

Report on National Seminar on Next generation therapeutics - A novel approach 23rd September, 2022

One day National Seminar on “Next generation therapeutics - A novel approach” was organized by the Department of Zoology, Holy Cross College (Autonomous), Nagercoil. Recent decades have witnessed a rise in the incidence of infectious and non-infectious diseases. As defined by the World Health Organization (2014), emerging diseases are serious global public health threats. These diseases have also become more challenging owing to pathogens’ increased resistance to antibiotics, the re-emergence of vaccine-preventable diseases and new pathogens that have no available vaccines or treatments. As we all know prevention is better than cure, biomedical scientists focus on the health benefits of vaccines and natural resources, in the prevention of ill-health and death from life threatening diseases. Therefore, an attempt was made in this Seminar to discuss and promote research, focused on next generation therapeutics highlighting marine toxins, oncolytic viruses, vaccine development and computational approaches in the fight against viruses. The seminar on the whole imparted a deep knowledge on therapies for deadly diseases, which pose a great challenge to human health and encouraged the researchers to venture into new areas of biomedical research.



The session started with welcome address by Dr. F. Brisca Renuga, Head of the department. She welcomed all the dignitaries and all present in the programme with a brief introduction of the resource persons. Dr. Sr. M. Mary Hilda delivered the inaugural address. In that she appreciated the seminar theme, resource

National Level Seminar
on
Next generation therapeutics – A novel approach

23rd September 2022




Organized by
Department of Zoology
Holy Cross College (Autonomous),
Nagercoil, Tamil Nadu, India
Accredited with 'A' Grade (CGPA 1.20) by NAAC (IV Cycle)
Affiliated to Mar Thoma Theological University, Thruvankulam

Venue
Mallapuzha Hall, Holy Cross College,
Nagercoil – 629 064, Tamil Nadu, India.

The organizing committee extends a warm welcome to the eminent scientists, academicians, researchers, students and industry personnel to participate in the National Seminar.

About the College
Holy Cross College, Nagercoil the first Women's College in Kanyakumari District administered by the Congregation of the sisters of the Cross of Charcoal was established in 1963 and raised to an autonomous status in 2007-2008. The College stands for total liberation and development of the students in order to prepare them to take their rightful place and responsibility in the society. Holy Cross College is known for its unique discipline and academic excellence. It is a premier and prestigious institution with a strong determination to empower women personally and professionally with state-of-the-art infrastructural facilities in an eco-friendly environment.

About the Department
The Department of Zoology is a renowned centre for learning, research and extension activities. The Department of Zoology established in 1966 was raised to a P.G. Department in 1979 and Research Department in the year 2000. The thrust areas of research are Immunology, Cytotoxic Physiology, Invertebrate Pest Management, Radiation Biology, Environmental Biology and Molecular Taxonomy. The department has a well-equipped DST – FIST sponsored laboratory. An UGC sponsored 'UGC Vocational Seminars' and innovative 'M.Sc. Biomedical Sciences' Program was established in 1989 and 2006 respectively.

From the day of inception, the department has strived to promote academic skills, research aptitude and societal commitment among the stakeholders. It has employed student-centric methods of teaching with competent staff adept in technology-assisted teaching. The students can grow and utilize their innovative potential, research aptitude, sporting prowess and artistic skills to establish themselves as citizens who would bring about transformative changes in the society.

About the Seminar
Recent decades have witnessed an unprecedented rise in the outbreak occurrence of infectious and non-infectious diseases. As defined by the World Health Organization (2014), emerging diseases are serious global public health threats. These diseases have also become more challenging owing to some pathogens' increased resistance to antibiotics, the re-emergence of vaccine-preventable diseases and new pathogens that have no available vaccines or treatments.

This seminar will focus on next generation therapeutics highlighting marine toxins, oncolytic viruses, vaccine development and computational approaches in the fight against viruses. This seminar will be a unique forum for the students, scholars, faculty and scientists to exchange new ideas in the diagnosis and management of diseases. It will impart a deep knowledge on therapies for deadly diseases, which pose a great challenge to human health and encourage researchers to venture into new areas of research.

Registration Fee
Faculty: Rs. 3000-
Research Scholars: Rs. 2500-
Students: Rs. 2000-
Delegates are requested to confirm their participation on or before 19th September, 2022. Registration fee can be paid on the day of the Seminar.

