Annual Report

PUSHPAGIRI MEDICAL COLLEGE
25 YEARS
We Care • God Cures
The First Private Medical College in the State of Kerala

PRC
SINCE 2010

PUSHPAGIRI Research Centre

April 2025 – March 2026

The 'CENTRAL RESEARCH FACILITY'
of the Pushpagiri Group of Institutions



OUR SALIENCY

- Pre - Clinical Trials
- Patents & Publications
- Evidence Based Practice
- Fully Equipped Animal House
- MoUs – National & International
- Academic - Industrial Collaborations
- Funded Projects – National & International

Recognized by DSIR, Government of India
Approved Ph.D. Centre by KUHS, Chinmaya Viswa Vidyapeeth & Helsinki University, Finland

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ABOUT PUSHPAGIRI RESEARCH CENTRE (PRC)

Pushpagiri Research Centre widely known as PRC was established in 2010 that serves as the 'Central Research Facility' to the various institutions under Pushpagiri Medical Society which includes Pushpagiri Institute of Medical Sciences, Pushpagiri College of Nursing, Pushpagiri College of Pharmacy, Pushpagiri College of Allied Sciences, Pushpagiri College of Dental Sciences alongside Pushpagiri Medical College Hospital. PRC has now grown to become one of the leading private research centres in the Central Travancore region of Kerala, featuring multifaceted and multidimensional research laboratories, which have all the facilities for conducting transdisciplinary biomedical research.

PRC is a hub of eminent scientists and faculties from diverse research domains like Tissue Engineering and Regenerative Medicine, Medical Biotechnology, Bioinformatics and Drug Designing, Cytogenetics and Biochemistry, Molecular Biology, Cell Culture, Clinical Microbiology, Virology, Cancer Research and Epidemiology studies. The center has received funding from prestigious agencies like DST, DBT, ICMR, KSCSTE and Bill & Melinda Gates foundation and has been part of many international research collaborations.

Approvals and Accreditations of PRC

- PRC is an approved Ph.D. Centre under the Kerala University of Health Sciences (KUHS), Chinmaya Viswa Vidyapeeth and Helsinki University, Finland
- PRC got an active Institution Review Board (IRB) that is registered to Director of Health Research (DHR)
- PRC has a Committee for Control and Supervision of Experiments on Animals (CCSEA) approved Animal House Facility which is regulated by the Institutional Animal Ethics Committee (IAEC)
- PRC conducts Phase 1 and Phase 2 Clinical Trials with approval from DHR

PRC's saliency lies in developing innovative patents and products, research publications in international peer reviewed journals of repute upon fostering in

sustainable therapeutic regimens. PRC holds active Memorandum of Understandings (MoUs) with reputed institutions affiliated to central and state governments, autonomous colleges and institutions, private companies and firms from various sectors.

Pushpagiri Research Centre (PRC) is currently driven by a dynamic team of 10 leading scientists, 4 research trainees, 10 Ph.D. students and over 50 post graduate research students. Beyond its core research team, Pushpagiri Medical Society (PMS) hosts 16 Ph.D. holders, 21 ongoing Ph.D. scholars, and a postdoctoral researcher from prestigious national and international institutions. The institute has made significant academic contributions, with over 1,000 research publications, case reports, and reviews featured in reputable medical and non-medical indexed journals. PRC has also made strides in innovation by filing 7 Indian patents. Equipped with state-of-the-art research facilities, PRC houses a central instrumentation unit featuring high-end machinery for precision research and diagnosis. Its flagship annual conference, *Bioradiance*, serves as a beacon for research excellence, bringing together distinguished scientists, educators, policymakers, and pharmaceutical leaders from around the world.

Actively fostering collaborations, PRC engages adjunct faculty and research advisors from both national and international institutions, strengthening its research initiatives. It maintains Memorandums of Understanding (MoUs) with esteemed institutions across government bodies, autonomous colleges, private companies, and various sectors, facilitating research activities, student exchange programs, and technology transfers. Additionally, PRC provides valuable opportunities for undergraduate and postgraduate students to participate in internships, and dissertation projects, in alignment with their academic curriculum further enhancing their research experience. The centre also conducts several workshops, seminars, hands-on-training and continuing medical education (CME) throughout the year.

Over the past 15 years, PRC has managed more than 50 research projects supported by international funding bodies, including the Bill & Melinda Gates Foundation and

Conferenza Episcopale Italiana, along with several national agencies such as DBT, ICMR, DST and KSCSTE. Several projects remain in progress, contributing to ongoing scientific advancements. In addition to external funding, the institute also sanctions intramural projects to foster a strong research culture and drive innovation within its academic community.

Successfully Completed Funded Research Projects by PRC

1. Project proposal to develop a Drug eluting Bio compatible polymeric membrane 'POLYSKIN' for treatment of chronic ulcers
2. A Population based Surveillance of invasive disease caused by S. pneumonia or H. influenza or N. meningitis in children below five years of age in India
3. DNA repair pro efficiency and Generic polymorphism of genes involved in DNA repair in coronary artery diseases
4. Evaluation of the Research activities in the Medical Colleges of Kerala and Suggestions for strengthening them
5. Study of the inhalation Dose Estimate and biological effects of thoron and its progeny Nuclides Using mice-board
6. Fabrication of Polylactide membrane for wound healing
7. Immunity levels to Rubella Virus in Medical students of in Pushpagiri Medical College, Tiruvalla
8. Bacterial Metal-combo One pot resolution dynamic kinetic resolution of racemic expoxides
9. Role of indolamine 2.3 dioxygenase (IDO) in inflammatory cytokines and high glucose induced apoptosis of pancreatic islets of beta Cell –Potential therapeutic targets for type-1 Diabetes Mellitus
10. Molecular Basis of retinal ganglion cell death in diabetic retinopathy
11. Screening of mutations in BRCA genes and prediction of cancer susceptibility and genetic risk assessment
12. A population-based surveillance of invasive disease caused by S. pneumonia or influenza or N. meningitis in children below five years of age in India
13. Baseline Assessment for Streptococcus pneumonia of Indian Serotypes

14. Lutein - PLGA - grafted dextran nanoparticles for the regeneration of intestinal cells: A promising therapeutic agent against inflammatory bowel disorder
15. Viral etiology of pediatric acute respiratory tract infections (ARTI) in Central Travancore region in Kerala: A pilot study
16. Hantavirus infections in Kerala: A pilot study
17. To identify novel mutations in gene x of HBV for the early diagnosis of HCC progression Epidemiology of Rotavirus among children with acute diarrhoea in a tertiary hospital in central Travancore, South India
18. A pilot study on the prevalent serotypes of the circulating dengue virus in Central Travancore
19. Oxidized HDL Apolipoprotein-A1 as a risk predictor of cardiovascular disorders and development of novel diagnostics
20. Lutein - PLGA - grafted dextran nanoparticles for the regeneration of intestinal cells: A promising therapeutic agent against inflammatory bowel disorder
21. Anti-inflammatory, wound healing, antioxidant, radio protective and antineoplastic activities of herbal extracts and Phytoceutical molecular mechanisms and potential applications
22. Phylogenetic study of Ganoderma from Western Ghats of Kerala
23. In Vivo Hepatoprotection, Nephroprotection and Cardioprotection effect of Medicinal Mushroom Ganoderma
24. Biological evaluation of novel biomaterials for anti-microbial and biofilm inhibition properties
25. Biological evaluation and efficacy testing of engineered medical implants for the purpose of reducing hospital associated infections
26. Exploring the anti-microbial, biofilm inhibition and anti-virulence potential of novel chalcone derivatives
27. Evaluating the anti-virulence potential of natural essential oils against clinically relevant pathogenic stains
28. Biofilm inhibition and antifouling evaluation of sol-gel coated silicone implants with prolonged release of eugenol against Pseudomonas aeruginosa
29. Viral triggers in under five wheezers

30. Assessment of Antibiotic Prescribing Pattern in the Outpatient Department of a Tertiary Care Hospital in South India
31. A Survey Based Study on the Knowledge, Attitude and Practices of General Practitioners Related to Treatment Guidelines on Antimicrobial Use in Common Syndromes
32. Occult hepatitis B virus infection among hemodialysis and chronic liver disease patients in a tertiary care hospital (2nd Phase)
33. Human Milk based Human Milk Fortifier for Preterm Infants
34. Development and validation of biomedical and cosmetic products from secondary fishery raw materials
35. Biobased scaffolds, membranes and hydrogels for improved wound healing and bone regeneration (Bioheal)
36. Novel Nano based formulation from Tinospora cordifolia and evaluation of anti-SARS-CoV-2 activity
37. ICMR - RUMC COVID-19 study of Prophylaxis in Healthcare Workers
38. Comprehensive Cancer Screening and Action for Women in Kerala
39. Faecal carriage of drug-resistant bacterial colonizers in a tertiary care centre in South India
40. Anti-inflammatory activity of: Ayurvedic day In vitro and In vivo condition
41. Preclinical evaluation of 3D printed polylactic acid loaded with fish scale derived hydroxyapatite based composite scaffolds intended for alveolar bone regeneration
42. Biocompatibility of Scaffold – [Carbon Nano Dot-Poly caprolactone]
43. Healing of chronic venous ulcers /extensive ulcers by Nano-technology
44. Socket Preservation with Fish Scale Derived Hydroxyapatite: An In Vivo Murine Study
45. Evidence gap maps in dentistry - Covid End
46. Cystic fibrosis and COVID-19 patients: prevalence, clinical features and outcomes - A systematic review protocol
47. Assessment of Antibiotic Prescribing Pattern in the Outpatient Department of a Tertiary Care Hospital in South India

48. A Survey Based Study on the Knowledge, Attitude and Practices of General Practitioners Related to Treatment Guidelines on Antimicrobial Use in Common Syndromes
49. Development of demineralized fishbone derived bone graft intended for periodontal regeneration
50. Implementation of Short Multimodal Intervention in Tribal Population with Public-Private-Partnership to Complement National Tuberculosis Elimination Program-Co IICMR project
51. The Economic burden and Catastrophic Health Expenditure associated with COVID 19 hospitalization in Central Kerala
52. Complications associated with Percutaneous Nephrolithotomy (PCNL) in a Tertiary Care Centre-a Retrospective Study
53. Knowledge, Attitude and Behavior Related to Evidence Based Practice Among Healthcare Practitioners

Our Vision

We aim to create breakthroughs in medical field, by taking research outcome from bench to bedside, with high ethical standards, and to develop transformative technologies, to meet growing challenges in the area of human health and illness, with an innovative approach. It provides a platform, to develop strategies of therapeutic intervention to improve the quality of life, and to alleviate human sufferings. Our state-of-the-art infrastructure, and domain of expertise, catalyzes the translation of laboratory research of academia and industry to hospital bed.

Our Mission

To work towards a knowledge society with life in abundance through science and technology, improving health care for our immediate community, the state, the country and the world at large.

Our History

Pushpagiri Group of Institutions is located in the heart of Tiruvalla, a scenic town in Central Travancore in Kerala. This land is blessed with the visit of Saint Thomas, the

disciple of Jesus. It harbours Sri Vallabha Temple, Saint John's Cathedral, Parumala Church to enrich the rich spiritual heritage of Tiruvalla. This place is richly ornamented with the lush green paddy fields and coconut grooves. The branches of Pushpagiri Medical Society comprise of Pushpagiri Institute of Medical Sciences, Pushpagiri College of Dental Sciences, Pushpagiri College of Pharmacy, Pushpagiri College of Nursing, & Pushpagiri College of Allied Health Sciences.

Our Team at PRC



Front Row – From Left to Right: **Mr. George Varghese (***Assistant Professor***), Dr. Ampadi A. N. (***Veterinary Officer & Research Coordinator***), Rev. Dr. Mathew Mazhavancheril (**Director & Head, PRC**), Prof. Dr. Sabu Thomas (***Adjunct Faculty***), Prof. Dr. A Devadattan (***Principal - PCDS***), Dr. Nebu George Thomas (***Professor & Scientist***)**

Back Row – From Left to Right: **Mr. Jacob P. Ouseph (***Secretary, PRC***), Dr. Dayana K (***Scientist***), Dr. Betsy A Jose (***Assistant Professor***), Dr. Aniket Naha (***Scientist & Student Coordinator),* Dr. Ajay Krishnan U (***Scientist***), Mr. Nikhil P (***Research Assistant***), Dr. Soumya RS (***Scientist***), Ms. Nisha Kurian (***Assistant Professor***), Dr. Reeba Mary Isaac (***Assistant Professor***)**

DIRECTOR'S MESSAGE



India's emergence as one of the world's major economies is increasingly reflected in its growing contribution to high-quality scientific research and publications. In this evolving landscape, Pushpagiri Research Centre (PRC) continues to serve as a research-intensive centre committed to advancing biological sciences and translational research. At PRC, our research team is dedicated to investigating and evaluating the complexities of biology, from isolating bioactive compounds from nature to developing innovative diagnostic approaches. We strive to move beyond conventional thinking and translate scientific discoveries into meaningful lab-to-bedside applications. Reflecting our commitment to innovation, PRC has filed 7 patents, of which 1 has been successfully commercialised.

The youthful and energetic environment at PRC has fostered an ideal research ecosystem for faculty, staff, students, and trainees. Through training programmes in cell culture, animal handling, and bioinformatics; workshops in molecular biology, cell culture, animal handling, and *in-silico* drug designing; and conferences such as Bioradiance, we provide emerging scientists and innovators with opportunities to strengthen their research, technical, analytical, and presentation skills. These initiatives bring together diverse disciplines, including disease biology, tissue engineering, and immunology, while encouraging interaction and collaboration with experts. Our mission is to explore bioactive compounds and develop drugs and diagnostic kits for the betterment of human health through *in-vitro* and *in-vivo* approaches, while promoting training in basic and translational sciences and fostering interdisciplinary collaborations. The progress of PRC has been strengthened by the support of DST, DBT, ICMR, BRNS, and international agencies such as the Bill & Melinda Gates Foundation. I sincerely thank our advisors, supporters, collaborators, and well-wishers for their continued encouragement and support.

RESEARCH COORDINATOR'S MESSAGE



Since its establishment in 2010, the **PRC** has served as the definitive **Central Research Facility** for the PMS. Our core objective is to bridge the trajectory between fundamental scientific inquiry and clinical implementation, fostering a transdisciplinary ecosystem where research is systematically translated into practical healthcare solutions. **Scientific Prolificacy:** PRC maintains a formidable academic footprint with a portfolio of over **1,000 peer-reviewed publications** in prestigious indexed journals.

- **Extramural Funding:** We have a proven track record of managing **50+ funded projects** supported by the **Bill & Melinda Gates Foundation, DST, DBT, ICMR,** and **KSCSTE**.
- **Innovation & IPR:** Our dedication to translational medicine is highlighted by **7 Indian patents** and the development of therapeutic products

Advanced Research Infrastructure

PRC operates multifaceted laboratories led by a dynamic cohort of **10 principal scientists** and over **100 researchers**. Our specialized competencies encompass:

- **Molecular & Cellular Sciences:** Advancing frontiers in tissue engineering, regenerative medicine, and oncology.
- **Computational Biology:** Utilizing sophisticated **in-silico pipelines** for bioinformatics and targeted drug design.
- **Clinical & Diagnostic Excellence:** Hosting **NABL-accredited virology diagnostics** and an active, **DHR-approved IRB** for clinical oversight.
- **Preclinical Validation:** A **CCSEA-approved Laboratory Animal Research Facility,** strictly regulated by the Institutional Animal Ethics Committee (IAEC).

Academic Integration & Global Synergy

As an approved doctoral center for **KUHS, Chinmaya Viswa Vidyapeeth, and Helsinki University (Finland)**, PRC is committed to nurturing a "knowledge society" through:

- **Strategic Alliances:** Active **MoUs** with government, autonomous, and private sectors to facilitate technology transfer and collaborative innovation.
- **Pedagogical Excellence:** Providing hands-on workshops, CMEs, and specialized dissertation support for UG and PG students to elevate research literacy.
- **Bioradiance:** Our flagship annual international conference, serving as a vital nexus for global scientific exchange.

STUDENT COORDINATOR'S MESSAGE



It is with immense pride and enthusiasm that I share the **Annual Report of Pushpagiri Research Centre (PRC) for 2025–2026**. Our mission is guided by the **'3P model'—Publication, Projects, and Patents**, driving sustainable therapeutic approaches and translating clinical research into innovative products, patents, and high-impact publications. As Student Coordinator, I actively seek collaborations and welcome students from diverse institutions to the PRC family. We mentor Ph.D. scholars, postgraduates, and undergraduates while providing opportunities for academic and research development through:

- *Project dissertations for UG and PG students aligned with their academic curriculum*
- *Pre-Ph.D. research training for postgraduates as Research Trainees*
- *Internships, workshops, seminars, and hands-on training*

PRC supports faculty-led research through intramural funding and promotes interdisciplinary research across clinical and non-clinical scientific domains. Our high-end analytical facilities are also accessible at affordable rates to students, scholars, and faculty from other institutions.

Our major research and infrastructure capabilities include:

- *Clinical microbiology, food biotechnology, and nanobiotechnology*
- *In-silico pipelines and computational drug designing*
- *Clinical biochemistry and biomaterial synthesis for tissue regeneration*
- *NABL-accredited virology diagnostics and research*
- *Fully equipped Animal House Facility with advanced surgical facilities*

I warmly invite students and researchers to explore the opportunities at PRC. Looking ahead, we remain committed to strengthening national and international collaborations, fostering multidisciplinary innovation, bridging academia and industry, and nurturing technically skilled researchers with a strong ethical foundation. Together, we aspire to contribute meaningfully to global healthcare while advancing research excellence.



H.G. MOST REV. DR. THOMAS MAR KOORILOS
Patron,
Metropolitan Archbishop of Thiruvalla



SHRI. JACOB PUNNOOSE IPS
Principal Advisor

GOVERNING BODY



President
RT. REV. DR. ISSAC PARAPPALLIL
Chief Vicar General,
Catholic Archdiocese of Thiruvalla



Secretary
REV. DR. BIJU VARGHESE PAYYAMPALLIL
Chief Executive Officer



Vice President
PROF. DR. ABRAHAM VARGHESE V.
Medical Director



Member
REV. DR. MATHEW MAZHAVANCHERIL
Director - Medicity & Research Centre



Member
REV. FR. MATHEW THUNDIYIL
Hospital Administrator



Member
MR. VARGHESE ALEXANDER
Chartered Accountant
V. Alexander & Co., Thiruvalla

DIRECTORS



REV. FR. JOHN PADIPURACKAL
Director, Finance & Purchases



REV. FR. MATHEW PUTHENPURAYIL
Director, Facilities Management & PCON



REV. FR. PHILIP MANGATTETHU
Chaplain & Director, Padheyam

CHAPLAINS



REV. DR. ANTONY CHETHIPUZHA
Chaplain-Medicity Campus



REV. FR. ALBERT KOILPARAMBIL OFM
Chaplain



REV. FR. MATHEW CMF
Chaplain



REV. FR. ABRAHAM PARIYARATHIL
Chief Librarian - Medical College
Chaplain



MEDICAL DIRECTORS



Dr. Abraham Varghese V.
MD General Medicine
Medical Director & Superintendent



Dr. Mathew Pulicken
MD General Medicine, IDCCM, EDIC
Additional Medical Superintendent



Dr. Samson Samuel E.
MS Orthopaedics
Additional Medical Superintendent

PRINCIPALS



Dr. Reena Thomas
MD General Medicine,
DM Nephrology
Principal, College of Medicine



Dr. Devadathan A.
MDS Conservative & Endodontics
Principal, College of Dental Sciences



Dr. Santhosh M. Mathews
M Pharm, PhD, MBA
Principal, College of Pharmacy



Prof. Vineetha Jacob
M.Sc. Mental Health Nursing
Principal, College of Nursing



Dr. M. O. Annamma
MD Pathology
Academic Co-ordinator
College of Allied Health Sciences

DSIR RECOGNITION

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: 26565687, 26562144
: 26562134, 26562122
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Website : http:/www.dsir.gov.in
(आईएसओ 9001:2008 प्रमाणित विभाग)
(AN ISO 9001:2008 CERTIFIED DEPARTMENT)

सूचना का अधिकार
RIGHT TO INFORMATION

सत्यमेव जयते

भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
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New Delhi - 110016

F.No. 14/590/2011-TU-V

Date: 13th April 2026

The Director
Pushpagiri Medical Society
Pushpagiri Medical Colege Hospital Campus,
Pathanamthitta,
Tiruvalla – 689101, Kerala

Subject: **Renewal of Recognition of Scientific and Industrial Research Organisations (SIROs).**

Dear Sir,

This has reference to your application for renewal of recognition of **Pushpagiri Medical Society, Tiruvalla, Kerala** as a Scientific and Industrial Research Organisation (SIRO) by the Department of Scientific and Industrial Research under the Scheme on Recognition of Scientific and Industrial Research Organisations (SIROs), 1988.

2. This is to inform you that it has been decided to accord renewal of recognition to **Pushpagiri Medical Society, Tiruvalla, Kerala from 01.04.2026 to 31.03.2029.** The recognition is subject to terms and conditions mentioned overleaf.

3. Receipt of this letter may kindly be acknowledged.

Yours faithfully,

(Vinay Kumar)
Scientist - 'F'

Pushpagiri received the DSIR recognition for the 5th consequetive time

PUSHPAGIRI RESEARCH COUNCIL

PUSHPAGIRI MEDICAL SOCIETY
We care God cures

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HR2/7506/2024 July 15, 2024

Proceedings of the Secretary, Pushpagiri Medical Society

Subject: Constitution of Research Council - Pushpagiri Medical Society.

A Research Council has been constituted to provide strategic oversight, coordination and support for research activities within our Institutions. Representatives from all Institutions under Pushpagiri Medical Society will serve as members in this Council.

Council Members:

1. Rev. Dr Mathew Mazhavancheril, Research Director
2. Dr Vikram Gowda, VP(Administration), PIMS
3. Dr Tomy Philip, Professor of General Medicine, PIMS
4. Dr Jacob Abraham, VP (PG Studies), PIMS
5. Dr.Aby Mathews, Principal, PCDS
6. Dr Sunil S, VP (Academics), PCDS
7. Dr. Nebu George Thomas, Professor of Periodontology, PCDS
8. Dr Santosh Mathews, Principal, PCP
9. Dr Christy K Jose, Professor & Head, Dept. of Pharmaceutical Chemistry, PCP
10. Dr Jeenu Joseph, Professor & Head, Dept. of Pharmacognosy, PCP
11. Rev Sr. Mary Jyothi OSS, VP (Administration), PCON
12. Mrs. Ashamol MB, Lecturer, PCON
13. Mrs. Ansu Raju, Asst. Professor, PCON
14. Dr Yogesh B Dalvi, Scientist, PRC
15. Dr Aniket Naha, Scientist, PRC

Fr. Dr. Biju Varghese
Secretary
Pushpagiri Medical Society

Fr. Dr. Biju Varghese
Secretary
Pushpagiri Medical Society
Tiruvalla - 689 101, Kerala, India

Enclosures:

1. **Broad objectives of the Research Council**
2. **Responsibilities of the Research Council Members**

Copy to: All Directors
All Members of the Research Council

PR

Aims of the Research Policy

PIMS&RC promote scientific temper and research culture among its faculty and students by providing the required resources and appropriate facilities to conduct quality research. It hopes to realize the vision and missions of the institution and uphold to the established standards and norms relating to safe and ethical conduct of research.

Objectives of the Research Policy

1. To create a research fund for supporting and facilitating research initiatives and projects of faculty members and students
2. To strengthen the institutional capacity for strategic, technical and operational planning, budgeting and control of all research activities of the University
3. To develop rules, procedures and guidelines for granting research support, instituting awards, and supporting all other related activities
4. To develop rules, procedures and guidelines for granting study leave, sabbatical leave, duty leave, reduction in workload, etc. for faculty members' research activities.
5. To provide a modality of for proper coordination of all research activities of the University and aligning these to the vision and missions of the University and national development goals.
6. To prepare and update the research agenda of the University outlining the preferred focus areas and priorities of research activities to be supported.
7. To guide faculty members in the effective integration of research projects with the regular curriculum implementation and curriculum enrichment activities.
8. To identify researchers about the appropriate research opportunities announced by different academic, research, industry or government organizations.
9. To promote interdisciplinary research and establish modalities for preparing and undertaking joint research projects covering more than one knowledge

domain as well as policies for involving external agencies/experts in such projects.

10. To provide a research code, which informs all researchers about the ethical and legal norms and principles to be followed in the conduct of research.
11. To establish linkages including MOU s for long-term relationships with national and international research organizations for widening the scope of research opportunities and funding options available to the teachers and students of the Institution.
12. To support the publication of the research work/projects in reputed academic journals and provide incentives for the same.
13. To support the presentation/communication of the research work/projects as well as their findings and recommendations through academic events such as workshops/seminars/guest lectures or the media.
14. To implement research quality assurance mechanism for ensuring that all research activities of the institution.
15. To enforce rules and procedures to ensure the compliance of all researchers to the research quality assurance framework, the research code and all the applicable rules and regulations.

Research Policy Implementation Mechanism

The Research Cell of the institution shall be responsible for implementing this research policy of the University by working closely with the University management. The specific roles and functions of the research cell will be as follows:

1. To facilitate the faculty in undertaking research and advice the management to set up a research fund for providing seed money
2. To provide research facilities in terms of infrastructure, i.e. laboratory equipment, and research incentives required by the faculty.
3. To promote a research culture (eg. teaching workload remission, opportunities for attending conferences).

4. To prepare rules & guidelines for Grant of Research related leave and other remissions, a research agenda with relative priorities.
5. To support the faculty to undertake research by collaborating with other research organizations/ industry.
6. To derive suitable procedures for giving due recognition for guiding research.
7. To facilitate the establishment of specific research units/ centres by funding agencies /university.
8. To organize workshops/ training programmes/ sensitization programmes are conducted by the institution to promote a research culture on campus.
9. To prepare budgets for supporting students' research projects.
10. To approach National and international organizations such as CSIR, DST-SERB, DST, DBT, NATO, DRDO and BARC to fund major and minor research projects undertaken by the faculty / students.
11. To improve the availability of research infrastructure requirements to facilitate research.
12. To develop and implement an official Code of Ethics to check malpractices and plagiarism in research.
13. To facilitate Interdepartmental / interdisciplinary research projects.
14. To institute research awards.
15. To provide incentives for the faculty who receive state, national and international recognition for research contributions as well as research awards and recognition from reputed professional bodies and agencies.
16. To promote the publication of research articles by the faculty in reputed/ referred journals.
17. To maintain a database of research work and research projects undertaken by the faculty and students as well as collect data by metrics such as Citation Index, Impact Factor, h-index, SNIP, SJR etc.
18. To publicize the research expertise and consultancy capabilities available in the University.
19. To encourage publication leading to patent/ patenting research activities.

20. To encourage collaborative research with International/ National repute institutes.
21. To facilitate the provision consultancy services to industries / Government / Non- Government organizations / community/Public.
22. To invite industry to use the research facilities of the University and sponsor research projects.



Newly formed Research Council Meeting at CEO's Office. Dr. Nebu, Dr. Yogesh and Dr. Aniket from PRC are the members. This Council was represented by all Principals / Vice Principals of various institutions. The council will be supervising and controlling all research done under PMS

Annual Report of Research Endeavours under Pushpagiri Medical Society under Pushpagiri Research Council

Research at the Pushpagiri Medical Society is anchored in a commitment to advancing healthcare through scientific inquiry, innovation and evidence-based practice. Across its constituent institutions, the Society fosters an integrated research environment that encourages faculty, researchers and students to pursue meaningful questions, translate knowledge into solutions, and contribute to the advancement of medical and health sciences. The research endeavours of PMS are supported by a growing ecosystem of scholarly activity, funded research, mentorship, student engagement and ethical research governance.

1. Research Publications and Scholarly Outputs

During the three-year reporting period from 2024 to 2026, faculty members and researchers of the Pushpagiri Medical Society produced a total of 590 scholarly research outputs. The research outputs comprised:

- **552 Research Papers** published in peer-reviewed journals.
- **31 Book Chapters** contributing to medical and scientific literature.
- **7 Comprehensive Review Articles** synthesizing advancements in specialized fields.

2. Intellectual Property Rights

The research activities of the PMS have contributed to intellectual property generation and the acquisition of funded research projects. PMS currently holds a total of 14 patents, comprising:

- **7 Filed** patent applications
- **6 Granted** patents
- **1 Commercialized** patent

3. Funded Research Projects

During the 2024–2026 reporting period, researchers of PMS secured a total of 125 Fully Funded Projects, comprising:

- **9 International Projects**
- **3 National Projects**
- **13 Institutional Projects**
- **100 Intramural Grants** under the Mar Athanasios Endowment seed funding

Notable international funding and research collaborations included:

- University of South Wales, UK
- Conferenza Episcopale Italiana
- University of Technology and Applied Sciences, Sultanate of Oman
- Charite University of Medicine, Berlin
- University of Salento, Italy
- The University of Alabama, United States

Notable national funding sources included:

- Indian Council of Medical Research (ICMR)
- Department of Biotechnology (DBT)
- Kerala University of Health Sciences (KUHS)

These funding sources have supported research activities across diverse areas of medical, biomedical and health sciences research.

4. Student Research and Research Training

The Pushpagiri Medical Society places emphasis on fostering research engagement among students and encouraging participation in research from the early stages of healthcare education.

During the reporting period, **74 student projects** secured **Extramural Funding** support, comprising:

- **50 from KUHS** — Kerala University of Health Sciences
- **13 from DHR** — Department of Health Research
- **11 from ICMR** — Indian Council of Medical Research

In addition to externally funded student projects, substantial research activity was undertaken at undergraduate and postgraduate levels.

Undergraduate Research Projects

A total of **464 UG projects** were completed during 2024–2026.

- Year 2024 – 128 Projects
- Year 2025 – 166 Projects
- Year 2026 – 170 Projects

Postgraduate Research Projects

A total of **401 PG thesis projects** were completed during the same period.

- Year 2024 – 125 Projects
- Year 2025 – 137 Projects
- Year 2026 – 139 Projects

These activities demonstrate the integration of research training into undergraduate and postgraduate healthcare education across the constituent institutions of PMS.

5. Doctoral Research and Research Mentorship

PMS has continued to strengthen its doctoral research capacity and academic mentorship framework. The Society currently has:

- **17 Ph.D. Degree Holders**
- **25 Ongoing Ph.D. Scholars** currently conducting doctoral research

The research ecosystem is further supported by approved research guides across the constituent colleges, comprising:

- **22 Approved Ph.D. Guides**
- **113 Approved PG Guides**

The availability of doctoral researchers and approved research mentors provides an institutional framework for the continued development of postgraduate and doctoral research.

6. Research Governance, Ethics and Regulatory Oversight

High-quality research requires appropriate ethical, scientific and regulatory oversight. Over the last three years, institutional committees of the Pushpagiri Medical Society reviewed and granted approval for **1,035 Total Research Proposals**.

The approvals comprised:

- **698 Ethics Clearances** by the **Institutional Ethics Committee (IEC)**
- **296 Scientific Clearances** by the **Institutional Review Board (IRB)**
- **41 Clearances** by the **Institutional Animal Ethics Committee (IAEC)**

These institutional review mechanisms provide an essential framework for the ethical and scientific oversight of research conducted within the Society.

7. Mar Athanasios Endowment Awards

The Pushpagiri Medical Society continues to recognize academic and research excellence through the **Mar Athanasios Endowment Awards**, which provide financial recognition to beneficiaries. The award details for 2025 and 2026 are as follows:

- Year 2025 – 63 Beneficiaries (Rs. 16,09,500)
- Year 2026 – 193 Beneficiaries (Rs. 34,22,105)

8. Overall Research Profile

The research activities of the Pushpagiri Medical Society during the **2024–2026** reporting period encompass scholarly publications, intellectual property generation, funded research, student research, doctoral education, research mentorship, ethical governance and academic recognition.

The Society's research ecosystem brings together faculty members, researchers, research scholars, students and approved research guides across its constituent institutions. The activities facilitated through the **Pushpagiri Research Centre** support the development and coordination of research across medical, biomedical and health sciences.

The reported achievements reflect the collective contribution of the faculty, research scholars, students, research guides and institutional research committees of the Pushpagiri Medical Society. Through continued emphasis on scientific investigation, research training and evidence-based discovery, the Society remains committed to advancing healthcare research and academic development.

RESEARCH ADVISORY BOARD & ADJUNCT FACULTIES



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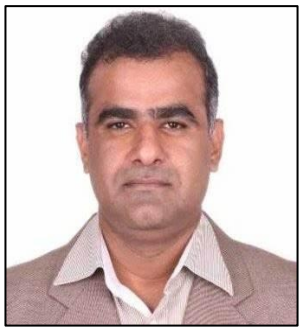
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FACULTY MEMBERS AND SCIENTISTS OF PRC

Director & Head



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[M.Sc., Ph.D., Post Doc (France)]

Molecular Biology Laboratory



Dr. Ajay Krishnan U
[M.Sc., Ph.D.]
Scientist

Animal House Facility



Dr. Ampadi A. N.
[MVSc, PGDAW, BVSc and Ah]
Veterinary Officer & Research Coordinator

Medical Biotechnology & Computational Drug Designing Laboratory & Microbial Technology & Infectious Disease Laboratory



Dr. Aniket Naha
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Scientist & Student Coordinator

Cancer Research & Public Health



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Assistant Professor & Project Coordinator (CANCare)

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Scientist

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Senior Resident

Stem Cell & Tissue Engineering Laboratory



Dr. Nebu George Thomas
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Scientist & Professor

Centre for Evidence Based Practice



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[M.Sc. (Biostatistics)]
Assistant Professor

Clinical Trials



Dr. Parameswaran Nampoothiri M.G [MD]
Assistant Professor

HLA & Tissue Typing



Dr. Reeba Mary Issac [MBBS, DCP, Ph.D.]
Assistant Professor

Cytogenetics & Biochemistry Laboratory



Dr. Soumya RS. [M.Sc., Ph.D., Post Doc]
Scientist & Assistant Professor

Secretary



Mr. Jacob P. Ouseph
Executive, PRC

13TH INTERNATIONAL CONFERENCE BIORADIANCE 2025



Inauguration of BIORADIANCE 2025 by PRC



From left to right: **Dr. Venkatesh S** (Associate Professor, West Virginia University), **Dr. Soumya RS** (Scientist and Organizing Secretary), **Dr. Christian Demitri** (Associate Professor, University of Salento), **Rev. Dr. Biju Varghese** (CEO), **Prof. (Dr). G M Nair** (President, Kerala Academy of Sciences), **H.G. Most Rev. Dr. Thomas Mar Koorilos** (Metropolitan Archbishop of Tiruvalla), **Dr. Sanjay Behari** (Director, SCTIMST), **Rev. Dr. Mathew Mazhavancheril** (Director and Chairman), **Dr. Reena Thomas** (Principal, PIMS&RC) and **Prof. David Pontin** (Emeritus Professor, University of South Wales)

Proceedings of BIORADIANCE - 2025

Bioradiance 2025, the **13th International Conference** organized by the **Pushpagiri Research Centre (PRC)** in association with **Kerala Academy of Sciences (KAS)** with the theme **"From Molecules to Medicine: Bridging Biochemistry and Therapeutics,"** was held on **17–18, June 2025** at **PIMS&RC (PIMSRC), Tiruvalla, Kerala.** With the theme "From Molecules to Medicine: Bridging Biochemistry and Therapeutics", the

conference aimed to create a platform for researchers, clinicians, and industry leaders to exchange knowledge, build collaborations, and explore translational applications of biomedical research.

The Inaugural Ceremony was held on 17th June 2025. The programme commenced with a video presentation highlighting PRC's research activities, followed by a prayer. Rev. Dr. Mathew Mazhavancheril, Director, Pushpagiri Medicity & PRC welcomed all to the Bioradiance 2025. A short description about the conference was delivered by Dr. Soumya RS, Scientist and Organizing Secretary, Bioradiance 2025. H.G. Most Rev. Dr. Thomas Mar Koorilos, Metropolitan Archbishop of Tiruvalla gave the benedictory address. The function was presided by Prof. (Dr). G M Nair, President, KAS. Following this, a special address was given by Fr. Dr. Biju Varghese, CEO, Pushpagiri Group of Institutions. The conference was inaugurated by Dr. Sanjay Behari, Director, SCTIMST.

Key Highlights of the Inauguration were

- Exchange of three Memorandum of Understandings (MoUs) between PRC and:
    1. University of South Wales, UK
    2. University of Salento, Italy
    3. Wellness Solutions Pvt. Ltd., India

These MoUs aim to promote collaborative research and student exchange programmes.

- A book of abstracts was released by the Chief Guest during this event.

Felicitations were given by Dr. K B Ramesh Kumar, Principal Scientist, JNTBGRI and Dr. Reena Thomas, Principal, PIMSRC. The inaugural session was concluded with Vote of thanks by Dr. Sreejith P, General Secretary KAS followed by National Anthem.

The Scientific sessions (17th June) were started after a tea break with a Special Plenary Lecture by Dr. Sanjay Behari, Director, SCTIMST entitled "*Publications in Sciences: A self-improvement exercise or drudgery*?". The key highlights of the talk addressed the important issues of transforming a thesis to a publication and discussed the methodology, the scientometric indices, the way forwards in consolidating data, the

referencing of articles, and the ethical and plagiarism related issues. The importance of citing articles of national research. was also discussed in this talk.

The Keynote session entitled "*From viruses to pseudoviruses: emerging possibilities*" by Dr. E. Sreekumar, Director, Institute of Advanced Virology, Thiruvananthapuram discussed the problems faced by mankind due to the emergence of viruses. The highlights of the conference discussed are the importance of developing BSL-3 or BSL-4 level laboratories for understanding the disease pathogenesis along with the possibilities for developing control measures.

The invited lectures were started with Dr. Venkatesh Sundararajan, Associate Professor, Department of Physiology, West Virginia University School of Medicine, USA. He delivered the lecture entitled "*Mitochondrial LonP1 Safeguards Inner-Membrane Integrity and Energetic Maturation of the Heart*". The presentation highlighted the importance of LonP1, an ATP-dependent protease responsible for preserving mitochondrial matrix proteostasis as a potential therapeutic target in mitochondrial cardiomyopathies.

Nutraceuticals are bioactive food-derived compounds that offer both preventive and therapeutic benefits, effectively bridging the gap between conventional food and pharmaceutical drugs. The invited session by Dr. Ruby John Anto, Chief Scientist, Centre of Excellence in Nutraceuticals, Thiruvananthapuram gave her talk entitled "*Nutraceuticals: A Comprehensive Insight into Their Therapeutic, Preventive, and Functional Benefits*" highlighted the significance of plant-derived nutraceuticals in combating cancer and other metabolic diseases.

The session by Dr. Rajeev Jayadevan, Convenor Research Cell, Kerala State Indian Medical Association, Kochi entitled "*Sharpening our scientific perspectives*" was started after lunch break. This session discussed the importance of the developing scientific temperament.

Dr. CN Ramchand, CEO, Co-founder and CSO, MagGenome Technologies Pvt. Ltd discussed about the topic "*Discovery Preclinical and Clinical Development of synthetic anti*

VEGF FAB for treating wet macular degeneration and diabetic retinopathy". This session highlighted the importance of discovery and development of FAB_{293} which is major drug candidate for diabetic retinopathy. Dr. Hussain Ali, Associate Director Infectious Diseases and Immunology, Abott Core Diagnostics, handled a technical session on "*Revolutionizing HCV Diagnosis. The role of core antigen testing*".

