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170.	Kajal Abrol	Identification of Hub Genes and their Regulatory Interaction Networks involved in Retinoic Acid Signaling Pathway of α -Synuclein in Parkinsons Diseases: An In-Silico Approach Department of Bioinformatics, Pondicherry University, Puducherry.	ICEBB-PP11
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176.	Rajalakshmi T	Characteristics and Quality Microbiology in the Formulation of Probiotic Solid Soap Using Citronella oil and the Isolated Lactobacillus species Department of Microbiology, Kamaraj Womens College, Thoothukudi.	ICEBB-PP17
177.	Muthu Krishna Veni A	A Preliminary Screening for the Bio-Productivity of Anti-microbial Agents from the Bacterial Isolates of Rhizosphere Department of Microbiology, Kamaraj Womens College, Thoothukudi.	ICEBB-PP18
178.	Riddhi Upadhyay	Intervening Therapeutic Strategies for the Oral-Gut-Brain AXIS induced Alzheimer's Disease Department of Biotechnology, Karunya Institute of Technology and Science, Coimbatore.	ICEBB-PP19
179.	Jeev Sheen Joseph	Nanotechnology Based Drug Delivery System: Current Strategies and Emerging Therapeutic Potential PG and Research Department of Biotechnology,	ICEBB-PP20

microbiology is influenced by their growth, respiration and nutrient exchange. The bacteria were isolated from the selected farm lands of Thoothukudi Districts, Tamil Nadu, India by standard serial dilution plate techniques. It was then followed by their morphological characterization studies by Gram's and negative staining procedures. Antibiotics play the role of self-defense mechanism for the bacteria and are produced as secondary metabolites to protect themselves from other competitive microorganisms. The need for new antibiotics arose as the pathogenic bacteria acquire resistance to various antibiotics meant for treating human diseases. Given the importance of antibiotics of bacterial origin, standard techniques have been used to isolate and characterize the soil bacteria which showed antibacterial activity.

Key Words: antibiotics, rhizosphere, antimicrobial activity etc.,

INTERVENING THERAPEUTIC STRATEGIES FOR THE ORAL-GUT-BRAIN AXIS- INDUCED ALZHEIMER'S DISEASE

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ABSTRACT

Alzheimer's disease (AD) is one of the world's most highly prevalent neurodegenerative conditions, posing significant challenges for affected persons and carers. Neurofibrillary tangles (NFT) and amyloid-beta ($A\beta_{42}$) protein depositions are critical causes of cognitive impairment. Oral and gut microbiome dysbiosis has been shown to trigger and accelerate the production of amyloid-beta plaques ($A\beta_{42}$) and neurofibrillary tangles (NFT) which alter the aetiology of Alzheimer's disease and other neurodegenerative disorders, particularly those linked with age. Significantly, the metabolites released by some intestinal microbes, in particular, might influence microglial activation and further enhance neuroinflammation, a major cause of neuronal necrosis and AD pathogenesis. Diet is a rapid and direct strategy to influence the composition and functioning of microbiota dysbiosis. In the past few years, research on edible mushroom polysaccharides (EMPs) has indicated the most positive health effects on gut and mouth microbiota dysbiosis by decreasing inflammation and aiding in the maintenance of eubiosis. This review aims to comprehensively discuss the possible influence of polysaccharides derived from various edible mushrooms of the basidiomycetes family that might prevent or prolong the pathogenesis of Alzheimer's disease underlying the oral-brain, the gut-brain and the oral-gut-brain associations.

Keywords: Gut-Oral microbiota Dysbiosis, Alzheimer's disease, Microglial, Neuroinflammation, Basidiomycetes.

NANOTECHNOLOGY BASED DRUG DELIVERY SYSTEM: CURRENT STRATEGIES AND EMERGING THERAPEUTIC POTENTIAL

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ABSTRACT

Nanotechnology involves the manipulation and engineering of materials and structures at the nanoscale, typically with dimensions ranging from 1 to 100 nanometers. The unique properties of these materials at this scale have led to a wide range of application, including in medicine. One area where nanotechnology has significant potential is drug delivery. Nanomedicine and nano delivery systems are a relatively new but rapidly developing science where materials in the nanoscale range are employed to serve as means

of diagnostic tools or to deliver therapeutic agents to specific targeted sites in a controlled manner. The use of nanoparticles in drug delivery has several advantages over traditional drug delivery methods. The nanoparticles protect the drug from degradation, improve solubility and stability and enhance drug absorption. There are several types of nanoparticles that can be used for drug delivery, including liposomes, polymeric nanoparticles, dendrimers and carbon nanotubes. There are numerous applications for nanotechnology in the field of medicine like drug development and delivery. Nanotechnology offers multiple benefits in treating chronic human diseases by site-specific and target-oriented delivery of precise medicines. Recently, there are a number of outstanding applications of the nanomedicine (chemotherapeutic agents, biological agents, immunotherapeutic agents etc.) in the treatment of various diseases such as cancer, respiratory disease, heart disease, neurological disorder, dentistry etc. Even for the treatment of genetic disorders like Alzheimer's, Cystic fibrosis and Parkinson's disease methods in nanotechnology has been developed. Nanotechnology has the potential to revolutionize drug delivery by improving the efficiency and effectiveness of drug therapies while minimizing side effects.

BIODEGRADATION OF PLASTIC USING MICROORGANISM

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ABSTRACT

Plastic waste accumulation in the environment has been an increasing ecological threat. Million tons of plastics accumulate annually as increased solid waste in terrestrial (or) marine environments, amounting to 20-30% of municipal solid waste; they thus pose serious hazards for nature. Today less than 10% of all plastics are recycled, 24% are incinerated for energy production and the remaining 60% are not recovered. In recent studies it is found that some microbes are responsible for the degradation of plastic. Our goal is to examine the degradation efficiency of plastic using microbes. The plastic sample was isolated and screened from our environment. The degradation efficiency of plastic was analysed using liquid culture medium. The microbial species were identified as *Actinomyces* sp. and *Pseudomonas* sp. degrades plastic at an efficiency of 21.9% and *Pseudomonas* sp. degrades plastic at an efficiency of 11.8%. We conclude that the degradation efficiency of *Actinomyces* sp. more than that the *Pseudomonas* sp.

ENHANCEMENT OF LIPID PRODUCTION OF OLEAGINOUS MICROORGANISMS BY CHANGING C/N RATIO OF FOOD WASTE MEDIUM

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ABSTRACT

According to UNEP food waste index report 2021, globally 931 million tonnes of food was wasted in 2019. In India, 50 kg of household food waste is generated per capita per year. Considering the quantity of food waste generated, the scope for their use to generate energy is very high. Oleaginous microorganisms that can accumulate >20% lipid of their dry cell biomass and have the capacity to utilize a wide variety of carbon sources. The lipids accumulated by the oleaginous microorganisms can be extracted to produce the biodiesel. Compared to other substrates, food waste (FW) is receiving greater attention recently due to the greater availability, and to eliminate the need to dispose these wastes. A batch experiment was conducted in culture flasks to evaluate the growth and lipid accumulation of two oleaginous yeast strains *Cryptococcus curvatus* and *Yarrowia lipolytica* on food waste medium. Food waste was collected from the canteen of Manonmaniam Sundaranar University, Tirunelveli. The physico-chemical properties of the collected food waste were analysed. The experiment was conducted for 168