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AB – 01

INSULIN RECEPTOR GENE POLYMORPHISM EXON - 8 (A>G) T INSR IN POLYCYSTIC OVARY SYNDROME

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Type 2 diabetes mellitus is a multifactorial diseasewhich is influenced by genetic and environmental factors. The prevalence of diabetes has increased overtime because of over nutrition and reduced physical activity. INSR is the member of the receptor tyrosine kinase family of proteins located on the chromosome 19 in Homosapiens. Insulin resistance is proposed as a key pathophysiological feature of polycystic ovary syndrome (PCOS) contributing to both reproductive and metabolic disturbances. Reproductively, insulin resistance increases hyperandrogenism through insulin increasing ovarian androgen production. Populations with prevalent insulin resistance are known to be at increased risk for Impaired Glucose Tolerance, Type 2 Diabetes mellitus and Cardio vascular disease. The main aim of this study is to investigate the association between INSR gene polymorphism and Type 2 diabetes mellitus in healthy and PCOS Patients. Values for various biochemical parameters such as age, hip or waist ratio, fasting insulin, LDL, HDL cholesterol levels etc for both healthy and PCOS patients were analyzed. Type 2 diabetes mellitus is screened by using the primer Exon-8(A>G)T and INSR gene was restricted by using restriction enzyme *NsiI* that resulted in band pattern 239bp and 285bp by PCR -RFLP techniques.

AB – 02

STUDY OF DIFFERENT METHODS FOR DETECTION OF BIOFILM FORMATION IN *ENTEROBACTER CLOACAE* IN DIFFERENT GROWTH MEDIA

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Biofilm formation is defined as a sessile microbial community produced by a bacterium. They are colonial way of life of microorganisms and defined as complex microbial assemblages and their attachment is by fimbriae, pili, flagella, extracellular polymeric substance which acts as a bridge between bacteria and the conditioning film. Most bacterial infections are caused by bacteria growing as a biofilm. *Enterobacter cloacae* is a ubiquitous, Gram negative, facultative anaerobic rod-shaped bacterium belonging tothe family Enterobacteriaceae. *Enterobacter cloacae* was isolated from grape fruit. The 16s rRNA sequencing was performed and the isolates were found to be *Enterobacter cloacae* and were submitted using NCBI Basic Local Alignment Search Tool and the accession number is MK615920. *Enterobacter cloacae* is a food borne pathogen and are found as a commensal in gut flora of many human and animals. The planktonic growth curve of *Enterobacter cloacae* was done in different media such as NA, LB, TSB, TSB-1, TSB-2, BHI, BHI-1 and BHI-2. *Enterobacter cloacae* have an ability to form biofilm in optimal conditions. *Enterobacter cloacae* in different growth media were analysed for biofilm formation by four methods, that is, tissue culture plate (TCP) method, tube method (TM), Congo Red Agar (CRA) method and Modified Congo Red (MCRA) method. Compared to all the different growth media Modified Tryptic Soy broth - 1 resulted in effective biofilm formation.

AB – 03

ISOLATION OF BACTERIOCIN PRODUCING BACTERIA FROM GOAT INTESTINE AND ITS ANTILISTERIAL ACTIVITY

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Bacteriocins are compounds produced by bacteria that possess antibacterial property. Now a days, food safety has become an increasingly important concern so the application of antimicrobial peptide that target food pathogens without toxic effects has gained great attention. Bacteriocins have many attractive characteristics that make them suitable candidates for use as food preservatives, such as protein nature, inactivation by proteolytic enzymes of gastrointestinal tract, non-toxic to laboratory animals tested and generally non-immunogenic and inactive against eukaryotic cells. *Listeria monocytogenes* causes the most food poisoning death. The genus *Listeria* consists of a group of Gram-positive bacteria which has low G+C content and is closely related to the genus *Bacillus* and *Staphylococcus*. The goat intestine sample was collected and it was serially diluted, enriched and the bacterium was isolated and maintained in MRS agar. The 16s rRNA sequencing was performed and the isolates were found to be *Staphylococcus sp.* The antilisterial property was checked by spot on lawn method in MRS agar and the zone of inhibition was observed for *Listeria monocytogenes*

AB – 04

INSULIN RECEPTOR GENE POLYMORPHISM EXON -17 (C>T) INSR IN POLYCYSTIC OVARY SYNDROME

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The INSR gene, which encodes the insulin receptor, is a candidate gene for type II diabetes (T2D). T2D is multifactorial disease, influenced by both genetic and environmental factors. Type 2 diabetes mellitus is characterized by insulin resistance and altered insulin secretion. The prevalence of diabetes has increased dramatically with the adoption of new life style of over nutrition and of reduced physical activity. The objective of the present study was to sequence some of the crucial exons in the INSR gene such as exon 3, which encodes the insulin binding domain of the INSR protein, and Exon 17-21, which encodes the protein tyrosine kinase domain for mutation/ polymorphism and to study their association with types 2 diabetes mellitus. PCOS has a multigenic disorder and insulin resistance is one of its hallmark features. Polymorphisms in exon 17 of insulin receptor (INSR) gene are reported to be associated with PCOS. PCOS have insulin resistance which plays key in its pathogenesis. The most frequent of these were at exon 17, which encodes the partial tyrosine kinase domain containing the ATP binding site of INSR important for downstream signalling. Among these polymorphisms, a C/T SNP at HIS 1085 IN EXON 17 has reported to be significantly associates with PCOS. The main aim of the study is to investigate the association between INSR gene polymorphism and type 2 diabetes mellitus in healthy and PCOS patients. Values for various biochemical parameters such as age, hip and waist ratio, fasting insulin, LDL and HDL cholesterol level etc for both healthy and PCOS patients were analysed. Type 2 diabetes mellitus is screened by using the primer EXON 17(C >T) and INSR gene was restricted by *PmlI* that resulted in band pattern 274bp and 43bp by PCR -RFLP techniques.

