Volume 1, Issue3

VOICE OF DAHM

DEPARTMENT OF ANIMAL HEALTH AND MANAGEMENT
STUDENTS NEWS LETTER

"Anyone who has never made a mistake has never tired anything new"

Albert Einstein

MICROBIAL POLYSACCHARIDE BASED VACCINATION FOR AQUACULTURE

In intensive aquaculture, the use of antibiotics and chemotherapeutics for treatment and prophylaxis has been broadly criticized for its negative impact, and research on interactions between growth, immunity and development of eco-friendly alternatives to antibiotics that may keep fish healthy such development of fish vaccines is a challenging task, in part, due to a variety of pathogens, hosts, and the uniqueness of host-susceptibility to each pathogen. Aquaculture has been facing a great threat due to infectious diseases and poses a major threat to the development of fish. To overcome this, several alternative suggestions for development of fish vaccines have been practiced nowadays.It is used to protect fish from disease outbreaks due to naive immune system. In recent decades, numerous polysaccharides have been suggests that possess as biological response modifiers to potent immunostimulatory activity.An exception is polysaccharides secreted by bacteria, which modulate innate and adaptive immunity and protect from diseases. The prevention of disease by polysaccharide based vaccination is used to increase the immune response and resistance of the host to a particular pathogen.The interactions between potentially helpful and harmful bacterial polysaccharide offers new approaches for treating diseases. Among various natural substances, polysaccharides from some microorganisms may harbor antioxidant activity. The current and future applications of microbial polysaccharide are presented will contribute to a bio based industry. To identify protective antigens with vaccine potential, comparative analyses of immunization with these antigens. The development of polysaccharide based vaccine would significantly improve the growth, disease resistance and immune responses in fishes. It has become an established, proven, and cost-effective method of controlling certain infectious diseases for sustainable.

M. Abinaya
(Ph. D Scholar)

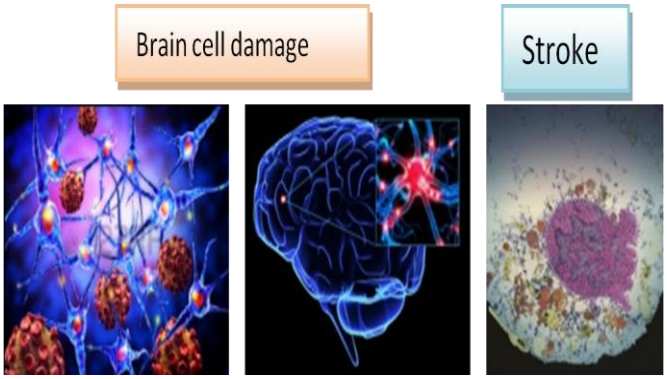
BIOPOLYMER BASED DRUG DELIVERY SYSTEM

Biopolymers are the backbone of drug delivery system due to its high potency, compostable and the formation of cross linking of hydrophobic segments, which have been derived from the living organisms. The recognition of these materials plays a vital role in novel therapeutics. According to the nature of these polymers such as charges and length, it is suitable for the formation of drug delivery system. The non-biodegradable polymers were reported the first polymers to be investigated for implantable drug delivery devices. The Polymeric drug utilization provides a variety of therapeutic system in treating various diseases mainly to minimize the cancer cells and to improve intracellular system. For more than 50 years, the pharmaceutical industry to incorporate the bioactive agent with biopolymers. Moreover the foundation of drug delivery in conceptual content and recent developments in response to the biopolymers.

There is much research under the process to investigate the long term drug delivery for chemotherapy and diabetes have achieved in last decade using the biopolymer. Furthermore polymer based therapeutics offer many potential advantages to treat the nervous system particularly in treating chronic neurological disorders. The polymer conjugates have targeted to various diseases, such as rheumatoid arthritis, cancer, hepatitis B, etc., The amount of drug release is directly proportional to the safety of polymer-drug conjugates, therefore novel approaches will helps to facilitating of polymer based drug delivery system. From the clinical backgrounds incorporation of the biopolymer based drug delivery system for the treatment of several disease its leads to revolutionize in biological applications. Expectantly the site specific drug delivery technology will be of great assistance to health care to the people.