Oral and poster presentations were held in parallel sessions after the tea break along with panel discussion with eminent scientists Prof. (Dr). GM Nair, Dr. E Sreekumar, Dr. Venkatesh Sundararajan, Dr. Ruby John Anto, Dr. Rajeev Jayadevan, Dr. CN Ramchand, Dr. Sreejith P, Dr. Ramesh Kumar, Dr. Christian Demitri, Dr. Sadeesh EM, Dr. Finosh G Thankam, Rev. Dr. Mathew Mazhavancheril, Dr. Soumya RS, Dr. Ajay Krishnan U,Dr. Aniket Naha, Dr. K Vijaya Kumar, Dr. Renjith P Nair, Mr. George Varghese, Dr. Nebu George Thomas, Dr. Ambadi AN, Dr. Rosin George Varghese, Dr. Betsy A Jose, Dr. Reeba Mary Issac and Mrs Nisha Kurian, on the "*Different aspects and applications of Science in Modern World*". The session was interactive with students, researchers and scientists from various discipline and provided a greater opportunity for the participants to interact with the scientists to discuss and share their ideas.

The event for the first day was concluded with cultural programmes. This included Kathakali by Kalamandalam Ullas and team followed by semiclassical dance, cinematic dance and music band by students from various institutions under Pushpagiri Medical Society.

The Second day (18th June 2025) was started with an invited session about antimicrobial resistance by Dr. Bipin Nair, Dean and Director, Amrita School of Biotechnology entitled "*Integrating Traditional and Conventional Approaches to Combat Antimicrobial Resistance*". Highlights of the talk was about the innovative solutions to combat the crisis of AMR. This was followed by the lecture of Dr. A. Sreekumar, Founder – Nutrigenomics, Well-genome Wellness Solutions entitled "*Precision Medicine – Biochemical Intervention to Balance Genes and Health*". The session highlighted the pathways of health and life from environment to genes, gene expression, mitochondrial function, other intracellular organ and cell membrane function.

Dr. Christian Demitri, Associate Professor, University of Salento, Italy through his session entitled "*Design of materials for tissue engineering and smart medical devices applications*" explained the importance of hydrogel technology in the biomedical field ranging from the production of scaffold for tissue engineering applications to the design of smart devices to treat and monitor metabolic diseases.

After the tea break, enlightening talk was presented by Dr. Biji Bahuleyan, Head of Neurosciences and Neurosurgery, Welcare Hospital on "*Using intrinsic white matter tract anatomy of the brain to maximize safe resection of brain tumor*". The highlight of the talk was; he explained about the white matter tracts of the brain connect different functional areas of the brain. The talk explained how modern technology helps neurosurgeons the safe resection of brain tumour with precision. Supplemented with videos of real-time resection.

"*Deciphering life style codes for human health*" by Dr. Sreejith N Kumar, Consultant, Diabetes Care Centre, Thiruvananthapuram highlighted the importance of following good dietary practises in our life to control metabolic diseases. This was an engaging session which helped audience to understand the importance of planning our diet tath has links to our evolution.

"*Genomic Insights into Milk Linked Mitochondrial Variations Using Whole Mitochondrial Genome Analysis in Indigenous Bovines*" by Dr. Sadeesh E. M, Senior Scientist, NDRI presented a comprehensive genomic analysis of mitochondrial variations associated with milk production traits in three indigenous bovine breeds using whole mitochondrial genome (mitogenome) sequencing and mitochondrial DNA (mtDNA) copy number quantification.

The session by Dr. Finosh Thankam, Assistant Professor, Department of Translational Research, Western University of Health Sciences, USA entitled "*Endogenous myocardial stem cells for heart regeneration*" revealed a hydrogel-based template for cardiac regeneration offering the sustained bioavailability promising cardiac regeneration. This was followed by a Lunch Break.

The day 2 technical sessions on *"Family Resilience in India: Bridging Literature and Practice through FRAIT in Kerala"* and *"Cultural Insights into the family resilience assessment tool (FRAIT) in the UK and India"* was handled by Dr. Michelle Thomas, Dr. David Pontin, Prof. Carolyn Wallace and Mrs. Anitha Livingstone from University of South Wales, United Kingdom discusses importance of Family Resilience Assessment Instrument and Tool (FRAIT) used to assess a family's resilience, which can be used by Indian community health workers working with families in India. This was followed by a tea break.

The valedictory ceremony started at 3.30 pm with welcome address by Dr. Soumya RS, Scientist and Organizing Secretary, Bioradiance 2025, followed by the Summing up of Conference by Mr. George Varghese, Assistant Professor, PIMSRC and the Presidential Address was given by Rev. Fr. George Valiyaparambil, Director, PIMSRC. This was followed by Valedictory Address by Dr. (Prof). A Sabu, Member Secretary, KSCSTE. A total of 12 prizes were given for best oral and poster presentations in two categories- Basic Research and Clinical Research. Cash prizes and certificates for the winner were handed over by the Chief Guest during this session. After that felicitation was given by Dr Ramesh Kumar, Principal Scientist JNTBGRI. The feedback of the conference was presented by the participants about the conference's multidisciplinary scope and networking opportunities. and the session concluded with vote of thanks by Dr. K. Vijayakumar, General Secretary, KAS. This was followed by the National Anthem and group photo session.

The Key Outcomes of this conference were

- ✓ Strengthened international collaborations through MoUs with UK and Italy-based universities.
- ✓ Facilitated knowledge exchange across disciplines including virology, mitochondrial biology, nutraceuticals, tissue engineering, neuroscience, and diagnostics.
- ✓ Provided a platform for young researchers to present work and engage with senior scientists.

- ✓ Promoted translational biomedical research aligned with national health priorities.

Sponsorship & Partnerships

The Main Sponsors of this programme were Anusandhan National Research Foundation (ANRF) and Department of Biotechnology (DBT). The Co-Sponsor of this event was Abbott Core Diagnostics. Qiagen was the Associate Sponsor and the media support was provided by Lab A to Z Services.

Participation at a Glance

- ✓ Total Registrations: 145
- ✓ Spot Registrations: 13
- ✓ Overall Registered Participants: 158
- ✓ Speakers: 19 (13 National, 6 International)
- ✓ Oral Presentations: 59
- ✓ Poster Presentations: 40

Speakers of BIORADIANCE - 2025

1. 

Dr. Sanjay Behari
Director
Sree Chitra Tirunal Institute for Medical Sciences & Technology
Thiruvananthapuram

2. 

Dr. E. Sreekumar
Director
Institute of Advanced Virology
Thiruvananthapuram

3. 

Dr. C.N. Ramchand
CEO & Co-Founder
Maggenome Tech

4. 

Dr. A. Sreekumar
Chairman
Wellness Solutions

5. 

Dr. Ruby John Anto
Chief Scientist
Centre of Excellence in Nutraceuticals
Thiruvananthapuram

6. 

Dr. Rajeev Jayadevan
Convenor Research Cell
Kerala State IMA

7. 

Dr. Bipin Kumar G. Nair
Dean and Director
Amrita Vishwa Vidyapeetham

8. 

Dr. Christian Demitri
Associate Professor
University of Salento

9. 

Dr. Biji Bahuleyan
Neurosurgeon
Welcare Hospital

10. 

Dr. Sreejith N Kumar
Consultant
Diabetes Care Centre

11. 

Dr. (Prof). A. Sabu
Member Secretary
Kerala State Council for Science, Technology and Environment

12. 

Dr. Venkatesh S
Associate Professor
West Virginia University

13. 

Dr Sadeesh E M
Senior Scientist
National Dairy Research Institute
Karnal

14. 

Dr. Finosh G Thankam
Assistant Professor
Western University of Health Sciences

15. 

Dr. Hussain Ali
Associate Director, Infectious Diseases & Immunology
Abbott Core Diagnostics

16. 

Dr. Michelle Thomas
Senior Lecturer
University of South Wales

17. 

Prof. Carolyn Wallace
Professor
University of South Wales

18. 

Prof. David Pontin
Emeritus Professor
University of South Wales

19. 

Mrs. Anitha Livingstone
Senior Lecturer
University of South Wales

Organizing Committee – BIORADIANCE 2025

Patrons

H.G. Most Rev. Dr. Thomas Mar Koorilos	Metropolitan Archbishop of Tiruvalla
Prof. (Dr). G M Nair, President	Kerala Academy of Sciences
Fr. Dr. Biju Varghese	CEO, Pushpagiri Group of Institutions

Chairman

Rev. Dr. Mathew Mazhavancheril, Director, Pushpagiri Medicity & PRC

Convenors

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Fr. George Valiyaparampil	Director, Pushpagiri College of Medicine & Allied Science
Fr. John Padipurackal	Director, Finance, PIMSRC
Fr. Mathew Puthenpurayil	Director, Pushpagiri College of Nursing
Dr. Reena Thomas	Principal, PIMSRC
Dr. M.O. Annamma	Principal, Pushpagiri College of Allied Health Sciences
Dr. Aby Mathew	Principal, Pushpagiri College of Dental Sciences
Dr. Santhosh Mathews	Principal, Pushpagiri College of Pharmacy
Dr. Abraham Varghese	Medical Superintendent, PIMSRC
Prof. Mrs. Vineetha Jacob	Principal, Pushpagiri College of Nursing

Co-Convenors

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Dr. Santosh Pillai	Vice Principal, PIMSRC
Dr. Gaddam Vijayalakshmi	Vice Principal PIMSRC
Dr. Jacob Abraham	Vice Principal, PIMSRC
Dr. Sunil S	Vice Principal, Pushpagiri College of Dental Sciences

Organizing Secretaries

Dr. Soumya RS	Scientist, PRC
Dr. Sreejith P Panicker	General Secretary, Kerala Academy of Sciences

Joint Organizing Secretaries

Dr. Ajay Krishnan U	Scientist, PRC
Dr. Finosh G Thankam,	Assistant Professor, Western University of Health Sciences, USA

Committee Members

Dr. K. B. Rameshkumar	General Secretary, Kerala Academy of Sciences
Mr. George Varghese	Assistant Professor, PIMSRC
Dr. Nebu George Thomas	Professor and Scientist, Pushpagiri College of Dental Sciences & PRC
Dr. Aniket Naha	Scientist, PRC
Dr. Ampadi AN	Veterinary Officer, PRC
Dr. Rosin George Varghese	Assistant Professor, PIMSRC
Dr. Betsy A Jose	
Dr. Reeba Mary Isaac	
Mrs. Nisha Kurian	
Dr. Meena Issac	
Dr. Sharlene Sara Babu	Additional Professor, Pushpagiri College of Dental Sciences
Dr. Minimol K Johny	Associate Professor, Pushpagiri College of Dental Sciences
Mr. Jacob P Ouseph	Secretary, PRC

Glimpses from BIORADIANCE – 2025














BIORADIANCE 2025








13th
BRIDGING BIOCHEMISTR

BE A
GAME CHANGER



















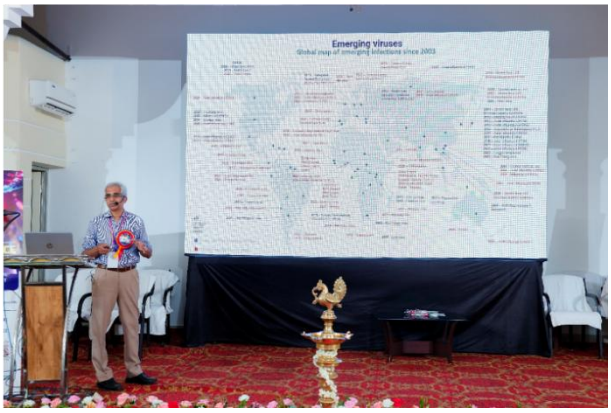
Discovery and development of a
Bispecific Intravitreal, Anti-VEGF-Fab
Antibody molecule for treating Wet-AMD
and Diabetic retinopathy
Dr. C.N. Ramchand
Therapeutics
MedGenome
Therapy
MEDGENOME


PUSHPAG
KERALA A
JUN




Our lab was primarily focusing on isolation and identification of anti-cancer
principles from natural sources, and investigating their chemotherapeutic,
chemopreventive and chemosensitization potential
Tryptanthrin
Kaempferide
To study the viral aetiology of various cancers and to evaluate whether
the molecules we isolated at BGCR have a regulatory role on the viral
aetiology of these cancers.
To identify new nutritional molecules from natural sources.


Mitochondrial Lonp1 Safeguards Inner-Mitochondrial Membrane
Integrity and Energetic Maturation of the Heart
BIORADIANCE 2025
Disclosure: None
West Virginia University
SCHOOL OF MEDICINE


Emerging viruses


Personal
10000
100000
1000000














Developing Family resilience concept in India among families with children under 6yrs: A GCM study
FRAIT




FROM MOLECULES TO MEDICINE:
BRIDGING BIOCHEMISTRY






Myocardial Infarction




13th International Conference
BIORADIANCE 2025
FROM MOLECULES TO MEDICINE: BRIDGING BIOCHEMISTRY AND THERAPEUTICS




Neuronavigation
Neurosurgery operation theatre
Acts like a GPS
Submillimetre precision
Improves accuracy




BIORADIANCE 2025
Design of materials for tissue engineering and smart medical devices applications
UNI SALENTO






BACKGROUND


13TH INTERNATIONAL CONFERENCE
BIORADIANCE 2025




PUSHPAGIRI RESEARCH CENTRE




PUSHPAGIRI RESEARCH CENTRE




BIORADIANCE 2025
PUSHPAGIRI RESEARCH CENTRE




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13th INTERNATIONAL CONFERENCE
BIORADIANCE 2025
PUSHPAGIRI RESEARCH CENTRE
IN ASSOCIATION WITH
KERALA ACADEMY OF SCIENCES
JUNE 17 - 18, 2025





























BIORADIANCE 2025


13TH INTERNATIONAL CONFERENCE
BIORADIANCE 2025

RESEARCH LABS AND FACILITIES OF PRC

Laboratory Animal Research Facility (LARF)

Dr. Ampadi A. N., MVSc, PGDAW, BVSc and Ah, Veterinary Officer & Research Coordinator; drampadian@pimsrc.edu.in

Laboratory Animal research facility (LARF) in PIMS&RC was established in the year 2008. It is registered with The Committee for Control and Supervision of Experiments on Animals (CCSEA) (Registration No: 602/PO/ReBi/S/2002/CCSEA). The CCSEA is a statutory body established under the Prevention of Cruelty to Animals (PCA) Act of 1960. Operating under the Department of Animal Husbandry and Dairying within the Ministry of Fisheries, Animal Husbandry and Dairying, the Committee is mandated to ensure that animals are protected from unnecessary pain or distress throughout all stages of experimentation. The Institutional Animal Ethics Committee (IAEC) was established in the Institute, in accordance with the standards established by the CCSEA.

Institutional Animal Ethics Committee (IAEC)

The IAEC of PIMS&RC was constituted in the year 2008, as an inter-institutional body under CCSEA, Govt of India. The IAEC is duly constituted as per the norms of the Government of India, which mainly focuses on following:

- Welfare cost to the animals
- Ethical considerations
- The proposed benefits that will be achieved
- The social / community acceptability of the procedures
- Ensuring compliance with the law
- Monitoring the use of animals in the institution and ensuring that appropriate standards and procedures are adhered to scientific validity of projects

Institutional Animals Ethics committee include nine members who are from within and outside the institution as per the Committee for Control and Supervision of Experiments on Animals (CCSEA) norms to ensure that the reviews are objective and without any form of bias. The registration of our establishment with CCSEA for the purpose of "Research for educational purpose on small animals and in-house

breeding" bears a registration number 602/PO/ReBi/S/2002/CCSEA renewed for **03/02/2026** to **02/02/2031**. The meetings of the IAEC are held twice a year. The proposals are to be submitted to the Chairman/scientist in charge & member secretary, one month before the commencement of the meeting so that the proposals can be circulated to the link/ Scientist from outside the Institute / Main nominee or all of them, so that they will get adequate time to review it. The proposals have to be submitted on a prescribed format, with all accompanying documents and checklists. For more information, please contact **iaec@pimsrc.edu.in**.

Ongoing Research Areas

- Biocompatibility studies in rodent model
- Wound healing studies in rodent model
- Nutritional studies in rodent model
- Behavioural studies in rodent model
- Toxicity studies in rodent model
- Bone regeneration studies in rodent model

Instrumentation Facilities

- Isoflurane Anaesthesia machine
- Anaesthesia machine
- CBC Analyser
- Autoclave
- Euthanasia Chamber
- Serum Analyser

Optimized Living Conditions

To ensure full compliance with CCSEA guidelines, the facility upgraded its environmental controls to maintain ideal conditions. This included the installation of:

- Noise-free exhaust fans, dehumidifiers, and AC units for climate stability
- An automated lighting system to strictly regulate a 12-hour light/dark cycle, minimizing animal stress

Safety and Biosecurity Enhancements

The facility's integrity was strengthened through new safety protocols and hardware, such as:

- The implementation of one-way transport routes and foot dips at all entry and exit points to prevent cross-contamination.
- Advanced monitoring via CCTV systems with dedicated backup storage.
- The installation of water mist extinguishers for specialized fire safety.

Upgraded Surgical Suite

The surgical wing was modernized to include a dedicated preparation area separate from the procedure zone. New high-end instrumentation was added, including:

- Height-adjustable surgical tables and specialized lighting.
- Integrated facilities for real-time blood and serum analysis.

Reconstitution of IAEC

1. Scope and Duration

Validity: The registration of the Animal House Facility has been renewed for a period of five years, effective from the date of the letter (February 3, 2026). Purpose: The facility is authorized for "Research for Education purpose on small animals." Specific Species: The renewal specifically covers the housing and experimentation of Rats, Mice, and Rabbits.

2. Housing Capacity Limits

The renewal strictly defines the maximum number of animals the institution is permitted to house at any given time:

✓ Rats: 400

✓ Mice: 400

✓ Rabbits: 12

3. Reconstitution of the IAEC

A critical part of this renewal is the formal reconstitution of the Institutional Animals Ethics Committee (IAEC). This committee is responsible for reviewing and approving all research protocols to ensure ethical treatment.

डॉ. एस. के. दत्ता
सदस्य सचिव (सीसीएसईए)
Dr. S. K. Dutta
Member Secretary (CCSEA)

सत्यमेव जयते

भारत सरकार
मत्स्यपालन, पशुपालन एवं डेयरी मंत्रालय
पशुपालन एवं डेयरी विभाग
पशुओं पर प्रयोगों संबंधी नियंत्रण और पर्यवेक्षण
के लिए समिति (सीसीएसईए)
Government of India
Ministry of Fisheries, Animal Husbandry and Dairying
Department of Animal Husbandry and Dairying
Committee for Control and Supervision
of Experiments on Animals (CCSEA)

No. 25/441/2009-AWD

Date: 03.02.2026

To,

Dr Vikram Gowda, Chairperson, IAEC
Pushpagiri Medical College Sciences & Research Centre
Tiruvalla - 689 101 Kerala
Email: vikramgowda@pushpagiri.in
Mobile: 9562947479

Subject: Renewal of Registration and Reconstitution of Institutional Animals Ethics Committee (IAEC)-regarding.

Sir,

This registration of Animal House Facility of your establishment with CCSEA has been renewed for a period of five years from the date of issue of this letter.

2. The registration number of Animal House Facility of your establishment is ***602/PO/Re/S/2002/CCSEA for 'Research for Education purpose on small animals (Rat, Mice and Rabbit)'***. Henceforth, the registration number may kindly be quoted in all your future correspondence with this office. Further, the maximum housing capacity in the small animal house facility of your establishment is 400 for Rat, 400 for Mice and 12 for Rabbit.

3. The CCSEA has accepted the following members recommended by your establishment:

Name of the IAEC Members	Designation in IAEC
Dr Vikram Gowda	Biological Scientist, Chairperson
Dr Dona Dominic	Scientist Incharge of Animal House Facility, Member Secretary
Dr Nebu George Thomas	Scientist from different biological discipline
Dr Reeba Mary Issac	Scientist from different biological discipline
Dr Ampadi A N	Veterinarian

4 The CCSEA hereby nominates following members to the Institutional Animals Ethics Committee (IAEC) of your establishment:

Nominee Detail	Nominated as
Prof. Dr. Jyoti Harindran Principal, DPS, Dept of Pharmaceutical Sciences, MG University, Kottayam – 686631, Kerala Contact No :9495213123 Email :jharindran@yahoo.com	Main Nominee
Dr. Jinish Jose Dept of Pharmacology, C Block, Govt Medical College, Kottayam, Kerala – 686008 Contact No :9447561378 Email :drjinishjosc@gmail.com	Link Nominee

Contd…

दिल्ली दुग्ध योजना परिसर, निकट भारतीय स्टेट बैंक, शादीपुर, दिल्ली -110008
Delhi Milk Scheme Complex, Near State Bank of India, Shadipur, Delhi - 110008
Tel. No.: 011-21401454
E-mail: sk.dutta@nic.in

Dr. Abdul Vahab. A Cheruvandoor Campus, Ettumanoor Campus, Kottayam Contact No :9605443759 Email :abdulvahab305@gmail.com	Scientist from outside the Institute
Dr. Vysakh Mohan. M 15A, Kinfra HI-Tech Park, Biotechnology Zone, Kalamassery, Kochi Contact No :8301021785 Email :vysakh@ivetlab.com	Socially Aware Nominee

(Please note that any change in IAEC members can be made only with prior approval of CCSEA.)

5. The IAEC is valid for a period of five years and is coterminous with renewed period of registration. IAEC is required to be reconstituted at the time of renewal of registration as per CCSEA guidelines.

6. You are requested to convene the meeting of the constituted IAEC within 30 days and upload the said minutes through website of CCSEA.

7. In addition, it is to inform that the decision should be taken only by the approved members of the IAEC and the attendance sheet of the minutes of IAEC meeting shall be signed by the approved member along with date. The minimum quorum of six (6) member is required for holding valid IAEC meeting. The Main Nominee, Scientist from outside the Institute and Socially Aware Nominee must be present in such meetings. Link Nominee can attend in case main nominee conveys his unavailability in writing to the chairman IAEC. However, the Link Nominee should be invited once a year to update him/ her about the activities of the IAEC. Any decision taken in the meetings of IAEC without quorum shall be considered invalid.

8. Before commencing research and experiments on any large animal species, it is required for the establishment to get registered with CCSEA for housing the respective species and also get the protocol approved from CCSEA through its web portal.

Yours Sincerely,

(Dr. S. K. Dutta)
Member Secretary (CCSEA)

Copy for necessary action to: Nominees of CCSEA.

The Main Nominee is requested to ensure conduct of the IAEC meetings as stipulated in the SOP and to furnish the Annual Inspection Report of the Animal House Facility regularly through the website of CCSEA.

IAEC Renewal Letter received on 03.02.26

डॉ. एस. के. दत्ता
सदस्य सचिव (सीसीएसईए)
Dr. S. K. Dutta
Member Secretary (CCSEA)

सत्यमेव जयते

भारत सरकार
मत्स्यपालन, पशुपालन एवं डेयरी मंत्रालय
पशुपालन एवं डेयरी विभाग
पशुओं पर प्रयोगों संबंधी नियंत्रण और पर्यवेक्षण
के लिए समिति (सीसीएसईए)
Government of India
Ministry of Fisheries, Animal Husbandry and Dairying
Department of Animal Husbandry and Dairying
Committee for Control and Supervision
of Experiments on Animals (CCSEA)

No. 25/441/2009-AWD

Date: 19/May/2026

To,

Dr . Vikram Gowda, Chairman IAEC
Pushpagiri Medical College Sciences & Research Centre
Tiruvalla - 689 101 Kerala
E-mail: vikramgowda@pushpagiri.in
Mobile: 9562947479

Subject: Amendment in the purpose of registration – regarding.

Sir,

With reference to your application on the above mentioned subject, your request for inclusion of purpose Breeding for in-house use of small animals has been approved.

The registration of animal house facility of Pushpagiri Medical College Sciences & Research Centre with CCSEA is hereby amended as "Research for Education purpose (Rat, Mice, Rabbit) and Breeding for in-house use (Rat, Mice) of small animals". The maximum housing capacity in the animal house facility of your establishment is 400 Rat, 400 Mice and 12 Rabbit.

Further, the registration number of your establishment has also been amended as **602/PO/ReBi/S/2002/CCSEA.**

The above registration number should be quoted in all future correspondence with this office.

Yours sincerely,

(Dr. S. K. Dutta)
Member Secretary (CCSEA)

दिल्ली दुग्ध योजना परिसर, निकट भारतीय स्टेट बैंक, शादीपुर, दिल्ली -110008
Delhi Milk Scheme Complex, Near State Bank of India, Shadipur, Delhi - 110008
Tel. No.: 011-21401454
E-mail: sk.dutta@nic.in

Laboratory Animal Research Facility receives Breeding Licence on 19.05.26

Members of IAEC

S. No	Name		Designation in IAEC
1.	Dr Vikram Gowda	-	Biological Scientist, Chairperson
2.	Dr Dona Dominic	-	Member Secretary
3.	Dr Nebu George Thomas	-	Scientists from different biological discipline
4.	Dr Reeba Mary Issac	-	Scientists from different biological discipline
5.	Prof. Dr. Jyoti Harindran	-	Main Nominee
6.	Dr. Jinish Jose	-	Link Nominee
7.	Dr. Abdul Vahab	-	Scientist from outside the Institute
8.	Dr. Vysakh Mohan.	-	Socially Aware Nominee
9.	Dr Ampadi AN	-	Veterinarian

Activities



Reconstituted IAEC Team in front of Laboratory Animal Research Facility on 26th February, 2026



Successfully completed training on Orthopaedic practice in small Animals organized by Kerala state Veterinary Council Congratulations Dr Ampadi AN. on 22.04.2025



Dr. Ampadi AN receiving certificate from Dr. A Devadattan at the Pushpagiri College of Dental Sciences





Dr. Ampadi AN. presentation in CMS College. (02.12.2025) for Research horizon; A collaborative session with CMS College

- Pharmacological studies
- Behavioural studies
- Surgical studies
- Imaging studies
- Infectious disease research
- Cancer research
- Nutritional studies
- Neurological studies
- Reproductive studies
- Metabolic Studies



Associated Facilities Provided

- Scaffold development
- Histological analysis of tissue scaffold reactions

Tissue processing Facility





Isoflurane Anaesthesia Machine





Why Research with Us?

Our facility is recognized by CCSEA (Committee for Control and Supervision of Experiments on Animals) and boasts an active Institutional Animal Ethics Committee (IAEC), ensuring ethical and high-quality research practices.

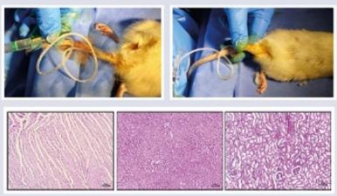
Benefits of using our facility:

- Improved animal care
- Enhanced research quality
- Increased productivity

Diverse Research Capabilities:

Explore a wide range of studies with us, utilizing our comprehensive facilities:

Toxicity Assessment



Histological images of (a) heart, (b) liver, (c) kidney after the acute systemic toxicity test.

Reference: Mohammed R, Chacko SK, Balakrishnan R, Thomas NG, Binsi PK, Muhamed Ashraf P, Krishnan N, Anil S. Catechin as a functional additive in electrospun PCL/gelatin/nHA nanocomposite fibers for tissue engineering applications. Journal of Applied Polymer Science.e56308. Impact factor: 3

Species Supported

Rat, Mice, Rabbit, Hamster, and Guinea pig

Collaboration & Customized Support

We foster collaborative research initiatives with esteemed institutions, industries, and researchers, providing tailored support for specific research projects. Our services include collecting samples from external agencies, such as institutions and companies, for animal studies, enabling comprehensive research and leveraging diverse resources.

Training and Internship Programs:

- Enhance your research skills with our specialized programs

Si. no	Course Title	Minimum Duration	Major Areas Covered	Target Group
1)	Trainee	Six months	Laboratory Animal research basics	Degree Life Science
2)	Internship	2 weeks	An introduction to Laboratory animal research	Degree Life Science
3)	Thesis (MSc, MS, MD, MDS, PhD)	Six months	As per the work	Masters/PhD life science

Contact Us:

Dr. Ampadi A N
In charge, Veterinary officer, Pushpagiri Institute of Medical Sciences and Research Centre
drampadian@pimsrc.edu.in. For more details, visit our website: https://www.prc.pushpagiri.in/

LABORATORY ANIMAL RESEARCH FACILITY

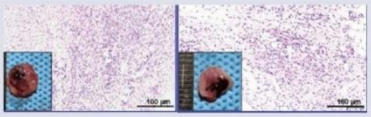
PUSHPAGIRI INSTITUTE OF MEDICAL SCIENCES AND RESEARCH CENTRE



In Vivo Biocompatibility



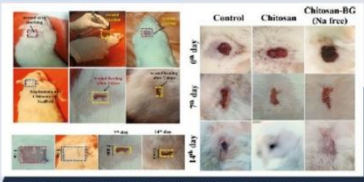
(a)–(f) - Biocompatibility study. (a) Inspection of the surgical site, (b) and (c) dorsal skin after fur removal and disinfection with 10% povidone-iodine solution, (d) wound creation, (e) scaffold implantation, and (f) wound closure with sutures



Histological Analysis

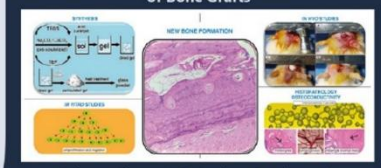
Reference: Sowndarya, A., Daniel Thangadurai, T., Thomas, N. G., Sreedharan, R., Anil, S., Manjubaashini, N., Satheesh Babu, T. G., & Megha Kumar, S. (2025). Effect of surface-engineered AuNPs on gene expression, bacterial interaction, protein denaturation, and toxicology assay: an in vitro and *in vivo* model. Journal of materials chemistry. B, 10.1039/d4tb01731e.

In Vivo Wound Healing



Reference: Manjubaashini N, Bargavi P, Thomas NG, Krishnan N, Balakumar S. Chitosan bioactive glass scaffolds for *in vivo* subcutaneous implantation, toxicity assessment, and diabetic wound healing upon animal model. International Journal of Biological Macromolecules. 2024 Jan 1; 256:128291. Impact Factor:8.20

Preclinical Analysis of *In Vivo* Bone Regeneration Potential of Bone Grafts



Reference: Thomas NG, Manoharan A, Anbarasu A. Preclinical evaluation of sol-gel synthesized modulated 4555-bioglass based biodegradable bone graft intended for alveolar bone regeneration. Journal of Hard Tissue Biology. 2021;30(3):303-8.







Inauguration of renovated Animal House on 10.07.2025 at MEU Hall, Medical College Administrative Block. Chief guest, Dr Sabu Thomas (Former VC, MG University, Kottayam)



Major speakers for the Pushpagiri Clinical Club Session:Dr. Ampadi AN & Dr. Nebu George Thomas





Animal House visit by Allied students (12.08.2025)



Dr. Ampadi AN secured 3rd place in the Innovative Section at the National Rabies Conclave, organized by the Indian Society of Scientific Education & Farmer Welfare, for the presentation "Paw Track Kerala: A Community-Driven, One Health Model for Humane Stray Dog Regulation." (30.09.2025)



Dr Denis Xavier, from SJRI wishes to visit PRC and Animal House today. His visit is scheduled around 3.30 to 5.00. Requesting all faculties to be there in the labs to showcase the lab, resources and the research endeavor ongoing. Achen has entrusted me to coordinate the matter. Humbly requesting all to oblige. (16.10.2025)







Animal Research Facility- blessings of Equipment serum analysis (13.01.2026)



Inauguration of the newly renovated Animal House by Prof. Dr. Sabu Thomas (10.07.2025)

New Instruments – SOP Blood & Serum Analyzer

Technical Protocol: TS 40 Vet (3-Part Diff Haematology System)

1. Instrumentation and System Initialization

The TS 40 Vet, a 3-part differential automated haematology analyser, is utilized for the quantification of haematological parameters. The procedure begins with system initialization by activating the primary power switch and performing a secure user login. To ensure the accuracy of species-specific algorithms, the operator must navigate to the interface's bottom panel, select the Animal icon, and designate the appropriate biological species for the subject being tested.

2. Sample Preparation and Aspiration

Prior to analysis, a minimum volume of 2ml of whole blood must be collected in a tube containing a suitable anticoagulant (typically EDTA) to maintain sample fluidity. The specimen data is integrated into the system software by selecting Next Sample and completing the required metadata fields. For the aspiration phase, the analyzer's sampling probe is submerged into the specimen; the aspiration cycle is then manually triggered via the activation switch located behind the probe assembly.

3. Data Acquisition and Output

Following aspiration, the system performs internal dilutions and cell counting via electronic impedance and spectrophotometry. Once the analytical cycle is complete, results are displayed on the digital interface for clinical review. Hard-copy documentation is generated by navigating the bottom panel to the Print command, with the thermal printout retrieved from the left-side integrated printer.

4. Fluidic Maintenance and Decontamination

To prevent protein build-up and maintain the integrity of the sensing apertures, a daily maintenance routine is mandatory. This involves accessing the Setup menu on the top panel and navigating Maintenance to execute the Flush Aperture command. This procedure ensures the fluidic pathways remain clear of cellular debris.

5. Standard Shutdown Procedure

To conclude daily operations, the software led Shut Down sequence must be initiated through the Setup menu. This ensures that the internal components are properly rinsed and parked before the physical power switch is toggled to the OFF position.

Technical Protocol: MSc 100V Pushkang Serum & Coagulation Analyzer

1. Instrumentation and Sample Requirements

The analytical process is performed using the MSc 100V Pushkang system, designed for serum and coagulation profiling. To ensure sample integrity, whole blood must be collected in anticoagulant-coated vials. Although a minimum volume of **2ml of blood** is required for primary collection, the analyzer specifically utilizes a micro-volume for the actual testing process.

2. Device Preparation and Loading Sequence

The procedure begins with system activation. Upon opening the device chamber, a specialized test disc— selected according to the required diagnostic panel (e.g., General Health or Electrolytes)—is inserted into the internal slot. The loading phase is highly specific:

- **Biological Sample**: Exactly **140 µL of whole blood** is pipetted into the chamber designated with a **Red Circle**.
- **Diluent**: Precisely **750 µL of Distilled Water** is added to the chamber marked with a **White Circle**.

The analytical process is performed using the MSc 100V Pushkang system, designed for serum and coagulation profiling. To ensure sample integrity, whole blood must be collected in anticoagulant-coated vials. Although a minimum volume of **2ml of blood** is required for primary collection, the analyzer specifically utilizes a micro-volume for the actual testing process.

- Device Preparation and Loading Sequence

The procedure begins with system activation. Upon opening the device chamber, a specialized test disc— selected according to the required diagnostic

panel (e.g., General Health or Electrolytes)—is inserted into the internal slot. The loading phase is highly specific:

1. **Biological Sample**: Exactly **140 µL of whole blood** is pipetted into the chamber designated with a **Red Circle**.
2. **Diluent**: Precisely **750 µL of Distilled Water** is added to the chamber marked with a **White Circle**.
3. **Technical Precision**: To prevent air bubbles that cause "Incomplete Sample" errors, the pipette tip must be placed at a slight angle against the chamber wall during delivery.

- Calibration and Analytical Processing

System calibration is achieved by scanning the unique **QR Code** provided on the test kit or disc packaging. Following calibration, the operator must select the specific **Animal Type (Species)** and input relevant patient metadata. Once confirmed, the automated analysis cycle commences, requiring approximately **15 minutes** for completion. Results are documented by printing and retrieving the data from the top of the unit.

- Post-Analysis, Safety, and Waste Management

Each test disc is strictly for single-use and is not reusable. Following the run, the chamber is opened, the used disc is removed, and the device is powered down. All biological waste, including the disc, pipette tips, and blood vials, must be disposed of in a designated **Biohazard Bin** to maintain laboratory safety standards.



Haematology & Serum Biochemistry

Testing on Animals at Pushpagiri Laboratory Animal Facility

(Laboratory Animal Research Facility, Pushpagiri Institute of Medical Sciences and Research Centre)

ACCURATE

RELIABLE

COST EFFECTIVE

Advanced diagnostic testing solutions to support veterinary treatment, research, and clinical decision making are now available at LARF PIMS & RC (Laboratory Animal Research Facility, Pushpagiri Institute of Medical Sciences and Research Centre).

A. Haematology Testing *TS 40 Vet Haematology Analyser (3 Part Differential)*



Parameters Measured:

WBC, LYM, MID, GRAN, RBC, HGB, HCT, MCV, MCH, MCHC, RDW_CV, RDW_SD, PLT, MPV, PDW, PCT, P_LCC, P_LCR with Histograms for WBC, RBC & PLT

Species Supported:

Dog, Cat, Horse, Pig, Cow, Buffalo, Rabbit, Monkey, Rat, Mouse, Sheep, Goat, Camel

Cost per Test: ₹300/-

B. Serum Biochemistry Testing *(MSc 100V Pushkang – Serum Analyser)*



Species Supported: Dog, Cat, Rat, Rabbit, Pig, Monkey, Horse, Cow, Sheep, Lizard, Tortoise

Cost per Test: ₹850/-

AVAILABLE TEST OPTIONS		
Test no	*Test name*	*Items measured*
1.	Veterinary Electrolyte	K+, Na+, Cl-, tCO2, Mg2+, Ca2+, PHOS
2.	Veterinary Liver Function	TP, ALB, ALT, AST, GGT, TBIL, DBIL, ALP, GLO, ALB/GLB, IBIL
3.	Veterinary Health Check	TP, ALB, TBIL, ALT, ALP, CREA, UREA, CK, AMY, GLU, TC, Ca2+, PHOS, GLO, ALB/GLB, UREA/CRE
4.	Veterinary Kidney	ALB, UREA, CREA, tCO2, Ca2+, PHOS, UREA/CRE
5.	Veterinary Preoperative Diagnosis	TP, ALT, AST, CREA, UREA, CK, GLU, LDH, UREA/CRE
6.	Veterinary Intensive Care	ALT, CREA, UREA, GLU, tCO2, K+, Na+, Cl-, UREA/CRE
7.	Veterinary General Chemistry	TP, ALB, ALT, AST, GGT, ALP, TBIL, TBA, CREA, UREA, CK, AMY, GLU, TC, Ca2+, PHOS, tCO2, DBIL, GLO, ALB/GLB, AST/ALT, UREA/CRE, IBIL
8.	Veterinary Liver Function	TP, ALB, ALT, AST, GGT, ALP, TBIL, TBA, CK, TG, TC, DBIL, LDH, GLO, ALB/GLB, AST/ALT, IBIL
9.	Veterinary Liver & Kidney	TP, ALB, ALT, AST, GGT, TBIL, CREA, UREA, GLU, GLO, ALB/GLB, AST/ALT, UREA/CRE
10.	Veterinary Preoperative Diagnosis	TP, ALB, ALT, AST, ALP, CREA, UREA, CK, GLU, LDH, CK-MB, GLO, ALB/GLB, AST/ALT, UREA/CRE
11.	Veterinary Canine Inflammation	CREA, UREA, AMY, LPS, CRP, UREA/CRE
12.	Veterinary Diabetes	GLU, TG, TC, FRU(GSP)
13.	Veterinary Coagulation (Option A)	PT/INR, APTT, TT, FIB (SODIUM CITRATE)
14.	Veterinary Coagulation (Option B)	PT, APTT (SODIUM CITRATE)

Required Documentation

For Research: Approved Form B Certificate with blood analysis permission

For Treatment: Request letter from Registered Veterinarian (KSVC No.)

Why Choose Us?

Wide species coverage

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Reliable analysers & standardized protocols

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Contact Us:

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Veterinary Officer PIMS & RC

Ph: 8921667742

Mail to us: iaec@pimsrc.edu.in

Cancer Research & Public Health

Scientist: Dr. Betsy A Jose, MD; betsymukkathu777@gmail.com

Public health labs explore the factors that affect health and wellbeing, understanding the underlying causes of health inequities and creating possible strategies to solve them.