AB – 05

BIOPRODUCTION AND CHARACTERIZATION OF EXTRACELLULAR MELANIN PIGMENT PRODUCED BY MICROBES

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Melanins are macromolecules formed by oxidative polymerization of phenolic and indolic compounds. In general, melanins are negatively charged and hydrophobic with amorphous nature. The main role of melanin is protection. There are different types of protection and the function may vary among different organisms. In plants, the melanin acts as the cell wall strengtheners. In human, the melanin determines the skin color and protecting against the U-V light. In microbes, melanin acts as a protective agent against environmental stress. The present work is based on the isolation of melanin from the soil sources, by serial dilution and further subcultured and identified as *Pseudomonas mosseli* by 16S rRNA sequencing. The biochemical tests were performed and proved to be the same culture. Further, the production of melanin was estimated with the maximum absorption maximum at 450nm, and maximum yield was measured to be 3000µg/ml that confirms the production of melanin. This study suggests that the pigment isolated could be used in cosmetic and pharma industries.

AB - 06

VITAMIN D RECEPTOR GENE POLYMORPHISM (RS 1544410) IN POLYCYSTIC OVARY SYNDROME

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Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder in reproductive age women. PCOS is characterized by clinical features including menstrual disorder, persistent anovulation and high androgen, obesity and insulin resistance. It is influenced by both genetic and environmental factors. PCOS is associated with a high risk of vitamin D deficiency. This deficiency is now considered a public-health because it has been associated with greater risks of other morbidities, such as cardiovascular disease and type 2 diabetes. Vitamin D deficiency might play an important role in the pathogenesis of PCOS. Vitamin D is involved in phosphorous-calcium homeostasis and also regulates growth and differentiation of various cells through specific receptor. The VDR gene is an important candidate gene for detecting PCOS, because vitamin D exerts its effects through the VDR. Mutations in the VDR gene may lead to defects in the particular gene activation or changes in its protein structure. Both these conditions could affect the cellular functions of vitamin D. The VDR gene is located on chromosome 12q12– q14, and is one of the common polymorphism that have been identified as *BsmI* (rs1544410). The aim of this study was to investigate the association between VDR gene polymorphism and PCOS in healthy patients and PCOS patients. Values for various biochemical parameters such as age, hip or waist ratio, fasting insulin, LDL, HDL cholesterol levels etc for both healthy and PCOS patients was collected from hospital for statistical analysis studies. Polycystic Ovary Syndrome was screened using the primer *BsmI* and VDR gene was restricted using the restriction enzyme *BsmI* that resulted in the band pattern 258bp and 203bp by PCR - RFLP techniques.

AB – 07

SOFTENING OF BANANA FIBERS USING PECTINASE ENZYME PRODUCED BY BACTERIA ISOLATED FROM COMPOST

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Natural fibers are schlerenchymatous cells with heavily lignified cell walls posses low density, appropriate stiffness and mechanical properties and also high disposability and renewability. India occupies the first position in banana fruit production globally and attains the yield of about 16 million tons per year. After harvesting, the pseudo stem of banana material can be effectively used as source of natural fibers. Banana fibers can be utilized in many sectors such as in textiles, paper and handicrafts industry. The textile chemical processing has started using enzymes because of their non-toxic and eco-friendly characteristics. Pectinases plays an important role in degumming of natural fibers and removes the plant's interlamellar pectin which acts as a cementing substance between the fibers. Our present study intends to use application of pectinase enzyme which is isolated from compost in degumming of banana fibers.

AB – 08

PURIFICATION AND CHARACTERIZATION OF PECTINASE PRODUCED FROM BACTERIA AND ITS APPLICATION IN FRUIT JUICE CLARIFICATION

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Pectinases are extracellular enzymes produced by many bacteria and fungi. They can cleave the complex carbohydrates pectin into simplest carbohydrates like glucose and maltose. Pectin is highly present in plant cell wall, Rice bran, Fruits peels etc., They have are used for fruits juice clarification, textile, fiber retting and degumming, wine production, extraction of edible oils from plant sources, etc., It is used in the preparation of fruits juice and vegetable juices in order to increase the juice yield, particularly in the case of berrices, tropical fruits, apples and pears. In the present study, a bacteria producing pectinases enzyme was isolated from compost sample and checked for pectinase activity in production media containing Pectin. The total activity and specific activity of the enzyme was determined. The crude enzyme would be purified and characterised for its optimum conditions like temperature and pH. Futher, it would be checked for its ability for apple juice clarification.

AB - 09

EVALUATION OF ANTI MICROBIAL ACTIVITY OF PROPOLIS AGAINST PATHOGENIC BACTERIA ISOLATED FROM FISH GUT

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Propolis is a resinous substance collected by bees. It is collected from leaf buds, bark of tree. Propolis is a golden dark brown resinous substance gathered by worker bee pack on their hind leg. Propolis is used by bee as sealant and sterilant. Propolis has antibiotic activity that helps to block out viruses, bacteria and other organisms. It also protects the honey comb from harmful pests. It is also natural supplement for effective healing surgical wound in mouth. Propolis also acts as anti- inflammatory agent and is shown to inhibit synthesis of prostaglandins. It accelerates the immune system by promoting phagocytic activity and stimulate cellular immunity. Based on the above activities, it is prescribed as nutritional supplement and also as a drug in siddha medicines for many ailments. In this work, we propose to determine the antimicrobial properties of propolis against pathogens prevailing in gut of infected fish, so that it can be supplemented along with their feed for their better growth and protection.