M. Divya
(Ph.D Scholar)

LATEST RESEARCH IN BRAIN CELL 'EXECUTIONER' IDENTIFIED



Brain death is the complete and irreversible loss of brain function (including involuntary activity necessary to sustain life. In general, brain damage refers to significant, undiscriminating trauma-induced damage, while neurotoxicity typically refers to selective, chemically induced neuron damage. Brain injuries occur due to a wide range of internal and external factors. A common category with the greatest number of injuries is traumatic brain injury (TBI) following physical trauma or head injury from an outside source.

Symptoms of brain injuries vary based on the severity of the injury or how much of the brain is affected. The three categories used for classifying the severity of brain injuries are mild, moderate or severe. Mild brain injuries:symptoms of a mild brain injury include headaches, confusions, ringing ears, fatigue, changes in sleep patterns, mood or behavior. Other symptoms include trouble with memory, concentration, attention or thinking. Moderate/severe brain injuries:The physical symptoms include headaches, vomiting or nausea, convulsions, abnormal dilation of the eyes, inability to awaken from sleep, weakness. Cognitive symptoms include confusion, aggressive, abnormal behavior, slurred speech and coma or other disorders of consciousness.

Symptoms observed in children include changes in eating habits, persistent irritability or sadness, changes in attention, disrupted sleeping habits. Cerebral hypoxia or Hypoxia occurs when your brain cells aren't getting enough oxygen. Neurons are extremely sensitive to oxygen levels and if oxygen levels are depleted, your cells start to die off Sleep Apnea – Obstructive sleep apnea can cause brain damage and kill brain cells due to lack of oxygen. Now, researchers at Johns Hopkins say they have pinpointed the protein at the end of that chain of events, one that delivers the fatal strike by carving up a cell's DNA. They find and say, potentially opens up a new avenue for the development of drugs to prevent, stop or weaken the process. The new experiments, conducted in laboratory-grown cells, build on earlier work by research partners Ted Dawson, now director of the Institute for Cell Engineering at the Johns Hopkins University School of Medicine, and Valina Dawson, professor of neurology.

Their research groups found that despite their very different causes and symptoms, injury, stroke, Alzheimer's disease, Parkinson's disease and the rare, fatal genetic disorder Huntington's disease have a shared mechanism of a distinct form of "programmed" brain cell death they named parthanatos after the personification of death in Greek mythology and PARP, an enzyme involved in the process. The researchers knew that when a protein called mitochondrial apoptosis-inducing factor, or AIF, leaves its usual place in the energy-producing mitochondria of the cell and moves to the nucleus, it sparks the carving up of the genome housed in the nucleus and leads to cell death.

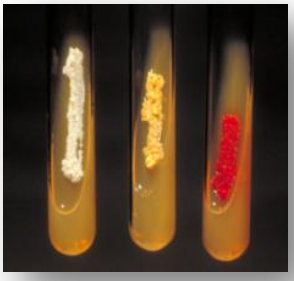
R. Reka

(Ph.D Scholar)

VITAL ROLE OF ACTINOBACTERIA AND ITS APPLICATIONS

Actinomycetes are one of the most diverse groups of filamentous bacteria capable of surviving in a number of ecological niches due to their bioactive potential. Actinomycetes are well recognized for their metabolic adaptability that is frequently accompanied by the production of both primary in addition to secondary metabolites of economic importance. They are a hopeful source of wide range of important enzymes, some of which are produced on an industrial scale, but many other remained to be harnessed. They have the ability to degrade a wide range of hydrocarbons, pesticides, and aliphatic and aromatic compounds. They perform microbial transformations of organic compounds, a field of great commercial value. Members of many genera of actinomycetes have potential for use in the bioconversion of underutilized agricultural and urban wastes into high-value chemical products.