Organizing Committee

Patron: Dr. Sr. M. Mary Hilda, Secretary
Chairperson: Dr. Sr. S. Sahayaselvi, Principal
Convener: Dr. F. Brisca Renuga, Head of the Department
Organizing Committee:
Dr. S. Mary Mathila Raj
Dr. C. Anitha
Organizing Committee Members:
Dr. A. Shyla Nagesh
Dr. P. I. Anshya Glory
Dr. J. Chandini Jeeva
Dr. C. Josephina Prayathakutty
Dr. A. Pancha
Dr. Y. Vinodha Gaudia
Dr. S. Prakash Shoba



The seminar started with the inaugural programme graced by Dr. Sr. M. Mary Hilda, our secretary, Dr. Sr. S. Sahayaselvi, our principal, our controllers of examinations Dr. J. Vinoliya Josephine Mary and Dr. Regi along with the resource persons: Dr. John Bernet Johnson, Scientist from Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala and Dr. S. Ravichandran, Associate Professor of Zoology, Government Thirumagal Mills College, Gudiyathem.



persons and the organising team. The annual newsletter of our department “CHIRPS” was released by the principal and the first copy was received by our Secretary. Then Dr. Sr. S. Sahayaselvi delivered the felicitation. The inaugural programme ended with vote of thanks by Dr. S. Mary Metilda Bai, the organising secretary.



Second session started after the tea break with the invited talk by Dr. S. Ravichandran, Associate Professor of Zoology, Government Thirumagal Mills College, Gudiyathem. He elaborated the natural medicines, the marine toxins. He has demonstrated the marine environment to be an interesting source of compounds with uncommon and unique chemical features on which the molecular modeling and chemical synthesis of new drugs can be based with greater efficacy and specificity for the therapeutics. His talk emphasised the need of new drugs from natural marine toxins.



Technical session 1 was followed by the inaugural session. The speaker of the session was Dr. John Bernet Johnson, Scientist E1, Tropical Disease Biology, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala. He delivered a talk on Oncolytic viruses – the next generation of therapeutics targeting cancer. The speaker focused on Biology of Oncolytic viruses (OVs), genetically engineered OVs with enhanced tumor targeting ability, and generating potent anti-tumor immune responses for therapeutic application.



The post lunch session started with an invited talk by Dr. H. Shakila, Professor & Head, Dept. of Molecular Biology, School of Biotechnology, Madurai Kamaraj University on “Innovations in vaccine development”. She narrated the development of edible vaccines for leptospirosis and HIV, the development of recombinant *M. smegmatis* vaccine for HIV-TB co infection and Latent TB infection. Her talk highlighted the importance of nanoparticles in the development of vaccine delivery systems.

As the resource person Dr. Kathiresan Natarajan, Scientist C, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala couldn't come offline due to the sudden announcement of *hartal*, the forth technical session was made online. The resource person explained the Computational approaches - in the frontiers of the fight against SARS-COV2 through Google platform. He mentioned the importance of rational computational strategy to identify the existing drug molecules to target host pathways to reduce the cytokine storm. He also highlighted the science of Beta-coronavirus SARS-CoV-2, the causative pathogen of the coronavirus disease of 2019 (COVID-19) that killed more than 3.5 million people all over the world. Each speech was followed by question, discussion and viewpoints of the participants and speakers.



Around 200 participants benefitted from this seminar (Inmates 149: I B.Sc. 24, II B.Sc. 27, III B.Sc. 39, I M.Sc. 19, II M.Sc. 20, Scholars 9, Faculty 11 & outsiders 43) There were representations from Scott Christian College (10), Women's Christian College (6), S.T. Hindu College (2), Vivekananda College (1), Annai Velakanni College (6), Muslim Arts College (6), Arignar Anna College (2) Manonmaniam Sundaranar University (3) and Xcellogen Indian Pvt. Ltd. (1). Participation of the research scholars (7) from other research centres (Botany & Chemistry) of our college added the profile of our seminar. The participants were from various disciplines such as Zoology, Botany, Chemistry, Biotechnology and Microbiology.

Technical session 4 was followed by valedictory function. Dr. Sr. P. Leema Rose, Vice Principal chaired the session and concluded the seminar with her Valedictory Address. Certificates were distributed to all the participants. The programme was ended with vote of thanks by Dr. C. Anitha, organising secretary of the Seminar.

Thank you!

Sincerely,
S. Mary Mettilda Bai & C. Anitha
Organising Secretaries