AB – 10

EVALUATION OF *IN VITRO* ANTI UROLITHIATIC AND ANTIOXIDANT ACTIVITY OF ENRICHED DECOCTION OF *PROTULACA SPP.,* AND *CORIANDRUM SATIVUM* SEEDS

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Urolithiasis (Nephrolithiasis), process of forming stones in kidney, bladder and urethra. Medicinal plants are established as renewable source with antiurolithiatic effects. There are many marketed formulations which are having antiurolithiatic activity, such as cystone, calculi etc. These drugs are costly, quite common reoccurrences, risk of long term fertility, potential side effects. Apart from these there are some other traditional plants available and have been scientifically assessed for their antiurolithiatic activity. Traditional plants have minimal side effects, cost effective, readily available and easily affordable. Keeping in view, the present investigation was under taken to evaluate the in vitro antiurolithiatic activity of Coriander seeds and *Protulaca Spp*., mixture by Lipid peroxidation assay, DPPH assay, nucleation assay, aggregation assay, Egg shell Decalcification assay, inhibition assay and kinetic study were performed to test the anti-urolithiasis activity of *Protulaca Spp*., and coriander mixture extracted by aqueous method. The mixture of coriander and *Protulaca Spp*., were extracted and processed.

AB – 11

STUDY ON FECILE GREEN SYNTHESIS OF GOLD NANOPARTICLES FROM MARINE ALGAE *PADINA PAVONICA* COATED WITH QUERCETIN COMPOUND AND EVALUTE ITS ANTI MICROBIAL AND *INVITRO* CYTOTOXICITY ON ZEBRA FISH EMBRYO

RAMASUBRAMANIAN V AND RANJITH SANTHOSH KUMAR D S

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Marine seed weeds are very good source of nature which posses many therapeutic values in nature, this current investigation, we first time investigated and reported the formation of AuNPs by the reduction of aqueous gold metal ions during exposure to seaweed which was future coated with Quercetin compound which was very good source of reducing agent, *Padina pavonica* extract and its anti microbial and *invitro* cytotoxicity. The gold nanoparticles obtained by this method were characterized using UV-visible spectroscopy and Fourier Transform Infrared (FTIR) spectrum analysis. Gold nanoparticle formation was confirmed by X-ray microanalysis (EDX) and X-ray diffraction analysis (XRD). Scanning Electron Microscope (SEM) and High Resolution Transmission electron microscopy (HRTEM) measurements were used to detect the shape of the nanoparticles and it indicated that they were poly dispersed with spherical, triangular, tetragonal, pentagonal, and hexagonal and rod shapes. Quercetin is a flavonol used because of its pharmaceutical properties effectively against variety of disease including Cancer. Zebra fish is widely used vertebrates model organism in scientific research and drug development we currently investigate the Cytotoxic activity on embryos of Zebra fish. This study supports that the green synthesized AuNPs from brown seaweed, *Padina pavonica* exhibited inhibitory activity suggesting that green synthesized AuNPs might be useful in the treatment to micro organism.

AB – 12

STUDY ON SYNTHESIS AND CHARACTERISATION OF E-Fe_3O_4 MAGNATITE NANOPARTICLES / POLYVENYL ALCOHOL HYBRID NANOPARTICLES FROM *ACANTHOPORA SPICIFERA* MARINE SEA WEED AND EVALUTION OF ANTI BIOFLIM ACTIVITY ON *PSEUDOMONAS AEROGENOSA* AND *ESCHERICHIA COLI*

HARI PUTHIRAN S AND RANJITH SANTHOSH KUMAR D S

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Having marine algae as a food is a simple way to boost a person intake of vitamins and minerals without adding many calories and can be used as fertilizers, animal feeds. In this present investigation, A hydrothermal assisted green Synthesized magnetite nanoparticle (E-Fe_3O_4 NPs)/Polyvinyl alcohol using *Acanthopora spicifera* extract as reducing agent and its anti biofilm potential was evaluated polyvinyl alcohol is a very good chemical stabilizing agent. The synthesized nanoparticles were characterized by X-ray diffraction (XRD), Transmission electron microscopy (TEM) analysis, Energy-Dispersive Spectrometer (EDS), Fourier transform infrared spectroscopy (FTIR), Zeta potential, Dynamic light scattering (DLS) studies and vibrating sample magnetometer (VSM). The E- Fe_3O_4 NPs were mostly spherical in shape with the averageparticle size of 10±4 nm and show long time stability and positive surface potential. FTIR spectral analysis confirmed the reduction, capping and the formation of E- Fe_3O_4 NPs. Further,on treating E-Fe_3O_4/Polyvinyl alcohol NPs against bacterial strains (*E.coli* and *S. aureus*), which resulted antibacterial activity and inhibited biofilm formation. FE-SEM and CLSM results provide the visual evidence that E- Fe_3O_4/Polyvinyl alcohol NPs arrested the bacterial growth and prevent biofilm formation in both the bacterial strains.