Cancer Research: The lab analyses the patterns of cancer occurrence within populations to identify risk factors especially among woman and develop preventive measures. Also develops and refines screening techniques to detect cancer at its earliest stages, when treatment is most effective. This research field is not confined to the laboratory. The lab is closely knitted with communities, healthcare providers, and policymakers to translate research findings into actionable solutions. By combining rigorous scientific methods with real-world insights, the activities of the lab strive to improve the health and well-being of individuals and communities around the world.

Key Research Areas

1. Cancer Research, CANcare: Cancer Epidemiology: Analyzing the patterns of cancer occurrence within populations to identify risk factors especially among woman and develop preventive measures
2. Cancer Screening: Developing and refining screening techniques to detect cancer at its earliest stages, when treatment is most effective.
3. In the 2024- 2025 year, CANcare conducted 20 camps along with other medical camps. The suspects were counselled for further investigations.
4. Health Promotion: I am interested to work on designing and implementing programs that empower individuals and communities to make healthy choices. This includes promoting healthy behaviors like physical activity, healthy eating, and stress management.
5. Antimicrobial Resistance -Health Literacy and Communication: Developing effective communication strategies to educate the public about AMR and promote appropriate antibiotic use is one of my field of interests.
6. Adolescent Health- Mental Health: I would like to work on Depression and anxiety, suicide prevention and substance abuse among adolescents. Depression

and Anxiety: Understanding the prevalence, risk factors, and effective interventions for mental health disorders among adolescents. Suicide Prevention: Identifying early warning signs, developing prevention strategies, and improving access to mental health services. Substance Use: Examining the factors influencing substance use and developing evidence-based prevention and intervention programs.

7. Tuberculosis – I am also interested in Identifying High-Risk Populations for Tuberculosis, identifying barriers to treatment adherence and developing strategies to improve patient outcomes, Developing and evaluating community-based interventions to prevent TB such as health education campaigns and social mobilization and understanding the impact of stigma and discrimination on TB patients and developing strategies to reduce stigma

Instrumentation Facilities

- Colposcope
- Breast light
- Speculum
- Velscope
- iBreastScan

Activities



Dr. Betsy A Jose received Memento for completing CANCare Phase I project on Pushpagiri Day on 06.10.2025

FRAIT Project – Family Resilience Assessment Instrument Tool –

A collaborative project of PRC with University of South Wales, UK

Family Resilience Assessment Instrument Tool (FRAIT) project is a collaboration between the University of South Wales (UK) and the Pushpagiri Research Centre (Kerala, India)

Background: Family resilience is defined as the ability of a family as a functional system to withstand and rebound from disruptive life challenges. It is not merely the absence of failure or the "grit" of a single person within the home; rather, it is a relational process that allows the entire family unit to adapt, survive, and even grow stronger through adversity. Family resilience is the "shock absorber" of the domestic world. It is the collective capacity to navigate a crisis such that the family emerges not just intact, but often with more sophisticated coping skills than they had before the event.

The study of family resilience in households with children under the age of 6 is a critical area of focus because this period represents the most significant window for human development. When a family system is resilient, it acts as a primary buffer against the biological and psychological stressors that can alter a child's life trajectory. In the context of Kerala, the importance of family resilience for children under 6 is unique. While Kerala leads India in health indicators—such as having the lowest infant mortality rate (5 per 1,000 live births)—it also faces specific "second-generation" public health challenges that make family resilience a critical factor for child survival and development. In a research or clinical setting, this is typically done using a combination of validated quantitative scales and qualitative interviews. This study will identify the concept of family resilience as understood by Indian community health workers of Kerala. The long-term goal is to use the new concept to develop a culturally relevant tool to assess families with children under 6yrs using an online tool Group Concept Mapping (GCM).

Scoping literature review shows that the family resilience concept has not been developed in India & Kerala. There are no culturally relevant family resilience assessment tools used in India as well as in Kerala.

Goals

To develop the concept of family resilience among Accredited Social Health Activists (Anganwadi) in Kerala

Objectives

1. To carry out a three-step Group Concept Mapping method (brainstorming, sorting and rating)
2. To analyse the data and identify the concept of family resilience in partnership.
3. To build on the existing relationship and take forward the program of research on family resilience with Accredited Social Health Activists (Anganwadi) in Kerala.

Investigators and Co-Investigators

University of South Wales (USW)

- Carolyn Wallace, Principal Investigator
- Anitha Livingstone – Co-Investigator and cultural lead
- Michelle Thomas - Co-Investigator
- David Pontin - Co-Investigator

PIMS&RC (PIMS&RC) and Pushpagiri College of Nursing (PCON)

- Dr. Betsy A Jose, **Principal Investigator (PIMS&RC)**
- Dr. Meena Isaac – Co-Investigator
- Dr. Rosin George Varghese – Co-Investigator
- Sr. Mary Jyothi OSS – Co-Investigator

Engagement of USW faculty during the visit



Engagement of USW faculty during the visit

1. Academic Engagement and Conferences

The visit was anchored by significant academic exchange, beginning with the Bioradiance International Conference.

- Bioradiance Conference (June 17–18): The faculty attended both days of the conference at the Senate Hall, PIMSRC. The first day featured a formal MOC Exchange, followed by a cultural program and banquet dinner.
- Qualitative Workshop (June 21): A comprehensive workshop titled "Using qualitative research methods for health care interventions" was conducted. Key sessions included:
- Overview of Group Concept Mapping (GCM) and its practical applications. Consensus methods such as the Nominal Group Technique, DELPHI, & World Café. Hands-on practice with focus groups discussions on publishing qualitative research

2. FRAIT Activities and Data Collection

A core component of the visit was the execution of the family resilience study, overseen by Principal Investigator Dr. Betsy A Jose and her team of Co-PIs. Stakeholder Briefing: On June 20, an initial meeting was held with health workers at the Medical College Annex to provide briefings, obtain consent, and distribute remunerations. Qualitative data was collected over two days (June 23–24) from 30 study participants (Anganwadi workers) at the Senate Hall.

3. Field Visits:

The USW faculty engaged with various departments, including:

- Pushpagiri Nursing College
- Department of Community Medicine
- Pushpagiri Pulinkunnu Rural Health Centre
- The Dental and Pharmacy colleges

4. Data Translation & Compilation:

Subsequent days were dedicated to data compilation, translation, and finalizing publication plans for the current family resilience study.

The team departed for Cochin airport on 28 June 2025.

5. Long term goal

To use the new concept to develop a culturally relevant tool to assess families with children under 6yrs using an online tool Group Concept Mapping (GCM)

"International Workshop on Bridging Research & Practice: Qualitative Methods & Consensus Techniques in Health Care Interventions"



The International Workshop on "Bridging Research & Practice: Qualitative Methods & Consensus Techniques in Health Care Interventions" was successfully organized on 21st June 2025, by the PIMS&RC, Kerala, India in collaboration with the University of South Wales, United Kingdom. The event aimed at bringing together researchers, academicians and practitioners to exchange ideas, share research findings and explore collaborative opportunities across various disciplines in health care.

The main objectives of the workshop were:

- Meeting International speakers from the University of South Wales
- Hearing from experts about their experiences in tool development
- Get introduced to Group Concept Mapping and Nominal Group Technique
- Hands on sessions on Nominal Group Technique

The workshop had 54 participants comprising doctors, nurse educators, biomedical engineers, dentists, research scholars and post graduate students from diverse institutions and delegates representing India and the United Kingdom.

The workshop featured eminent speakers and resource persons:

- Prof. Carol Wallace, University of South Wales On the topic: Using qualitative research methods for health care interventions – an overview
- Emeritus Prof. David Pontin: Using consensus methods in practice
- Dr. Michelle Thomas: Hands on Nominal Group Techniques
- Mrs. Anitha Livingstone: Reflecting on consensus method in Practice.

The workshop included the following sessions:

1. **Inaugural Session**

The event began with a formal inaugural session at 9.30 am with a prayer song followed by welcome address by Dr. Meena Issac, Organizing Secretary. The presidential address was given by Rev. Dr. Mathew Mazhavancheril, Director, PRC and Medicity and the ceremonial lamp lighting was carried out by all the dignitaries.



2. Technical Session

The session began promptly at 10.00 am with a "Discussion on publication related to Qualitative Studies" facilitated by Prof. Carolyn Wallace and Emeritus Prof. David Pontin. From 11.00 am to 12.00 pm there was a session on "GCM and its use" by Dr. Michelle and Mrs. Anitha Livingstone. From 12.00 pm to 1.00 pm, a session on "Nominal Group Technique, DELPHI" was conducted and the group dispersed at 1.00pm for a lunch break. From 2.00pm to 3.00 pm hands-on session on "Nominal Group Technique and World Café" was conducted.

3. Valedictory Session

From 3.00 pm to 4.00 pm feedback was collected from participants and resource persons were honored. The workshop ended with Vote of Thanks by Prof. Sr. Mary Jyothi OSS, Vice Principal &HOD, Dept. of Pediatric Nursing, Pushpagiri College of Nursing. The key takeaways of the highly beneficial workshop included: enhanced understanding of Qualitative Methods and Consensus Techniques, networking opportunities with experts in various professional fraternity and exchange of innovative ideas. Participants expressed high levels of satisfaction with the quality of the workshop, the relevance of the topics, the interesting interactive sessions, and the overall organization of the workshop. Constructive feedback was collected for future improvement. The workshop was coordinated by Dr. Meena Isaac, Dr. Betsy A Jose: Assistant Professors Community Medicine & Prof. Sr. Mary Jyothi OSS, Vice Principal (Administration) & HOD: Child Health Nursing.



Centre for Virology

Mr. George Varghese, M.Sc. Medical Microbiology (CMC Vellore);
surugv@pushpagiri.in

Pushpagiri centre for virology has groomed into a premier centre for viral diagnosis and research in Central Travancore. It is equipped with state-of-the-art facilities. The mission of the centre is to initiate diagnostic services and research on viruses and viral diseases of humans. The centre is involved in providing diagnostic services and cutting-edge research on viruses and viral diseases in humans. It is equipped with state-of-the-art facilities. The mission of the Centre is to initiate diagnostic services and research on viruses and viral diseases of humans. The volume of work is managed by fully automated systems like CLIA, ELFA and ELISA. The hall mark of Pushpagiri Centre for Virology is the Biosafety level-2 facility for molecular diagnosis and research. The lab is equipped with conventional and real time PCR facilities. The Centre also provides training programmes in PCR.

Diagnostic Viral Serology Facilities

The laboratory is handling various types of specimens, primarily from Pushpagiri Medical College Hospital. Serological diagnosis of HIV, Hepatitis viruses, including various HBV markers, HEV, HAV and Dengue Fever. Apart from ELISA's, the volume of work is managed by fully automated systems like CLIA (Chemiluminescence Immuno Assay – Abbot, USA) and ELFA (Enzyme Linked Fluorescent Assay – Vidas Biomerieux, France). The lab is giving valuable services during seasonal outbreaks of Influenza, Dengue etc.

Diagnostic Molecular Virology Facilities

The hall mark of Pushpagiri Centre for Virology is the diagnostic molecular virology. The lab is equipped with Conventional and real time PCR facilities. Apart from quantitative PCRs for HBV, HCV & CMV, qualitative PCRs for SARS CoV-2, Leptospira, HSV1 & amp2, Influenza A, Influenza B, H1N1, HBV and CMV are also available.

Quality Assurance

The lab is NABL accredited as per ISO 15189:2022 for Real Time quantitative HCV PCR and SARS CoV-2 qualitative PCR. The quality of the lab is evaluated by NABL assessments and internal audits. Lab follows strict internal quality controls measures as per guidelines.

Research Facilities

Research at virology has been aimed at elucidating the epidemiology in the local community, initiating and maintaining surveillance, studies in the genetic variations of viruses and developing affordable technologies for the provision of diagnostics for diseases in the near future. The centre trains students of basic and medical sciences for various internships, hands-on-training and dissertation projects.

Presently PCV has been selected as one of the National Rickettsial Surveillance Spoke Centre for southern region under National Reference Centre for Rickettsial Diseases (NRCRD), Department of Clinical Microbiology, CMC Vellore. This is based on the ICMR ICAR (Centre for Advanced Research) 12 crore fund to NRCRD, CMC Vellore.

The centre is currently doing a collaborative project with Institute of Advanced Virology, Thiruvananthapuram (IAV) in Dengue virus infections.

Virology centre has awarded with two ICMR STS (short term students) project during the period.

Consolidated Statistics of Diagnostic Services Provided for April 2024 to March 2025

Test Name	No. of Tests
HIV	17325
HBsAg	18199
HCV	18013
HBeAg	74
HBeAb	1
HBcIgM	1
Anti Hbs Titer	1119

HAV IgM	277
HEV IgM	102
Dengue NS1	1623
Dengue IgM	1623
Dengue IgG	1623
Influenza PCR	248
HSV 1 & 2 PCR	24
HBV Qualitative PCR	49
HBV Quantitative PCR	23
CMV PCR	10
Leptospira PCR	220
COVID-19 RT PCR	372
TOTAL INVESTIGATIONS	**60926**

Activities





George Varghese presenting at National Institute of Virology conference on the study on CMV seroprevalence done at PIMS&RC in the VIROCON 2025 international conference by ICMR NIV Pune & Indian Virological Society (IVS)at Pune. Study was conducted with ICMR STS fund awarded to Dr. Jennath M Ashraf under his guidance. Other contributors are Dr. Mercy John, Dr. Soumya RS & Dr. Rosin George Varghese

Clinical Epidemiology Unit (CEU)

Lead Researcher: **Dr. Rosin George Varghese** (till Feb 2026)

Mrs. Nisha Kurian (from March 2026); ceu@pushpagiri.in

Since its inception in 2015, the Clinical Epidemiology Unit (CEU) has been instrumental in nurturing and supporting clinical research activities within the Pushpagiri Medical Society. Over the past year, the unit has continued to expand its scope by strengthening research facilitation, enhancing analytical support, and promoting a systematic approach to evidence generation across departments.

Research Facilitation and Technical Support

During the reporting period, the CEU provided end-to-end support to a wide range of research projects undertaken by faculty members, postgraduate trainees, and undergraduate students. The unit's contributions spanned multiple stages of the research process, including:

- Designing studies with appropriate methodological frameworks
- Estimating sample size to ensure scientific validity
- Performing statistical analysis using suitable techniques
- Assisting in the preparation and refinement of research protocols
- Supporting validation of data collection tools
- Guiding authors in manuscript development and journal submission

The steady utilization of these services reflects the growing emphasis on structured research within the institution.

- Sample size estimation requests handled: 21
- Statistical analysis requests completed: 24

In addition to these, individualized consultations were provided to address specific research queries and methodological challenges.

Training and Skill Development Initiatives

The CEU continued to prioritize capacity enhancement through targeted educational activities. A series of structured sessions were conducted throughout the year to improve research literacy and analytical skills among various groups:

- Foundational workshops on research design and methodology
- Practical training in biostatistics and use of statistical software
- Introductory sessions for undergraduates and interns on research concepts
- Dedicated guidance sessions for postgraduates focusing on thesis planning and execution

These initiatives have contributed to improved confidence and competence in conducting research, particularly among early-career learners.

Clinical Research and Trial Support

The Clinical Epidemiology Unit (CEU) continues to engage in preparatory and exploratory activities aimed at strengthening the institution's potential for participation in multicentric clinical research. During the reporting period, the unit facilitated initial discussions with academic collaborators and industry stakeholders to identify feasible opportunities for clinical studies. Efforts have been directed towards understanding sponsor expectations, assessing institutional capabilities, and aligning existing systems with regulatory and operational requirements. The CEU has maintained close coordination with the Institutional Ethics Committee (CDSCO-registered), ensuring that all activities remain consistent with applicable regulatory standards and Good Clinical Practice (GCP) principles.

Preliminary assessments of site readiness—including infrastructure, documentation processes, and investigator engagement—are underway. In parallel, internal processes are gradually being streamlined to support the structured conduct of future clinical studies.

The CEU is also in the process of exploring feasibility in areas such as bioequivalence (BE) studies, with ongoing discussions focusing on infrastructure readiness, regulatory pathways, and capacity building. The unit is progressively

working towards establishing a structured clinical trials framework, including development of standard operating procedures, strengthening of coordination mechanisms, and enhancement of research governance practices. These efforts reflect a steady movement towards positioning the institution as a reliable participant in clinical research initiatives.

Funded Research and Collaborations

The CEU played a supportive role in securing and implementing funded research projects addressing relevant clinical and public health concerns. This included collaborations with both national and international partners.

Support extended across:

- Conceptualization and proposal writing for grant applications
- Methodological input during project planning
- Data handling, statistical evaluation, and interpretation
- Preparation of scientific outputs for dissemination

Scholarly Activities and Outputs

Through its continued engagement with researchers, the CEU contributed to a noticeable improvement in academic productivity:

- Increased participation in research projects across departments
- Enhanced quality and timely completion of postgraduate dissertations
- Rise in manuscript submissions to indexed journals
- Support for presentations at conferences and academic forums

Way Forward

The Clinical Epidemiology Unit aims to build on its current momentum by further strengthening research infrastructure and collaboration. Future priorities include:

- Promoting multidisciplinary and collaborative research initiatives
- Expanding involvement in externally funded projects and clinical trials
- Introducing advanced training modules in epidemiology and data science
- Developing structured mentorship systems for young researchers

Cytogenetics & Biochemistry Laboratory

Scientist: Dr. Soumya RS., M.Sc., Ph.D.; drsoumyars@pimsrc.edu.in

The Biochemistry Research Laboratory at PRC is equipped with state-of-the-art facilities and instruments, enabling cutting-edge research in biochemistry and related fields. The lab focuses on various research areas, including metabolic disorders, cardiovascular disease, enzyme kinetics, protein chemistry, and molecular biology. The Biochemistry Lab at PRC also offers training programs and internships for students and researchers, providing hands-on experience with advanced techniques and instruments. This gives an excellent opportunity for students to gain practical knowledge and contribute to ongoing research projects. Dr. Soumya is the present faculty in Biochemistry lab.

Currently the lab research is focused on guar gum based mitochondrial antioxidants in invitro and in-vivo models. The works are mainly based on metabolic syndromes and synthesis of nanoparticles for various application in diabetics and atherosclerosis. In addition, the lab is focused on various studies that is submitted to ICMR, DST, DBT for funding in collaboration with national Institute like CSIR-NIIST & Christ University Bangalore (MoU based collaboration).

Dr. Soumya is the registered research guide of KUHS and co-guiding PhD students from Vinayaka Mission Homoeopathic Medical College, Salem. The area of research involved in the lab is the identification of novel mechanisms for the prevention of cardiovascular diseases and other metabolic disease through dietary molecules, phytocompounds and nanoparticles. In addition, the lab research also focused on guar gum based mitochondrial antioxidants in cardiac hypertrophy through cell culture, animal experiments, molecular biology techniques, biochemical analysis and phytochemistry techniques. Apart from that the lab offers training programs in HPLC, cell culture and animal handling.

Besides the research lab revolves in mitochondria dysfunctional studies involving the key role in the etiopathogenesis of mitochondria in cardiovascular disease (CVD) and

is regarded as an intriguing target for the development of innovative therapies. Oxidative stress, mitochondrial permeability transition pore opening, and excessive fission are major noxious pathways amenable to drug therapy. Several mitochondria-targeted drug delivery systems (DDS) have been optimized with improved pharmacokinetic and biocompatibility, lower toxicity and antigenicity for application in the cardiovascular field. The lab focuses on synthesizing triphenyl phosphonium conjugated rutin guar gum nanoparticles (Ru-TPP-GG) against angiotensin II (Ang II) induced hypertrophy in H9c2 cells. Ang II cells showed pathological hypertrophic responses and mitochondrial dysfunction which was evident from TGF β expression, cell surface area measurement and alteration of protein expression studies.

In addition, myocardial infarction (MI) studies using Isoproterenol [1– (3, 4–dihydroxyphenyl)–2–isopropylaminoethanol hydrochloride (ISO)] is a well-known model for studying MI is the key area of research for the lab. ISO is a synthetic catecholamine and β-adrenergic agonist that is an important regulator of myocardial contractility and metabolism. The pathophysiological and morphological aberrations produced in the heart of the myocardial necrotic rat model are comparable with those taking place in human MI. Allicin (diallylthiosulfinate) is the active compound of garlic with wide range of health benefits. Locust bean gum (LBG) is a galactomannan with a wide range of biological applications. The allicin functionalized LBG nanoparticles (LBGAN) were synthesized in the lab through nanoprecipitation method and was characterized using particle size analysis, SEM and TEM were used for the *in-vivo* studies.

Key Lab Facilities

1. Cell Culture Facility – CO_2 incubator, Biosafety cabinet and Microscope
2. High-Performance Liquid Chromatography (HPLC) – Shimadzu
3. Ultrabath Sonicator

Projects Conducted – FAME Project

The research project "Multiparametric Evaluation of the Effects of Fatty Acid Methyl Esters in HepG2 Cells: An *In-Vitro* Study" is being conducted under the joint

supervision of Dr. Soumya RS, Scientist, Pushpagiri Research Centre (PRC), and Dr. Mathew John, Scientist, Jubilee Centre of Medical Research, Thrissur. The study is significant in understanding the potential biological effects of fatty acid methyl esters (FAMEs) on hepatic cells, particularly their possible contribution to lipid accumulation, oxidative stress, and mitochondrial dysfunction associated with hepatic steatosis. During the reporting period, HepG2 cell culture was established and standardized, and FAME treatment conditions were optimized. The cytotoxic effects of FAMEs were evaluated using the MTT assay, while intracellular lipid accumulation was assessed using Oil Red O staining and Nile Red assay.

The DCFDA assay was used to evaluate intracellular reactive oxygen species, and JC-1 staining was performed to assess mitochondrial membrane potential. The multiparametric approach enables a comprehensive assessment of the cellular responses to FAME exposure and may provide insights into the mechanisms linking altered lipid metabolism with hepatic cellular injury. The study is currently progressing with lipidomics analysis, which is ongoing and is expected to provide further information on FAME-induced alterations in the cellular lipid profile. The findings from this study may contribute to a better understanding of lipid-mediated hepatic dysfunction and provide a basis for further investigations into the molecular mechanisms underlying hepatic steatosis.

Activities



07.05.2025- Research Collaboration meeting with Dr Christian Dimitri of University of Salento, Italy



Session on targeting mitochondria, a new frontier in translational medicine on the National Science Day 2026 conducted at Bishop Moore College (26.02.2026)

PUSHPAGIRI RESEARCH CENTRE

TIRUVALLA, KERALA

ABOUT US

Pushpagiri Research Centre, known as PRC was established in 2010 and serves as the Central Research Facility to various institutions under Pushpagiri Medical Society, featuring multifaceted and multidimensional research laboratories which have all the facilities for conducting transdisciplinary biomedical research.

The cell culture facility of PRC is well equipped with instruments for performing various cellular assays. This include subculturing and maintenance of various cell lines, cytotoxicity studies, differential stainings and protein expression studies



FACILITIES PROVIDED

- Cytotoxicity Assay
- Scratch Assay
- Differential Stainings
- Immunocytochemistry / Immunofluorescence
- ELISA

CHARGES FOR CELL CULTURE ASSAYS

ASSAY	Faculty/ Students from institutions under Pushpagiri Medical Society	Faculty /Students from other Institutions
Cytotoxicity Assay (3 doses) Concentration Based	2000/ Sample	2500/ sample
Cytotoxicity Assay (5 doses) Concentration Based	2500/Sample	3000/ Sample
Scratch Assay	1000/Sample	1500/ Sample
Differential Stainings	Price on Request	Price on Request
Immunocytochemistry / Immunofluorescence	Price on Request	Price on Request
ELISA	Price on Request	Price on Request

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HLA & Tissue Typing Laboratory

Scientist: Dr. Reeba Mary Issac, MBBS, DCP, Ph.D.; issacjohn151@gmail.com

The HLA lab under the Department of Pathology at PIMS&RC plays a pivotal role in diagnostic services, facilitating research and academic advancement within the institution. Equipped with modern laboratory infrastructure and staffed by skilled pathologists and technical personnel, the department ensures high standards of tissue diagnosis and scientific support.

Diagnostic Services

The department provides comprehensive histopathological services, including routine processing and reporting of biopsy and resection specimens. All specimens are received and processed following standardized protocols to maintain integrity, traceability, and patient safety. Specialized services include frozen section analysis for intraoperative consultation, immunohistochemistry for precise tumor characterization, and special staining techniques to aid in the diagnosis of infectious, inflammatory, and neoplastic conditions. The laboratory adheres to stringent internal and external quality control measures to ensure accuracy, reliability, and timely reporting, thereby supporting optimal patient management.

Specimen Storage and Archival

The department maintains a well-organized and secure archival system for the storage of specimens, paraffin blocks, and histopathology slides. Gross specimens are stored for a defined period in accordance with institutional policies and regulatory guidelines. Paraffin-embedded tissue blocks and stained slides are systematically catalogued and preserved under optimal environmental conditions to ensure long-term integrity. This robust archival system facilitates case review, academic teaching, and future research, including retrospective studies.

Research Support

The department actively contributes to both clinical and translational research. It provides essential support in the form of tissue processing, slide preparation, histomorphological evaluation, and immunohistochemical analysis for various research projects. The facility also supports biorepository functions, including the preservation, documentation, and retrieval of tissue samples for future research. In human research, the department collaborates with clinicians and researchers across specialties, facilitating studies in oncology, inflammatory diseases, and molecular pathology, while strictly adhering to ethical standards and regulatory requirements. In animal research, the department offers histopathological evaluation of experimental tissues, supporting preclinical and translational studies. This includes processing and interpretation of tissue samples from laboratory animals, contributing to disease modeling, drug development, and toxicological assessments, in compliance with institutional and national ethical guidelines.

Academic and Training Activities

The department is actively involved in teaching and training undergraduate and postgraduate students, residents, and technical staff. Regular academic sessions, slide discussions, seminars are conducted to enhance diagnostic skills and keep pace with recent advances in histopathology and related disciplines.

Quality and Accreditation

The department functions in alignment with the standards prescribed by the National Accreditation Board for Hospitals & Healthcare Providers (NABH). Standard operating procedures, documentation practices, quality assurance programs, and patient safety protocols are regularly reviewed and updated in accordance with NABH guidelines. Participation in internal audits and continuous quality improvement initiatives ensures maintenance of high standards in diagnostic accuracy and laboratory practices.

Departmental Activities and Achievements

The department actively participates in interdisciplinary platforms like clinicopathological conferences, contributing to integrated and evidence-based patient care. Faculty members are engaged in research publications, conference presentations, and collaborative projects at regional and national levels.

Continuous efforts are made to upgrade laboratory techniques, incorporate digital pathology, and expand molecular diagnostic capabilities, ensuring that the department remains at the forefront of diagnostic excellence and research innovation.

Medical Biotechnology & Computational Drug Designing Laboratory

Scientist: Dr. Aniket Naha, M.Sc., Ph.D.; draniketnaha@pimsrc.edu.in

The Medical Biotechnology and Computational Drug Designing Laboratory is dedicated to understanding and addressing antimicrobial resistance through advanced approaches in genomics, proteomics, systems biology, structural bioinformatics, and computational drug designing. Our research focuses on clinically significant nosocomial bacterial pathogens and the development of sustainable therapeutic strategies by combining bioactive phytocompounds from medicinal plants with conventional antibiotics. Our experimental studies follow established WHO and ICMR guidelines, with antimicrobial susceptibility testing performed according to CLSI breakpoints and EUCAST standards.

The laboratory also focuses on the isolation, characterization, and evaluation of novel probiotic strains with nutritional and immunomodulatory potential. We have successfully screened and characterized probiotic candidates through student research projects, with selected strains deposited in the NCBI database. Supported by high-performance computational workstations, the laboratory undertakes computer-aided drug design (CADD) for the discovery and optimization of novel antimicrobial peptides and lead molecules. We also perform protein structure modelling and structural bioinformatics, with successfully modelled structures deposited in the Protein Model Database (PMDB) for public access.

The laboratory has received institutional research funding and extramural support from the Indian Council of Medical Research (ICMR) and has established a strong record of publications in international peer-reviewed journals. We actively mentor undergraduate, postgraduate, and research scholars through dissertation projects, research training, and hands-on computational and laboratory activities. Dr. Aniket Naha also conducts specialized training programmes to equip students and researchers with emerging computational, AI-driven, and bioinformatics technologies for modern biomedical research.

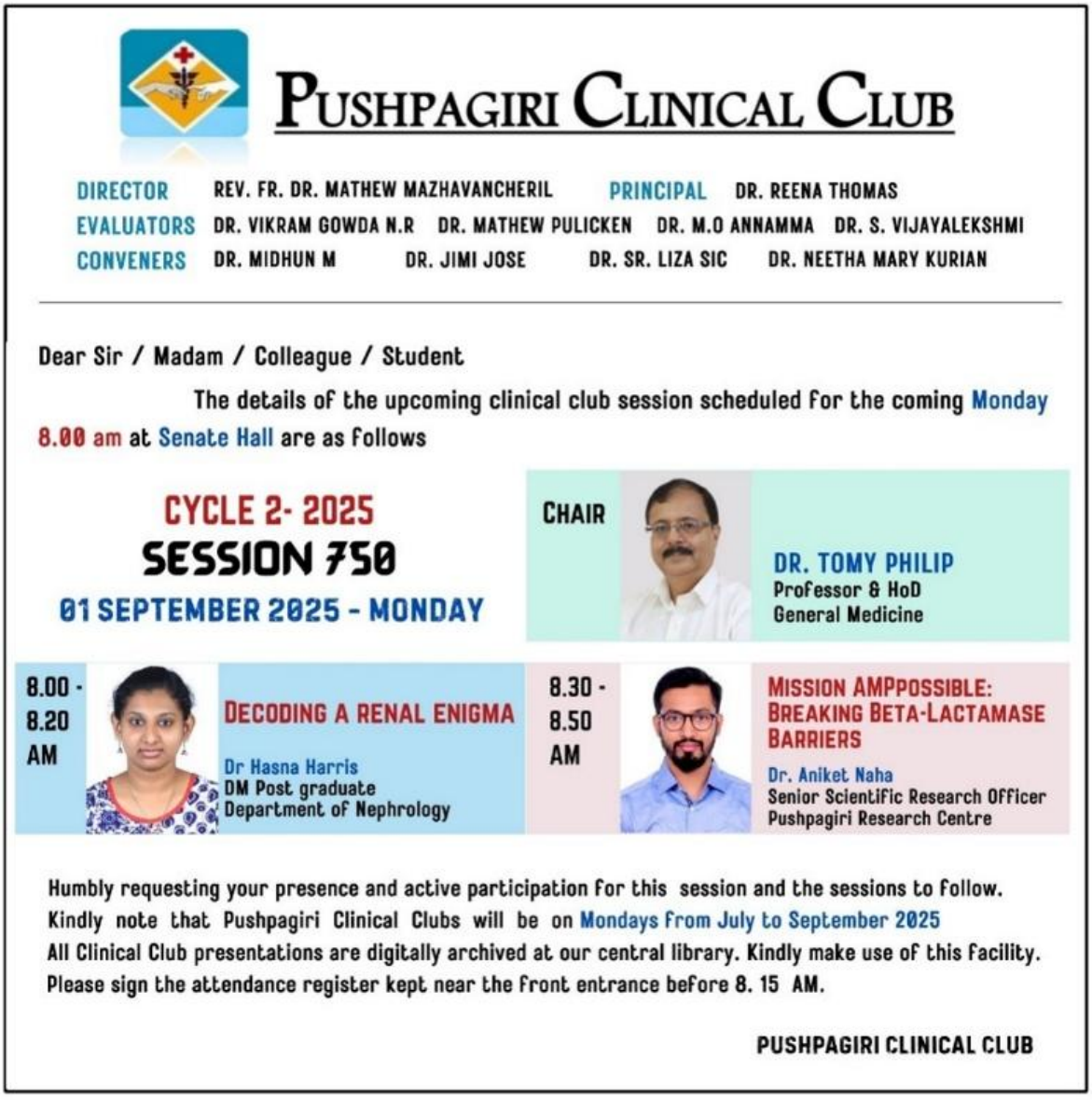
Key Research Areas

1. **Antimicrobial Tolerance and Resistance in ESKAPE Pathogens:** We investigate the mechanisms behind the emergence of antimicrobial tolerance and resistance in ESKAPE pathogens to develop strategies to combat these resilient bacteria.
2. **Phytocompound-Derived Antimicrobial Agents:** We focus on identifying and screening effective antimicrobial agents derived from phytocompounds, exploring their potential as sustainable alternatives to conventional antibiotics.
3. **Systems Biology and Therapeutic Biomarkers:** Utilizing systems biology approaches, we study protein-protein interactions (PPI) and host-pathogen interactions (HPI) to identify alternative therapeutic biomarkers in nosocomial pathogens.
4. **Virtual Screening and Lead Optimization:** Our research includes virtual screening, pharmacokinetics-pharmacodynamics (PK-PD) assessments, pharmacophore modelling, and lead optimization through quantum chemical density functional theory simulations.
5. **Structural Bioinformatics and Molecular Dynamics:** We employ structural bioinformatics techniques to validate the stability of novel theragnostic biomarkers with screened leads. This involves molecular docking, molecular dynamics simulations, and essential dynamics simulations to ensure the efficacy and stability of potential therapeutic agents.
6. **Probiotics Research and Novel Strain Discovery:** Isolation and characterization of novel probiotic strains using anaerobic bacterial culturing systems, followed by comprehensive probiotic screening and functional characterization. Our studies include gastric acid, bile salt, pancreatin, lysozyme, and intestinal juice tolerance assays, along with safety assessments, technological properties, antimicrobial activity, and other probiotic attributes to identify robust and functionally promising strains for potential nutraceutical and therapeutic applications.

Key Instrumentation Facilities

- Dell Precision Tower Workstation for performing molecular docking, molecular modelling, host-pathogen protein-protein interactions and quantum chemical simulations
- Soxhlet extraction units, rotary evaporators, TLC chambers and solvent filtration units to extract phytocompounds and secondary metabolites from natural sources
- Ultra cooling centrifuge, Precision weighing balance and Orbital shaking incubators

Activities



PUSHPAGIRI CLINICAL CLUB

DIRECTOR REV. FR. DR. MATHEW MAZHAVANCHERIL PRINCIPAL DR. REENA THOMAS
EVALUATORS DR. VIKRAM GOWDA N.R DR. MATHEW PULICKEN DR. M.O ANNAMMA DR. S. VIJAYALEKSHMI
CONVENERS DR. MIDHUN M DR. JIMI JOSE DR. SR. LIZA SIC DR. NEETHA MARY KURIAN

Dear Sir / Madam / Colleague / Student

The details of the upcoming clinical club session scheduled for the coming Monday 8.00 am at Senate Hall are as follows

CYCLE 2- 2025
SESSION 750
01 SEPTEMBER 2025 - MONDAY

CHAIR
DR. TOMY PHILIP
Professor & HoD
General Medicine

8.00 - 8.20 AM
DECODING A RENAL ENIGMA
Dr Hasna Harris
DM Post graduate
Department of Nephrology

8.30 - 8.50 AM
MISSION AMPPOSSIBLE: BREAKING BETA-LACTAMASE BARRIERS
Dr. Aniket Naha
Senior Scientific Research Officer
Pushpagiri Research Centre

Humbly requesting your presence and active participation for this session and the sessions to follow.
Kindly note that Pushpagiri Clinical Clubs will be on Mondays from July to September 2025
All Clinical Club presentations are digitally archived at our central library. Kindly make use of this facility.
Please sign the attendance register kept near the front entrance before 8. 15 AM.

PUSHPAGIRI CLINICAL CLUB



Dr. Aniket Naha presented his research work on 'Mission AMPossible: Breaking Beta Lactamase Barriers' at the Pushpagiri Clinical Club (01.09.2025)



Dr. Aniket Naha served as a Guest Faculty for the hands-on Session on Mendeley Reference Management System to PGs of PCDS (08.10.25)



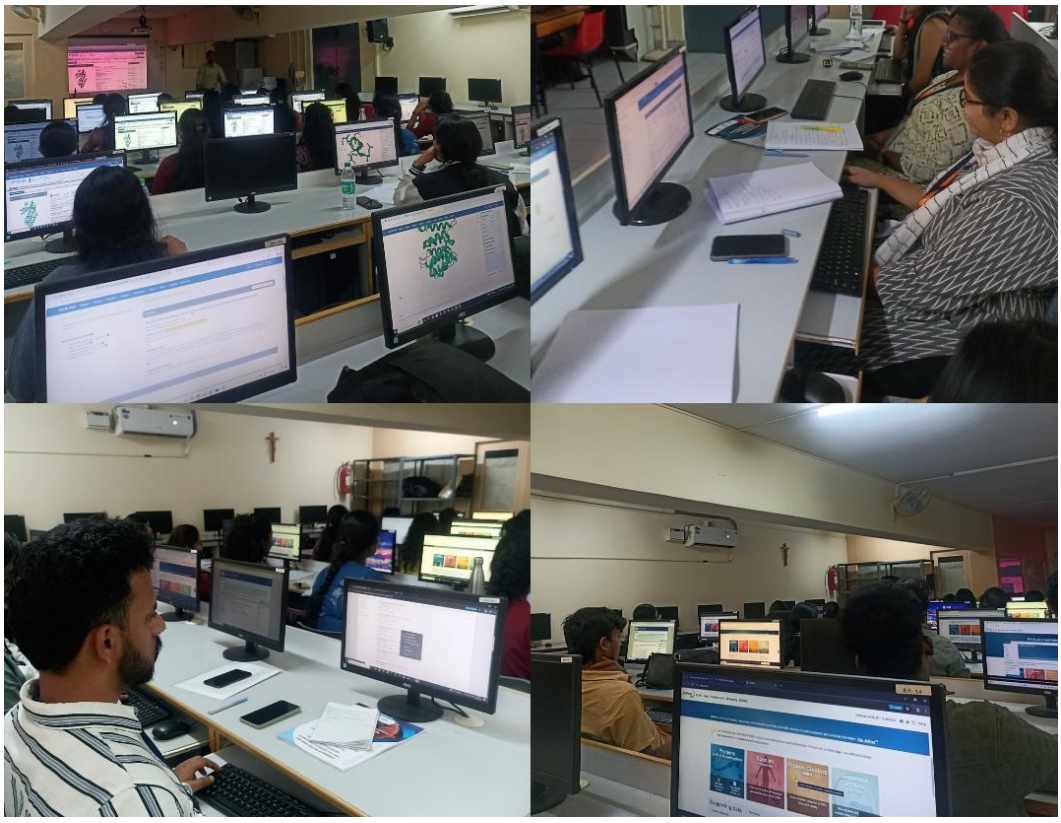
Dr. Aniket Naha, Scientist PRC has successfully completed Short Term Course on 'Transforming Healthcare with AI-driven Drug Discovery' from IIT-BHU, Varanasi on 5-9th December 2025



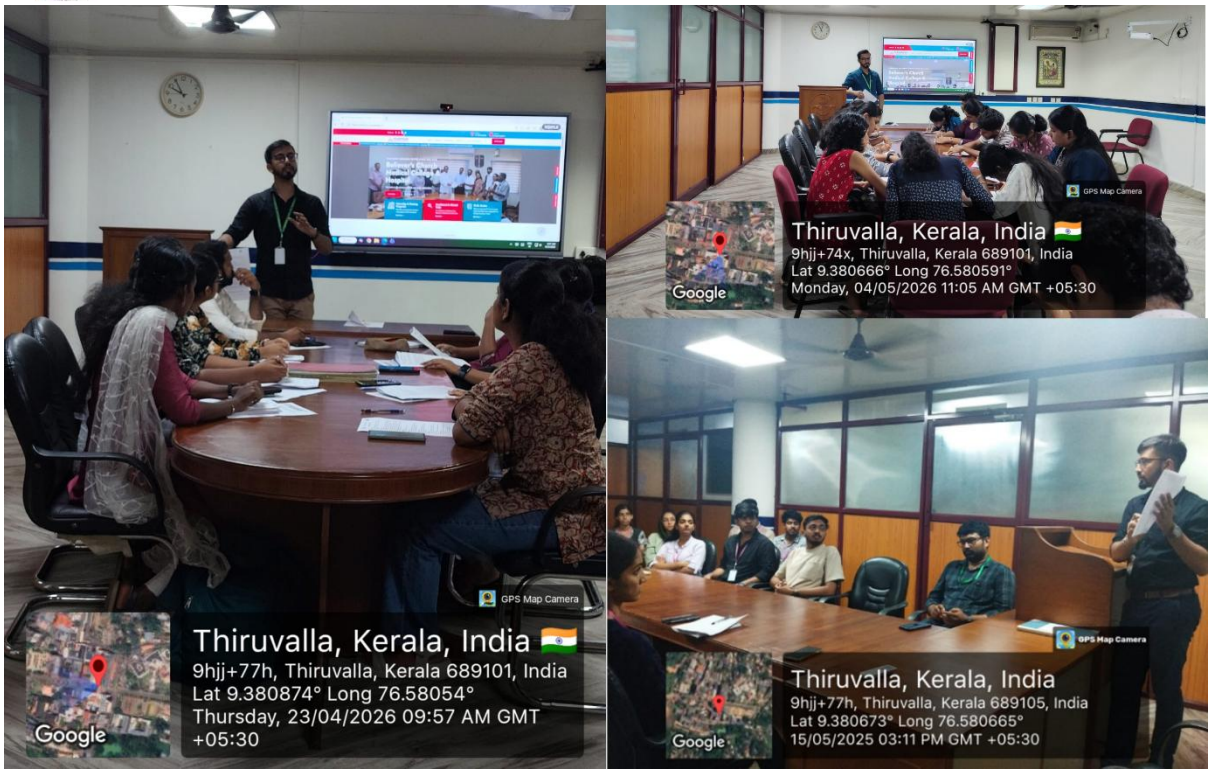
Dr. Aniket Naha, Scientist PRC served as a Speaker at the ICMR–DHR Sponsored National Workshop at Maharani's Science College for Women (Autonomous), Mysore (02.01.2026)



Dr. Aniket Naha and Dr. Ampadi AN conducted the induction and orientation program for all project students and interns at the PRC Conference Hall (23.01.26)



Dr. Aniket Naha served as a Guest Faculty for the hands-on Bioinformatics session at Jyoti Nivas College Autonomous, Bangalore (04.02.2026)



PRC Induction Session highlighting the rules and regulations, responsibilities and duties needed to be abided by the students, interns and trainees



Dr Aniket Naha, receiving award for his research endeavours during Pushpagiri Day (25.10.2025)



Dr Aniket Naha served as the resource person at CMS College, Kottayam for orienting undergraduates and postgraduates about PRC facilities (02.12.2025)



Dr Aniket Naha served as the resource person for the IGNOU on 23rd February 2026 at Gurucharan University Assam (24.02.2026)



Dr. Aniket conducted a hands-on bioinformatics workshop on Computer Aided Drug Designing at St Berchmans College (16.02.2026)

Microbial Technology & Infectious Disease Laboratory

Scientist: Dr. Aniket Naha, M.Sc., Ph.D.; draniketnaha@pimsrc.edu.in

The **Microbial Technology & Infectious Disease Laboratory** is dedicated to research in clinical microbiology, microbial technology, antimicrobial discovery and the molecular investigation of infectious diseases. The laboratory focuses on understanding emerging microbial threats and developing scientifically validated approaches for the prevention, diagnosis and management of infectious diseases. A major thrust of the laboratory is the investigation of antimicrobial resistance (AMR), which represents one of the most significant global public health challenges and threatens the effectiveness of currently available antimicrobial therapies.