A large fraction of antibiotics in the market are obtained from actinomycetes. They produce enzyme inhibitors functional for cancer treatment and immunomodifiers that enhance immune response. Actinomycetes are also important in plant biotechnology as strains with antagonistic activity against plant pathogens are useful in biocontrol. Their metabolic potential offers a strong area for research. Accordingly, this special issue is dedicated to the role of actinomycetes in biotechnology and medicine. Contribution of research papers and review articles with focus on characterization and applications of novel biomolecules from actinomycetes will be considered after peer review.Biochemical characterization and/or applications of biomolecules from actinomycetes.



Applications: Enzymes, Antibiotics, Enzyme inhibitors, Immunomodulators**,** Actinomycetes and their products in plant and environment biotechnology, Genetic improvement of actinomycetes.

K.Madhuri

(Research Sholar)

PROTEINS FROM HAEMOLYMPH OF MARINE CRUSTACEANS

The effort research face though, is their provides reasonably priced, good quality, highly nutritious food while helping to maintain the long-term sustainability of wild caught fisheries and the environment. Crustaceans are valuable sources of aquatic food protein. The defense mechanisms of crustaceans depend completely on the innate immune system that is activated when pathogen-associated molecular patterns are recognized by soluble or by cell surface host proteins, antimicrobial, clotting, and pattern recognition proteins, which, in turn, activate cellular or humoral effector mechanisms to destroy invading pathogens.

Antimicrobial peptides and proteins form an important means of host defense in eukaryotes. In addition to their role as endogenous antibiotics, antimicrobial peptides have functions in inflammation, wound repair and regulation of the adaptive immune system. All proteins are that bind specifically and reversibly to carbohydrates. Although the functions of invertebrate proteins are ambiguous at present, several lines of evidence suggested that proteins have significant of invertebrates via mediation of cell-cell and/or cell-substrate in reactions and in neutralization and exclusion of foreign substances through binding to their carbohydrate components. Besides having biological role in cell recognition and host defense, proteins have long been used in research that recognize specific sugar chains of glycoconjugates and cell surface glycoproteins as well as glycolipids.

In India, discovery of immune related proteins are very little and need more research in this area to understand the immune mechanism behind the locally available crustaceans around the coastal areas of India. Consequently to compensate, this study focused towards the control and prevent the spread of pathogenic disease in aquaculture by directed on the immune linked protein of crustaceans.

S. Jeyanthi

(Ph.D Scholar)

MEMORABLE ACHIEVEMENTS OF DEPARTMENT OF ANIMAL HEALTH AND MANAGEMENT

Pongal festival Celebration

Pongal festival was celebrated by the Department of Animal Health and Management, Alagappa University, Karaikudi, on 12th January, 2017. All the Faculty members of Department, Research scholar, M.Sc students and Nonteaching staffs are heartily participated in the precious celebration.

Alumini Meet - 2017

Alumini meet was organized by Department of Animal Health and Management, Alagappa University, Karaikudi on 6th Febraury, 2017. Dr. M. Brindha, Assistant Professor, delivered the welcome address, Alumini who all heartily participated in the occasion. They all shared their views and ideas about the department, research and etc, Dr. P.Kumar, Assistant Professor, Department of Animal Health and Management, delivered the vote of thanks in this meet.

Parents – Teachers Meet – 2017

Parents – Teachers Meet was organized by Department of Animal Health and Management, Alagappa University, Karaikudi on 6th February, 2017. Dr. B. Vaseeharan, Professor and Head, Department of Animal Health and Management, delivered the welcome address. Dr. V. Nithya, Assistant Professor, Department of Animal Health and Management, delivered the inaugural address, Parents shared their view about the students career. Students are participated in the cultural activities in the meet, Dr. N.M Prabhu, Assistant professor, Department of Animal Health and Management, concluded the meet with vote of thanks.