AB – 13

MYCOSYNTHESIS AND CHARACTERIZATION OF COPPER NANOPARTICLES FROM *GANODERMA LUCIDUM* MEDIATED WITH SILVER AND ITS EVALUATION OF ANTIMICROBIAL AND ANTIOXIDANT POTENTIAL

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Ganoderma lucidium is a fungus belonging to family Ganodermataceae of polypore mushrooms which grows on woody root region of a tree. These mushrooms are effectively used as a traditional Asian medicine and are well known for their potential in bioremediation of metals. The present study was carried out with the objective of using the above mushroom for developing copper nanoparticles (Cu-Np's) mediated with Silver and characterization of the same using ultraviolet-visible spectroscopy (UV-Vis), Fourier transform infrared spectroscopy (FTIR), X-ray diffraction (XRD), Energy dispersive X-ray (EDX), and scanning electron microscope (SEM). Surface Plasmon showed the formation of Copper nanoparticles in UV-Visible spectroscopy. The fourier transform infrared spectroscopy (FTIR) analysis was used to study the functional groups responsible for the reduction of copper ions. The XRD analysis showed that the particles were crystalline in nature with a Face centered cubic (FCC) structure. The synthesized Cu-NP's were poly dispersed spherical shapes further confirmed by EDAX-SEM. Further studies were carried out to evaluate its Antimicrobial and Anti oxidant potentials.

AB – 14

STUDY OF SOIL MICROORGANISMS FOR THE BIOAGUMENTATION OF TEXTILE MATERIALS

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Fabrics made from cellulosic fibers such as cotton, linen, ramie, viscose and lyocell are normally characterized by short fibers protruding from the surface (fuzz formation) and piling i.e. loosened fuzz attached to the surface. Ensuring the quality and durability of fabrics is the most significant problem encountered by manufacturers. The destructive action of microorganisms present in the environment should be given attention. This often decreases their market value and in order to prevent this, a process called biopolishing is done. Biopolishing is usually done during the wet processing stage and includes scouring, bleaching, dyeing and finishing. Textile units and apparel industries are finding intricacy for the disposal of the wastes. Raw and finished cellulosic apparel products are source for the microorganisms. Keeping the above in vision that the present study aimed to isolate and characterize bacterial isolates with cellulase producing ability from soil for the degradation of waste or the production of the products for the respective industries.

AB – 15

A STUDY ON THE EXTRACTION, PURIFICATION AND THE VARIOUS APPLICATION OF BIOMOLECULE (VITAMIN B-12) PRESENT IN *SPIRULINA PLANTENSIS*

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Spirulina is a microalgae (Cyanobacterial biomass) which is the only source of 60- 70% of protein. It grows naturally in the alkaline waters of lakes in warm regions. It is commercially very valuable and a lot of products can be prepared using Spirulina. Spirulina are unicellular and filamentous blue-green algae and it has gained importance in the health and food industry and also as a protein and vitamin supplement to aquaculture diets. The light harvesting pigments in Cyanobacteria include chlorophyll-a, carotenoids and phycobiliproteins. Spirulina which is rich in proteins, vitamins and minerals is widely used as protein supplement in diets of many undernourished children in a global level. One gram of Spirulina protein can be compared to one kilogram of assorted vegetables. Spirulina should be grown in clean waters and under strictly controlled conditions for it to be used for human consumption. The present study also focuses on the application of *Spirulina plantensis.* Vitamin B12 can be used in pharmaceutical industry, food industry etc. *Spirulina plantensis* used as excellent fish feed. It shows antibacterial activity against various strains like *E.coli*, *Streptococcus sp, Staphylococcus sp. Candida albicans* etc.

AB – 16

A STUDY ON THE PHYTOREMEDIATION OF HEAVY METAL CONTAMINATED SOIL TAKEN FROM VARIOUS SOURCES

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Soil plays crucial and strategic life-supporting roles as humans and many other living organisms depend directly or indirectly on if for food and shelter but it is constantly subjected to various forms of abuse like heavy metal pollution. There is an urgent need of suitable techniques for addressing these concerns. Phytoremediation can be understood as the use of plants and their associated microorganisms in order to remove, degrade or isolate toxic substances from the environment. Substances that may be subjected to phytoremediation include metals (Pb, Zn, Cd, Cu, Ni and Hg). Naturally occurring metal tolerant plants and genetic manipulation, should hasten the transfer of this technology from laboratory to field. Plants can store these contaminants in there tissues and later they can be harvested or dumped in safe sites. This work is based on remediation of heavy metals contaminated soil by using environment-friendly and cost-efficient approaches such as Phytoremediation methods. For the present study Indian grass, Mustard, *Nicotiana tabacum* and *Canna indica* was used to remediate the polluted soils taken from Tannery processing area and Paper mill effluent area. The pot and field studies were conducted in order to achieve soil phytoremediation effect.

AB – 17

AQUAPONICS - A SMART FARMING TECHNOLOGY

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Aquaponics is a combination of aquaculture, in which fish and hydroponics plants can be grown without soil. Aquaponics uses a symbiotic combination in which plants are nourished with the discharge or waste of the aquatic animals. In turn, the plants could clean the water that goes back to the fish. Microbes also play an important role to the nutrition of the plants. These beneficial bacteria colonize the roots of the plant and convert the fish waste into plant growth substances. So there is a perfect collaboration between aquaculture and gardening. A part of the nitrogen excreted by the fish is thus taken up by the plants rather than being released to the atmosphere, and the plants also remove a wide range of other nutrients from the water. The plants used for the present study are *Solanum trilobatum* (Thuthuvalai), *Costum igneus* (Insulin), *Centella asiatica* (Vallarai). When these systems are combined, aquaponics can be closely termed as sustainable agriculture. In general, our findings suggest that aquaponics is a dynamic and rapidly growing field, actively experimenting with adopting new technologies. Additional research and outreach is needed to evaluate and communicate best practices within the field.