The laboratory is involved in the screening and evaluation of antimicrobial compounds derived from natural products as well as synthetic materials, with the objective of identifying promising antimicrobial candidates that may contribute to the development of novel therapeutic strategies. Antimicrobial activity is evaluated against standard reference strains as well as clinically relevant bacterial and fungal isolates. Such investigations support the identification of new antimicrobial sources, characterization of their efficacy and exploration of their potential applications in combating drug-resistant microorganisms.

Research activities also encompass the investigation of emerging and re-emerging infectious diseases, with particular emphasis on the identification and characterization of causative microbial agents. Molecular and microbiological approaches are employed to understand the characteristics of pathogens, their virulence-associated properties and their possible association with disease severity and clinical manifestations. The laboratory also contributes to antimicrobial resistance surveillance, including the assessment of resistance patterns among clinically relevant microorganisms and microbiota, thereby supporting evidence-based approaches for antimicrobial stewardship and infection control.

In addition to research activities, the laboratory provides opportunities for short-term training and hands-on exposure in basic and clinical microbiology techniques. Training activities are designed to strengthen practical competencies in microbial culture, identification, antimicrobial susceptibility testing, aseptic techniques, biosafety practices and laboratory-based investigation of infectious agents.

Key Research Areas

- Identification, isolation and characterization of **emerging and re-emerging infectious disease-causing microorganisms** using conventional microbiological and molecular approaches.
- **Antimicrobial resistance surveillance** in clinically relevant microorganisms and microbiota, including assessment of antimicrobial susceptibility and resistance patterns.
- Screening and evaluation of **antimicrobial activity of natural products, bioactive compounds and synthetic materials** against standard reference strains and clinical bacterial and fungal isolates.
- Investigation of microbial phenotypic characteristics and antimicrobial susceptibility profiles to identify potential **therapeutic and infection-control strategies**.
- Development and evaluation of laboratory-based approaches that support the discovery of **novel antimicrobial candidates and alternative strategies for addressing antimicrobial resistance**.
- Training and capacity building in **basic, clinical and applied microbiology**, with emphasis on safe handling, culture, identification and characterization of microorganisms.

Instrumentation & Laboratory Facilities

- **BSL-2 laboratory facilities** for the safe handling, culture and investigation of pathogenic and opportunistic microorganisms, including clinically important nosocomial and **ESKAPE pathogens**.

- **Anaerobic bacterial culturing facility** equipped with a 3.5 L anaerobic jar, anaerobic gas-generating packs and anaerobic indicators for the isolation and cultivation of obligate and facultative anaerobic microorganisms.
- **Class II Biosafety Cabinets** for microbiological work requiring containment and protection of personnel, samples and the laboratory environment.
- **Autoclave facilities** for sterilization of microbiological media, laboratory materials and biohazardous waste.
- **Bacteriological oven/incubator facilities** for controlled-temperature cultivation and microbiological experimentation.
- **Refrigerators and deep freezers (-20°C)** for the preservation and storage of biological tissues, serum, microbial cultures, clinical specimens and bacterial samples.
- Facilities for **microbial culture, isolation, biochemical characterization and antimicrobial susceptibility testing** of bacterial and fungal isolates.
- Laboratory infrastructure supporting **conventional microbiology and molecular characterization studies** of clinically important microorganisms.

The laboratory aims to integrate **microbial technology, clinical microbiology and translational research** to address contemporary challenges in infectious diseases and antimicrobial resistance. Through research, training and collaborative investigations, the laboratory seeks to contribute to the discovery of innovative antimicrobial solutions, improved understanding of pathogen-associated disease mechanisms and the development of evidence-based strategies for controlling infectious diseases.

Activities



Dr. Aniket Naha was awarded the 'Best Oral Presentation' at the annual CME PRICE – 2025, hosted by PIMSRC on 25th July, 2025.



Dr. Aniket Naha, (Scientist PRC) was invited as a distinguished Speaker at the 6th World Congress on Infectious Diseases and Antibiotics 2025, held on October 12, 2025, at the Indian Institute of Science (IISc), Bengaluru.





Dr. Aniket Naha was the Invited Speaker at the DHR-ICMR Sponsored National Workshop on Combating Antimicrobial Resistance (AMR): From Awareness to Action held on 4th February 2026 at Jyothi Nivas College, Bangalore (03.02.2026)



Dr. Aniket Naha served as a Guest Lecturer for the career guidance session entitled 'Biotech Compass: Navigate Your Future' organized by the International iGEM club at VIT, Vellore (21.09.2025)



Dr. Aniket Naha, (Scientist PRC) served as an Invited Speaker at the DHR-ICMR Sponsored National Workshop at REVA University on 9th May 2026



Hands-on-Training on Clinical Microscope by Professional from Olympus and Dr. Aniket Naha to all Trainees, Project and Interns of PRC on 24th January 2026

Molecular Biology Laboratory

Scientist: Dr. Ajay Krishnan U, M.Sc., Ph.D.; dr.ajaykrishnanu@pimsrc.edu.in

The Molecular Biology Laboratory at Pushpagiri Research Centre, affiliated with the PIMS&RC, Kerala focuses research in molecular biology, toxicity and cell culture. The lab provides practical knowledge of various molecular biology techniques to students and other researchers.

Currently, the lab focuses research on screening various plant-derived compounds for their biological activities using *in vitro* and *in vivo* experimental models, thereby providing better understanding of the real efficacy and mechanism of these compounds in management of various disease conditions like obesity, type 2 diabetes, non-alcoholic fatty liver disease and cancer.

Cell Culture Facility

The Cell Culture Facility of Molecular Biology Laboratory is well equipped with instruments for performing various cellular assays which include cytotoxicity studies and differential staining. The lab offers facilities like subculturing and maintenance of various cell lines, determination of toxicity of various drugs or extracts (MTT assay) and various staining for analysing lipid accumulation (oil red O), reactive oxygen species generation (DCFH-DA), apoptosis (acridine orange and ethidium bromide dual staining and DAPI) and mitochondrial membrane potential (Rhodamine). The lab is also equipped with multimode reader which facilitates protein expression studies using Enzyme-linked Immunosorbent Assay technique. The Cell Culture Facility also provide imaging facilities with the aid of simple, compound and inverted fluorescence microscope attached with camera. The lab also offers facilities, guidance and trainings to students, interns and research scholars to complete their academic projects.

Activities

PUSHPAGIRI CLINICAL CLUB

DIRECTOR REV. FR. GEORGE VALIYAPARAMPIL
PRINCIPAL DR. REENA THOMAS
EVALUATORS DR. VIKRAM GOWDA N.R DR. MATHEW PULICKEN DR. M.O ANNAMMA DR. S. VIJAYALEKSHMI
CONVENERS DR. MIDHUN M DR. JIMI JOSE DR. SR. LIZA SIC DR. NEETHA KURIAN

Dear Sir / Madam / Colleague / Student

The details of the upcoming clinical club session scheduled for the coming Friday 8.00 am at Senate Hall are as follows

CYCLE 1 - 2024-25
SESSION 734
09 MAY 2025 - FRIDAY

CHAIR



DR. LILLYKUTTY POTHEN
Professor
Department of Pathology

8.00 - 8.20 AM



A CASE OF IGA VASCULITIS.

Dr DALIA,
DM Resident,
Department of Nephrology.

8.30 - 8.50 AM



NON-ALCOHOLIC FATTY LIVER DISEASE: A SILENT KILLER

Dr. AJAY KRISHNAN U.
Scientist,
Pushpagiri Research Centre,

Humbly requesting your presence and active participation for this session and the sessions to follow.
Kindly note that Pushpagiri Clinical Clubs will be on Fridays from April to June 2025
All Clinical Club presentations are digitally archived at our central library. Kindly make use of this facility.
Please sign the attendance register kept near the front entrance of the Senate Hall before 8. 15 AM.



Dr. Ajay Krishnan U delivered his presentation entitled "Non-Alcoholic Fatty Liver Disease: A Silent Killer" organized by Pushpagiri Clinical Club on 9th May 2025.



(25.07.2025) Best Faculty presentation – Dr. Ajay Krishnan U., Scientist, Molecular Biology Lab

Pharmaceuticals Laboratory

Scientist: Dr. Dayana K, M.Sc., Ph.D.; dayanak.dk@gmail.com

Executive Summary & Profile

Established in April 2026 and located within the Pharmacology Department at PIMS&RC (PIMS & RC), the Pharmaceuticals Laboratory (PRC) serves as a dedicated center for advanced pharmaceutical research, synthesis, characterization, pharmacology, toxicity studies, and analytical research.

Core Research & Collaborative Initiatives

The laboratory drives high-impact medicinal chemistry projects aimed at discovering and evaluating novel therapeutics, supported by strategic national academic partnerships.

Major Research Projects

- Synthesis, characterization, and analgesic & anti-inflammatory activities of novel 1-amino-dibenzofuran in rodent models: Approved by IAEC at PIMS & RC on December 13, 2025, and granted a 6-month extension on August 14, 2026.

Collaborations & MoUs

- **Islamiah (Autonomous) College, Vaniyambadi:** Formal Memorandum of Understanding (MoU) signed on August 3, 2026, with the PG & Research Dept. of Chemistry. Key scientific interactions included participation in the National Conference on Medicinal Chemistry, where Dr. Dayana K. and Dr. Soumya R. S. served as key Resource Persons.
- **St. Berchmans (Autonomous) College, Changanassery:** Active research collaboration with the Dept. of Chemistry on synthetic and biological characterization studies.

Professional Development & Scholarly Output

Academic Engagement

- **BIORADIANCE 2026:** Active leadership and committee representation at the 14th International Conference.
- **Pharmacovigilance Training Programme:** Completion of specialized online training covering ADR Reporting & Case Processing (April 24 – April 30, 2026).
- **Faculty Development Program (FDP):** Participation in SRM Institute of Science & Tech FDP on "Converging Biotechnologies for Sustainable Health and Genomic Innovations" (July 27 – July 31, 2026).

Infrastructure and equipment setup

- Precision balance; Shimadzu Electronic Balance (ELB Series): High-precision quantitative mass measurements
- Magnetic Stirrer; iSTIR HP320 (10 Ltr capacity, 10 RPM/step, range 200–2200 RPM): Chemical synthesis and reagent dissolution

PUSHPAGIRI RESEARCH CENTER

PUSHPAGIRI INSTITUTE OF MEDICAL SCIENCES AND RESEARCH CENTRE

KERALA, INDIA

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PHARMACEUTICALS LABORATORY

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WITH HANDS-ON CHEMISTRY & PHARMACEUTICAL INNOVATION

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- Evaluation of antimicrobial, antioxidant and other pharmacological activities

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- Exposure to Real-time Projects
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DURATION: FLEXIBLE
(As per program requirements)

MENTOR
Dr. DAYANA K
M.Sc. Pharmaceutical Chemistry, Ph.D. Chemistry

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9895908128
dayanak.dk@gmail.com
www.prc.pushpagiri.in

STUDENT CO-ORDINATOR
Dr. Aniket Naha
8473912790
draniketnaha@pimsrc.edu.in

Pushpagiri Research Center, Pushpagiri Institute of Medical Sciences and Research Centre,

Certificate on Completion | Mentorship & Research Support | Practical Learning, Real Impact

Centre For Evidence Based Practice (PCEBP)

Scientist: Nisha Kurian, MSc (Biostatistics), MPS; nishakurianmathew@gmail.com

Pushpagiri Centre for Evidence Based Practice (PCEBP) was inaugurated on January 7, 2019. This centre functions with collaboration of Medical, Dental and Nursing Colleges of Pushpagiri Medical Society. PCEBP is a JBI Centre of Excellence. JBI is an international research organization based at the University of Adelaide, Australia, to promote and support evidence-based decisions and to offer solutions to health teams from the best available evidence.

This year we have completed a Multicentric Implementation Project funded by JBIC Brighter Future Grant (2023-25) and we have also received another one for the years 2025-27. JBI has renewed our contract for the next three years as the initial one which was for five years ended in January 2025. An MoU was signed between University of Adelaide and PRC in this regard in May 2025. JBI recently conducted the annual evaluation of activities for 2025 of their collaborating entities. We are extremely happy to place on record that our centre received a total of 50,500 KPI's (Key Performance Indicators) for year 2025 out of a total requirement of 60,000 KPIs for the three years (2025-2027).

Major events:

1. **Annual Webinar 2025:**

The JBI gLOCAL Solution Room, 2025, was organized by PCEBP in collaboration with our clinical partner - the Critical Care Unit of Pushpagiri Medical College Hospital on June 27, 2025. The title of the webinar was **"Navigating Evidence-Based Practice: Strategies for Local Clinical Decisions - A JBI gLOCAL Solution Room."** Dr. Mathew Pulicken, Professor and Head of the Critical Care Unit served as the moderator for the webinar. The distinguished speakers were:

(i) Prof. Dr. Rajeev A, Professor and Head of the Department of Community and Family Medicine at AIIMS Mangalagiri, India on "*Effective literature searching techniques*"

(ii) Dr. Biju George, Associate Professor of Community Medicine at Government Medical College, Kannur on "*Critical Appraisal of a Journal Article*"

(iii) Dr. Anupam S Thomas, Senior Resident in Critical Care, PIMS & RC, critically appraised the following study using the JBI Critical Appraisal tool for RCTs: "Conservative Oxygen Therapy in Mechanically Ventilated Critically Ill Adult Patients: The UK-ROX Randomized Clinical Trial" (Martin DS, Gould DW, Shahid T, et al., JAMA, June 12, 2025).

The online feedback from participants reflected a high level of satisfaction with the event.

2. **JBI Strategies: Bridging Evidence and Practice –** a one-day conference

The dissemination conference for the JBI Grant-in-Aid project, by Adelaide University, Australia "JBI Strategies: Bridging Evidence and Practice," was successfully conducted by PCEBP on November 15, 2025. The event brought together healthcare professionals from the medical, dental and nursing disciplines to celebrate the completion of a comprehensive evidence implementation initiative.

The highlight of the conference was the presence of two JBI Implementation Science faculty members from the Faculty of Health and Medical Sciences, University of Adelaide, Australia: Ms Alexa McArthur and Dr Lucylynn Lizarondo. They delivered classes on Evidence Implementation, JBI education, tools and resources and shared evidence-based approaches to improving healthcare practice. They also presented JBI Evidence Implementation Training Program certificates to the project team members.

Dr. Elizabeth Joseph, Principal of Believers Church Medical College was the chief guest, Rev Dr Mathew Mazhavancheril, Chairman of Pushpagiri Research Council delivered the welcome speech and Rev Dr Biju Varghese Payyampallil presented mementos to dignitaries during the inauguration of the conference. Also, Dr Elsheba Mathew, the founder director of PCEBP was honoured.

Dr. Sunu Alice Cherian, Lead of the project presented the comprehensive findings, which encompassed three major research components: 1. Primary Study- "Incidence of Central Line-Associated Blood Stream Infection in Patients Admitted to Critical Care Units at Three Centers in Kerala: A Cross-Sectional Study". 2. Systematic Review

- "Incidence of Central Line-Associated Blood Stream Infection among Patients Admitted in Intensive Care Units in India: A Systematic Review and Meta-Analysis". 3. Implementation Study "Central Venous Access Device Management in Critical Care Units: A Multicentric Implementation Project in Low-Resource Settings". The project team members also shared their experience. Dr Anupam S Thomas, Senior Resident, Critical Care Unit of PIMS& RC presented the findings of another implementation project done in the CCU on delirium management. The conference ended with closing remarks and vote of thanks by Nisha Kurian, director, PCEBP.



Project team with Chief Guest, CEO, Director and JBI faculty- Adelaide University

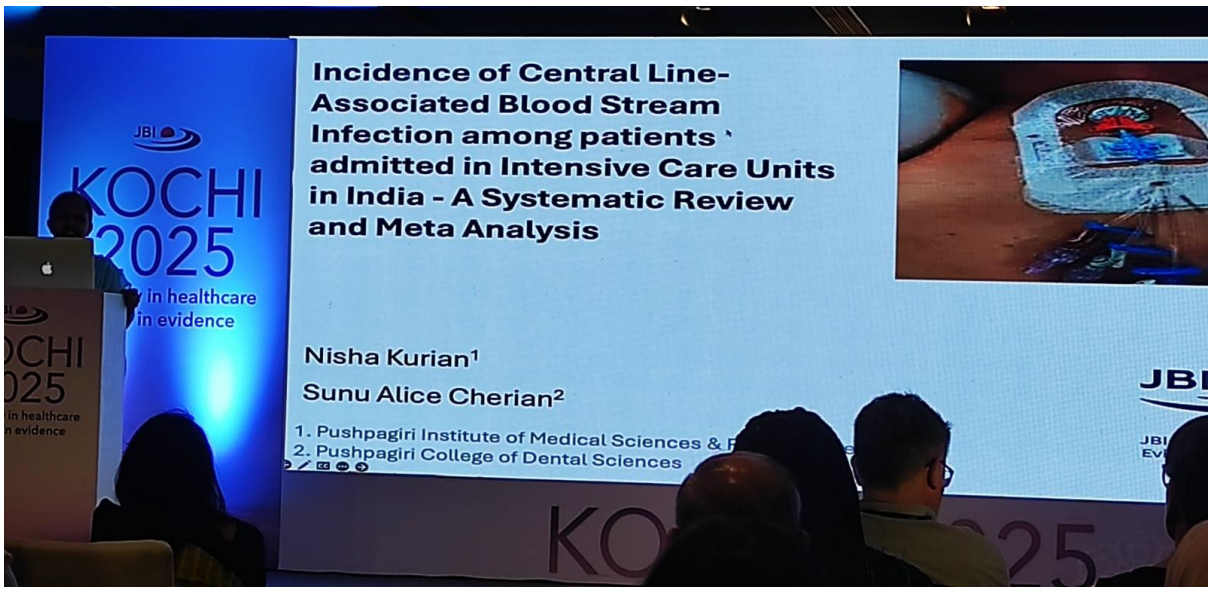
3. 74TH JBIC MEETING & JBI COLLOQUIUM

The JBI Collaboration Meeting and Colloquium was held first time in India, in Kochi from November 15–21, 2025, bringing together approximately 200+ delegates from around the world. Mrs. Nisha Kurian (Director), Dr. Sunu Alice Cherian (Deputy Director), and Sr Mary Jyothi OSS (Training Coordinator) attended it. Mrs. Nisha Kurian (Oral presentation titled "Incidence of Central Line-Associated Blood Stream Infection among patients admitted in Intensive Care Units in India - A Systematic Review and Meta Analysis") and Dr. Sunu Alice Cherian (poster presentation titled "Prevalence of Periodontitis in the Context of Post-Traumatic Stress Disorder: A Systematic Review and Meta-Analysis") delivered at the colloquium.



74th JBIC Meeting

Collaboration,Communities & Collective Impact





4. **JBI Comprehensive Systematic Review Training Program (CSRTP):**

This training programme on quantitative and qualitative systematic review and meta-analysis was conducted on hybrid mode at Pushpagiri College of Dental Sciences from Sept 24-26 and 29-30, 2025 (5 days). Ten participants from India (one from Sikkim, three from Karnataka, one from north Kerala and remaining five from Pushpagiri (two from PIMSRC, two from nursing college and one from dental college)) attended and received certificates from JBI. Sr Mary Jyothi OSS was the JBI Accredited trainer and Nisha Kurian and Dr Sunu A Cherian were the facilitators of the programme.

Major Research Projects

1. **Central Venous Access Device Management in Critical Care Units - A Multicentric Implementation Project in Low Resource Setting**. Principal Investigator: Dr. Sunu Alice Cherian, Co-Investigator: Mrs Nisha Kurian. The collaborating centres were Critical Care units of (i) PIMS & RC, Tiruvalla; (ii) SH Medical Centre, Kottayam and (iii) Believers Church Medical College Hospital, Tiruvalla. This was funded (AUD 27254.90) by JBI Collaboration Brighter Futures Grant 2023-25. Project completed on January 31, 2026. An educational video titled "Central Venous Access Device Management" was created and uploaded in YouTube and Posters for educating health professionals on "Best Practice in CVAD Implementation" were made in English, Malayalam, Hindi and Tamil as part of this project, in collaboration with CCU, PIMS &RC.

2. Cross cultural Insights: Cancer awareness and information needs of Adolescents and young adults in India and Australia. Co Investigators: Mrs. Nisha Kurian, Dr. Sunu Alice Cherian. This project was funded (AUD 32368.6) by JBI Collaboration Brighter Futures Grant 2025-27. Collaborating centers are (i) Western Sydney University, Australia; (ii) Christian Medical College, Vellore; (iii) Christian Medical College, Chittor Campus; and (iv) St Johns Medical College, Bengaluru.

3. **Impact of Antimicrobial Stewardship Interventions in the ICU: An Implementation Study**. This proposal was developed collaboratively by the Critical Care Unit, the Department of Pharmacology, and PCEBP using JBI audit criteria. The project received institutional funding, and the pilot study is over.

Stem Cell & Tissue Engineering Laboratory

Scientist: Dr. Nebu George Thomas, MDS, Ph.D.;
nebugeorgethomas@pushpagiri.in

Involved in the development of scaffolds, using principles of engineering and life-sciences, which may help regenerate tissue lost due to various diseases or injuries. The goal of the lab is to develop scaffolds that have the ability to induce cellular response and stimulate regenerative cells. Focus on bone and skin regeneration in general, and periodontal tissue in particular. Also involved in studying interaction of various biomaterials with tissue structures in the body. Preclinical analysis of scaffolds was performed as per ISO guidelines. The lab performs pre-clinical analysis of biomaterial as per ISO standard. The biomaterial is developed from marine sources and animal origin for tissue engineering application the test performed in the labs are:

- *In-vitro* facilities: Biomaterials Preparation and Extraction, Cytocompatibility, Cytotoxicity elution test, MTT cell proliferation assay, Surface culture test, Agar overlay assay

- Clean room facility for fabrication of tissue engineering scaffolds for application in regenerative medicine with Lyophilizer facility

- *In-vivo* facilities: Genotoxicity, Mammalian test systems, Nonmammalian test systems, Intracutaneous Reactivity, Skin Sensitization Assay, Acute Systemic Toxicity, Hemocompatibility, Complement Activation, Thrombogenicity, Pyrogenicity, Carcinogenicity Implantation ,Performance and Efficacy Evaluation Osseointegration and Critical-Size Defects, Long-Bone Pressure Fitted Transcortical Placement, Trephined bone core repair, Mandibular Osteotomy Defect Repair, Osteomyelitis and Antimicrobial Treatments, Osteoinduction Models, Dental Implants and Guided Bone Regeneration, Teeth extraction procedure, Bone graft implantation procedure, Dental implant placement, Imaging, Live computed tomography (Cone beam CT-scan), Magnetic resonance imaging (MRI), Micro-computed tomography (micro-CT),

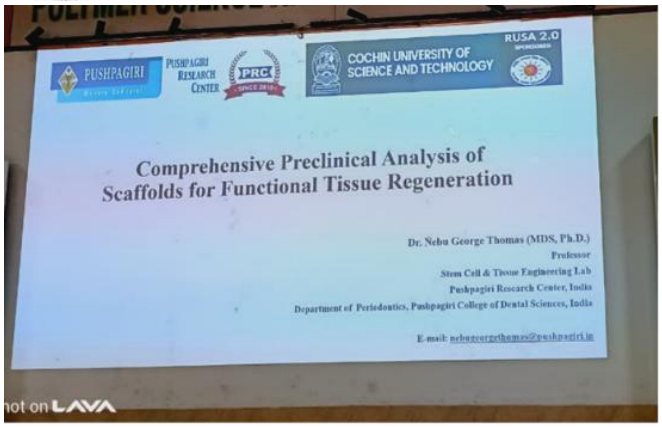
Necropsy and Macroscopic Grading (Gross Pathology), Histology, Sample preparation, Nondecalcified (plastic) histology, Decalcified histology, Histopathology, Local effects on hard tissue, Local effects on soft (cartilage) tissues, Effects on major organs, Abnormal macroscopic findings and gross lesions, Histology Imaging, Histomorphometry

- Histopathology lab- Adaptor for disposable knife attachment, Albuminometer, Automated hematology analyzers-sysmex XN 1000, Mindray BC 6200, Automated urine analysers: FUS 1000, Uriplus 600, Balance for weighing organs, Binocular microscope, Bone saw, Hot air oven, Hot plate, Incubator

Activities



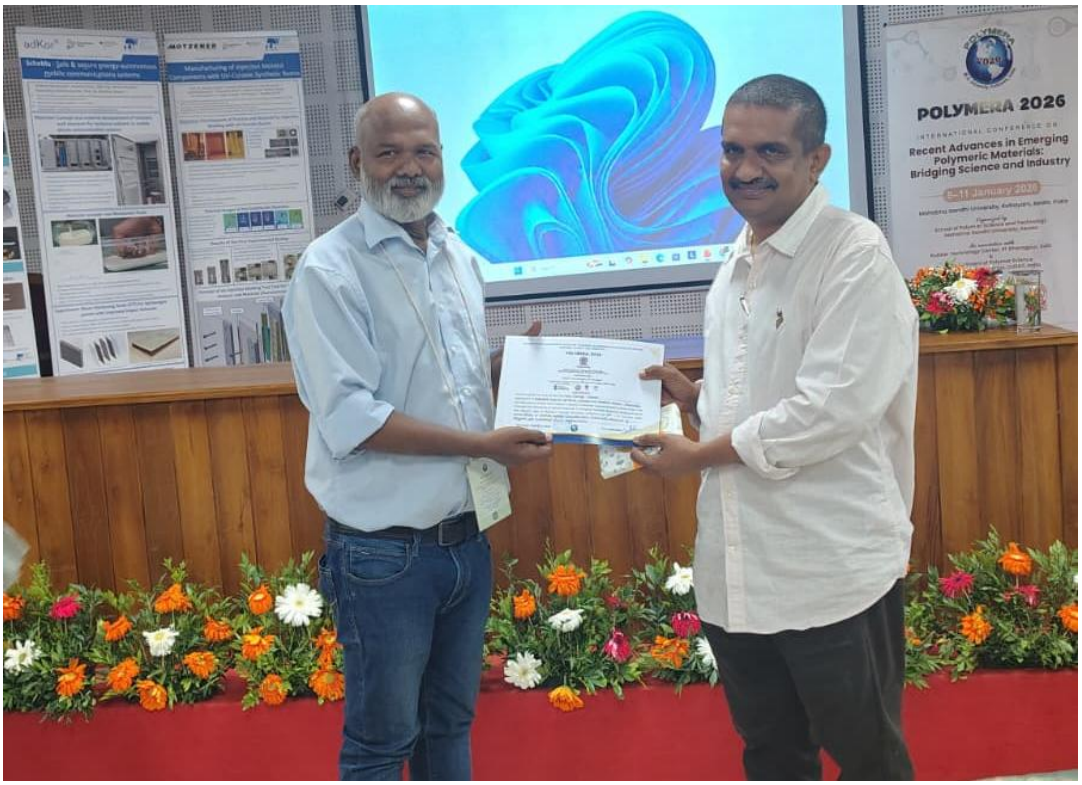
Induction to PGs of PIMSRC regarding research facilities of animal house facility (06.06.2025)







Dr Nebu George Thomas Given a talk on "Comprehensive Preclinical Analysis of Scaffolds" at National seminar on Next generation biomaterials at CUSAT



Presentation on Recent Advances on Emerging Polymeric Material: Bridging Science and Industry; MG University, Kottayam (08.01.2026)

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सत्यमेव जयते

पेटेंट कार्यालय,भारत सरकार | **The Patent Office, Government Of India**

पेटेंट प्रमाण पत्र | **Patent Certificate**

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	572988
आवेदन सं. / Application No.	:	202441045392
फाइल करने की तारीख / Date of Filing	:	12/06/2024
पेटेंटी / Patentee	:	1.Dr. SHEENA S RAJ 2.Dr. EMIL GEORGE 3.Dr. NEBU GEORGE THOMAS 4.Dr. A DEVADATHAN

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *ANTI MICROBIAL EFFECT OF CATECHIN DOPED BIOACTIVE GLASS NANOPARTICLE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2024 के बारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *ANTI MICROBIAL EFFECT OF CATECHIN DOPED BIOACTIVE GLASS NANOPARTICLE* as disclosed in the above mentioned application for the term of 20 years from the 12th day of June 2024 in accordance with the provisions of the Patents Act,1970.

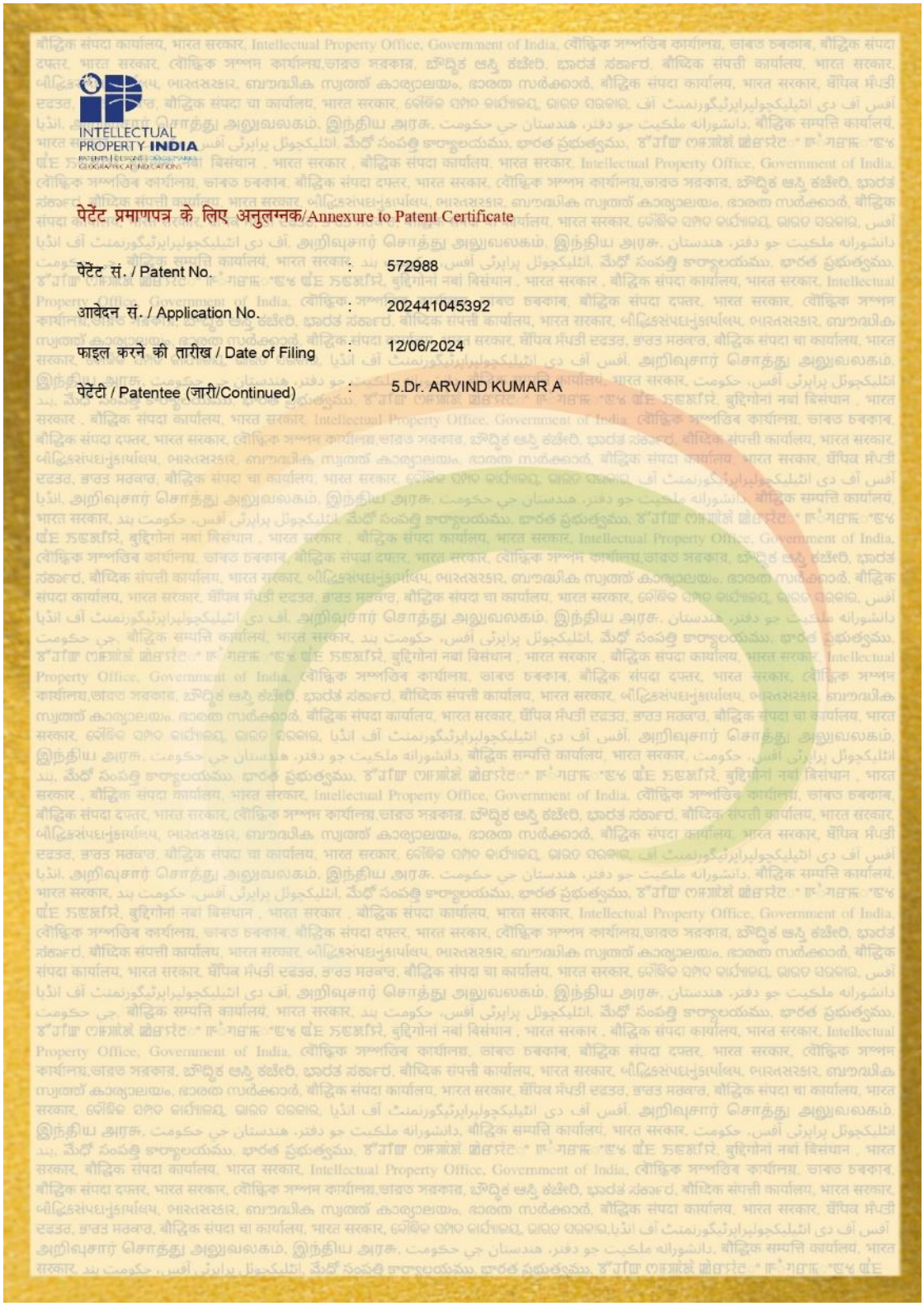
अनुदान की तारीख : 30/10/2025
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जून 2026 के बारहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 12th day of June 2026 and on the same day in every year thereafter.

*चूंकि पेटेंटी व आविष्कारकों की संख्या अधिक है, पेटेंटी व आविष्कारकों के नाम पृष्ठ संख्या 2 पर जारी है।
*Since the Number of Patentees / Inventors is more, the name of Patentees / Inventors are continued on Page No. 2

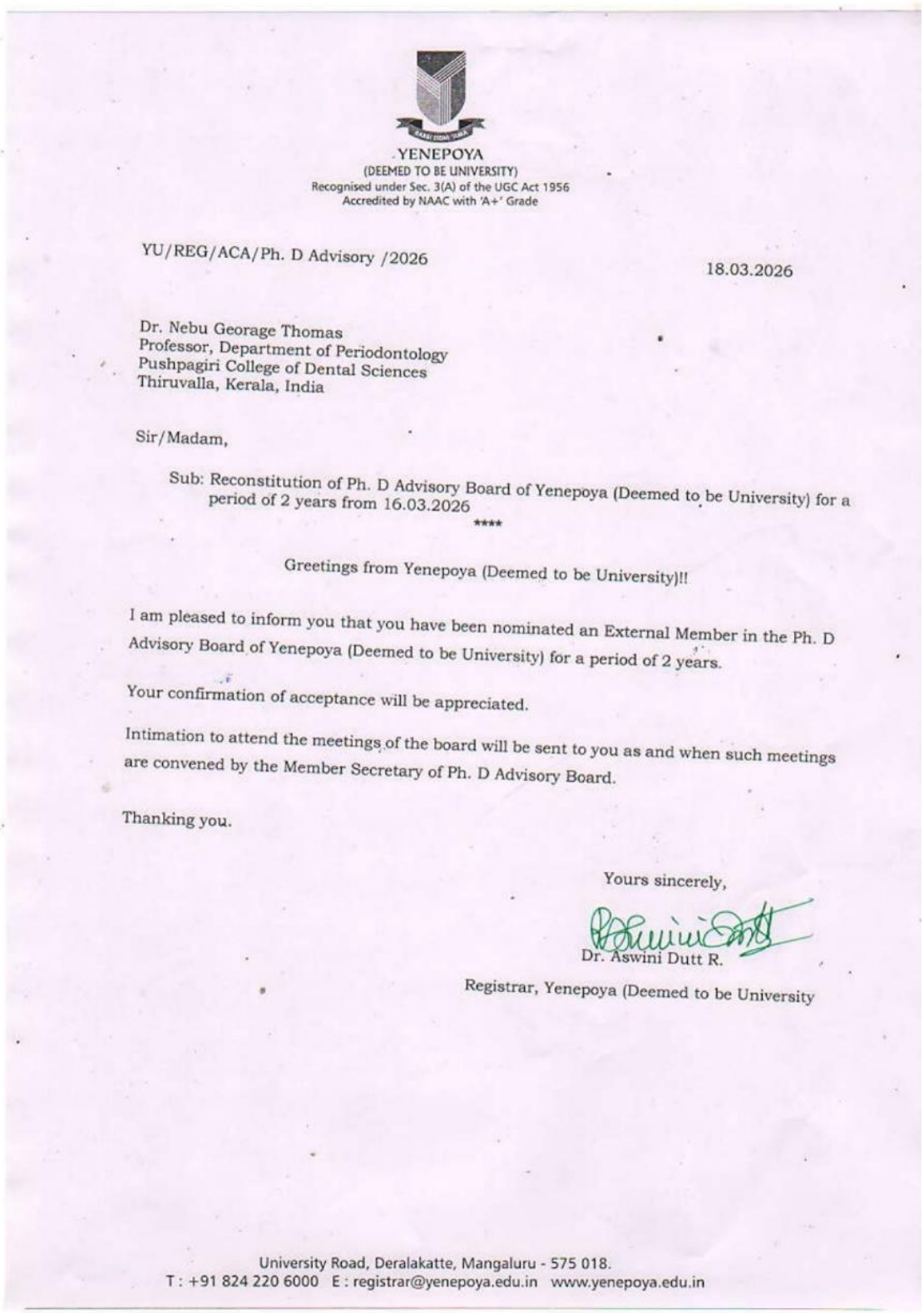


INTELLECTUAL PROPERTY INDIA

पेटेंट प्रमाणपत्र के लिए अनुलग्नक/Annexure to Patent Certificate

पेटेंट सं. / Patent No.	:	572988
आवेदन सं. / Application No.	:	202441045392
फाइल करने की तारीख / Date of Filing	:	12/06/2024
पेटेंटी / Patentee (जारी/Continued)	:	5.Dr. ARVIND KUMAR A

Dr. Nebu George Thomas Received the patent for invention entitled "Antimicrobial Effect of Catechin Doped Bioactive Glass Nanoparticle" (07.11.2025)



YENEPOYA
(DEEMED TO BE UNIVERSITY)
Recognised under Sec. 3(A) of the UGC Act 1956
Accredited by NAAC with 'A+' Grade

YU/REG/ACA/Ph. D Advisory /2026

18.03.2026

Dr. Nebu Georage Thomas
Professor, Department of Periodontology
Pushpagiri College of Dental Sciences
Thiruvalla, Kerala, India

Sir/Madam,

Sub: Reconstitution of Ph. D Advisory Board of Yenepoya (Deemed to be University) for a period of 2 years from 16.03.2026

****

Greetings from Yenepoya (Deemed to be University)!!

