. Siva Reddy

Department of Biotechnology,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur, Andhrapradesh-522502, India. gsiva@kluniversity.in

Abstract:

Plant growth-promoting bacteria (PGPB) are excellent biocontrol agents and stimulators of plant growth, nutrition, and production. Therefore, these plant-associated bacteria are considered an excellent alternative to reduce or eliminate the use of toxic chemical fertilizers. Some aspects of the formulation technology and bioinoculant efficiency of diverse PGPBs (e.g., Rhizobacteria) in the field are also discussed. However, the commercialization and application of these biological agents in agriculture occur mainly in developed countries, limiting their success in developing regions. The possible causes of the delay in the application of bioinoculants for sustainable agriculture. The method used in this process is manual inoculation of bacteria and examining of growth of the plant in vivo conditions. Assays are performed to assess the growth of these (PGPB).

Keywords: plant growth-promoting bacteria rhizobacteria,agrochemicals, sustainable agriculture.