AB – 18

EFFICACY OF *CHRYSOPOGON ZIZANIOIDES*, SILVER NANOPARTICLES AND ITS EFFECTS ON ERADICATION OF *STAPHYLOCOCCUS* BIOFILM

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Bovine mastitis is the persistent, inflammatory reaction of the udder tissue caused due to physical trauma or microorganism infections. Several kinds of microorganisms are responsible for bovine mastitis. Among those, bacterial infection is a major issue and the predominant is Methicillin Resistant *Staphylococcus* sp., To eradicate these organisms, multidrug antibiotics are used, which causes potential side effects for both the affected cow as well as humans. Antimicrobial resistance (AMR) remains an important global health issue. So, the gap between AMR and development of new antimicrobials is increasing. Plant extracts may have good antimicrobial activity which can act against pathogens. The plant extracts has the ability to inhibit or destroy preformed bacterial biofilms. The root of *Chrysopogon zizanioides* (vetiver), shows strong inhibitory activity against *Staphylococcus* sp., Besides, Silver nanoparticles has a major role on the eradication of the biofilm formation. By using the root of *Chrysopogon zizanioides* (Vetiver) silver nanoparticles are synthesised which has strong biological activities. Thus this study shows that *Chrysopogon zizanioides* (vetiver) plant has a good antibiofilm activity against Methicillin Resistant *Staphylococcus species*.

AB – 19

EFFICACY OF *ELAEOCARPUS GANITRUS* (RUDHRAKSHA), SILVER NANOPARTICLES AND ITS EFFECTS ON ERADICATION OF *STAPHYLOCOCCUS* BIOFILM

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Bovine mastitis or udder mastitis is an inflammation of the mammary gland or udder, caused by udder infections usually resulting from bacteria introduced either during milking process or from environmental contact. Several kinds of microorganisms are responsible for bovine mastitis. Among those, bacterial infection is a major issue and the predominant is Methicillin Resistant *Staphylococcus* species. The use of multidrug antibiotics has a potential side effect which affects both the affected cow as well as human consumption. Biofilm formation is associated with reduced susceptibility to antibiotics resulting in chronic infections by pathogens. So to overcome this problem, an alternative method is to treat bovine mastitis is with medicinal plant extract. There are many medicinal plants used for the eradication of biofilm as well as the wound healing property. Using *Elaeocarpus ganitrus* (Rudhraksha) silver nanoparticles is the effective way of eradication of the biofilm formation Thus this study shows that *Elaeocarpus ganitrus* (Rudhraksha) plant has a good antibiofilm activity against Methicillin Resistant *Staphylococcus species*.

AB – 20

EFFICACY OF *ELETTARIA CARDAMOMUM WITH* SILVER NANOPARTICLES AND ITS EFFECTS ON ERADICATION OF BIOFILM FORMATION *OF* METHICILLIN RESISTANT *STAPHYLOCOCCUS* SPECIES

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Mastitis remains as one the most important diseases in dairy cattle despite the progress made in improving general udder health in recent years. A major issue and the predominant organism is Methicillin Resistant *Staphylococcus* species. Biofilm formation is considered to be a major problem for *Staphylococcus aureus* isolates by facilitating bacterial persistence in the udder of bovine mastitis. It attaches to mammary epithelium, proliferate and accumulation of cells in multilayers. Biofilm formation is associated with reduced susceptibility to antibiotics resulting in chronic infections by pathogens. Epidemiological studies have revealed that bacteriological cure rates vary between 0% and 80% by treating with antimicrobials but there is no evidence of the major classes of antibiotics licensed for the treatment of bovine mastitis. So to overcome this problem an alternative method is to treat bovine mastitis is with medicinal plant extract. The effective way of eradication of the biofilm formation by using *Elettaria* cardamomum (Elachi) silver nanoparticles. Thus, this study aimed to determine the biofilm producing Methicillin Resistant *Staphylococcus* species. From the plant extract synthesized silver nanoparticles, are synthesised which has strong biological activities. Thus this study shows that *Elettaria cardamomum (Elachi)* plant has a good antibiofilm activity against Methicillin Resistant *Staphylococcus species*.