I am pleased to inform you that you have been nominated an External Member in the Ph. D Advisory Board of Yenepoya (Deemed to be University) for a period of 2 years.

Your confirmation of acceptance will be appreciated.

Intimation to attend the meetings of the board will be sent to you as and when such meetings are convened by the Member Secretary of Ph. D Advisory Board.

Thanking you.

Yours sincerely,

Dr. Aswini Dutt R.

Registrar, Yenepoya (Deemed to be University

University Road, Deralakatte, Mangaluru - 575 018.
T : +91 824 220 6000 E : registrar@yenepoya.edu.in www.yenepoya.edu.in

Dr Nebu George Thomas, nominated as an External Member of the Ph.D. Advisory Board of Yenepoya (Deemed to be University). This appointment is a testament to your academic excellence and your significant contributions to the field of Periodontology (19.03.2026)

LIST OF ONGOING OR NEWLY GRANTED PROJECTS

Sl. No.	Title of the Project	PI & Co-PI (s)	Funding Agency (if applicable) and duration	Collaborating Institutions
1.	Development and validation of biomedical and cosmetic products from secondary fishery raw materials	**Principal Investigator:** Dr. Nebu George Thomas	CIFT Cochin, Kerala, India	CIFT PRC
2.	Fabrication of fish skin and collagen composite scaffolds loaded with drug molecules for simultaneous management of wounds and associated bacterial infections	**Principal Investigator:** Dr. Nebu George Thomas	Ministry of Higher Education Research and Innovation. Sultanate of Oman	Indo-Oman
3.	Identification of Casual Genetic Variants in Early- Onset Severe Periodontitis: A Large-Scale Whole- Exome Sequencing Study	**Principal Investigator:** Dr. Nebu George Thomas Dr Thomas George V	DAAD PRIME Grant	Charite University Berlin
4.	Optimierung der Zelladhasion auf Biomaterialien durch Oberflachenvernetzung – Indo- German Project	**Principal Investigator:** Dr. Avneesh Chopra **Co- Principal Investigator:** Prof. Dr. Andrej Trampuz Dr. Nora Renz Dr. Nebu George Thomas	Charite University Berlin	Charite University Berlin

5.	Fabrication and Preclinical Evaluation of PVDF-TRFE Nanofibers Incorporated with Cobalt Ferrite Nanoparticles Intended for Wound Healing Applications	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN	Institutional funding	Catholicate college, Pathanamthitta, Kerala
6.	Fabrication and Preclinical Evaluation of PCL- PLA Loaded with Dopamine and Zinc Oxide Nanoparticles Intended for Wound Healing Applications	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN	Institutional Funding	MG University, Kottayam. (MoU)
7.	Evaluation of *in-vivo* biocompatibility and bone regeneration potential of 3D printed CAD-CAM assisted PLA Fish scale derived Hap composite scaffolds	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Yogesh Bharat Dalvi, and Dr. Ampadi AN Shahanas Seethi and Nair Sreelekshmi	Institutional funding (JSS Academy of Higher Education and Research, Mysore)	JSS Academy of Higher Education and Research, Mysore
8.	3D Scaffolds for in vivo biocompatibility, Skin Sensitization, Acute toxicity assessment, subcutaneous Implantation, bone regeneration, wound healing and Antioxidant Assay upon animal model	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN Rani Shine Raju	MG University MOU work	The University of Alabama Tuscaloosa, AL

9.	Evaluation *of in-vivo* biocompatibility and wound healing ability of PCL-PVDF Core shell membrane loaded with Ag NPs, Astaxanthin and Bioglass	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN	Institutional funding (JSS Academy of Higher Education and Research, Mysore)	JSS Academy of Higher Education and Research, Mysore
10.	Bioactivity and surface performance of Fucoidan-modified 45ss bioglass and nano fish scale derived hydroxyapatite coatings on titanium implants	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN Dr. Haseena Ummer	Institutional funding (Sree Blaji Vidyapeeth)	Sree Balaji Vidyapeeth
11.	Surface modification of Titanium implant surface using curcumin nanoparticles and hydroxyapatite nanoparticles	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN	Institutional funding (Helsinka University, Finland)	Helsinka University, Finland
12.	Biocompatibility and wound healing assessment of bioactive biomaterials intended for tissue engineering applications	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN	MG University MOU work	KPR Institute of Engineering and Technology
13.	Design, Synthesis and Anti-Alzheimer's Evaluation of Novel Small Molecular Hybrids	Dr. Sasidhar B. S, Dr. Soumya RS	NIIST MOU work	NIIST MOU work
14.	*In-vitro,* genomic and validation of novel antimicrobial peptide	**Principal Investigator:** Dr. Aniket Naha,	VIT MoU	VIT, Vellore

	mutants against pathogens of clinical significance	Dr. Anand Anbarasu **Co-Principal Investigators:** Dr. Sudha Ramaiah, Elizabeth Annie George		
15.	*In-vitro* and Genomic characterization of novel probiotic strains from indigenous fermented foods	**Principal Investigators:** Dr. Aniket Naha **Co-Principal Investigators:** Dr. Soumitra Nath, Ancy Sara Mathew	Gurucharan College, Silchar	Assam University, Silchar Gurucharan College, Silchar
16.	Bio molecular interaction of a novel drug carrier Carnosine with anti- TB drug through *in-vitro* and *in-silico* investigations	**Principal Investigators:** Dr. Anand Anbarasu; Dr. Aniket Naha **Co-Principal Investigators:** Dr. Saravanan N, Ms. Elizabeth Annie George	VIT MoU	VIT, Vellore NIRT, Chennai
17.	Exploring the synergistic potential of novel phytocompounds from indigenous medicinal plants against ESKAPE pathogens: An integrated *in-vitro* and *in-silico* approach	**Principal Investigators:** Dr. Aniket Naha **Co-Principal Investigator:** Ancy Sara Mathew	VIT MoU	VIT, Vellore Gurucharan College, Silchar

18.	*In-vivo* Evaluation of *Tribulus terrestris* and *Chandraprabha Vatika* Against Multidrug-Resistant Uropathogens	Dr. Smitha Vijayan, Dr. Soumya RS	MACFAST, Tiruvalla	MACFAST, Tiruvalla
19.	Neem hypericum between hepatotoxicity in cell line models with esters of fatty acids	Dr. Mathew John & Dr. Soumya RS		Jubilee Mission Medical College Hospital, Thrissur
20.	Synthesis, characterization and analgesic and anti-inflammatory activities of some novel 1-aminodibenzourans in the Rodent Model	**Principal Investigator:** Dr. Dayana K **Co-Principal Investigator:** Dr. Ampadi AN	Intramural	Intramural
21.	Evaluation of *in-vivo* biocompatibility of tissue engineering scaffold	Dr. Nebu George Thomas	Intramural	Intramural
22.	Evaluation of Bone Regeneration potential of novel 3D printed scaffolds	Dr. Nebu George Thomas	Intramural	Intramural
23.	Bioactive composite scaffolds for *in-vivo* acute toxicity and enhanced wound healing	Dr. Nebu George Thomas	Intramural	Intramural
24.	The development of Squid based wound healing agent. II Phase	Dr. Nebu George Thomas	University of Technology and Applied	University of Technology

			Sciences, Oman	and Applied Sciences, Oman
25.	Central Venous Access Device Management in Critical Care Units - A Multicentric Implementation Project in Low Resource Setting	**Prinicpal Investigator:** Dr. Sunu Alice Cherian **Co-Investigator**: Mrs. Nisha Kurian	JBI Collaboration Brighter Futures Grant 2023-25 AUD 27254.90	International
26.	Preliminary studies on relation between hepatotoxicity in cell line models with esters of fatty acids	Dr. Soumya RS & Dr Mathew John	Jubilee Mission Medical College. Thrissur	Jubilee Mission Medical College. Thrissur
27.	Neem hypericum bacterial cellulose paste on Invitro cell line models	Dr. Soumya RS & Dr Sanosh K P		University of Salento
28.	Extraction of Nanocellulose and Carrageenan from Seaweeds and preparation of polymer nanocomposites for tissue engineering and diabetic wound healing	**Principal Investigators:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN	Department of Biotechnology (DBT) – BIRAC, Government of India. Total amount-165L.	Christ University, Bangalore
29.	ViVal Waste: Repurposing fish processing residues for tapping vital value	Dr. Nebu George Thomas, Dr. Binsi P K	Central institute of fisheries technology, Cochin India Kerala	Central institute of fisheries technology, Cochin India Kerala

30.	Characterization and screening of novel probiotics from indigenous fermented food products: Evidence through *in-silico* and *in-vitro* approaches	**Principal Investigator:** Dr. Aniket Naha **Co-Principal Investigator:** Ms. Rani Maria Jolly	Gurucharan University, Silchar, Assam	Gurucharan University, Silchar, Assam
31.	Exploring the synergistic potential from Indian medicinal plants against ESKAPE pathogens: An integrated *in-vitro* and *in-silico* approach using quantum chemical and dynamics simulation	Dr. Aniket Naha	Intramural Seed Funding	--
32.	Profiling Antimicrobial Resistance in Salivary Samples of Cleaning Staff and Its Association with Their Knowledge, Attitude, and Skills on Infection Prevention and Control	**Principal Investigator:** Dr. Betsy A Jose, Dr. Aniket Naha **Co-Principal Investigator:** Ms. Rani Maria Jolly, Ms. Bency M Biju, Mr. Abed Benny (MBBS)	PIMS&RC	PIMS&RC
33.	Family Resilience Assessment Instrument Tool (FRAIT) project	**Principal Investigator:** Dr. Betsy A Jose **Co-Principal Investigator:** Dr Meena Isaac Sr. Mary Jyothi OSS	University of South Wales, UK	Pushpagiri College of Nursing

PAPERS PRESENTED OR GUEST LECTURES DELIVERED

Sl. No.	Name of the Conference / Workshop / CME / webinar	Title of the Paper or Talk	Place & Date	Name of Scientist
1.	Bioradiance 2025	Protective effect of watermelon seed on D-Galactose induced aging In HepG2 cells	PIMS & RC Tiruvalla	**Student:** Anjana Venugopal, R Anagha **Guide:** Dr. Soumya RS
2.	Bioradiance 2025	*In-Vitro* Assessment of Antioxidant and Anti-inflammatory Activities of *Morinda citrifolia* Leaf Extract	PIMS & RC Tiruvalla 17/06/2025	**Student:** N A Hairunisa, Angel Mary Varghese **Guide:** Dr. Soumya RS
3.	Bioradiance 2025	Protective Effect *of E. hirta* on Hydrogen Peroxide-Induced Cell Damage in HepG2 Cells	PIMS & RC Tiruvalla 17/06/2025	**Student:** Sona Sunil, Kolbin Joshy **Guide:** Dr. Soumya RS
4.	Bioradiance 2025	*Allamanda cathartica* Linn. Flowers as a Source of Natural Antioxidants: *In-Vitro* Evaluation of Methanolic Extract	PIMS & RC Tiruvalla 17/06/2025	**Student:** K Fathima Fejinsha, Leya Tresa Jiji **Guide:** Dr. Soumya RS
5.	Bioradiance 2025	*In-Vitro* Antioxidant and Free Radical Scavenging Activity of *Oldenlandia*	17/06/2025	Dr. Soumya RS

		Corymbosa: A Cell Line Based Study		
6.	Bioradiance 2025	Synthesis and Characterization of Casein-Coated Iron Oxide Micro/Nano Structures for Drug Targeting	PIMS & RC Tiruvalla 17/06/2025	**Student:** Sabiya Rasool, KJ Lakshmi Priya **Guide:** Dr. Soumya RS
7.	Bioradiance 2025	Preparation and Characterization of Transferulic Acid Encapsulated Guar Gum Nanoparticles	PIMS & RC Tiruvalla 17/06/2025	**Student:** N. Safna Sherin, Devika Govind **Guide:** Dr. Soumya RS
8.	Bioradiance 2025	Comparative evaluation of changes in vertical dimension of occlusion and gingival crevicular fluid biomarker TNF-a following the placement of Stainless-steel crowns by the Hall technique and Conventional technique - A split mouth study.	PIMS & RC Tiruvalla 17/06/2025	**Student:** Namitha Jayan Attuvepil, Elizabeth Joseph **Guide:** Dr. Soumya RS
9.	Bioradiance 2025	HPTLC Guided Evaluation of a Flavonoid Rich Leaf Extract from *Dodonaea viscosa* L.) Jacq. and Its Anti-	PIMS & RC Tiruvalla 17/06/2025	**Student:** Sruthi S. Nair **Guide:** Dr. Soumya RS

		inflammatory Potential		
10.	Pushpagiri Clinical Club	Non-Alcoholic Fatty Liver Disease: A Silent Killer	Senate Hall, PIMS & RC on 9th May 2025.	Dr. Ajay Krishnan U
11.	Attended National Workshop on Good Clinical Practice Guidelines		Department of Pharmacology & IEC, PIMS&RC, 11/09/25	Dr. Soumya RS
12.	Guest Lecture on Quest2 Qualitize series at Pushpagiri College of Nursing	Grant Proposal Writing	15th December 2025	Dr. Soumya RS
13.	Attended Annual CME PRICE 2025- Thrive Hustle for your Health, conquer your limits, Enhance your wellbeing.		PIMS&RC, 25th July2025	Dr. Soumya RS
14.	National Science Day - 2026, Women in science Catalysing vikasit Bharat	Targeting Mitochondria: A new frontier in translational medicine	Bishop Moore College, Mavelikkara, 26/02/2026	Dr. Soumya RS
15.	Completed KUHS QAS capacity building programme at PIMS&RC	QAS capacity building programme	8th December 2025	Dr. Soumya RS
16.	National Seminar on Advancements and Innovations in Phytochemistry-Therapeutic Translations	*In-vitro* Anti-Inflammatory and Antioxidant Evaluation of *Allamanda cathartica* Flower Extracts in RAW 264.7 Cells	15th December 2025	Dr. Soumya RS
17.	National Seminar on Advancements and Innovations in	Study on the Ethanolic Extract of	15th December 2025	Dr. Soumya RS

	Phytochemistry-Therapeutic Translations	*Euphorbia hirta* in HepG2 Cell Lines.		
18.	Guest Lecture for Quest2Qualitize series at Pushpagiri College of Nursing	Smart Cite, Bright Write - Mendeley Reference Management System	29th November, 2025	Dr. Aniket Naha
19.	Guest Lecture on Quest2Qualitize series at Pushpagiri College of Nursing	Mastering Advanced Literature Search using PubMed	1st December, 2025	Dr. Aniket Naha
20.	Invited Speaker at CMS College, Kottayam	Mendeley reference management system and Advanced literature search using PubMed	2nd December, 2025	Dr. Aniket Naha
21.	Guest Lecture on Quest2 Qualitize series at Pushpagiri College of Nursing	Mastering Manuscript Writing - IMRAD format	12th December, 2025	Dr. Aniket Naha
22.	Bioradiance 2025	Exploring the synergistic potential of novel phytocompounds from indigenous medicinal plants against ESKAPE pathogens: An integrated *in-vitro* and *in-silico* approach	17/06/2025	Dr. Aniket Naha
23.	Bioradiance 2025	Synergistic relationship between *Piper betle* extract isolated from indigenous plants and susceptible antibiotics against nosocomial	17/06/2025	Dr. Aniket Naha

		Escherichia coli and *Staphylococcus aureus*		
24.	Bioradiance 2025	*In-vitro* evaluation, safety assessments and technological speculations of potential probiotic strain isolated from fermented tender coconut water	17/06/2025	Dr. Aniket Naha
25.	Bioradiance 2025	Isolation and characterization of probiotic from fermented pineapple.	17/06/2025	Dr. Aniket Naha
26.	Bioradiance 2025	Novel sulbactam-durlobactam combination therapy shows huge promise against XDR *Acinetobacter baumanii*	17/06/2025	Dr. Aniket Naha
27.	6th World Congress on Infectious Disease and Antibiotics	AntiTB Nanocarnosine Drug Composites: A Novel Drug Delivery System for Combating AMR in Pulmonary Tuberculosis	IISc Bangalore, 12th October	Dr. Aniket Naha
28.	Biotech Compass: Navigate Your Future	Career Guidance Session	VIT Vellore, 21st September, 2025	Dr. Aniket Naha
29.	Pushpagiri Clinical Club - Cycle 2 (Session 750)	Mission AMPpossible: Breaking Beta lactamase barriers	PIMS&RC, 1st September, 2025	Dr. Aniket Naha

30.	PG Orientation Programme at Pushpagiri College of Dental Sciences	Cite Smarter, Write Brighter - Mendeley Reference Management System	8th October, 2025	Dr. Aniket Naha
31.	Invited Speaker for ICMR–DHR Sponsored National Workshop on "Molecular Approaches to Vector-Borne Disease Surveillance and Control: From Resistance to Resilience"	Vector-Borne Disease Complications: Targeting AMR and Virulence in *Shigella flexneri* and ESβL-Producing *Escherichia coli*	Maharani's Science College for Women (Autonomous), Mysore (01/01/2026)	Dr. Aniket Naha
32.	Invited Speaker for ICMR–DHR Sponsored National Workshop on Combating Antimicrobial Resistance: From Awareness to Action	Nanocarnosine-Drug Composites for Tuberculosis: A Novel Aerosol-Compatible Delivery System Targeting Antimicrobial Resistance	Jyoti Nivas College Autonomous, Bangalore (04/02/2026)	Dr. Aniket Naha
33.	Guest Lecture for One-Day workshop on Bioinformatics	Databases, Sequence Analysis and Phylogenetics	St. Berchmans College, Changanassery (16/02/2026)	Dr. Aniket Naha
34.	KSVC CVE	Basics of Animal Orthopaedics	August 2025	Dr. Ampadi A.N.
35.	KSVC CVE	Recent Trends in Emergency Veterinary Medicine	July 2025	Dr. Ampadi A.N.
36.	Annual Conference of the SMRM on Mitochondria in Health, Disease and Ageing	Tissue-Specific Expression of Nuclear-Encoded Mitochondrial Genes Reveals	Bangalore October 2025	Dr. Ampadi AN

		Metabolic Adaptations in Buffalo with Translational Relevance to Human Health		
37.	5th International Home Care Congress organized by the Faculty of Health Sciences, Istanbul Aydin University, Turkey with the University of Newcastle, Australia, & Cyprus Science University, Cyprus	Meta Analysis	Hybrid Dec 9-12, 2025	Ms. Nisha Kurian
38.	Indian Society of Scientific Education and Farmer Welfare Rabies Conclave-2025 One Health Approach for Rabies Eradication - Innovative Idea Session	Paw Track Kerala (3rd Place in Innovative Idea Session)	September 2025	Dr. Ampadi AN
39.	Conference -JBI Strategies; Bridging Evidence and Practice.	Bridging evidence-based practice	Nov 15 2025, PIMS &RC	Ms. Nisha Kurian
40.	Paper presented-Pushpagiri Institute of Medical Sciences & Research Centre, Tiruvalla conducted clinical club-2/12/25	Synthesis and evaluation of Novel 2-(2-pyridyl)-2H-pyrazole-3-carboxamide derivatives	Dec 2 2025, PIMS RC	Dr. Dayana K
41.	5th International Home Care Congress organized by the Faculty of Health Sciences, Istanbul	Ethics in Homecare Nursing	Hybrid Dec 9-12, 2025	Dr. Sunu Alice Cherian

	Aydin University, Turkey with the University of Newcastle, Australia, & Cyprus Science University, Cyprus			
42.	Bioradiance 2025	Bioactive Glass Infused Core Shell Membranes: A Multifunctional for Wound Healing	17/06/2025	Dr. Nebu George Thomas
43.	Bioradiance 2025	Innovative Core Shell Membrane for Advanced Wound Healing: Development and Preclinical Evaluation	17/06/2025	Dr. Nebu George Thomas
44.	International Conference 2026 "Recent Advances in Emerging Polymeric Materials: Bridging Science and Industry"- Polymera 2026	Bench-to-Bedside Bridge: Comprehensive Preclinical Analysis of Scaffolds for Functional Tissue Regeneration	MG University, Kottayam, Kerala, India. 08/01/2026	Dr. Nebu George Thomas
45.	National seminar & Workshop 2026 "Next generation biomaterials for tissue regeneration"- RUSA 2.0	Bench-to-Bedside Bridge: Comprehensive Preclinical Analysis of Scaffolds for Functional Tissue Regeneration	Cochin University of Science and Technology, Ernakulam, Kerala 05/02/2026	Dr. Nebu George Thomas
46.	Research Methodology Workshop	Descriptive study design	MEU Hall, PIMSRC & 2/4/2025	Dr. Betsy A Jose
47.	Infection Control Practices	Prevention of Influenza/ H1N1/ COVID 19 in Community Settings	PIMSRC, 21/4/2025	Dr. Betsy A Jose

WORKSHOPS / CME CONDUCTED

Sl. No.	Name of the Workshop/ CME/webinar	Date of the Workshop	Place	Name of Scientist & Resource Person
1.	Bioradiance 2025 (Organizing Secretary)	17-18 June 2025	PRC, Tiruvalla	Dr. Soumya RS
2.	Bioradiance 2025 (Joint Organizing Secretary)	17 - 18 June 2025	PRC, Tiruvalla	Dr. Ajay Krishnan U
3.	Bioradiance 2025 (Organizing Committee Member)	17 - 18 June 2025	PRC, Tiruvalla	Dr. Aniket Naha
4.	Bioradiance 2025 (Organizing Committee Member)	17 - 18 June 2025	PRC, Tiruvalla	Dr. Ampadi AN
5.	Bioradiance 2025 Dr. Nebu George Thomas (Organizing Committee Member)	17 - 18 June 2025	PRC, Tiruvalla	Dr. Nebu George Thomas
6.	Navigating Evidence-Based Practice: Strategies for local clinical decisions - A JBI GLOCAL Solution Room	June 27, 2025	Webinar	**Organizers** Nisha Kurian, Sunu A Cherian **Resource person** Dr Mathew Pulicken, Dr A Rajeev, Dr Biju George
7.	JBI Strategies: Bridging Evidence and Practice organized by PCEBP and Critical Care Unit, PIMS & RC	November 15, 2025	Senate Hall, Pushpagiri	**Organizers** Dr Sunu A Cherian & Nisha Kurian **Resource person** Alexa McArthur & Lucylynn Lizarondo
8.	JBI Comprehensive Systematic Review Training Program (CSRTP)	Sept 24-31, 2025 (5 days)	Pushpagiri College of Dental Sciences	Sr Mary Jyothi OSS Dr Sunu A Cherian Nisha Kurian
9.	Basics of Canine Orthopaedic Practice	22-04-2025 (1 day)	Kerala State Veterinary Council	Dr. Ampadi AN

RESEARCH TRAINEES

Sl. No.	Name of the Student	Date of Joining	Title of the Project	Name of the Scientist
1.	Athira S	21.10.25	Screening and evaluation of antioxidant potential and cytotoxic effects of *Pueraria phaseoloides* extract in HepG2 cell line	Dr. Ajay Krishnan U
2.	Silpa S		National Reference Centre for Rickettsial Diseases (NRCRD): Scrub typhus	Mr. George Varghese
3.	Saishma S Surendran	21.07.25	Synthesis and Characterization of Casein-Coated Iron Oxide Micro/Nano Structures for Drug Targeting	Dr. Soumya RS
4.	Shifina A S	01.01.25	In vitro antioxidant activity of methanolic extract of *Oldenlandia corymbosa* (Linn.) on HepG2 cell lines	Dr. Soumya RS
5.	Libin Samuel Mathew	10.11.25	Multifunction casein loaded iron oxide nanoparticles for drug delivery applications	Soumya R S
6.	Ritty Gold	27.01.26	Preliminary studies on relation between hepatotoxicity in cell line models with esters of fatty acids	Soumya R S
7.	Anna Benitta		Development and validation of biomedical and cosmetic products from secondary fishery raw materials funded by Central institute of fisheries technology	Dr. Nebu George Thomas
8.	Rani Maria Jolly	21st Nov 2025	Profiling Antimicrobial Resistance in Salivary Samples of Cleaning Staff	Dr. Aniket Naha

			and Its Association with Their Knowledge, Attitude, and Skills on Infection Prevention and Control in a Tertiary Care Centre in South Kerala	
9.	Akhil Kumar C M	22.07.2025	Characterization and screening of novel probiotics from indigenous fermented food products: Evidence through in-silico and in-vitro approaches	Dr. Aniket Naha
10.	Sreelakshmi S. Nair	06.01.2025	Development and validation of biomedical and cosmetic products from secondary fishery raw materials funded by Central Institute of Fisheries Technology	Dr. Nebu George Thomas
11.	Rani Shine Raju	25.01.2025	Development and validation of biomedical and cosmetic products from secondary fishery raw materials funded by Central Institute of Fisheries Technology	Dr. Nebu George Thomas
12.	Nandana B. Nair	25.01.2025	Development and validation of biomedical and cosmetic products from secondary fishery raw materials funded by Central Institute of Fisheries Technology	Dr. Nebu George Thomas
13.	Sruthi S Kumar	15.09.2025	Development and validation of biomedical and cosmetic products from secondary fishery raw materials funded by Central institute of fisheries technology	Dr. Nebu George Thomas

STUDENT PROJECTS

B.Sc. Project Students

Sl. No.	Name of Student	Research Thesis Title	Name of the Institution	Name of Scientist
1.	Anagha Vinod	Biochemical characterization and technological property evaluation of endophytic bacteria from fermented gooseberry	Amity University, Mumbai	Dr. Aniket Naha
2.	Hani Hameed	Screening and *in vitro* validation of antimicrobial and anticancer potential of methanolic extract of *Pleurotus ostreatus* in HepG2 cells	SB College, Changanacherry	Dr. Ajay Krishnan U
3.	Athul Krishna	Screening and evaluation of anti-proliferative effect of *Azadirachta indica* in human embryonic kidney (HEK293) cells	SB College, Changanacherry	Dr. Ajay Krishnan U
4.	Aslam Anish	Screening and cytotoxic evaluation of *Ocimum sanctum* extract in DLD1 colorectal cancer cells	SB College, Changanacherry	Dr. Ajay Krishnan U
5.	Nuby Sakeer	Free Radical Scavenging Potential of Oldenlandia Corymbose *in-vitro*	MES College Marampally	Dr. Soumya RS
6.	Fathima Anvar	*In-vitro* evaluation of the antioxidant efficacy of methanolic extract from *Cissus Quandragularis*	MES College Marampally	Dr. Soumya RS
7.	Ramsana R	Isolation, characterization and identification of	Chettinad Academy of Research and	Dr. Aniket Naha

		probiotics from curd fermented using green chillies	Education, Chengalpattu, Tamil Nadu	
8.	Chaithanya M	Probiotics	St. Pius X College, Rajapuram	Dr. Aniket Naha
9.	Anand S	AMR & Bioinformatics	St. Pius X College, Rajapuram	Dr. Aniket Naha
10.	Sivanandu CS	Isolation and evaluation of probiotic property of acid producing bacteria from milk fermented with pineapple	CMS College, Kottayam	Dr. Aniket Naha
11.	Kailashnath J	Synergistic effect of *Terminalia bellirica* against *Staphylococcus aureus* and *Klebsiella pneumoniae*	Devaswom Board Pampa College, Parumala Tiruvalla	Dr. Aniket Naha
12.	Pavithra M	Probiotics	Devaswom Board Pampa College, Parumala Tiruvalla	Dr. Aniket Naha
13.	Celestina Joseph	Fish bone hydroxyapatite-plasma treated for hard tissue regeneration	St. Berchman's College, Changanassery	Dr.Nebu George Thomas
14.	Ann Rose Soy	Bacterial polymer for soft tissue regeneration	St. Berchman's College, Changanassery	Dr.Nebu George Thomas
15.	Anakha Lekshmi	Protective effect of *Citrullus lanatus* Seeds on D-Galactose-induced aging in HepG2 Cells.	B.Sc. Biochemistry and Industrial Microbiology, Sree Narayana College For Women, Kollam.	Dr. Soumya RS

M.Sc. Project Students

Sl. No	Name of Student	Thesis Title	College & Programme	Name of Scientist
1.	Ardra P	Seroprevalence of Rubella IgG In pregnant women – A preliminary study among antenatal cases in tertiary care hospital	Sir Syed Institute for Technical Studies, Taliparamba, Kannur	Mr. George Varghese
2.	Merris Blessy Thomas	Detection of acute Cytomegalovirus (CMV) infection among pregnant women - a preliminary study among antenatal cases in a tertiary care hospital	St. Berchmans College (Autonomous), Changanassery	Mr. George Varghese
3.	Muhsina Musthafa	Seroprevalence of West Nile Fever virus at a tertiary care centre in Kerala – A cross sectional study	Sir Syed Institute for Technical Studies, Taliparamba, Kannur	Mr. George Varghese
4.	Vishal Pratap Roul	Seroprevalence of West Nile Fever Virus at a tertiary care center in Kerala- a cross-sectional study	Shobhit Institute of Engineering and Technology, Meerut	Mr. George Varghese
5.	Nadeera	Detection of acute Cytomegalovirus (CMV) infection among pregnant women - a preliminary study among antenatal cases in a tertiary care hospital	Sir Syed Institute for Technical Studies, Taliparamba, Kannur	Mr. George Varghese
6.	Minu Joy	Genomic characterization and probiotic evaluation of *Lactiplantibacilli pentosus* from fermented pineapple	St. Thomas College, Palai	Dr. Aniket Naha
7.	Anit Sharon Abraham	Synergistic relationship between *Piper betle* extract isolated from indigenous	Indira Gandhi College of Arts	Dr. Aniket Naha

		plants and susceptible antibiotics against nosocomial *Escherichia coli* and *Staphylococcus aureus*	and Science, Kothamangalam	
8.	Akshay Vinod	Synergistic relationship between *Terminalia Chebula* extract isolated from indigenous plants and susceptible antibiotics against nosocomial *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*	Indira Gandhi College of Arts and Science, Kothamangalam	Dr. Aniket Naha
9.	Athul Jayakumar	Isolation and characterization of probiotics from fermented orange	Indira Gandhi College of Arts and Science, Kothamangalam	Dr. Aniket Naha
10.	Megha Madhu	Isolation and characterization of probiotics from fermented watermelon	St. Mary's College for Women, Paliakara, Tiruvalla	Dr. Aniket Naha
11.	Jiya Dani Thomas	Synergistic effect of *Justicia adhatoda, Aegle marmelos* and *Terminalia bellirica* against *Staphylococcus aureus* and *Pseudomonas aeruginosa*	VIT Vellore, Vellore	Dr. Aniket Naha
12.	Fathima A	Phytoextracts from *Terminalia bellirica* Revealed Promising Synergistic Potential with Susceptible Antibiotics Against Nosocomial *Staphylococcus aureus* and *Pseudomonas aeruginosa*	St. Berchmans College (Autonomous), Changanassery	Dr. Aniket Naha
13.	Hiba M Rasheed	Fermented Milk with Orange (*Citrus sinensis*) Explored Novel Endophytic *Enterobacter cloacae* PRCOC1 Exhibiting Potential Probiotic Attributes: An *In-Vitro* Study	St. Berchmans College (Autonomous), Changanassery	Dr. Aniket Naha

14.	Anima K	*Citrus limetta* Harbours *Pediococcus pentosaceus* PRCMC1 and PRCMC2 which Revealed Promising Probiotic Potency upon Fermentation: An *In-Vitro* Study	Sir Syed Institute for Technical Studies, Kannur	Dr. Aniket Naha
15.	Shifana M K	Exploring the Probiotic Potency of *E. durans, E. lactis, E. faecium* Isolated from Curd Using Green Grapes as a Natural Fermentation Starter: An *In-vitro* Study	Sir Syed Institute for Technical Studies, Kannur	Dr. Aniket Naha
16.	Aleena Sunny	Evaluation of *in-vivo* biocompatibility and *in-vivo* wound healing ability of PCL-PVDF coreshell membrane loaded with silver nanoparticles, Astaxanthin and Bioglass.	JSS Academy of Higher Education and Research, Mysore	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr.Ampadi AN
17.	Anitta Joseph	Evaluation of *in-vivo* biocompatibility and bone regeneration in potential of cad-cam assisted 3D printed PLA fishscale derived hydroxyapatite composite scaffolds.	JSS Academy of Higher Education and Research, Mysore	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr.Ampadi AN
18.	Fathima Afra Shajahan	In vitro in vivo assessment of plasma treated fish bone derived HAp based bone graft intended for Hard Tissue Regeneration	Sir Syed Institute for technical studies, Taliparamba, Kannur	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN

19.	Nafeesathul Misririya	Evaluation of in vitro and in vivo wound healing potential of electrospun chitosan membrane loaded with Polyethylene oxide (PEO) and polyethylene oxide - hydroxyethyl cellulose (PEO-HEC) membrane in cell line and rat model	Sir Syed Institute for technical studies, Taliparamba, Kannur	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr.Ampadi AN
20.	Sreejina K	Evaluation of wound healing potential of electrospun membrane PCL / Gelatin / Nanofibre mesh loaded with nanoclay and G.O by in vitro scratch assay and in vivo study in rat model.	Sir Syed Institute for technical studies, Taliparamba, Kannur	**Principal Investigator:** Dr. Nebu George Thomas **Co-Principal Investigator:** Dr. Ampadi AN
21.	Geethu John	Bacterial Cellulose as a Bioactive Scaffold for Soft Tissue Regeneration	Shobhit Institute of Technology, Meerut Uttara pradesh.	**Principal Investigator:** Dr. Ampadi A. N **Co-Principal Investigator:** Dr. Nebu George Thomas
22.	Anjana Venugopal	Protective effect of citrullus lanatus seeds on D-Galactose induced aging in HepG2 Cells.	MES college, Marampally, Aluva	Dr. Soumya RS
23.	Ajisha Mohan	Synthesis and Characterization of guar gum nanoparticle incorporated with caffein for biological application	CMS College Kottayam	Dr. Soumya RS
24.	Safna Sherin.N	Synthesis and characterization of trans ferulic acid encapsulated	MES college Marampally, Aluva	Dr. Soumya RS

		guar gum nanoparticles for drug delivery application		
25.	Hairunnisa N A	A comparative analysis of *in-vitro* antioxidants and anti-inflammatory activities in leaf extract and fruit juice of *Morinda citrifolia*	MES college, Marampally, Aluva	Dr. Soumya RS
26.	Sabiya Rasool	Synthesis and characterization of casein-coated iron oxide micro/nano structures for drug targeting.	MES college, Marampally, Aluva	Dr. Soumya RS
27.	Sona Sunil CK	Protective effect of *Euphorbia hirta* on hydrogen peroxide induced cell damage in HepG2 cells.	MES college, Marampally, Aluva	Dr. Soumya RS
28.	Fathima Fejinsha k	In vitro antioxidant and anti-inflammatory activities of methanolic extract of *Allamanda cathartica* flower	MES college Marampally, Aluva	Dr. Soumya RS
29.	Anagha R	Antioxidant capacity of *Euphorbia hirta* against oxidative stress:an invitro study	SN College Kollam	Dr. Soumya RS
30.	Jeff George	Evaluation of antioxidant potential of selected plants: a cell line based approach	Sheffield University	Dr. Soumya RS
31.	Laya Sara George	Screening and evaluation of antioxidant potential and cytotoxic effects of *Pueraria phaseoloides* extract in MCF7 cell line	St. Mary's College for Women, Tiruvalla	Dr. Ajay Krishnan U
32.	Harsha Habeeb	Screening and *in vitro* validation of anticancer activity of *Calotropis gigantea* extract in U87MG cell line	St. Mary's College for Women, Tiruvalla	Dr. Ajay Krishnan U
33.	Harsha Hari	Determination of antioxidant potential and cytotoxic effects of *Mimosa pudica* extract: An *in vitro* approach	St. Mary's College for Women, Tiruvalla	Dr. Ajay Krishnan U

INTERNSHIP STUDENTS

Sl. No	Name of Student	Name of the Institution	Supervising Guide
1.	Dhruva Rajesh	Amrita School of Biotechnology, Amrita Vishwa Vidyapeetham Clappana, Amritapuri, Kollam	Dr. Aniket Naha
2.	Gireendraja V S	Amrita School of Biotechnology, Amrita Vishwa Vidyapeetham Clappana, Amritapuri, Kollam	Dr. Aniket Naha
3.	Nandana Hari	Amrita School of Biotechnology, Amrita Vishwa Vidyapeetham Clappana, Amritapuri, Kollam	Dr. Aniket Naha
4.	Anamika Pradeep	Amrita School of Biotechnology, Amrita Vishwa Vidyapeetham Clappana, Amritapuri, Kollam	Dr. Aniket Naha
5.	Neeshma S	Amrita School of Biotechnology, Amrita Vishwa Vidyapeetham Clappana, Amritapuri, Kollam	Dr. Aniket Naha
6.	Rohan Binuraj Panicker	Christ University, Bangaluru	Dr. Aniket Naha
7.	Deol Joseph Skaria	Christ University, Bangaluru	Dr. Aniket Naha
8.	Govind S Kumar	Christ University, Bangaluru	Dr. Aniket Naha
9.	Anjana S Manoj	Mar Ivanios College, Thiruvananthapuram	Dr. Aniket Naha
10.	Joel Benny	Amity University, Uttar Pradesh	Dr. Aniket Naha
11.	Litricia O J	St. Joseph's University, Bangaluru	Dr. Aniket Naha
12.	Jiya Dani Thomas	VIT, Vellore	Dr. Aniket Naha
13.	Anjali A Nair	Sree Sankara College, Kalady	Dr. Aniket Naha

14.	Parveen Nisa	Lovely Professional University, Punjab	Dr. Aniket Naha
15.	Aiswarya D S	Lovely Professional University, Punjab	Dr. Aniket Naha
16.	Devika Govind	Christ University, Bangaluru	Dr. Aniket Naha
17.	Deepshikha Dutta	Medical Biotechnology and Computational Drug Designing Lab	Dr. Aniket Naha
18.	Kajal Das	Medical Biotechnology and Computational Drug Designing Lab	Dr. Aniket Naha
19.	Aminul Hussain Ansary	Medical Biotechnology and Computational Drug Designing Lab	Dr. Aniket Naha
20.	Aminul Chanda	Microbial Technology Research and Infectious Disease Laboratory	Dr. Aniket Naha
21.	Gitanjali Chakraborty	Microbial Technology Research and Infectious Disease Laboratory	Dr. Aniket Naha
22.	Mrigakshi Das	Microbial Technology Research and Infectious Disease Laboratory	Dr. Aniket Naha
23.	Vaishnavi Harikumar	Amrita Viswapeetha, Kollam	Dr. Aniket Naha
24.	Bency M Biju	MACFAST College, Tiruvalla	Dr. Aniket Naha
25.	Arjun Santhosh	SB College, Changanasherry	Dr. Aniket Naha
26.	Merlin Anna Varghese	Karunya Institute of Technology and Sciences, Coimbatore (Molecular Biology Laboratory)	Dr. Ajay Krishnan U
27.	Akshaya Rajeev	Bhaskaracharya College of Applied Sciences, New Delhi (Molecular Biology Laboratory)	Dr. Ajay Krishnan U
28.	Sandra Sajan	JSS Academy of Higher Education and Research,	Dr. Ajay Krishnan U

		Mysore (Molecular Biology Laboratory)	
29.	Farsana Mol Anwar	Marthoma College, Tiruvalla (Molecular Biology Laboratory)	Dr. Ajay Krishnan U
30.	Parvathy Chandran	Marthoma College, Tiruvalla (Molecular Biology Laboratory)	Dr. Ajay Krishnan U
31.	Parvathi R M	SAS SNDP Yogam College, Konni	Dr. Ajay Krishnan U
32.	Anjali O P	Mount Carmel College, Bengaluru (Molecular Biology Laboratory)	Dr. Ajay Krishnan U
33.	Hani Hameed	SB College Changanacherry (Molecular Biology Laboratory)	Dr. Ajay Krishnan U
34.	Kessiya Ann George	SB College Changanacherry (Molecular Biology Laboratory)	Dr. Ajay Krishnan U
35.	Lakshmi Priya	Christ University, Bangalore	Dr. Soumya RS
36.	Silpa S	Central University Punjab	Dr. Soumya RS
37.	Gopika P S	Central University Punjab	Dr. Soumya RS
38.	Angel Mary Varghese	SB College, Changanassery	Dr. Soumya RS
39.	Kolbin Joshy	Christ University, Bangaluru	Dr. Soumya RS
40.	Zeno Vimalan A	Christ University, Bangalore	Dr. Soumya RS
41.	Goury S Kumar	Lovely Professional University, Punjab	Dr. Soumya RS
42.	Rani Shine Raju	Stem Cell and Tissue Engineering Lab	Dr. Nebu George Thomas
43.	Nandana B Nair	Stem Cell and Tissue Engineering Lab	Dr. Nebu George Thomas
44.	Krsna Rajesh	Amrita School of Biotechnology	Dr. Dayana K

ICMR SHORT-TERM STUDENTSHIP (STS) PROJECT

Sl. No.	Research Thesis Title	Student	Name of Scientist
1.	Behavioural and Occupational Risk Factors for Oral Cancer Among the Fishing Community in South Kerala: A Cross-Sectional Study	Ms. Deepa Lordon	Dr Rosin George Varghese

MDS THESIS

Sl. No.	Student Name	Research Thesis Title	Name of the Institution	Name of Scientist
1.	Aswathy S	Evaluation of In vivo bone regeneration potential of 3D printed nano fish Scale derived hydroxyapatite intended for periodontal regeneration	Sri Sankara Dental College, Varkala	Dr. Nebu George Thomas
2.	Nimisha A	Fabrication, characterization and *in-vivo* biocompatibility assessment of melatonin incorporated electrospun Guided Tissue Regeneration membrane intended for Periodontal Regeneration	Sri Sankara Dental College, Varkala	Dr. Nebu George Thomas
3.	Sreelakshmi P	Fabrication, *in-vivo* biocompatibility assessment of rutin loaded PCL-Gelatin electrospun Guided Tissue Regeneration membrane intended for Periodontal Regeneration – An animal Study	Pushpagiri College of Dental Sciences, Tiruvalla	Dr. Nebu George Thomas
4.	Mariam G Varghese	Electroactive Polymeric Composite Membrane Incorporated with Bioactive Materials for Enhanced Tissue Repair	VIT Vellore	Dr. Nebu George Thomas
5.	Dr. Namitha Jayan Attuvepil	Comparative evaluation of changes in vertical dimension of occlusion and gingival crevicular fluid biomarker TNF-a following	Department of Pediatric and Preventive Dentistry,	**Guide**: Dr. Elizabeth **Co-Guide**:

		the placement of Stainless-steel crowns by Hall technique and Conventional technique - A split mouth study	Pushpagiri Medical College, Tiruvalla	Dr. Soumya RS
6.	Dr. Megha	Comparative evaluation of irrigant activation techniques on the expression of TGF-β, IGF-1, EGF-a, growth factors from dentine:an *in-vitro* study.	Pushpagiri College of Dental Sciences	Dr. Soumya RS

DETAILS OF Ph.D. SCHOLARS

SI. No.	Name of the Ph.D. Candidate	Name of the Guide & Co-Guide	Research Topic	Collaborative Institution
1.	Dr. Sruthy Pratha	**Guide:** Rajesh K.S **Co-guide:** Dr. Nebu George Thomas	Evaluation of the activity of composite graft material synthesized from eggshell derived bone substitute (Hydroxyapatite) in a biocompatible matrix (Fish collagen) on bone healing and regeneration in the animal model (Wistar rats)	Yenapoya Dental College, Mangalore
2.	Dr. Haseena Ummer	**Guide:** Dr. David Livingstone **Co-guides:** Dr. Nebu George Thomas Dr. Anil Sukumaran	Assessment of surface properties and biological performance of Titanium Implants with novel triple-layer coatings: Fucoidan, 45S5 bioglass, and fish scale-dervided nano hydroxyappetite.	Sri Balaji Vidyapeeth University, Pondicherry
3.	Siyamol T J	Dr. Nebu George Thomas	*In-vivo* studies of PA-TiO2 NPs and AgZ thinfilms: Actute toxicity, Biocompatibility and wound healing properties	VIT Vellore (VIT)

4.	Dr. Nandita	**Guide:** Dr. Nebu George Thomas	Implant surface modification with natural hydroxyapatite	University of Helsinki
5.	Mariam G Varghese	**Guide:** Dr. Nebu George Thomas	Electroactive polymeric composite membrane incorporated with bioactive materials for enhanced tissue repair.	VIT University
6.	Dr. Minimol K Johny	**Guide:** Dr. Nebu George Thomas **Co-Guide:** Dr. Jose Jacob	Development, Physicochemical and Biologic evaluation of Collagen-Tannic acid-Bioglass Composite Scaffold as a Novel medicament intended for Vital Pulp Therapy: An In-vitro & *In-vivo* Study	Kerala University of Health Sciences
7.	Dr. Arun R Nair	**Guide**: Dr. H Venkatesan **Co-guide**: Dr. Soumya RS	A Comprehensive Charecterization and In Silico Analysis of the Various Potencies of Homeopathic Medicine Arsenicum Album and Assessing its Effects on *In-Vitro* Studies of Acute Promyelocytic Leukemia.	Vinayaka Mission's Homeopathic Medical College Hospital, Salem.
8.	Ms. Elizabeth Annie George	**Guide:** Dr. Sudha Ramaiah **Co-Guide:** Dr. Aniket Naha	An Integrated Computational Framework for Decoding Novel Therapeutic Targets and Strategies Against Antimicrobial Resistance in Critical Priority Pathogens	Vellore Institute of Technology, Vellore

MoUs SIGNED WITH PRC

SI. No.	Collaborating Institute	PRC Faculties & Coordinators	Date of Signing	Period (in years)	Status
1.	MoU with Alabama State University, US	Dr. Nebu George Thomas	14.08.2026	5	Active
2.	MoU with VIT Vellore	Dr. Nebu George Thomas, Dr Ampadi AN	07.11.2025	5	Active
3.	MoU with Chinmaya University	Dr. Nebu George Thomas	29.07.2025	5	Active
4.	MoU with SSRI Santhigiri Ashram	Dr. Soumya RS	22.01.2026	5	Active
5.	MoU with University of Salento (Italy)	Dr. Soumya RS	18.06.2025	3	Active
6.	MoU with Well Genome Biotechnology Pvt Ltd	Dr. Soumya RS	01.06.2025	5	Active
7.	MoU with Vinayaka University	Dr. Soumya RS	11.03.2024	5	Active
8.	MoU with University of Adelaide, Australia	Ms. Nisha Kurian	16.05.2025	3	Active
9.	MoU with Western Sydney University	Ms. Nisha Kurian	08.08.2025	2	Active
10.	MoU with St Thomas College, Palai	Ms. Nisha Kurian	23.03.2026	5	Active
11.	MoU with University of South Wales	Dr. Betsy A Jose	18.06.2025	1	Active
12.	MoU with Believers Church Medical College and Hospital	Rev. Dr. Mathew Mazhavancheril	14.04.2026	3	Active

PATENT DETAILS

SI. No.	Patent No./ Application Number	Date of Filing	Title of Invention	Inventors	Status (Filed / Granted)
1.	Patent Number: 572988	12/06/2024	Antimicrobial effect of catechin doped bioactive glass nanoparticle	Dr. Sheena Raj, Dr. Emil George, Dr. Nebu George Thomas, Dr. A. Devadathan	Granted
2.	Application Number: 202541071339	27/07/2025	Core- Shell Electrospun Fibers of PVP/Quercetin @ PCL / Nanoclay / Catechin for Bone Regeneration	Dr. Raneesh Balakrishnan, Dr. Sobi K Chacko, Dr. Nebu George Thomas, Dr. Nibu Varghese, Dr. Vijay V.K	Filed
3.	Application Number: 202541023124	15/03/2025	3D-pored nanocellulose -curcumin composites: A novel material for tissue engineering applications	Dr. Yogesh Bharat Dalvi,Dr. R. Ramya, Ms. Rekha Unni, Dr. Ruby Varghese, Dr. Reshmy R, Dr. Robin Augustine, Dr. Nebu George Thomas	Filed
4.	Application Number: 202541023125	15/03/2025	PEG-Plasticized Nanocellulose-ZnO hybrid scaffold: a biocompatible and	Dr. Yogesh Bharat Dalvi,Dr. R. Ramya, Ms. Rekha Unni, Dr. Ruby Varghese, Dr.	Filed

			antimicrobial platform for wound healing applications	Reshmy R, Dr. Robin Augustine, Dr. Nebu George Thomas	
5.	Application Number: 202411090199 A	20/11/2024	Nanofibers and a process for their preparation	Binsi Puthanpurakkalkizhakkethil Kamalamma, Sobi Kannamkulam Chacko, Raneesh Balakrishnan, Nebu George Thomas	Filed

PUBLICATIONS IN PEER-REVIEWED JOURNALS AND BOOK CHAPTERS

Research Articles

1. Pulickal Mannath, Saharuba, Partha Kundu, Sujith Athiyanathil, Abdulla Musaffar Thazathethil, Prathish Krishna Pillai, **Soumya Rema Sreenivasan**, Abdul Haleem Basheer, Athul Koppalthodikayil, and Anju Kizhakkummuriyil Purushan. "Zero-Discharge Synthesis of Silver Nanoparticles and Activated Carbon from Agricultural Residues." ChemistrySelect 11, no. 4 (2026): e04011.

2. Nair Arun, R., H. Venkatesan, **R. S. Soumya**, and M. Sridevi. "Acute Promyelocytic Leukemia Unraveled: Biotechnological Approaches in Targeted Therapies and Molecular Mechanisms-A Review." Research Journal of Biotechnology Vol 20 (2025): 7.

3. George, Elizabeth Annie, **Aniket Naha**, H. Soundharya, Janardhan Pallavi, Anushka Menon, Anand Anbarasu, and Sudha Ramaiah. “Pharmacokinetics Screening, Molecular Docking, and Dynamics Simulations Revealed Novel

Antimicrobial Peptide NKLF2 Mutants as Potent Inhibitors of Mycobacterium tuberculosis." *Probiotics and Antimicrobial Proteins,* Springer Nature, 2025

4. Elizabeth Annie George, **Aniket Naha** & Sudha Ramaiah. "Novel antimicrobial peptide HFIAP-1 mutant as a β-lactamase inhibitor against extended-spectrum β-lactamases of *Escherichia coli*: a comprehensive *in-silico* approach" *Archives of Microbiology,* Springer Nature, 24th September 2025

5. George, E.A., **Naha, A.** and Ramaiah, S., 4-methyl substituted durlobactam analogue as a potential class-D oxacillinase inhibitor in Acinetobacter baumannii–An in-silico study. Frontiers in Bioinformatics, 6, p.1790411. ***[IF: 3.6] [doi: 10.3389/fbinf.2026.1790411]***

6. **Thomas NG**, de Souza Junior FG, Ninan N, Sukumaran A, Raju RS, Varghese N, Chopra A, Thomas S. "Bioglass in Dentistry: A Comprehensive Review of Current Applications and Innovative Frontiers" *Journal of Dentistry Impact factor: 5.5,* Elsevier Ltd. August 5th, 2025
7. Rubiya Mohammed, Raneesh Balakrishnan, **Nebu George Thomas**, and Yogesh Bharat Dalvi. "Biocompatible Nanocomposites: Synthesis, challenges, and Future Prospects in Biomedical Applications" *Biocompatible Nanocomposites: From Synthesis to Applications,* Springer (Advanced Structured Materials series, Vol 239), August 26th, 2025
8. Genu George, **Soumya R.S "**Metalloprotease: the effectors of inflammation in breast cancer progression" *Therapeutics of Natural and Synthetic Compounds in Protease Induced Cancer,* Elsevier, September 2025 DOI: 10.1016/B978-0-443-26635-5.00013-4.

9. Prasasti Sarma, Aravind Madhavan, **Soumya R. S.,** and Arun K. B. "Pharmacological Insights into Banana Inflorescence: A Review of Antioxidant, Antimicrobial, Antidiabetic, and Anticancer Potential." 3 (9) (2025): 242–253. ISSN: 0975-4725.

10. Soumitra Nath, Mainak Paul, Puja Paul, Poulomi Chanda, **Aniket Naha**, Hanna Yumnam, Indu Sharma. "Traditionally fermented dairy products harbouring multidrug-resistant bacteria with probiotic-associated characteristics" *International Dairy Journal* 106538, 10.1016/j.idairyj.2025.106538

11. Pati, Sukanya, Aseem Mishra, Rahul Modak, **Aniket Naha**, and Soumya Basu "Determination of nutrient diffusion through biocompatible cross-linked hydrogels: A smart phone based analytical method" *Next Materials,* 101865, 11, 2026, https://doi.org/10.1016/j.nxmate.2026.101865

12. Varghese, Mekha Grace, Thomas George Valliaveettil, Binsi Puthanpurakkalkizhakkethil Kamalamma, **Nibu Varghese, Yogesh Bharat Dalvi, Nebu George Thomas,** Rajasree Anitha Rajeevan, Anoop Chandran, and Sukumaran Anil. "Development and evaluation of a fish skin-derived acellular dermal matrix for diabetic wound healing: In vitro and in vivo assessment." *Journal of Biomaterials Applications* (2025): 08853282261422121

13. Rajan, Anju, Raneesh Balakrishnan, Premjith Pradeep, Amal Babu, Karthika Shylaja, **Nebu George Thomas,** Neethu Ninan, Ampadi Ajith Nishi, and Annie Susan Thomas. "TiO2 Nanoparticles—Incorporated PCL/Gelatin Nanocomposite Fibers for Enhanced Biocompatibility and Reduced Foreign Body Response." *Biopolymers* 117, no. 1 (2026): e70069.

14. Prathap, Sruthy, Rajesh Kashyap Shankar, **Nebu George Thomas**, Riaz Abdulla, Binsi Puthanpurakkalkizhakkethil Kamalamma, Suprith Surya, and Prathap Mulackal Sreekanatan. "Evaluation of the cell viability and in vivo biocompatibility of three potential regenerative biomaterials derived from eggshells in Wistar rats." *World Academy of Sciences Journal* 8, no. 3 (2026): 1-8.

15. Prathap, Sruthy, K. S. Rajesh, **Nebu George Thomas**, P. K. Binsi, Suprith Surya, M. S. Prathap, and Ranajit Das. "Comparative evaluation of the effectiveness of a novel composite bone substitute synthesized from eggshell-derived

hydroxyapatite and fish collagen in bone regeneration of critical-sized calvarial defects in Wistar rats." *Frontiers in Dental Medicine* 6 (2025): 1731880.

16. **Thomas, Nebu George**, Fernando Gomes, Raneesh Balakrishnan, Rani Shine Raju, Neethu Ninan, Anju Rajan, Richard Bright et al. "Engineered core-shell nanocomposite fibres incorporating bio-ceramics and bioactive molecules for wound repair." *International Journal of Pharmaceutics* (2025): 126533.

17. Naik, Sachin, Sajith Vellappally, Mohammed Alateek, Yasser Fahad Alrayyes, Abdul Aziz Abdullah Al Kheraif, Talal Mughaileth Alnassar, Ziyad Mohammed Alsultan, **Nebu George Thomas**, and Avneesh Chopra. "Patients' Acceptance and Intentions on Using Artificial Intelligence in Dental Diagnosis: Insights from Unified Theory of Acceptance and Use of Technology 2 Model." *International Dental Journal* 75, no. 6 (2025): 103893.

18. Aswathy, Sreeja Harikumar, **Nebu George Thomas, Yogesh Bharat Dalvi**, Madhan Balraman, Uttamchand NarendraKumar, and Inderchand Manjubala. "Unravelling the Potential of Carboxymethyl Cellulose Hydrogels for Articular Cartilage Repair: A Rat Model Study." *Regenerative Engineering and Translational Medicine* 11, no. 3 (2025): 696-707.

19. Ashraf, Shijna, S. Santhosh Kumar, Rekha P. Radhakrishnan, R. M. Baiju, Nebu George, Neethu P. Reghu, Tony Kurien et al. "Effect of Non-surgical Periodontal Therapy on the Salivary Resistin Level in Obese and Non-obese Individuals with Periodontitis." *Cureus* 17, no. 12 (2025).

20. Kavya, S., V. Thomas George, Nebu George Thomas, M. Rakesh, M. Lekshmi, Anjana Appukuttan, and V. Varsha Prabhu. "Salivary Cystatin C as a Potential Biomarker in Stage III/IV Periodontitis: A Comparative Study." *Journal of International Oral Health* 17, no. 4 (2025): 316-322.

21. Rajeevan, R. A., K. Aparna, M. G. Elenjickal, T. G. Valliaveettil, E. Joseph, J. John, R. G. Varghese et al. "Oral health disparities among children with special

healthcare needs: a comparative cross-sectional study." *European Archives of Paediatric Dentistry* 27, no. 1 (2026): 159-169.

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Review Articles

1. Soumitra Nath, **Aniket Naha**, Kankana Saikia, Chandan Paul Choudhury, Veluswamy Venkatramanan. "Degradation of organic pollutants using lignin-derived carbon materials as a sustainable approach to environmental remediation" *Biotechnology for Sustainable Materials,* Springer Nature, 7th July 2025
2. Nair Arun, R., H. Venkatesan, **R. S. Soumya**, and M. Sridevi. "Acute Promyelocytic Leukemia Unraveled: Biotechnological Approaches in Targeted Therapies and Molecular Mechanisms-A Review." *Research Journal of Biotechnology Vol* 20 (2025):7
3. **Thomas, Nebu George**, Fernando Gomes de Souza Junior, Neethu Ninan, Anil Sukumaran, Rani Shine Raju, Nibu Varghese, Avneesh Chopra, and Sabu Thomas. "Bioglass in dentistry: A comprehensive review of current applications and innovative frontiers." *Journal of Dentistry* (2025): 106017.
4. Synthesis and Antifungal activity of N-(3-(4-(1,3-dioxolan-2-yl) phenyl)-1,2,4-thiadiazol-5-yl) benzamide Derivative *Journal of Clinical & Diagnostic Research (JCDR).*
5. Synthesis, characterization & Antimicrobial Evaluation of N-(3-(4-(1,3-dioxolan-2-yl) phenyl)-1,2,4-thiadiazol-5-yl) benzamide Derivative Submitted *to Asian Journal of Pharmaceutics.*

6. Sheeja Perumbil Pathrose, Kerry Sutcliffe, Fiona McDonald, Dorothy Lall, Twinkle Agrawal, Vibisha D, Anu Mary Oommen, Naveen Ramesh, **Nisha Kurian**, Sunu Alice Cherian, Lucie Ramjan. Systematic review and meta-analysis of effectiveness of cancer awareness Interventions among adolescents and young adults in Low- and Middle-Income Countries. PROSPERO 2026 CRD420251114770.
7. Varughese CS, Mani SM, Vincent V, Cherian SA, **Kurian N**. Impact of urban heat islands on human health in India – a systematic review protocol. Int J Community Med Public Health [Internet]. 2025 May 31 [cited 2025 Jun. 11];12(6):2804-12.
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Book Under Editing

Editor of a book entitled "Biocompatible Nanocomposites - From Synthesis to Applications" 'Biocompatible Nanocomposites- From Synthesis to Application (89273517)' by Springer Nature Editors: Raneesh Balakrishnan, Rubiya Mohammed, Nebu George Thomas, Yogesh Bharat Dalvi

Book Edited

Editor of a Book Entitled "Bioglass and its Applications in Tissue Engineering and Dentistry" Elsevier Science & Technology Books *(Book Proposal*

Under Consideration) Editors: Sabu Thomas, Fernando Gomes, Nebu George Thomas, Neethu Ninan, Raneesh Balakrishnan

Book Chapters

1. George, Genu, and **R. S. Soumya**. "Metalloproteases: the effectors of inflammation in breast cancer progression." In Therapeutics of Natural and Synthetic Compounds in Protease-Induced Cancer, pp. 117-129. Academic Press, 2025.

2. Dr Ampadi AN (Co-Author), "Biomedical Nanocomposite Coatings and Their Regulatory Requirements" Advanced Structured Materials, August 2025

3. Joy, Shilpa, Mridula Sreedharan, Rojin Abraham, Sherin Sara George, Nebu George Thomas, Anil Sukumaran, and Sabu Thomas. "Green Synthesis of Nanoparticles in Biomedicine." In *Micro-and Nanoscale Technologies in Drug Delivery*, pp. 193-224. Apple Academic Press, 2025.

4. Mohammed, Rubiya, Raneesh Balakrishnan, Nebu George Thomas, and Yogesh Bharat Dalvi. "Biocompatible Nanocomposites: Synthesis, Challenges, and Future Prospects in Biomedical Applications." *Biocompatible Nanocomposites: From Synthesis to Applications* (2025): 1-16.

5. Anil, Sukumaran, Nandita Suresh, Vishnupriya K. Sweety, Amartya Raj Suraj, and Nebu George Thomas. "Biocompatible nanocomposites: An overview of materials used in biomedical applications." *Biocompatible nanocomposites: from synthesis to applications* (2025): 17-61.

6. Thomas, Nebu George, George V. Thomas, S. Kavya, P. K. Binsi, P. M. Aiswarya, Shilpa Joy, Mridula Sreedharan Nikhil et al. "Marine biopolymers in tissue engineering applications." In *Marine Biopolymers*, pp. 491-527. Elsevier, 2025.

SPECIAL ACHIEVEMENTS AND RECOGNITIONS

1. Dr. Aniket Naha received 1st Prize in Paper Presentation in Annual CME PRICE 2025 (Pushpagiri Research & Innovation: Clinical Excellence) on the research work entitled 'AntiTB Drug Composites and Nanocarnosine: A Novel Drug Delivery System for Combating Pulmonary Tuberculosis' on 25th July 2025
2. Dr. Aniket Naha delivered a talk on 'Mission AMPpossible - Breaking beta lactamase barriers' in Pushpagiri Clinical Club Meeting Cycle 2 - Session 750 on 1st September 2025
3. Dr. Ajay Krishnan U received Best Faculty Presentation (Cycle 2)- 2025 organized by the Pushpagiri Clinical Club for his presentation entitled "Non-Alcoholic Fatty Liver Disease - A Silent Killer" on 25th July 2025
4. Dr. Aniket Naha was awarded the Above and Beyond Recognition Award in recognition for having secured more than 500 citations and h-index of 12 on google scholar and ResearchGate
5. Dr. Aniket Naha was the Resource Person for the PG Orientation Programme at Pushpagiri College of Dental Sciences on the topic 'Cite Smarter, Write Brighter - Mendeley Reference Management System' on 8th October 2025
6. Dr. Aniket Naha was an Invited Speaker at The World Congress on Infectious Diseases and Antibiotics at Indian Institute of Science (IISc), Bangalore on 12th December 2025
7. Dr. Aniket Naha delivered a Guest Lecture on Quest2Qualitize series at Pushpagiri College of Nursing on the topic 'Smart Cite, Bright Write - Mendeley Reference Management System' on 29th November 2025
8. Dr. Aniket Naha was an Invited Speaker at CMS College, Kottayam on the topic 'Introduction to facilities and fraternities of PRC, Mendeley reference management system and Advanced literature search using PubMed' on 2nd December 2025
9. Dr. Aniket Naha delivered a Guest Lecture on Quest2Qualitize series at Pushpagiri College of Nursing on the topic 'Mastering Advanced Literature Search using PubMed' on 1st December 2025

10. Dr. Aniket Naha delivered a Guest Lecture on Quest2Qualitize series at Pushpagiri College of Nursing on the topic 'Mastering Manuscript Writing - IMRAD format' on 12th December 2025
11. Dr Soumya R.S was the resource person for the National Science Day 2026 Celebration conducted at Bishop Moore College Mavelikara, in association with Kerala Academy of Sciences on the topic 'Targeting mitochondria, A new frontier in translational medicine 'on 26th February 2026.
12. Dr Soumya R.S has successfully completed the 'Certificate Program in Basics of Genetics and Related Disorders (CBGRD-01)' conducted by School of Translational Health Sciences from June to November 2025 under the order No: 32478/2024/Schools & Centers/KUHS dated 09/03/2026.
13. Delivered a speech titled "Targeting Mitochondria: A New Frontier in Translational Medicine" on 26 February 2026, as a part of National Science Day 2026, themed "Women in Science: Catalyzing Viksit Bharat", at Bishop Moore College, Mavelikkara
14. Completed a 4 days training programme on "Laboratory Management Systems and Internal Audit as per IS/ISO 15189:2022" held at Govt Medical College – Kottayam from 28th January to 31st January 2025 as part of the Course on Ethics including Good Laboratory Practices (GLP) initiative by MELAP
15. Completed the Certificate Program in Basics of Genetics and Related Disorders (CBGRD-01) conducted by the School of Translational Health Sciences from June to November 2025 Special Recognition Award (Category IV) – Mar Athanasios Research Endowment, Pushpagiri Research Council For sustained excellence in research, innovation, and institutional leadership in tissue engineering and regenerative dentistry
16. Recognition as Approved PhD Supervising Guide under Kerala University of Health Sciences (KUHS)
17. Postdoctoral Fellowship Renewal at IMA-UFRJ, Federal University of Rio de Janeiro, Brazil
18. Dr. Nebu George Thomas got Recognision as PhD Co-Supervisor at Manipal Academy of Higher Education (MAHE), Manipal

19. Dr. Aniket Naha has been appointed as the Ph.D. Programme Coordinator for Pushpagiri Research Centre
20. Dr Aniket Naha, Recognition as PhD Co-Supervisor at VIT Vellore, Vellore
21. Dr. Aniket Naha was the Invited Speaker for ICMR–DHR Sponsored National Workshop on "Molecular Approaches to Vector-Borne Disease Surveillance and Control: From Resistance to Resilience at Maharani's Science College for Women (Autonomous), Mysore on the topic Vector-Borne Disease Complications: Targeting AMR and Virulence in Shigella flexneri and ESβL-Producing Escherichia coli on 2nd January 2024
22. Dr. Aniket Naha was the Invited Speaker for ICMR–DHR Sponsored National Workshop on Combating Antimicrobial Resistance: From Awareness to Action at Jyoti Nivas College Autonomous, Bangalore on the topic Nanocarnosine-Drug Composites for Tuberculosis: A Novel Aerosol-Compatible Delivery System Targeting Antimicrobial Resistance on 4th February 2026
23. Dr. Betsy A Jose served as the External Validator for Programmatic Management of Drug-Resistant Tuberculosis at DTC, Kozhencherry on 8/5/2025
24. Dr. Betsy A Jose served as the Young Innovator Programme 2k25 Evaluator Online on 26/5/2025
25. Dr. Betsy A Jose served as the Judge for Creative writing Malayalam- Literary events competition organized by College Union on 27/5/2025
26. Dr. Betsy A Jose served as the Judge for script writing Malayalam Literary events organized by the College Union on 2/6/2025
27. Dr. Betsy A Jose served as the faculty organizer of Pulse 2025 & Quiz master for Quiz competition on 14/6/2025
28. Dr. Betsy A Jose served as the Judge for Paper presentation for NATCON 2025-15th National Conference on Students Medical Research at Government Medical College, Trivandrum
29. Dr. Betsy A Jose served as the Conducted awareness session on Life style diseases to Santhwanam Volunteers at Collectorate Pathanamthitta on 8/10/2025
30. Dr. Betsy A Jose served as the Resource Person for Antimicrobial Resistance on WAAW occasion at Pushpagiri Pharmacy College on 22/11/2025.

31. Dr. Betsy A Jose Represented Kerala state at Regional Consultative meeting on Integration of Tobacco Quitline services at NIMHANS, Bangalore on 14/10/2025
32. Dr. Betsy A Jose Received Mar Athansious Research Endowment Award for seed funding on 17/10/2025
33. Dr. Betsy A Jose served as the Judge for Collage Competition for World Bio Ethics Day Celebration on 24/10/25
34. Dr. Betsy A Jose served as the Resource person for Health awareness session for senior citizens for Marthoma SC Fellowship, Mavelikkara
35. Dr. Betsy A Jose served as the Resource Person for NSS Volunteers special camp on the topic drug abuse on 28/2/2026 at St. Marys Malankara Catholic Church Auditorium, Vengal.
36. Dr. Betsy A Jose served as the Resource Person for Adolescent Health at Sacred Heart Higher Secondary School & CISCE Junior College, Changanassery on 19/1/2026.
37. Dr. Betsy A Jose served as the Resource Person for NCD awareness session for Ward 5 Peringara Grama Panchayat on 16/2/2026.
38. Dr. Betsy A Jose served as the External assessor for "TB Mukt Panchayat" at FHC Nedumbram, FHC Niranam & FHC Othera on 17/2/2026 & 18/2/2026
39. Dr. Betsy A Jose served as the Resource Person for Research Methodology Workshop conducted for MDS post graduates at Pushpagiri Dental College on the topic" How to write research protocol" on 17/12/2025
40. Dr. Betsy A Jose served as the Resource person for sharing experience as NTEP Nodal Officer in CME on newer updates in TB diagnosis and Management conducted by Amala Institute of Medical Sciences, Thrissur on 11/1/2026
41. Dr. Aniket Naha served as a Guest Faculty for One-Day workshop on Bioinformatics at St. Berchmans College, Changanassery on Databases, Sequence Analysis and Phylogenetics on 16th February 2026

ABSTRACTS

UNDERGRADUATE PROJECTS – B.Sc., BDS, MBBS

Screening and evaluation of anti-proliferative effect of *Azadirachta indica* in human embryonic kidney (HEK293) cells

Athul Krishna, Dr. Ajay Krishnan U, Suma Abraham

Cancer remains a major global health challenge, prompting the search for effective therapeutic agents derived from natural sources. Medicinal plants have long been recognized for their rich phytochemical composition and diverse pharmacological activities. Among these, *Azadirachta indica* (neem) has been widely used in traditional medicine due to its medicinal properties. In this study, the phytochemical composition and pharmacological potential of the hexanoic extract of *Azadirachta indica* were evaluated with a focus on cytotoxicity. Phytochemical screening revealed the presence of important bioactive compounds such as alkaloids, flavonoids, phenolic compounds, tannins, proteins, reducing sugars, and quinones, which are known to contribute its therapeutic effects through various biological mechanisms. Furthermore, cytotoxicity assays performed against HEK-293T cells showed a dose-dependent reduction in cell viability, indicating notable antiproliferative activity. These antiproliferative effects are likely mediated by key phytochemicals such as alkaloids and flavonoids present in the extract. These findings support the traditional medicinal significance of *Azadirachta indica* and highlight its potential as a promising source of plant-based therapeutic agents. Further mechanistic studies are required to validate its efficacy as an anticancer agent.

Keywords: *Azadirachta indica,* phytochemical, screening, cytotoxicity

Screening and *in vitro* validation of antimicrobial and anticancer potential of methanolic extract of *Pleurotus ostreatus* in HepG2 cells

Hani Hameed, Dr. Ajay Krishnan U, Neena Krishnan

Hepatocellular carcinoma (HCC) is a primary tumour of the liver and is the fifth most common cause of cancer worldwide. Surgical resection and liver transplantation are currently used treatment for HCC but have limited applicability. Mushrooms are well known for their nutritional value as well as their medicinal properties due to the presence of various bioactive compounds. The present study evaluates the biological potential of the oyster mushroom *Pleurotus ostreatus* through phytochemical screening and assessment of its antimicrobial and anticancer activities. The methanolic extracts of *Pleurotus ostreatus* were subjected to various screening assays to identify the presence of important secondary metabolites. The antimicrobial activity of the mushroom extract was evaluated against selected Gram-positive and Gram-negative bacterial strains to determine its inhibitory effects against pathogenic microorganisms. Furthermore, the anticancer potential of the extract was evaluated by cytotoxicity assay in HepG2 cell line. The analysis revealed the presence of several bioactive constituents such as phenolic compounds, flavonoids, alkaloids, and other phytochemicals that may contribute to its therapeutic properties. The extract also possesses significant antimicrobial activity, suggesting the potential of the mushroom extract as a natural antimicrobial agent. Cytotoxic activity was evaluated using the MTT assay and a concentration-dependent reduction in cell viability was observed in HepG2 cells, indicating the antiproliferative and cytotoxic effects of *Pleurotus ostreatus* extract. These findings suggest that *Pleurotus ostreatus* contains bioactive compounds with potential antimicrobial and anticancer properties and highlight its significance for further biomedical Research. Further studies involving detailed mechanistic investigations in *in vitro* and *in vivo* models are required to validate its therapeutic efficacy and development as a novel therapeutic agent.

Keywords: Hepatocellular carcinoma, *Pleurotus ostreatus,* Cytotoxicity, Anticancer, HepG2 cell line

Screening and cytotoxic evaluation of *Ocimum sanctum* extract in DLD1 colorectal cancer cells

Aslam Anish, Ajay Krishnan U, Biby Sara John

Colorectal cancer affects the colon (large intestine) or rectum and is one of the most common cancers worldwide. It can cause severe illness and premature death, particularly when diagnosed at advanced stages. The risk of colorectal cancer increases with age, with most cases occurring in people over 50 years, although several countries are reporting rising incidence among younger adults. Several lifestyle factors contribute to the development of colorectal cancer such as a high intake of processed meats and low intake of fruits and vegetables, a sedentary lifestyle, obesity, smoking, and alcohol consumption. The incidence and impact of colorectal cancer can be significantly reduced by adopting a healthy lifestyle, avoiding risk factors, and monitoring symptoms to enable timely diagnosis and treatment. *Ocimum sanctum*, commonly known as Tulsi, is a medicinal plant widely recognized for its diverse pharmacological properties. The DLD1 cell line is a widely used human colorectal adenocarcinoma model in cancer research due to its stability, tumorigenicity and relevant genetic mutations. This study aimed to screen and evaluated the cytotoxic effect of *Ocimum sanctum* extract against DLD-1 human colon cancer cells. The plant extracts were prepared in hexane and subjected to various phytochemical screening assays. The cytotoxic activity of the extract was assessed using the MTT assay on DLD1 cell line. Phytochemical screening revealed the presence of diverse bioactive constituents, including alkaloids, flavonoids, phenolic compounds, tannins, proteins, reducing sugars, and quinones each contributing to the plant's therapeutic potential. Moreover, cytotoxicity assays against DLD 1 cells showed a dose-dependent reduction in cell viability. The findings support the traditional medicinal use of *O. sanctum* and highlight its promise as a source of plant-based therapeutic agent. Further, mechanistic studies are to be carried out in various models to validate the anticancer potential of *Ocimum sanctum*.

Keywords: *Ocimum sanctum,* phytochemical, screening, cytotoxicity

Bacterial Polymer for Soft Tissue Regeneration

Ann Rose Soy, Dr. Nebu George Thomas,Dr. Ampadi AN

Biopolymers derived from natural sources have gained considerable attention in biomedical applications due to their biodegradability, biocompatibility, and sustainable origin. Among them, bacterial cellulose (BC), synthesized by Gluconacetobacter xylinus, exhibits a unique three-dimensional nanofibrillar architecture, high crystallinity, superior mechanical strength, and exceptional water-retention capacity, closely mimicking the extracellular matrix. These properties make BC a promising scaffold for wound healing and skin tissue engineering. The present study aimed to evaluate the acute systemic toxicity and in vivo biocompatibility of bacterial cellulose intended for biomedical use. A dual-extraction approach was employed to assess potential water-soluble and lipid-soluble toxic components using phosphate-buffered saline and natural cottonseed oil, respectively. Following ethylene oxide sterilization, extracts were administered to male Sprague–Dawley rats via intravenous (aqueous extract) and intraperitoneal (non-aqueous extract) routes at a dose of 50 mL/kg, with appropriate control groups receiving normal saline. Animals were observed for 72 hours for clinical signs of toxicity, behavioral changes, body weight variation, and mortality. Post-euthanasia, vital organs were subjected to gross examination and histopathological analysis using hematoxylin and eosin staining. Hematological parameters were also evaluated, and it was within a normal physiological range and comparable to controls. No mortality, abnormal clinical signs, or behavioral alterations were observed during the study period. Organ morphology and histological architecture of the heart, liver, and kidney remained normal, with no evidence of inflammation or tissue damage. These findings demonstrate that bacterial cellulose exhibits no acute systemic toxicity and have excellent in vivo biocompatibility, supporting its safe application in wound healing and tissue engineering applications.

Keywords: acute toxicity, bacterial cellulose, soft tissue regeneration, tissue engineering, wound healing

Fish Bone-Derived Hydroxyapatite for Hard Tissue Regeneration

Celestina Joseph, Dr. Nebu George Thomas, Dr. Ampadi AN

Bone tissue engineering has become a promising approach for treating various bone defects that do not heal on itself. Hydroxyapatite is one of the most widely used biomaterials. It is a bioceramic material. It has excellent biological activity, biocompatibility and similarity to that of human bone in its chemical composition. Fish bone-derived hydroxyapatite is a source of hydroxyapatite that has gained attention due to its low cost, sustainability and biocompatibility. This current study aims to understand the in vivo acute toxicity of the fish bone-derived plasma treated hydroxyapatite and its biocompatibility in rats. The study uses fish bone-derived plasma treated hydroxyapatite mixed with both saline (PBS)(aqueous) and oil (cottonseed oil) (non-aqueous). The aqueous extract was administrated intravenously and non-aqueous was administrated intraperitoneally. Animals were observed for 72 hours for clinical signs of toxicity, behavioural changes and mortality. This work uses the histopathological examination of the heart, liver and kidneys of rats on which the hydroxyapatite was administered. The work also uses the haematological analyses of blood to know about the variations in blood counts. The result shows no abnormalities in abnormalities in histological and haematological analysis. This shows that the fish bone-derived plasma treated hydroxyapatite is biocompatible in vivo and non-toxic.