AB – 21

EVALUATION OF HYPOLIPIDEMIC POTENTIAL OF A 50% HYDROETHANOLIC POLYHERBAL CRUDE EXTRACT IN EXPERIMENTAL RATS

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Atherosclerosis is a complex disease and the underlying cause of heart attack, stroke, and peripheral vascular disease. It is characterized by excessive inflammatory, fibro-fatty, proliferative response to damage of the artery wall. The present study was designed to evaluate the hypolipidaemic activity of Polyherbal extract on isoproterenol-induced myocardial infarction in *Wistar albino* rats. The rats were divided into eight groups of six animals each. Group I served as normal control, Group II rats were test samples administered isoproterenol (20mg/g B.wt). Group III and IV were administered with PH extract (250 mg/kg B.wt and 500mg/kg B.wt, respectively) for 30 days and received a subcutaneous injection of isoproterenol (20mg/kg B.wt) at the end of the experimental period for 2 consecutive days. Group V and VI were administered with Propranolol (10 mg/kg B.wt and 20mg/kg B.wt) for 30 days and received a subcutaneous injection of isoproterenol (20mg/kg, B.wt) at the end of the experimental period for 2 consecutive days. Group VII and VIII received PH extract of 250mg/kg B.wt and 500mg/kg B.wt for 30 days. After the experimental period, blood was collected; serum was separated and used for the estimation of lipid profile. The activity of the serum lipoproteins (LDL and VLDL) was significantly ($p<0.05$) elevated and a significant ($p<0.05$) reduction in the HDL cholesterol was observed in the myocardial rats of Group II. Pretreatment of the 50% hydroethanolicpolyherbal crude extract (Group III and IV) showed a significant ($p<0.05$) reduction LDL, VLDL and a significant ($p<0.05$) increased in HDL cholesterol when compared with Isoproterenol induced Group II rats. Oral doses of Propranolol for 30 days to myocardial rats (Group V and VI) also showed significantly ($p<0.05$) decreased in LDL, VLDL and increased in HDL. No significant ($p<0.05$) variation was shown when the Group III and IV animals are compared with Group V and VI respectively. Comparison of Group I with Group VII and VIII also showed no significant ($p<0.05$) changes. When compared with Group III rats, Group IV rats had shown an effective activity. The 500 mg/kg Body weight showed an efficient result when compared to 250 mg/kg Bodyweight, likewise Standard drug Propranolol at the concentration of 20 mg/kg shows a competent result when compared to 10 mg/kg bodyweight.

AB – 22

PRELIMINARY PHYTOCHEMICAL SCREENING OF MARINE SEAWEEDS COLLECTED FROM GULF OF MANNAR AND EVALUATING ITS ANTIMICROBIAL AND ANTIOXIDANT ACTIVITY

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Seaweeds belong to group of plants known as marine algae Sea weeds contains various inorganic and organic substance which can benefit human health . Seaweeds are one of the commercially important living marine resources that grow abundantly along the Tamilnadu coast.the current investigation deals with, Marine Seaweeds collected from Gulf of mannar region are *Ulva lactuca, Egregia menziesii, Thalassia testudium, Halimeda opuntia*. It produces great variety of secondary metabolites. The preliminary photochemical analysis of Seaweeds shows with its rich composition of terpenoids, steroids, flavonoids, alkanoids, tannins, reducing sugars and saponins are exhibited antioxidant and anti-microbial activities. It has therapeutic potential in treatment of cancer, dysentery, hypertension, urinary tract infection and thus can be used as commonly prescribed drugs for effective treatment. It has become recognized potential natural product in pharmaceutical industries. Seaweeds can be consumed as treatment for autoimmune illness.

AB – 23

STUDIES ON BIOCHEMICAL CHARACTERIZATION AND SECONDARY METABOLITIES OF *SPIRULINA PLATENSIS*

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Spirulina platensis is rich in protein sources which is of microbial origin and have similar protein levels when compared to animal protein sources. It has high macro and micro nutrient contents. This investigation is carried out for optimization of growth parameters of *Spirulina platensis* cultivated in laboratory scale. A biochemical analysis is carried in this study and conclude that *Spirulina platensis* are rich in protein content and is screened for secondary metabolities.

AB – 24

ANTI OXIDANT, ANTIFUNGAL, ANTIMICROBIAL ACTIVITY AND ERADICATION OF BIOFILM FORMATION OF THE METHICILLIN RESISTANT *STAPHYLOCOCCUS* SPECIES IN BOVINE MASTITIS USING SELECTIVE MEDICINAL PLANT EXTRACTS

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Mastitis is an infectious inflammatory disease of mammary gland caused by various invading pathogenic microorganisms. This disease in bovine causes low yield of milk and so economic loss to the dairy farming people. Methicillin resistance *Staphylococcus species* (MRSS) is a dangerous pathogen resistance to β- lactam antibiotics. Due to its resistance it is difficult to manage the infections caused by the strain in bovine mastitis as a predominant strain. Antimicrobial agents are commonly used to treat mastitis. But, the limitations which include antimicrobial resistance and high cost of antimicrobials motivated the search of alternative therapeutics. The ability to form biofilm in MRSs after the application of various multidrug antibiotics is the major issue which becomes more resistant strains. The present study aimed to investigate the efficacy of traditionally used anti-mastitis plant extract against the biofilm forming MRSs, anti oxidant, antifungal, and antimicrobial activity. In this study, the various plant extract using different solvents was evaluated for its antibacterial activity using MIC and MBC and compared with standard antibiotics.

AB – 25

INFLUENCE OF PECTINASES IN EXTRACTION OF RICE BRAN OIL

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Pectinases are enzymes that degrade complex pectin into simple carbohydrates. It has various application in food industry like fruit juice clarification, wine production, oil extraction etc., It has been used for extraction of edible oil from various sources like olive seeds, sunflower seeds, palm seeds etc., Hexane has been used as universal solvent for extraction of edible oil but hexane is highly carcinogenic. So, this research project aims to recover oil from rice bran using pectinase enzyme in aqueous solvent percentage of recovered oil and other oil properties will be composed with hexane extraction. Rice bran has more amount of pectin. Influence of pectinases on rice bran oil extraction has not been explored so far. The present study aims to extract rice bran oil in aqueous solution using various concentrations of pectinase. The percentage of oil recovery from rice bran using pectinase treatment would be analyzed and compared with the hexane extraction.