Keywords: bone tissue engineering, hydroxyapatite, fish bone- derived plasma treated hydroxyapatite, in vivo acute toxicity

Protective effect of *Euphorbia hirta* on hydrogen peroxide-induced cell damage in HepG2 cells

Sona Sunil C K, Dr. Soumya RS

Medicinal plants have been integral to both traditional remedies and contemporary healthcare due to their wide array of bioactive constituents and therapeutic potentials. *E. hirta*, a well-known medicinal herb, has been traditionally employed to manage ailments such as asthma, diarrhea, respiratory infections, and various skin conditions. Previous research has highlighted its antibacterial, antimalarial, anti-inflammatory, galactagogue, and antihistaminic effects. The current study investigates the potential of ethanolic extract of *E. hirta* leaves, focusing on its phytochemical profile and antioxidant potential using a series of in vitro analyses. HPLC was utilized to identify key polyphenolic compounds within the extract, including apigenin, gallic acid, ferulic acid, catechin, caffeine. rutin, and quercetin, suggesting their role in enhancing the extract's antioxidant efficacy. Preliminary phytochemical screening confirmed the presence of phenolic compounds. carbohydrates, glycosides, steroids, terpenoids, and quinones in the ethanolic extract. To assess antioxidant capacity, several assays were conducted, including total phenolic content determination. Total reducing power. DPPH radical scavenging. ABTS radical scavenging. Nitric oxide and superoxide radical scavenging and metal ion chelation. The extract exhibited strong antioxidant activity across most assays, with particularly high performance in DPPH. ABTS, total reducing potential, and metal chelating activity. Furthermore, the protective effect of *E. hirta* extract against hydrogen peroxide (H2O2) -induced oxidative damage in Hep G2 liver cells was evaluated. The results support the potential application of *E. hirta* leaf extract as a natural antioxidant, underscoring its value in pharmaceutical and nutraceutical formulations aimed at mitigating oxidative stress.

Keywords: *Euphorbia hirta*, ethanolic leaf extract, antioxidant activity; phytochemical analysis, HPLC.

Synthesis and characterization of casein-coated iron oxide micro/nano structures for drug targeting

Sabiya Rasool, Dr. Soumya RS

The surface characteristics and intrinsic physicochemical properties of engineered nanomaterials significantly influence Their interactions with biological systems, ultimately determining their effectiveness in both diagnostic and therapeutic settings. In this study. iron oxide nanoparticles (IONPs) were synthesized via a green synthesis approach. Casein, a naturally occurring protein found in milk was utilized as a biocompatible coating material to stabilize and functionalize the nanoparticles. This casein coating improves colloidal stability, minimizes cytotoxic effects, and introduces functional groups suitable for additional surface modifications. The casein-coated iron oxide micro/nanoparticles were thoroughly characterized using analytical techniques including Fourier Transform Infrared Spectroscopy (FTIR), X-ray Diffraction (XRD), Field Emission Scanning Electron Microscopy (FESEM). and particle size analysis. These assessments confirmed the nanoparticles' nanoscale dimensions, magnetic properties and successful surface functionalization. The antioxidant potential was evaluated assessed through in vitro assays, including metal chelating activity and superoxide radical scavenging assay. They performed to evaluate biological activity. These structures hold promise for controlled and targeted drug delivery applications. The study highlights casein's potential as an eco-friendly, biocompatible stabilizing agent, advancing the development of safer and more effective iron oxide nanoparticles for nanomedicine.

Keywords: iron oxide nanoparticles, green synthesis, casein coating, antioxidant activity, drug delivery.

A comparative analysis of *in vitro* antioxidant and anti-inflammatory activities in leaf extract and fruit juice of *Morinda citrifolia*

Hairunnisa N A, Dr. Soumya RS

Oxidative stress and inflammation are major contributing factors in the pathogenesis of chronic diseases, and plant-derived compounds offer a promising avenue for therapeutic intervention. *M. citrifolia* (noni). tropical medicinal plant belongs Rubiciae family. Traditionally used in Polynesian and Ayurvedic systems, is known for its wide range of pharmacological benefits. Different parts of the plant including the leaf and fruit-are utilized for their potential antioxidant and anti-inflammatory effects due to the presence of diverse phytoconstituents. This study aimed to comparatively evaluate the in vitro antioxidant and anti-inflammatory activities of leaf extract and fruit juice of *M. citrifolia.* Preliminary phytochemical screening confirmed the presence of key bioactive groups such as phenolics. flavonoids, tannins, and alkaloids. Ethanol was used for extraction of *M. citrifolia* leaf. Quantitative assays revealed that the total phenolic content was higher in the leaf extract (3.1 mg GAE/g), while the flavonoid content was greater in the fruit juice (1.8 µg/mL), suggesting differential bioactive profiles between the two parts. High-Performance Liquid Chromatography (HPLC) analysis identified ferulic acid and quercetin as major phenolic compounds in the leaf extract, while gallic acid, caffeine, catechin, and apigenin were predominant in the fruit juice. These compounds are well-documented for their biological roles in oxidative stress modulation and inflammation control. Antioxidant activity was assessed using DPPH, ABTS, superoxide scavenging, and metal chelating assays. Fruit juice exhibited stronger DPPH and ABT Sradical scavenging potentials at lower concentrations compared to the leaf extract. Similarly, in the superoxide assay, fruit juice showed greater inhibition. In contrast, the leaf extract demonstrated higher metal chelating activity, indicating its strength in binding transition metals. When compared to standards, both extracts showed promising activity but with differing mechanisms of action. Anti-inflammatory activity was evaluated through BSA and egg albumin denaturation assays. The fruit juice showed stronger inhibition in BSA denaturation,

while the leaf extract performed slightly better in the egg albumin model. These results indicate that both extracts possess anti-inflammatory potential, though with variation in efficiency based on assay type. This comparative analysis suggests that both the leaf and fruit of M. citrifolia serve as valuable sources of natural antioxidants and anti-inflammatory agents, with potential applications in phytopharmaceutical development.

Keywords: *M. citrifolia*, antioxidant activity, anti-inflammatory activity, phytochemical analysis, HPLC.

Synthesis and characterization of trans ferulic acid encapsulated guar gum nanoparticles

Safna Sherin N, Dr. Soumya RS

Nanotechnology has emerged as a promising field in both therapeutic and diagnostic applications. Among the various nanomaterials under investigation. polysaccharide-based nanoparticles have garnered considerable attention due to their unique properties such as biocompatibility, biodegradability, and ease of chemical modification. This study centers on the formulation and characterization of trans-ferulic acid encapsulated guar gum nanoparticles (TGG). The nanoparticles were synthesized via the nanoprecipitation method. Guar gum, a natural polysaccharide extracted from Cyamopsis tetragonoloba, offers excellent film forming abilities along with favourable biological compatibility, making it an ideal candidate for drug delivery systems. The encapsulation of trans-ferulic acid within guar gum nanoparticles was intended to improve its physicochemical stability, enhance bioavailability, and solubility allow for a sustained release profile. The encapsulation efficiency was evaluated through High-Performance Liquid Chromatography (HPLC). Comprehensive characterization of the nanoparticles was performed using several analytical methods, including Fourier Transform Infrared Spectroscopy (FTIR). X-ray Diffraction (XRD), Particle Size Analysis, and Field Emission Scanning Electron Microscopy (FESEM). The antioxidant potential of the developed TGG was

assessed through in vitro assays such as the metal chelating activity assay and the superoxide radical scavenging assay. Morphological analysis reveals the results indicate that the formulated TGG possess substantial antioxidant activity, suggesting their potential application as a safe and effective antioxidant delivery system for the management of oxidative stress-related diseases.

Keywords: guar gum nanoparticles, trans-ferulic acid, nanoprecipitation, drug delivery system, antioxidant activity

Protective effect of *Citrullus lanatus* seeds on D-Galactose-induced aging in HepG2 Cells

Anjana Venugopal, Dr. Soumya RS

Aging is an inevitable biological process, and emerging research has highlighted the potential of dietary and pharmacological interventions to decelerate the trajectory of age-related diseases and prolong the health span of an individual. *Citrullus lanatus* (Watermelon) is a significant horticultural plant that belongs to the Cucurbitaceae family. People utilize *C. lanatus* seed to treat various health issues like cardiovascular diseases, age-related conditions, obesity. neurodegenerative and different forms of cancer. The *C. lanatus* seeds are recognized for their high nutritional values as they are abundant in protein, with beneficial lipids, fibers, and phytochemicals. This study evaluates the protective effect of *C. lanatus* seed on D-Galactose induced aging in the HepG2 cell line. It involved an analysis of *C. lanatus* seeds to assess their phytochemical composition, total phenolic content, total flavonoid content, and antioxidant activity. Methanol was employed as a solvent for extraction, followed by qualitative phytochemical screening to identify the presence of bioactive compounds. The analysis revealed the existence of numerous biologically active substances, including carbohydrates, flavonoids, glycosides, proteins, terpenoids, steroids, phenols and quinones. High-pressure liquid chromatography (HPLC) was performed, and the result showed that the main phenolic acids identified by HPLC analysis were gallic acid, rutin, ferulic acid, and caffeine. At the same time, the

predominant flavonoids were quercetin, and catechin. These findings highlight the potential of *C. lanatus* seed extract warranting further in its antioxidant potential. The total phenolic content of the *C. lanatus* seed extract was found to be 88.6 µg GAE/g of seed extract, while the total flavonoid content was 1.7 mg QE/g of seed extract. The lipid peroxidation capacity of extract was recorded using a linoleic acid emulsion system, which showed ICs of 95.19 µg/ml. Additionally, the *C. lanatus* seed extract exhibited notable antioxidant activity across various assays. It showed strong DPPH radical scavenging with an ICs of 100 µg/ml, followed by ABTS radical scavenging (668 µg/mL), superoxide radical scavenging (334 µg/mL), and hydroxyl radical scavenging (448 µg/mL) activity. The total antioxidant capacity, assessed by the phosphomolybdenum method, was 0.2 mg AAE/g of seed extract, and the extract also demonstrated 47% metal chelating activity, indicating its potential as a natural antioxidant source. In vitro cytotoxicity analysis on D galactose induced HepG2 cells, revealed that *C. lanatus* seed extract serve as a natural source of potential antioxidants for mitigating the age-related oxidative stress related disorders.

Keywords: aging, *Citrullus lanatus* seed extract, antioxidant activity, D-Galactose, HepG2

Screening and *In-Vitro* Validation of Anticancer Activity of *Calotropis gigantea* Extract in U87MG Cell Line

Harsha Habeeb, Ajay Krishnan U, Vidya N P

The present study explores the phytochemical composition and pharmacological potential of the methanolic extract of *Calotropis gigantea* (CGE), with a focus on its antioxidant and antiglioma properties. Phytochemical screening revealed the presence of diverse bioactive constituents, including alkaloids, flavonoids, phenolic compounds, tannins, proteins, reducing sugars, and quinones, each contributing to the plant's therapeutic potential through various mechanisms such as antioxidants, anti-inflammatory, antimicrobial, and anticancer activities. The extract demonstrated significant antioxidant capacity, suggesting its potential in mitigating oxidative stress,

a key contributor to numerous chronic diseases. Moreover, cytotoxicity assays against U87MG glioma cells showed a concentration-dependent reduction in cell viability, with morphological changes indicative of apoptosis. These antiproliferative effects are likely mediated by key phytochemicals such as alkaloids and flavonoids, known to induce cell cycle arrest and apoptotic pathways. The findings support the traditional medicinal use of *C. gigantea* and highlight its promise as a source of plant-based therapeutic agents for oxidative stress-related conditions and glioma. Further *in vivo* and mechanistic studies are warranted to validate its potential in glioma treatment.

Keywords: *Calotropis gigantea*, Glioma, U876MG cell line, Antioxidant, Cytotoxicity

Determination of Antioxidant Potential and Cytotoxic Effects of *Mimosa Pudica L.* Extract: An *Invitro* Approach

Harsha Hari, Ajay Krishnan U, Akhila Anil

The present study explores the phytochemical composition and pharmacological potential of the methanolic extract of *Mimosa pudica* extract (MPE), with a focus on its antioxidant and anticancer properties. Phytochemical screening revealed the presence of diverse bioactive constituents, including alkaloids, flavonoids, phenolic compounds, tannins, proteins, reducing sugars, and quinones-each contributing to the plant's therapeutic potential through various mechanisms such as antioxidant, anti-inflammatory, antimicrobial, and anticancer activities. The extract demonstrated significant antioxidant capacity Moreover, cytotoxicity assays against A549 cells showed a dose-dependent reduction in cell viability. These antiproliferative effects are likely mediated by key phytochemicals such as alkaloids and flavonoids. The findings support the traditional medicinal use of *M. pudica* and highlight its promise as a source of plant-based therapeutic agents. Further *in vivo* and mechanistic studies are warranted to validate its potential in cancer treatment.

Keywords: *Mimosa pudica*, Phytochemical, A549 cell line, Cytotoxicity

Screening And Evaluation of Antioxidant Potential and Cytotoxic Effects of *Pueraria phaseoloids* Extract in MCF7 Cell Line

Laya Sara George, Ajay Krishnan U, Mary Josephine George

Pueraria phaseoloides methanolic extract (PPE) was evaluated for its phytochemical profile, antioxidant potential, and cytotoxic effects. Phytochemical screening revealed the presence of several bioactive constituents including alkaloids, flavonoids, phenolic compounds, tannins, proteins, glycosides, and phytosterols. These secondary metabolites are implicated in various pharmacological activities: alkaloids contribute antimicrobial and stress-resilience benefits; flavonoids act as UV-protective and allelopathic agents; phenolic compounds serve defensive roles and exhibit anti-inflammatory and anticancer effects; tannins provide antimicrobial and antioxidative actions; plant proteins and peptides offer health benefits, including metabolic regulation; glycosides have diverse therapeutic roles, and phytosterols help reduce cholesterol and support cardiovascular health. The extract demonstrated significant antioxidant activity, likely attributable to its polyphenol-rich composition helping to scavenge reactive oxygen species and protect against oxidative stress. In addition, PPE exhibited mild cytotoxicity at tested concentrations, suggesting potential utility in anticancer drug discovery pending further safety and efficacy evaluations. These findings indicate that *P. phaseoloides* is a rich source of bioactive compounds with notable antioxidant capacity and modest cytotoxic effects, supporting its potential for medicinal applications and further investigation in drug development.

Keywords: *Pueraria phaseoloides*, MCF-7 cell line, Antioxidant, Cytotoxicity

In-vitro antioxidant and anti-inflammatory activities of methanolic extract of *Allamanda cathartica* flower

Fathima Fejinsha K, Dr. Soumya RS

Ornamental plants are cultivated primarily for aesthetic purposes, including beauty. fragrance, and landscape design. They are commonly used in gardens, parks, and indoor spaces to enhance visual appeal and contribute to physiological well-being. Ornamental plants are increasingly recognized for their pharmacological potential. Many ornamental plants contain bioactive compounds with antioxidant, anti-inflammatory, antimicrobial, anticancer, and antidiabetic properties etc. In this study, the methanolic flower extract of *A. cathartica* was aimed at assessing the phytochemical content and in vitro antioxidant activities. Phytochemical screening together with total phenolic content (TPC), total flavonoid content (TFC), and various antioxidant assays like 1. 1-diphenyl-2-picryl-hydrazyl (DPPH) and 2, 2-azino-bis 3-thylbenzthiazoline-6-sulphonic acid (ABTS), total reducing power, superoxide, metal chelation activity, total antioxidant capacity and antioxidant activity in linoleic acid emulsion system was done. To identify and quantify specific bioactive compounds, High-Performance Liquid Chromatography (HPLC) was performed. FTIR spectroscopy was also done to reveal information about its molecular structure and composition. The antioxidant assays conducted on *A. cathartica* flower extract reveal significant free radical scavenging potential, indicating the presence of potent bioactive compounds. These findings provide evidence that the *A. cathartica* flower could serve as a promising natural source of antioxidants, with potential applications in pharmaceutical and nutraceutical industries.

Keywords: *Asystasia cathartica*, phytochemical screening, antioxidant activity, HPLC, FTIR.

Synergistic relationship between *Terminalia Chebula* extract isolated from indigenous plants and susceptible antibiotics against nosocomial *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*

Akshay Vinod, Dr. Aniket Naha

Antimicrobial resistance is a growing global health challenge that significantly impacts public health and development. One of the serious consequences is nosocomial infections. A group of pathogens called ESKAPE pathogens are major cause of nosocomial infections. Some strains are not at all susceptible against all available antibiotics. Development of new antimicrobial resistant strain is faster than development of new antibiotics. We need to find a new mode of treatment. Some studied show that certain plants have antimicrobial properties. *T. chebula*, a medicinal plant with long history of traditional use and has shown a different pharmacological activity, including antibacterial action. This study was aimed to explore the antibacterial potency of *T. chebula* in synergism with susceptible antibiotics against nosocomial *K. pneumoniae* and *P. aeruginosa*. The methanolic extraction of *T. chebula* fruit was prepared using Soxhlet extraction process and rotary evaporation and finally crude extract was obtained. Crude extract was subjected to separate column chromatography based on polarity that resulted in the formation of non-polar and polar fractions. Presence of flavonoids glycosides, reducing sugar, terpenoids, steroids, and total carbohydrates were detected under qualitative analysis. Isolation, morphological characterization, biochemical test and cultural characteristics were done and identified as *Klebsiella pneumoniae* (K1, K2, K3) and *Pseudomonas aeruginosa* (P1, P2, P3). Antibiotics susceptibility test was performed, and all strains were found to be resistant to most of the antibiotic. Zone of inhibition (ZOI) of phytocompound was analyzed. This work manifests a method, where the antimicrobial activity of antibiotics can be enhanced through synergism with *T. chebula* fruit extract.

Keywords: Antimicrobial resistance; Chromatography; Extensively drug resistant; Nosocomial pathogen; Phytocompounds

Isolation and characterization of probiotics from fermented orange

Athul Jayakumar, Dr. Aniket Naha

Fermented foods are valued for their contributions to traditional cuisines and health benefits, particularly due to their nutritional qualities, distinct flavors, and presence of probiotics. This study aimed to isolate and analyze novel probiotic bacteria from fermented orange juice using a combination of microbiological, molecular, and genomic methodologies. Through 165 rRNA gene sequencing, two isolates PRC AAI and PRC AA2 are to be identified. Various biochemical tests, including indole, MR, VP, citrate utilization, catalase, oxidase and triple sugar iron test were performed to identify the isolates nature. The probiotic properties of the isolates were evaluated under stimulated gastrointestinal conditions including tolerance to low pH, bile salts, pancreatin and lysozyme. Additionally, the isolates were assessed for their ability to exhibit cellular aggregation and surface hydrophobicity. Safety attributes were evaluated through haemolytic activity on blood agar, DNase, lipolytic activity, gelatinase, antibiotic sensitivity and biofilm formation assays. The results revealed that the isolates exhibit significant probiotic potential, with high tolerance acidic pH 2.0 and bile salt (0.3%) and have the potential to survive gastric and lysozyme conditions, as well as moderate low level of cellular aggregation and surface hydrophobicity. Furthermore, the isolates demonstrated safety attributes including absence of haemolytic, DNase. Gelatinase test showed negative for both isolates. These findings suggest that the bacterial strains isolated from fermented orange juice possess desirable probiotic properties and safety attributes, making them potential for developing as probiotic agents. Though a comprehensive approach, this study sheds light on the potential benefits of probiotic bacteria from fermented orange juice. Overall, these findings suggest that the strains isolated from fermented orange juice possess promising probiotic properties. However, further *in-vivo* preclinical studies are necessary to fully assess their potential for therapeutic or dietary supplementation.

Isolation and characterization of probiotics from fermented watermelon

Megha Madhu, Dr. Aniket Naha

Probiotics are live microorganisms that confer health benefits when administered in adequate amounts. The isolation and characterization of probiotic bacteria from this source can lead to the development of novel probiotic products. The probiotic isolate obtained include *Lactiplantibacillus plantarum*. This study aimed to isolate, screen, undergone 16S rDNA sequencing and characterize bacterial strains from fermented watermelon for evaluating their biochemical activities, probiotic potential and safety attributes. Various biochemical tests, including indole, MR, VP, citrate utilization, catalase, oxidase and triple sugar iron test were performed to identify the isolates nature. The probiotic properties of the isolates were evaluated under stimulated gastrointestinal conditions including tolerance to low pH, bile salts, pancreatin and lysozyme. Additionally, the isolates were assessed for their ability to exhibit cellular aggregation and surface hydrophobicity. Safety attributes were evaluated through haemolytic activity on blood agar, DNase, lipolytic activity, gelatinase, antibiotic sensitivity and biofilm formation assays. The results revealed that the isolates exhibit significant probiotic potential, with high tolerance acidic pH 2.0 and bile salt (0.3%) and have the potential to survive gastric and lysozyme conditions, as well as moderate low level of cellular aggregation and surface hydrophobicity. Furthermore, the isolates demonstrated safety attributes including absence of haemolytic, DNase. Gelatinase test showed negative for both isolates. These findings suggest that the bacterial strains isolated from fermented watermelon possess desirable probiotic properties and safety attributes, making them potential for developing as probiotic agents. Though a comprehensive approach, this study sheds light on the potential benefits of probiotic bacteria from fermented watermelon.

Keywords: 16S rDNA sequencing; Fermentation; Probiotics; Biochemical Test: Safety Attributes: Watermelon

Genomic characterisation and *in-vitro* evaluation of *Lactiplantibacillus pentosus* from fermented pineapple

Minu Joy, Dr. Aniket Naha

Probiotics are live microorganisms intended to enhance gut microbiota and gut health with proven immunomodulatory and digestive enhancing properties. This study thoroughly investigated acid-producing bacteria from fermented pineapple for its probiotics and technological aspects as a promising source for new probiotic strains. The research initiated by isolating MA1 from fermented pineapple which was characterised by initial morphological and biochemical characterization. Thereafter, 16S rDNA genomics characterization revealed the isolate PRC-MAI as the closest homologue *to Lactiplantibacillus pentosus*. Prior to *in-vitro* evaluation of probiotic potential, safety assessments revealed that the isolate *Lactiplantibacillus pentosus* PRC-MAI was non-haemolytic and non-DNase producing strain marking it safe for human administration. The probiotic potential of MA1 was thoroughly examined under simulated *in-vivo* condition and it revealed that it could withstand acidic pH (2.0 and 3.0), gastric juice (pH 3.0), bile (0.3%), pancreatin (0.3%), lysozyme (100-300 mg/ml) and phenol (0.2-0.4%) respectively. However, the ability of the isolate MA1 to adhere to hydrophobic cellular lining was found to be low as witnessed against n-hexadecane (10.34%), toluene (8.04%), xylene (8.6%) and to colonize was also found to be low (auto aggregation 3.4%) respectively. Stress tolerance to different physicochemical and habitat stress revealed that isolate MAI was able to resist NaCl stress till 7.5% and was viable even at 37°C. Enzymatic analyses revealed that the isolate MA1 exhibited lipolytic and proteolytic potency while amylase, cellulase, and gelatinase activity was not seen. Isolate MAl was also found to have 72.57% antioxidant potential which is beneficial for therapeutic applications. Further assessments revealed that the isolate was moderately biofilm forming strain thus validating the auto aggregation.

Keywords: 16S rDNA sequencing, Fermentation; Hydrophobicity; Probiotics; Simulated gastric juice; Technological properties

Synergistic effect of *Justicia adhatoda, Aegle marmelos* and *Terminalia bellirica* against *Staphylococcus aureus* and *Pseudomonas aeruginosa*

Jiya Dani Thomas, Dr. Aniket Naha

The rise of multidrug-resistant (MDR) and pan drug-resistant (PDR) pathogens is becoming a significant global health issue, particularly among nosocomial pathogens. The study aimed to investigate the antimicrobial potency of three Indian medicinal plants named *Justicia adhatoda*, *Aegle marmelos* and *Terminalia bellirica* and their synergistic potential in combination with classical antibiotic solutions. Clinical isolates were collected, screened, characterized and was detected for antimicrobial resistance and B-lactamase production. The isolates involved in this study were *Pseudomonas aeruginosa* and *Staphylococcus aureus*. Antimicrobial susceptibility pattern revealed the presence of both MDR and PDR strains. Methanolic extraction was done for these medicinal plants and *Terminalia bellirica* exhibited highest yield, flavonoid and phenolic content, antioxidant activity as well as prominent antibacterial activity. Antibacterial studies showed that plant extracts showed inhibitory activity against the tested pathogens. The combination of antibiotics with *Terminalia bellirica* extract was able to shift the paradigm of bacterial resistance towards sensitivity which highlights the multitarget specificity of phytocompounds. This potency of phytoextract was further validated using broth macrodilution in which there was a visible decline in bacterial growth with increase in phytoextract concentration. Cytotoxicity analysis using MTT assay showed that *Terminalia bellirica* extract was non-toxic for RAW264.7 macrophage cell lines for tested concentrations. Computational studies were done which involved ADMET evaluation, virtual screening, site specific docking to evaluate the interaction and binding affinity of phytocompounds with beta lactamase enzymes. Overall, the study highlights the ability of phytocompounds in enhancing the antibacterial efficacy of existing classical antibiotics by restoring its sensitivity.

Keywords: ADMET; Nosocomial pathogens; Broth microdilution; Drug resistance; Phytocompounds; RAW264.7

Fermented milk with orange (*Citrus sinensis*) explored novel *endophytic Enterobacter cloacae* PRCOC1 exhibiting potential probiotic attributes: An *in-vitro* study

Hiba M Rasheed, Dr. Aniket Naha

Probiotics are described as the live microorganisms that when given in sufficient amounts, provide health benefits to the host. This study investigated the isolation and characterization of potential probiotic strains obtained from a fermenting milk with fresh orange (*Citrus sinensis*) juice. Three distinct isolates designated as OCI, OC2, and OC3 was revealed to be Endophytic *Enterobacter cloacae* (PX963693), *Klebsiella quasipneumoniae* (PX963701), and *Bacillus thuringiensis* (PX963732) respectively. The evaluation of probiotic properties indicates that all the three isolates OCI, OC2, and OC3 exhibit the necessary resistance to overcome gastrointestinal transit. While each isolate showed tolerance to acidic conditions, simulated gastric juice, bile salts, pancreatin, and lysozyme, OC1 consistently stood out as the most potential candidate due to their capacity to withstand the harsh physiological environment of the human digestive system. Furthermore, all isolates demonstrated the capacity for biofilm formation, with OC3 exhibiting the most robust production followed sequentially by OC2 and OC1, further highlighting their potential for persistent intestinal colonization. Along with this, all the isolates showed cell surface hydrophobicity and auto aggregation potential which is an important trait for intestinal colonization. OC1 and OC2 were non-haemolytic, DNase and gelatinase negative while OC3 was marked unsafe. Antibiotic sensitivity testing demonstrated that the isolates exhibited varying resistance patterns. In technological property evaluation, OCI was found to reveal lipolytic nature while OC2 was amylolytic and lipolytic and OC3 revealed its strong amylolytic and proteolytic nature. In conclusion, though OCI proved as better candidate with potential probiotic features, future pre-clinical and clinical trials are pivotal for successful inclusion as marketed products for human consumption.

Keywords: 16S rDNA sequencing; Antimicrobial Sensitivity; *Bacillus thuringiensis*; Endophytic *Enterobacter Cloacae*, *Klebsiella quasipneumoniae*

Synergistic relationship between *Piper betle* extract isolated from indigenous plants and susceptible antibiotics against nosocomial *Escherichia coli* and *Staphylococcus aureus*

Anit Sharon Abraham, Dr. Aniket Naha

Antimicrobial resistance can be defined as when a bacteria show increased resistance to an antibiotic that was subjected to kill or inhibit them. In this study, the bacteria show extended drug resistance against the set of antibiotics used for it, and an alternative method has to be found out. For that combinational therapy must be used. *Piper betle* extract shows antibacterial activity and has a lot of medicinal values. Synergistic relationship between the *Piper betle* extract and the susceptible antibiotics increases the antibiotic efficacy and its capability to kill or inhibit the bacterial growth. In this study two samples were collected from Pushpagiri Hospital laboratory. The two pathogenic samples were then subjected for culturing on to different media, biofilm assay, and biochemical tests were performed. The *Piper betle* leaves were subjected for extraction by Soxhlet method and rotary evaporation. Thin layer chromatography and column chromatography was performed. Qualitative and quantitative analysis was performed to identify the phytocompounds present in the crude extract. GCMS and FTIR were done to confirm the presence of phytocompounds present in the extract. Antibiotic sensitivity test and MIC were done. Antioxidant were done to assess the antioxidant activity of compounds. Antibacterial property of crude and fractions and its synergy was checked by using the susceptible antibiotics for the organism. Broth microdilution (BMD) was done to confirm the synergy.

Keywords: Antimicrobial resistance; Chromatography: Multi drug resistant; Nosocomial pathogen; Phytocompounds

Citrus limetta harbours *Pediococcus pentosaceus* PRCMC1 and PRCMC2 which revealed promising probiotic potency upon milk fermentation: An *in-vitro* study

Anima K, Dr. Aniket Naha

Probiotics are live microorganisms which can improve the health of host organism when administered in an adequate amount. This study aimed to isolate, identify, and comprehensively characterize potential probiotic bacteria from cow milk fermented with mosambi (*Citrus limetta*) juice. Raw cow milk was fermented overnight with fresh mosambi juice, resulting in the isolation of two distinct strains, PRCMC1 and PRCMC2, using MRS broth enrichment and serial dilution techniques. Morphological analysis revealed both isolates to be Gram-positive cocci, while biochemical tests including IMViC, catalase, and oxidase assays demonstrated active carbohydrate fermentation and metabolic versatility. Molecular identification through 16S rRNA sequencing confirmed both MC1 and MC2 as *Pediococcus pentosaceus* strain PRCMC1 and PRCMC2. Among both strains, MC1 revealed better tolerability upon surviving under low pH, bile salts, gastric juice, lysozyme and pancreatin while MC2 exhibited comparatively higher tolerance to phenol than MC1. Functional characterization indicated that both isolates possess biofilm-forming ability, along with notable cell surface hydrophobicity and auto aggregation capacity, which are important for intestinal colonization. Additionally, both strains demonstrated beneficial properties, including cholesterol assimilation (19.19% for MC1 and 4.04% for MC2) and high antioxidant activity (71.84% and 76.63%) respectively. Safety evaluation confirmed the absence of haemolytic activity, DNase, and gelatinase production. The overall results suggest that these isolates particularly *Pediococcus pentosaceus* strain PRCMC1 and PRCMC2, hold significant promise for use in functional foods and therapeutic applications. However, the claim could be further validated upon *in-vivo* validations and clinical trials evaluation.

Keywords: 16S rDNA sequencing: Antimicrobial Sensitivity; *Citrus limetta*; Fermentation; *Pediococcus pentosaceus*

Phytoextracts from *Terminalia bellirica* Revealed Promising Synergistic Potential with Susceptible Antibiotics Against Nosocomial *Staphylococcus aureus* and *Pseudomonas aeruginosa*

Fathima A, Dr. Aniket Naha

The increasing emergence of multidrug-resistant (MDR) and pan drug-resistant (PDR) pathogens poses a serious global health challenge, particularly among ESKAPE pathogens. The study aimed to isolate and characterize clinical bacteria, assess their antimicrobial resistance, and evaluate the antibacterial and synergistic effects of medicinal plant extracts and adjuvants to enhance antibiotic efficacy. Among the *Pseudomonas* isolates studied, P2 and P4 were identified as multidrug-resistant (MDR), while P3 was confirmed as pan-drug-resistant (PDR), showing a very high level of resistance to commonly used antibiotics. Minimum Inhibitory Concentration (MIC) determination using the E-test method revealed that Gentamicin was effective against P2 and P4, with low MIC values (0.5 µg/mL and 1.5 µg/mL respectively), indicating sensitivity. In contrast, P3 showed no inhibition zone for Gentamicin, confirming complete resistance. Ceftazidime did not show any inhibition against all tested isolates, indicating widespread resistance to this antibiotic. ß-lactamase detection results demonstrated the presence of multiple resistance enzymes. MBL production was predominantly observed in P3, while P2 showed both MBL and AmpC activity. P4 exhibited combined enzyme production including ESBL and AmpC. ESBL activity was mostly inconclusive when tested alone but was detected in combination with other enzymes, especially in P4. Phytochemical analysis of *Justicia adhatoda*, *Aegle marmelos*, and *Terminalia bellirica* confirmed the presence of important bioactive compounds such as flavonoids, phenols, and tannins. Antioxidant activity assessed by DPPH assay demonstrated good free radical scavenging potential in *Terminalia bellirica*. Antibacterial studies showed that plant extracts exhibited inhibitory activity against the tested pathogens. Among the adjuvants, tannic acid demonstrated significant antibacterial activity both alone and in combination. Synergistic studies revealed that combinations of plant extracts with antibiotics and tannic acid enhanced antibacterial activity compared to individual treatments. Overall, the study highlights the prevalence of MDR and PDR Pseudomonas strains associated with ß-lactamase production and demonstrates the potential of plant-based compounds and adjuvants as alternative therapeutic strategies to combat antimicrobial resistance.

Keywords: Multiple drug resistant (MDR); Pan drug resistant (PDR); Extended-spectrum ß- lactamases (ESBL); DPPH (2;2-diphenyl-1-picrylhydrazyl)

Exploring the Probiotic Potency of *E. durans, E. lactis, E. faecium* Isolated from Curd Using Green Grapes as a Natural Fermentation Starter: An *In-vitro* Study

Shifana M K, Dr. Aniket Naha

Probiotics are live microorganisms that confer health benefits when administered in adequate amounts. This study evaluated the probiotic potential of endophytic bacteria-*Enterococcus faecium* PRCGC1, *Enterococcus lactis* PRCGC2, and *Enterococcus durans* PRCGC3-isolated from green grape juice and used as starter cultures for milk fermentation. The isolates were characterized using morphological, biochemical, and carbohydrate fermentation assays. Probiotic attributes were assessed based on tolerance to acidic conditions (pH 2 and 3), bile salts (up to 0.5%), pancreatin (0.3%), and lysozyme. Safety was evaluated using hemolytic, DNase, and gelatinase assays, while functional properties including cholesterol assimilation, antioxidant activity, biofilm formation, and antibiotic susceptibility were examined. All isolates were Gram-positive, facultative anaerobic cocci, catalase- and oxidase-negative, and MR-positive. GC2 showed strong acid tolerance, while GC1 and GC3 were more sensitive. All isolates exhibited good survivability in pancreatin, bile salts, and lysozyme. GC2 demonstrated the highest auto-aggregation (3.43%), whereas GC3 showed maximum hydrophobicity (36.34%). None of the isolates exhibited hemolytic, DNase, or gelatinase activity. GC3 showed the highest cholesterol assimilation (12.12%), while GC1 demonstrated the greatest antioxidant activity (81.78%). The isolates were generally sensitive to most antibiotics, including penicillin and tetracycline, with some resistance to methicillin. In conclusion, these strains exhibit significant probiotic potential, with GC2 showing superior acid tolerance, GC3 enhanced cholesterol-lowering ability, and GC1 strong antioxidant capacity, supporting their application in functional foods.

Keywords: Acid tolerance; Antioxidant activity; Bile salt tolerance; Cholesterol assimilation; Enterococcus, Green grape juice

In-vitro, in-vivo assessment of plasma treated fish bone derived HAp based bone graft intended for Hard Tissue Regeneration

Fathima Afra Shajahan, Dr. Nebu George Thomas, Dr. Ampadi AN

Bone defects resulting from trauma, infection, congenital abnormalities, or surgical interventions often require suitable biomaterials to support bone regeneration. Hydroxyapatite (HAp), a calcium phosphate-based material that closely resembles the mineral component of natural bone, has been widely used in bone tissue engineering due to its excellent biocompatibility and osteoconductive properties. In recent years, natural sources of hydroxyapatite such as fish bone have gained attention as sustainable and cost-effective alternatives to synthetic materials. The present study aims to evaluate the potential of hydroxyapatite derived from fish bone for bone regeneration through both in vitro and in vivo investigations. Fish bone-derived hydroxyapatite was prepared and subjected to plasma surface treatment in order to enhance its surface properties and biological performance. The fish bone–derived hydroxyapatite exhibited excellent biocompatibility and supported cell viability, as confirmed by the MTT assay, which showed no significant cytotoxic effects. Acute toxicity evaluation revealed no mortality, abnormal clinical signs, or significant changes in body weight, indicating the absence of immediate toxic effects. Furthermore, in vivo subcutaneous implantation observations indicated a favourable tissue response at the implantation site, with no signs of pus formation or adverse reactions. Overall, these findings suggest that plasma-treated hydroxyapatite derived from fish bone is a safe and promising biomaterial for bone tissue engineering and regenerative medicine applications.

Keywords: bone regeneration; biocompatibility; fish bone-derived hydroxyapatite; hydroxyapatite; plasma surface modification

Evaluation of *in-vitro* and *in-vivo* wound healing potential of electrospun chitosan membrane loaded with Polyethylene oxide (PEO) and polyethylene oxide - hydroxyethyl cellulose (PEO-HEC) membrane in cell line and rat model

Nafeesathul Misririya, Dr. Nebu George Thomas, Dr. Ampadi AN

Chronic and non-healing wounds remain a major clinical challenge due to persistent inflammation, impaired angiogenesis, and delayed tissue regeneration. Advanced biomaterials that can actively support cellular activity and tissue repair are therefore of significant interest. In this study, electrospun chitosan-based nanofibrous membranes incorporating polyethylene oxide (PEO) and hydroxyethyl cellulose (HEC) were developed to enhance wound healing performance. The fabricated nanofibrous membranes exhibited excellent cytocompatibility, maintaining high cell viability and supporting fibroblast proliferation. Enhanced cell migration and accelerated in vitro wound closure were observed, indicating improved regenerative potential. In vivo evaluation further confirmed the safety of the membranes, with no evidence of systemic toxicity or adverse histopathological changes. Notably, treated wounds demonstrated significantly faster wound contraction, along with improved re-epithelialization, collagen deposition, and tissue organization compared to controls. The synergistic combination of chitosan with PEO and HEC contributed to improved structural integrity, hydration capacity, and biological performance of the electrospun membranes. Overall, these nanofibrous scaffolds provide a bioactive and multifunctional platform that effectively promotes tissue regeneration and accelerates wound healing. These findings highlight the potential of electrospun membranes, composed of chitosan, polyethylene oxide (PEO), and hydroxyethyl cellulose (HEC), demonstrate significant potential as advanced wound dressing materials for the effective management of acute and chronic wounds.

Keywords: chitosan; electrospinning; nanofibrous membranes; polyethylene oxide; wound healing

Evaluation of wound healing potential of electrospun membrane PCL/Gelatin/Nanofibre mesh loaded with nanoclay and G.O by in vitro scratch assay and in vivo study in rat model

Sreejina K, Dr. Nebu George Thomas, Dr. Ampadi AN

Wound healing is a complex biological process that requires an optimal environment to promote tissue regeneration and repair. In the present study, electrospun polycaprolactone (PCL)/gelatin nanofiber scaffolds incorporated with graphene oxide and nanoclay were developed and evaluated for their wound healing potential. The fabricated nanofiber membranes were subjected to comprehensive in vitro and in vivo analyses to assess their biocompatibility, safety, and therapeutic efficacy. In vitro cytotoxicity assessment using the MTT assay confirmed high cell viability, indicating the biocompatible and non-toxic nature of all samples toward L929 fibroblast cells, with enhanced cell proliferation observed in scaffolds containing low and high concentrations of graphene oxide and nanoclay compared to the pure scaffold, highlighting the beneficial role of these nanomaterials in supporting cellular activity. Acute toxicity studies showed no signs of erythema, edema, or any adverse reactions, confirming the safety and non-irritant nature of the developed membranes. In vivo wound healing studies using an excision wound model demonstrated significantly enhanced wound contraction, reduced healing time, and faster epithelialization in the treated groups, particularly in scaffolds with higher concentrations of graphene oxide and nanoclay. Histopathological analysis revealed well-organized collagen deposition, reduced inflammatory cell infiltration, enhanced fibroblast proliferation, and improved re-epithelialization in the treated groups compared to the control. Overall, the findings suggest that the electrospun PCL/gelatin nanofiber mesh incorporated with graphene oxide and nanoclay is biocompatible, non-toxic, and effective in promoting wound healing, making it a promising candidate for advanced wound dressing applications.