AB – 26

EVALUATION OF ENZYMATIC ACTIVITY OF CALOCYBE INDICA (P&C) VAR APK2 MUSHROOM AND ITS APPLICATION IN DYE DECOLORISATION

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Calocybe indica is a grassland species, saprophytic in nature and ectomycorrhizal. The first milky white mushroom variety is *Calocybe indica* (P&C) var APK2. During the growth period of mushroom mycelia and their development into mature fruiting bodies, there occurs various biochemical changes, as a result of which many extracellular enzymes are secreted to degrade the complex insoluble materials to simple and soluble molecules. Mycoremediation depends on enzymes produced by mushrooms for the degradation of various types of pollutants. Commercial production of this mushroom variety has increased over a decade in India and uplifted the rural livelihood.

AB – 27

SCREENING OF MICROORGANISMS – SPECIFICALLY BACTERIA IN COSMETICS

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A cosmetic is a preparation applied to the body, especially the face, neck and hands to improve its appearance. Cosmetics are mixture of some surfactants, oil and other ingredients. Cosmetics play an important role in human being for presenting themselves. The usage of cosmetics are increasing day by day although it is contaminated by various microorganisms like *Staphylococcus aureus, E.coli, Pseudomonas, Clostridium, Aspergillus, Candida etc which* represent serious health risk for customers. The effect of these pathogens may cause drastic effects in human health. So, studies on possible microorganisms in such products are highly required. Various used cosmetic products were selected to isolate the microorganisms which cause effects on human health. Microbiological analysis and molecular screening could be carried to confirm the possible organisms.

AB – 28

PRELIMINARY PHYTOCHEMICAL SCREENING AND *IN VITRO* ANTIOXIDANT POTENTIAL OF *CHLORELLA VULGARIS* AND ANALYSIS OF SUN PROTECTION FACTOR

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Chlorella vulgaris is a green microalgae mainly used as a dietary supplement or protein rich additive. Microalgae are indigenous source of phytochemical potent of being used in medicinal applications and in numerous natural health products. In this aspect, present study deals with the efficiency of Chlorella for its sun protection factor. Chlorella vulgaris was grown in BG11 medium. These cultures are maintained in thermostatically controlled room in a 12:12h light dark regime. Chlorella vulgaris is well determined nutrient dense super food containing 60% protein, 18 amino acids, 20 vitamins and minerals like Iron, Calcium, Potassium, Magnesium and Phosphorous. The phytochemical and antioxidant property was to be analyzed. Then the *Chlorella vulgaris* will be subjected to sun protection factor analysis using UV spectrophotometer method. The extract will be exposed to direct sunlight for 21 days to determine the photo stability of the Chlorella. The UV absorbance will be measured at 7^{th} day, 14^{th} day and 21^{st} day.

AB – 29

ISOLATION AND IDENTIFICATION OF LACTIC ACID BACTERIA FROM FERMENTED RICE

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Traditional foods are the staple foods which have been consumed for Thousand of years and long history of supporting health and wellness. Fermented foods are the part of cultural heritage, even today. The significant benefits of such food are maintaining the healthy composition of the intestinal microbiota, reduces cholesterol, rich in minerals, nutrients, contain edible beneficial microbes. Rice based fermented foods is a well known practice in India. Functional foods are the conventional foods that attract human beings are probiotics or probiotics. Live microbial food supplements which confer health benefits when consumed are probiotics. Hence, the study was designed to isolate and identify the probiotic lactic acid bacteria (LAB) from the liquid of cooked and uncooked fermented rice focusing on their antimicrobial properties and also examined for its antibiotic susceptibility. The selective isolate were examined for its various probiotic properties. Further, the isolate that possessed the probiotic properties were subjected for sequencing and to sequence database. Also, the application of the identified organism was verified.

AB – 30

PRELIMINARY PHYTOCHEMICALS, ANTIOXIDANT AND FREE RADICAL SCAVENGING ACTIVITY OF A 50% HYDROETHANOLIC POLYHERBAL CRUDE EXTRACTS

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Medicinal plants are used as traditional medicines since pre-historic times. It functions like Pharmaceuticals Drug to enhance and maintain proper health with no side effects. Whereas, Allopathy Medicine are easier in curing the illness. But it shows many side effects regardless of any diseases.eg: skin rashes, headache, dry mouth, and constipation. India is known for its traditional medicine systems- Ayurveda, it has been under use from 500BC. A Polyherb is a medicine that uses the extracts for curing ailments. It has a major role in the Ayurveda (traditional medicine). Medicinal plants have bioactive compounds due to which they have various properties like antiviral, antimicrobial, anticancer, antidiabetic, *etc*. The fact that the herbal drugs are more effective and affordable than the synthetic drugs. The health benefits of any extracted compound show the biological potential at the cellular level. Antioxidants mainly perform their activity as scavengers on the cellular level and prevent the damaging of free radical oxidation. In the present study 50%, HydroethanolicPolyherbal formulation was prepared by using *Urginea indica, Teprosia purpurae, Gymnema sylvestre.* The Plants were selected based on their Literature survey. All the Phytochemicals and Antioxidant Activity were done to analyze the Preliminary Compounds present in the extract. Besides, Free Radical Scavenging Activity was also analyzed to detect the Scavenging potential of the extract. The Analytical Techniques like IR, TLC, and HPTLC is also done for the confirmation of the compounds and compared with the standards and detect the functional groups present in the extract.

AB – 31

ANTIMICROBIAL ACTIVITY AND *IN VIVO* WOUND HEALING ACTIVITY OF A 50% HYDROETHANOLIC POLYHERBAL CRUDE EXTRACT USING EXPERIMENTAL ANIMALS

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The plant is an important source of medicine and plays a key role in world health. Medicinal plants are known to be a potential source of therapeutics or curative agents. Ayurveda is an approach to traditional medicine native to the Indian subcontinent. Formulations containing two or more herbs are called Polyherbal Formulation. Ayurvedic literature "Sarangdhar Samhita" highlights the concepts involved in synergism behind this polyherbal formulation. Recent scientific studies have revealed that these plants of varying potency when combined may theoretically produce a greater result. One of the significant and potential characters of medicinal plants is their ability to control or inhibit the growth of microorganisms, specifically pathogenic microbes. Thus 50% hydroethanolicpolyherbal crude extract has been prepared for the present study. A wound can be defined as a disruption of cellular and anatomic continuity of tissue with or without microbial infection. Thus according to the literature survey, medicinal plants such as *Urginea indica, Tephrosia pupurae* and *Gymnema sylvestre* was selected to determine the antimicrobial and wound healing activity of a 50% hydroethanolic polyherbal crude extract.

AB – 32

RECENT REVIEWS OF FOOD MICROBIOLOGYSTUDY'S TO ENHANCE THE QUALITY OF FOOD PRODUCT

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Food microbiology encompasses the study of microorganisms which have both beneficial and deleterious effects on the quality, and safety of raw and processed meat, poultry and egg products. Food microbiology focuses on the biological concepts of the microorganisms that are found in food which includes their growth characteristics, identification, and pathogenesis. Areas of interest concerned with food microbiology are food poisoning, food spoilage, food preservation, and food legislation. Pathogens result in major public health problems at a global level. Food spoilage the damage or injury to food making it unsuitable for human consumption. Food must be considered as spoiled if it is contaminated with any harmful microorganisms or poisonous chemicals. Foods when fresh are free of microorganisms (bacteria, fungi, protozoa, etc.), while food surfaces may have a low load of microorganisms. Food spoilage is complicated by the fact that food begins to deteriorate shortly after harvesting, gathering or slaughtering. Food security is food productivity, wasting less and supplying safe. Nutritious foods must be achieved with minimal impact on the environment in a sustainable manner. Meeting the challenges is interfered by a number of constraints, including climate change, energy usage, mineral and water availability and population dynamics.

AB - 33

OVERLAPPING OF *ECLIPTA PROSTRATA L.* SPECIES ON PHYTOCHEMICAL, ANTIOXIDANT AND ANTIMICROBIAL PROPERTIES

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Eclipta prostrata L. is commonly known as in Tamil Karisalanganni. These plants have two kinds of flowering system one is white flower based plant and another one is yellow flower based plant. It is a creeping and moisture loving herb commonly found on roadsides and waste lands. In the present study we collected the yellow flower plant and white flower plant leaf powder of *Eclipta prostrate L.* from commercially available stores. Followed the extraction with the aqueous and methanol using soxhletion apparatus. The extract were used to find the phytochemicals like phenol, flavonoids, alkaloids, carbohydrates and proteins. We also analysed the antioxidant activity of Free radical scavenging assay, total phenol and total flavonoids. Those plant extract were used to find the antimicrobial properties of selected microbes. We observed similar results for both plant extracts.

AB – 34

IDENTIFICATION OF BIOACTIVE COMPOUND AND ANTIMICROBIAL PROPERTIES FROM *ECLIPTA PROSTRATA L.*

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Eclipta prostrata L. is a creeping and moisture loving herb commonly found on roadsides and waste lands. It is also used in indigenous system of medicine as a hepatoprotective drug. In this plant available from tropical and subtropical region of annual herbaceous for uses of traditional medicine. The has many therapeutic properties and acts as analgestic, antibacterial, antihepatotoxic, antihaemorrhagic, antihyperglycemic, antioxidant and immunomodulatory properties. A wide range of phytochemicals including alkaloids, flavonoids, polyacetylenes, triterpenes and their glycosides have been isolated from this species. Extracts and metabolites from this plant has many pharmacological properties. In the present investigation of yellow flower based *Eclipta prostrate L.* the bioactive compounds was analysed through GCMS and the antimicrobial activity was also examined for the aqueous and methanol extract.

AB – 35

EXTRACTION, PURIFICATION AND APPLICATION OF TANNASE PRODUCING BACTERIA FROM DIFFERENT SOURCES

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Tannin is reported as the fourth most abundant group of compounds found in plants. Although having antimicrobial activity tannin serves as a substrate for some microbes that utilizes it with the help of hydrolytic enzymes tannase. Tannase is a commercially important enzyme which could catalyze the hydrolysis of ester bond of tannins and it has yielded industrially valuable products. It is essential to develop potent tannase producing strains that can be used for economically feasible tannase production. The present study deals with extraction and purification of tannase enzyme producing bacteria from various sources like soil, compost, tannery effluent and goat rumen. One bacterial isolate was found to produce tannase enzyme, which was revealed by formation of zone of hydrolysis in tannin containing minimal media. The bacteria was identified to be *Klebsiella pneumoniae* by 16S rDNA sequencing. The effect of various parameters like pH, temperature and carbon source on tannase activity was also evaluated. The present paper reports the effects of various parameters for tannase production by *K.pneumoniae,* purification of tannase enzyme and its characterization.