Keywords: Electrospinning; Graphene Oxide; PCL/Gelatin Nanofibers; Tissue Regeneration; Wound Healing

Bacterial Cellulose as a Bioactive Scaffold for Soft Tissue Regeneration

Geethu John, Dr. Ampadi AN, Dr. Nebu George Thomas

Bacterial cellulose (BC) has emerged as a promising biomaterial in wound healing due to its high purity, excellent water retention capacity, mechanical strength, and nanoscale fibrous architecture that closely mimics the extracellular matrix. In the present study, BC-based films, demonstrated excellent in vivo safety and biocompatibility in Sprague–Dawley rats. Acute toxicity evaluation revealed no signs of erythema, edema, or adverse systemic reactions, confirming the non-toxic and non-irritant nature of all BC formulations.

Biocompatibility assessment further indicated favorable tissue responses, with minimal inflammatory infiltration and absence of rejection, supporting their suitability for wound healing applications. Among the tested variants, modified BC films exhibited improved biological performance, suggesting enhanced cellular compatibility and tissue integration.

These findings highlight the potential of BC as a superior alternative to conventional natural polymers such as collagen, chitin, and gelatin for wound management. Overall, BC-based films demonstrate strong potential as safe, effective, and scalable biomaterials for applications in wound healing, diabetes mellitus management, and soft tissue regeneration.

Keywords: Bacterial Cellulose; Biocompatibility; *In-Vivo* Toxicity; Soft Tissue Regeneration; Wound Healing

ABSTRACTS – Ph.D.

An Integrated Computational Framework for Decoding Novel Therapeutic Targets and Strategies Against Antimicrobial Resistance in Critical Priority Pathogens

Elizabeth Annie George, Dr. Aniket Naha, Dr. Sudha Ramaiah

Antimicrobial resistance (AMR) has emerged as a major global healthcare challenge, diminishing the effectiveness of existing antimicrobial therapies and creating an urgent need for new therapeutic strategies. A comprehensive understanding of the genetic and molecular mechanisms underlying resistance is essential for addressing this growing problem. This study integrates genomics, structural bioinformatics, artificial intelligence and machine learning, quantum chemical analysis and molecular dynamics simulations to investigate AMR and explore potential therapeutic approaches. Genomic analyses were employed to characterize resistance-associated genes, mutations, evolutionary patterns, and other genomic factors contributing to antimicrobial resistance. These findings were further linked to molecular-level investigations of key resistance-associated targets to understand their structural and functional characteristics. Computational and AI/ML-based approaches were subsequently applied to identify, design, and evaluate potential antimicrobial candidates, including modified antibiotic analogues, antimicrobial peptides, and natural compounds. Molecular docking and MDS were used to investigate molecular interactions, structural stability, binding behaviour, and conformational changes, while quantum chemical and energetic analyses provided additional insights into the molecular properties and interaction profiles of the investigated compounds. By integrating complementary computational approaches across multiple levels of AMR research, this study establishes a systematic framework linking the genetic basis of resistance with molecular mechanisms and exploration of therapeutic interventions.

Keywords: AMR; Molecular Dynamics; Quantum Chemical Simulations, Genomics

Assessment of surface properties and biological performance of Titanium Implants with novel triple-layer coatings: Fucoidan, 45S5 bioglass, and fish scale-dervided nano hydroxyappetite

Dr. Haseena Ummer, Dr. Nebu George Thomas

Titanium (Ti) dental implants are widely used due to their superior mechanical properties and biocompatibility. However, unmodified Ti surfaces exhibit limited bioactivity, which affects osseointegration. This study aims to develop, characterize, and optimize a novel biocomposite coating system for Ti implants by integrating fucoidan, 45S5 Bioglass, and fish scale-derived nano-hydroxyapatite (HA) to enhance implant–tissue integration. A standardized dip-coating methodology is established by optimizing solution concentration, dipping parameters, and curing conditions. Physical and chemical characterization techniques, including FESEM, AFM, XRD and FTIR, are used to assess surface morphology, roughness, adhesion strength, and degradation kinetics. Wettability and mechanical integrity are also analyzed to ensure coating stability. Biological performance is also evaluated in this study through in vitro and in vivo (rat model) experiments to assess cell viability, adhesion, proliferation, osteogenic differentiation, acute toxicity, biocompatibility, and bone integration. The primary hypothesis proposes that the novel biocomposite coating significantly enhances osteoblast proliferation, biocompatibility, and implant stability. Secondary objectives include evaluating coating uniformity, adhesion strength, and biological responses. This research contributes to advanced implant surface engineering by optimizing bioactive coatings for improved clinical outcomes while promoting sustainability through bio-derived materials. The findings provide crucial insights for future dental implant innovations and the standardization of biomaterial applications.

Keywords: 45S5 Bioglass; Bioactive Coatings; Fucoidan; Implant Surface Engineering; Osteogenic Differentiation; Titanium Dental Implants

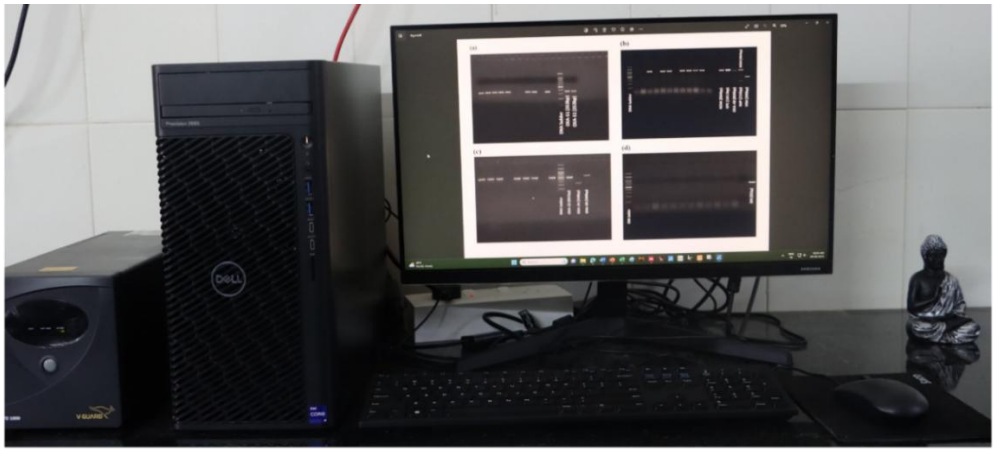
Evaluation of the activity of composite graft material synthesized from eggshell derived bone substitute (Hydroxyapatite) in a biocompatible matrix (Fish collagen) on bone healing and regeneration in the animal model (Wistar rats)

Dr. Sruthy Prathap, Dr. Nebu George Thomas

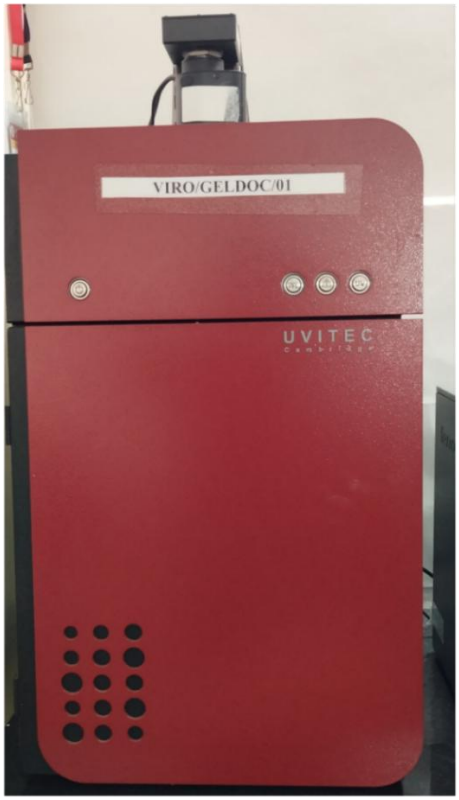
Large bone deformities pose significant challenges in periodontal surgeries. Bone regeneration is influenced by the health of underlying bone and osteo-inductive properties of the surrounding environment. Collagen and hydroxyapatite are used bone substitutes due to their biocompatibility and biodegradability. This study aimed to develop a novel composite graft using hydroxyapatite synthesized from domestic chicken eggshells and collagen extracted from Rohu fish scales. Hydroxyapatite was synthesized using chemical precipitation, while collagen was extracted from fish scales. The composite graft was prepared by direct mixing and lyophilization, followed by glycerol incorporation to achieve consistency. After characterization, its bone regenerative potential was evaluated in critical-sized calvarial defects in Wistar rats. Bone regeneration was assessed radiographically using cone-beam computed tomography and histomorphometrically. The regenerative capacities of eggshell-derived hydroxyapatite and the composite graft were compared with empty controls and the standard graft, Bio-Oss. Both novel materials demonstrated greater bone regeneration than empty controls, although their regenerative capacity was lower than Bio-Oss over 90 days. The composite graft showed significantly higher radiodensity than empty controls ($p < 0.0001$) and eggshell-derived hydroxyapatite ($p < 0.01$), while Bio-Oss showed marginally higher radiodensity than the composite graft ($p < 0.05$). The composite graft demonstrated enhanced bone regeneration and radiodensity, indicating potential for periodontal and peri-implant defect regeneration. Further laboratory and clinical studies are warranted to confirm its osteo-inductive properties.

Keywords: Bone Regeneration; Critical Bone Defect; Eggshells; Fish Collagen; Hydroxyapatite

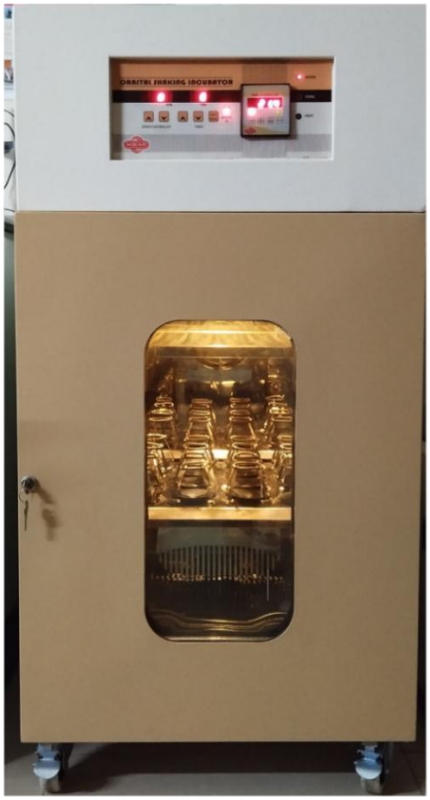
KEY FACILITIES FOR RESEARCH AT PRC



Precision Tower Dell Workstation



Gel Doc



Shaking Incubator



Miniature Centrifuge



Ultra Cooling Centrifuge



Rotary Evaporator



Double Distillation Unit



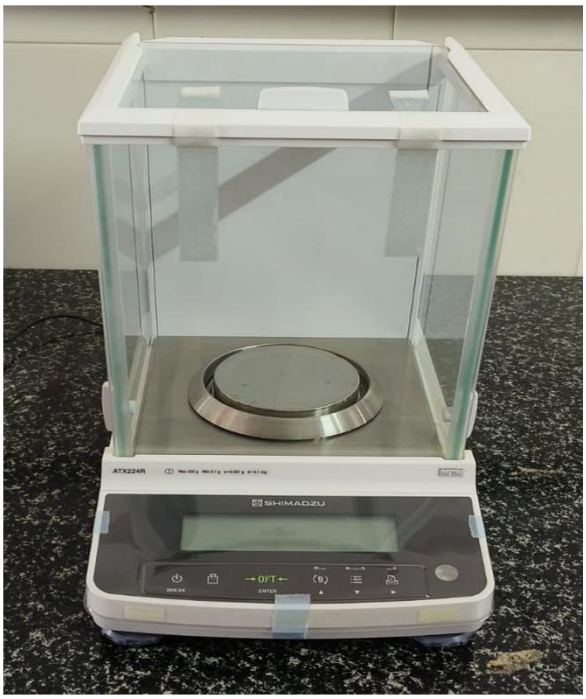
Colorimeter



Heating Plate with Magnetic Stirrer



pH Meter



Precision Weighing Balance



Cyclo Mixer



Heating Chamber



Heating Mantle



Microbial Colony Counter



Autoclave



Water Bath Shaker



Water Bath Sonicator



Orbital Shaker



ELISA Washer



Thermal Cycler



Ultra Cooling Refrigerator (-20^{0}C)



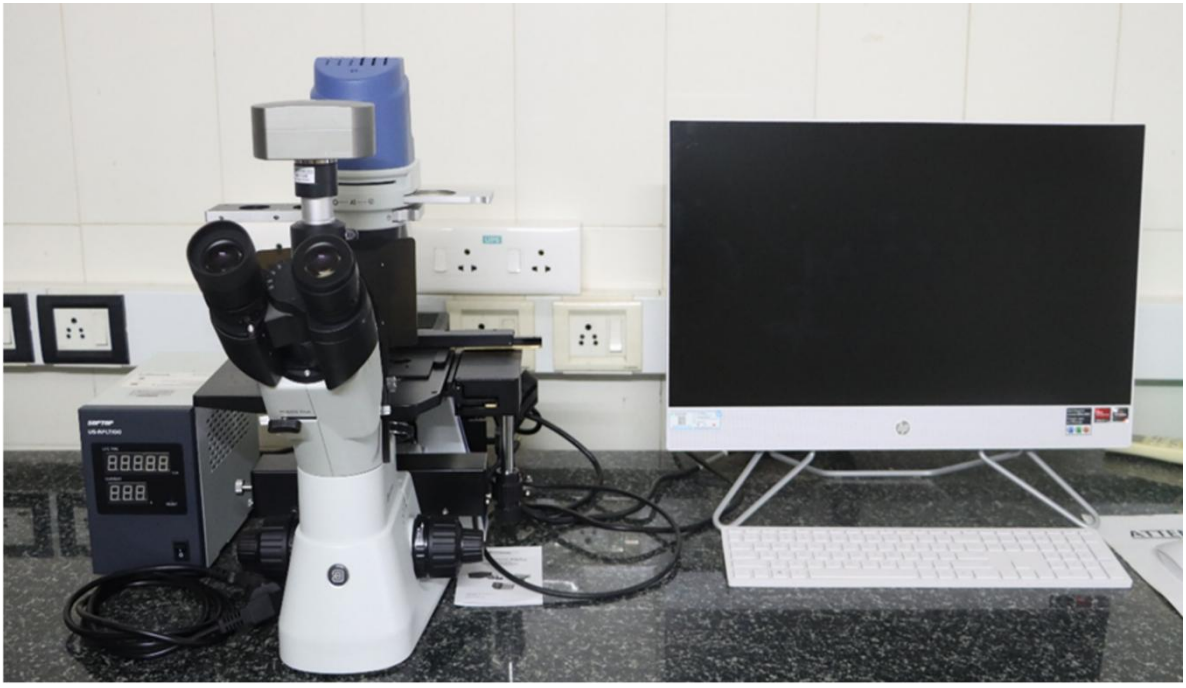
Deep Freezer (-80^{0}C)



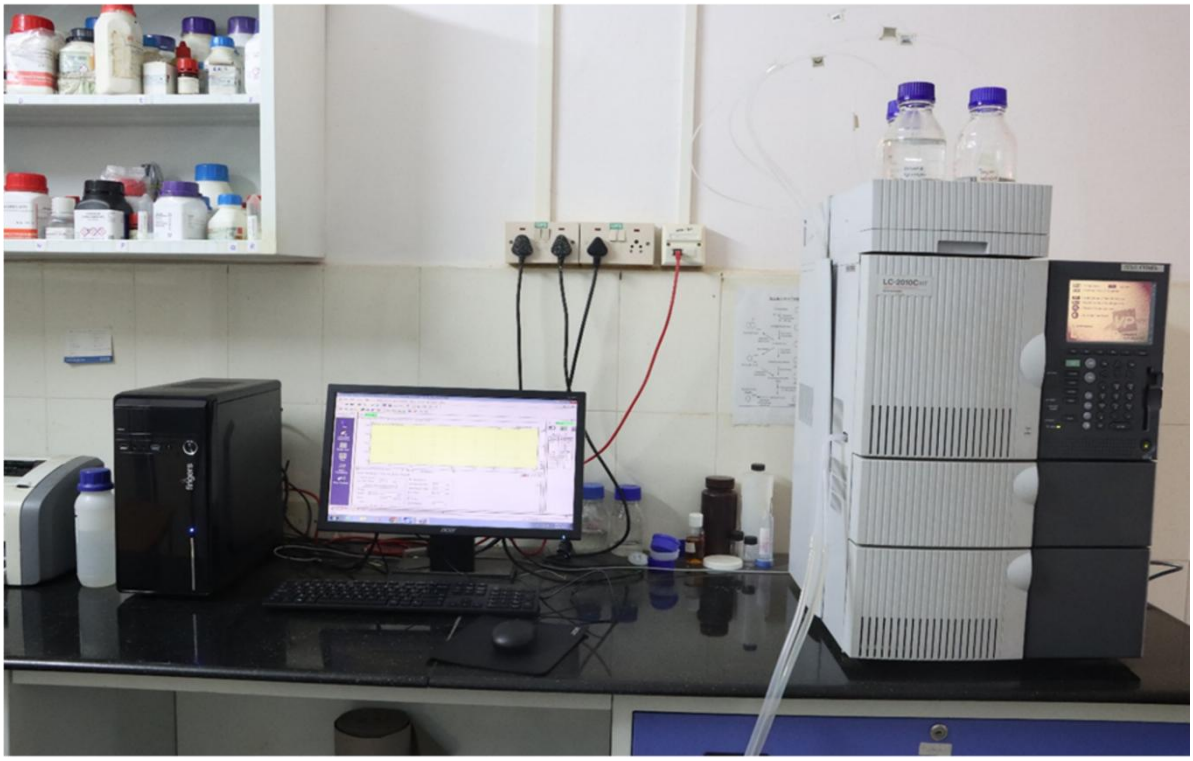
Dry Bath



Compound Microscope with Camera Attachment



Fluorescence and Inverted Microscope with PC Attachment



Analytical HPLC with PC Attachment



RT PCR



Hot Air Oven



Isoflurane Anesthesia Machine



VIDA Enzyme Linked Fluorescent Assay (ELFA)



BIORAD Connect R1



UV-Vis Spectrophotometer



Abbot CLIA



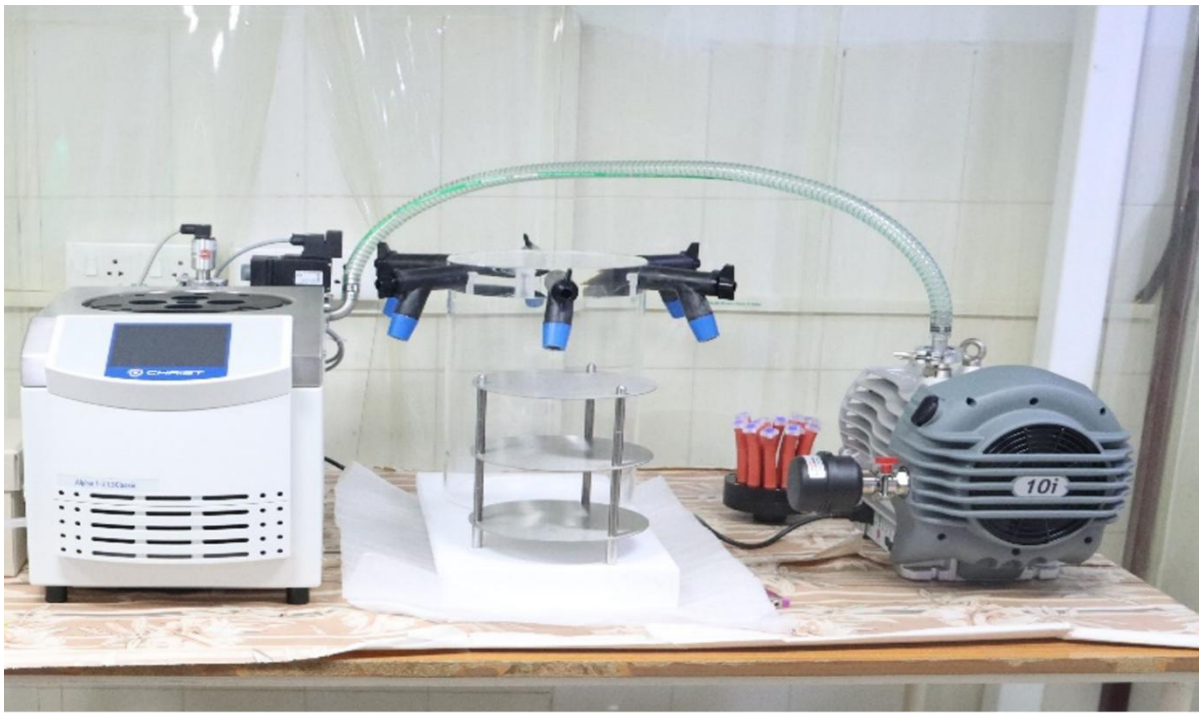
Microtome



Bacteriological Incubator



CO_2 Incubator



Lyophilizer – Christ Martin



Serum Analyzer



CBC Analyzer



Clinical Microscope with Camera

MEMORANDUM OF UNDERSTANDINGS (MoUs)

SIGNED BY PRC



MoU signed with University of South Wales (18.06.2025)



MOU With WellGenome Technologies Pvt Ltd (17.06.2025)



MOU With University of Salento, Italy (18.06.2025)



MoU signing with Chinmaya Viswa Vidhyapeeth, Kochi (29.07.2025)



MoU signing with Vellore Institute of Technology, Vellore (13.01.2026)



MoU signed with Santhigiri Scientific and Industrial Research Institute (SSIRI) (22.01.2026)



MoU signing with St Thomas College, Pala (23.03.2026)



MoU signing with Believers Church Medical College, Tiruvalla (14.04.2026)

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Parvathi R.M.



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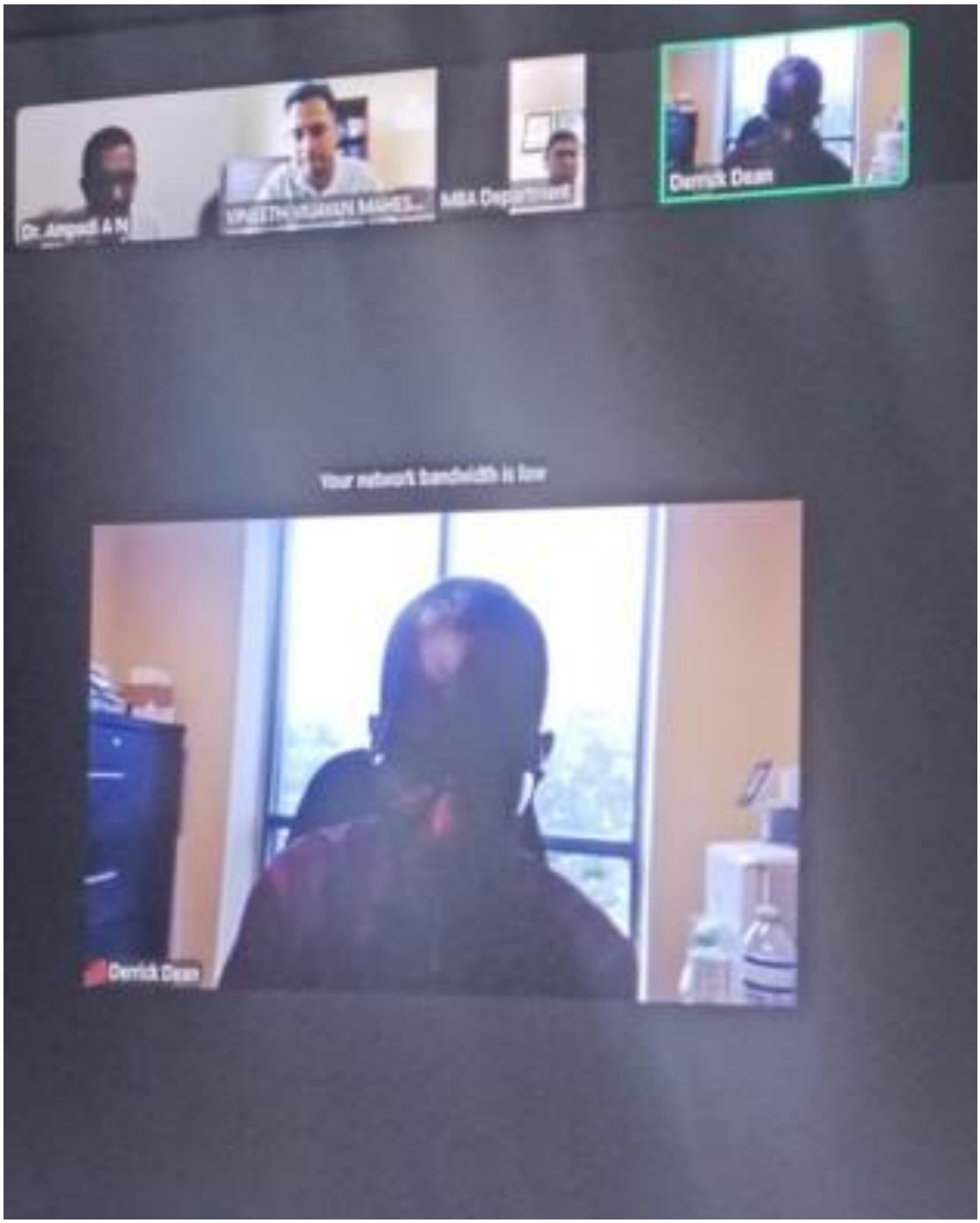


Silpa S.

GALLERY OF PRC



Pushpagiri Research Centre Faculty meeting (26.07.2025)



Online meeting with Alabama State University Dean Dr Derick and Associate professor Dr Vineeth attended meeting. Meeting agreed to sign MoU between PRC and Alabama University for in vivo animal work, joint publications, academic activity, joint proposal submission, conferences and joint PhD program Thrust areas are Tissue engineering and Nephrology studies in animal models. (31.05.2025)





PRC Onam Celebration (02.09.2025)





Institutional Review Board meeting (15.09.2025)

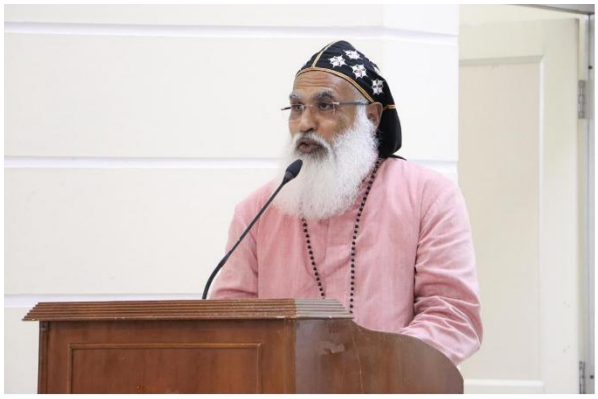


Adjunct Faculties of PRC in World's 2% Scientists List



Rev. Dr. Mathew Mazhavancheril receiving Pushpagiri Award for Patent in Biomedical research











Research Day Celebration – 17.10.2025



Distribution of Mar Athanasios Research Endowment Awards to PRC Faculties (18.10.2025)

ലേഖനം



പുഷ്പഗിരിയിലെ ഗവേഷണ സാധ്യതകൾ

(അത്യാധുനിക ബയോമെഡിക്കൽ ഗവേഷണങ്ങളുടെ സംഗമകേന്ദ്രം)



റവ. ഡോ. മാത്യു മഴവഞ്ചേരിൽ
M.Sc., Ph.D., Post Doc (France)
ഡയറക്ടർ, പുഷ്പഗിരി മെഡിക്കൽ കോളേജ്

പുഷ്പഗിരി മെഡിക്കൽ സൊസൈറ്റിക്ക് കീഴിലുള്ള മെഡിക്കൽ, നഴ്സിംഗ്, ഫാർമസി, അനുബന്ധ ആരോഗ്യശാസ്ത്ര (Allied sciences), ദന്തൽ കോളേജുകൾ തുടങ്ങിയ സ്ഥാപനങ്ങളുടെയെല്ലാം പ്രധാന ഗവേഷണ കേന്ദ്രമാണ് 2010 ൽ സ്ഥാപിതമായ പുഷ്പഗിരി റിസർച്ച് സെന്റർ (PRC). കഴിഞ്ഞ ഒരു ദശാബ്ദത്തിനിടയിൽ, മധ്യതിരുവിതാംകൂർ മേഖലയിലെ ഒരു പ്രമുഖ സ്വകാര്യ ഗവേഷണ കേന്ദ്രമായി PRC വളർന്നു. വിവിധ വിജ്ഞാനശാഖകളെ ഏകോപിപ്പിക്കുന്ന (transdisciplinary) അതിനൂതന ബയോമെഡിക്കൽ ഗവേഷണങ്ങൾക്കായി സജ്ജീകരിച്ചിട്ടുള്ള ബഹുമുഖ സൗകര്യങ്ങളുള്ള ലബോറട്ടറികളാണ് ഈ സ്ഥാപനത്തിന്റെ കരുത്ത്.

ടിഷ്യൂ എഞ്ചിനീയറിംഗ്, മെഡിക്കൽ ബയോടെക്നോളജി, ബയോ ഇൻഫർമാറ്റിക്സ്, സൈറ്റോജെനെറ്റിക്സ്, മോളിക്യുലാർ ബയോളജി, വൈറോളജി, കാൻസർ ഗവേഷണം തുടങ്ങിയ വിവിധ മേഖലകളിലെ വൈദഗ്ധ്യത്തെ ഒരുമിപ്പിക്കുന്ന, ശാസ്ത്രീയ അന്വേഷണങ്ങളുടെ ഒരു സജീവ കേന്ദ്രമാണ് PRC. നൂതനമായ പരിഹാരങ്ങൾ കണ്ടെത്തുന്നതിലുള്ള ഈ കേന്ദ്രത്തിന്റെ മികവ്, ലഭിച്ചിട്ടുള്ള നിരവധി പേറ്റന്റുക

ളിലും അന്താരാഷ്ട്ര ജേണലുകളിലെ ഗവേഷണ പ്രബന്ധങ്ങളിലും പ്രമുഖ ഏജൻസികളിൽ നിന്ന് നേടിയ ഫണ്ടിംഗിലും പ്രകടമാണ്.

കർശനമായ ഗുണനിലവാരവും ഗവേഷണ എത്തിക്സും പിന്തുടരുന്ന ഈ കേന്ദ്രം, കേരള ആരോഗ്യശാസ്ത്ര സർവ്വകലാശാല (KUHS), ചിന്മയ വിശ്വവിദ്യാപീഠം, ഫിൻലൻഡിലെ ഹെൽസിങ്കി സർവ്വകലാശാല എന്നിവയ്ക്ക് കീഴിലുള്ള അംഗീകൃത പി.എച്ച്.ഡി. ഗവേഷണ കേന്ദ്രം കൂടിയാണ്. ആരോഗ്യ ഗവേഷണ ഡയറക്ടറേറ്റിന് (DHR) കീഴിൽ രജിസ്റ്റർ ചെയ്ത ഇൻസ്റ്റിറ്റ്യൂഷണൽ റിവ്യൂ ബോർഡും (IRB) ഇവിടെ പ്രവർത്തിക്കുന്നു. ഫേസ് 1, ഫേസ് 2 ക്ലിനിക്കൽ ട്രയലുകൾ നടത്തുന്നതിനൊപ്പം, മൃഗങ്ങളിലെ പരീക്ഷണങ്ങൾ നിയന്ത്രിക്കുന്നതിനുള്ള സമിതിയുടെ (Committee for Control and Supervision of Experiments on Animals - CCSEA) അംഗീകാരമുള്ള അനിമൽ ഹൗസ് സൗകര്യവും ഇവിടെ യുണ്ട്. ഇത് എല്ലാ ഗവേഷണങ്ങളും ഉയർന്ന ധാർമ്മിക നിലവാരം പുലർത്തുന്നുവെന്ന് ഉറപ്പാക്കുന്നു.

പ്രശസ്തമായ ദേശീയ, അന്തർദേശീയ സ്ഥാപനങ്ങളുമായി ധാരണാപത്രങ്ങളിലൂടെ (MoUs) സഹകരിക്കുന്ന ഈ കേന്ദ്രം, വിദ്യാർത്ഥികൾക്ക് ഇന്റേൺഷിപ്പ്, അവരുടെ ബി.എസ്സി., എം.എസ്സി. പ്രോജക്റ്റുകൾ എന്നിവ ചെയ്യാനുള്ള മികച്ച അവസരങ്ങളും നൽകുന്നു. 'ബയോറേഡിയൻസ്' എന്ന വാർഷിക കോൺഫറൻസിലൂടെയും നിരവധി ശില്പശാലകളിലൂടെയും സെമിനാറുകളിലൂടെയും PRC ഗവേഷണ മികവിന്റെ വഴികാട്ടിയായി നിലകൊള്ളുന്നു.

പ്രധാന ഗവേഷണ വിഭാഗങ്ങളും ലബോറട്ടറികളും

ബയോമെഡിക്കൽ സയൻസിന്റെ ഓരോ പ്രത്യേക മേഖലയ്ക്കായി സജ്ജീകരിച്ചിട്ടുള്ള ഗവേഷണ വിഭാഗങ്ങളാണ് PRC യുടെ ശക്തി. ഈ ലബോറട്ടറികൾ സുപ്രധാനമായ ഗവേഷണങ്ങൾക്ക് ആവശ്യമായ അടിസ്ഥാന സൗകര്യങ്ങളും വൈദഗ്ധ്യവും നൽകുന്നു.

1. അനിമൽ റിസർച്ച് ഫെസിലിറ്റി

2008 ൽ സ്ഥാപിതമായ ഈ കേന്ദ്രത്തിന് CCSEA അംഗീകാരമുണ്ട്. ഇൻസ്റ്റിറ്റ്യൂഷണൽ അനിമൽ എത്തിക്സ് കമ്മിറ്റിയുടെ (IAEC) മേൽനോട്ടത്തിലുള്ള ഈ കേന്ദ്രത്തിൽ, മൃഗങ്ങളിലെ പരീക്ഷണങ്ങൾക്കായി (in-vivo) അത്യാധുനിക ശസ്ത്രക്രിയാ ഉപകരണങ്ങളും സാങ്കേതികവിദ്യകളുമുണ്ട്. എലി, ചുണ്ടെലി, ഗിനി പന്നി, മുയലുകൾ എന്നീ മൃഗങ്ങളിലാണ് ഇവിടെ പരീക്ഷണങ്ങൾ നടത്തുന്നത്. മൃഗക്ഷേമം, ശാസ്ത്രീയമായ കൃത്യത, നിയമപരമായ നിബന്ധനകൾ എന്നിവ ഉറപ്പുവരുത്തുന്ന ഈ കേന്ദ്രം, മറ്റ് സ്ഥാപനങ്ങളിലെ ശാസ്ത്രജ്ഞർക്കും ഗവേഷകർക്കും മൃഗങ്ങളെ കൈകാര്യം ചെയ്യുന്നതിലും ശസ്ത്രക്രിയാ രീതികളിലും പരിശീലനം നൽകുന്നു.

2. പുഷ്പഗിരി സെന്റർ ഫോർ വൈറോളജി (PCV)

2011 മുതൽ പ്രവർത്തിക്കുന്ന ഈ BSL-2 (ബയോസേഫ്റ്റി ലെവൽ - 2) ലബോറട്ടറി പുഷ്പഗിരി മെഡിക്കൽ കോളേജ് ആശുപത്രിക്ക് സുപ്രധാനമായ രോഗനിർണ്ണയ സഹായം നൽകുന്നു. ഹെപ്പറ്റൈറ്റിസ് സി (HCV), കോവിഡ്-19 (SARS CoV-2) എന്നിവയുടെ ആർ.ടി.പി.സി.ആർ. പരിശോധനകൾക്ക് ഈ കേന്ദ്രത്തിന് NABL അക്രഡിറ്റേഷനുണ്ട്. വൈറൽ രോഗനിർണ്ണയത്തിനും ഗവേഷണത്തിനുമുള്ള ഒരു പ്രധാന കേന്ദ്രമായി മാറിയ ഈ സ്ഥാപനം, നാഷണൽ റിക്കറ്റ്ഷ്യൽ സർവൈലൻസ് നെറ്റ്വർക്കിന്റെ ഭാഗവുമാണ്. തിരുവനന്തപുരത്തെ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് അഡ്വാൻസ്ഡ് വൈറോളജിയുമായി (IAV) ചേർന്ന് ഡെങ്കിപ്പനിയെക്കുറിച്ചുള്ള പഠനം പോലുള്ള പൊതുജനാരോഗ്യ പദ്ധതികളിലും ഈ കേന്ദ്രം സഹകരിക്കുന്നു.

3. സെന്റർ ഫോർ എവിഡൻസ് ബേസ്ഡ് പ്രാക്ടീസ് (PCEBP)

2019 ൽ ആരംഭിച്ച ഈ കേന്ദ്രത്തിന് 2023 ൽ ജോന്ന ബ്രിഗ്സ് ഇൻസ്റ്റിറ്റ്യൂട്ടിന്റെ (JBI) 'സെന്റർ ഓഫ് എക്സലൻസ്' പദവി ലഭിച്ചു. കേരളത്തിൽ ഈ അംഗീകാരം ലഭിക്കുന്ന ആദ്യ സ്ഥാപനമാണിത്. ആസ്ട്രേലിയയിലെ അഡ്ലെയ്ഡ് സർവകലാശാലയുമായി സഹകരിക്കുന്ന JBI, ശാസ്ത്രീയ തെളിവുകളെ അടിസ്ഥാനമാക്കിയുള്ള ആരോഗ്യപരിചരണത്തിനാണ് ഊന്നൽ നൽകുന്നത്. അദ്ധ്യാപകർക്കും ബിരുദാനന്തരബിരുദ വിദ്യാർത്ഥികൾക്കും ഗവേഷണ രീതികളിൽ പരിശീലനം നൽകുന്നതിലും സിസ്റ്റമാറ്റിക് റിവ്യൂകൾ തയ്യാറാക്കുന്നതിലും ഈ കേന്ദ്രം സജീവമായി പ്രവർത്തിക്കുന്നു.

4. ക്ലിനിക്കൽ എപ്പിഡെമിയോളജി യൂണിറ്റ് & ക്ലിനിക്കൽ ട്രയൽസ്

സ്ഥാപനത്തിന്റെ ഗവേഷണ ശേഷി ശക്തിപ്പെടുത്തുന്നതിൽ ഈ യൂണിറ്റിന് നിർണ്ണായക പങ്കുണ്ട്. സ്റ്റാറ്റിസ്റ്റിക്കൽ അനാലിസിസ്, പ്രോട്ടോക്കോൾ തയ്യാറാക്കൽ തുടങ്ങിയ കാര്യങ്ങളിൽ ഈ യൂണിറ്റ് ഗവേഷകർക്ക് പൂർണ്ണ പിന്തുണ നൽകുന്നു. ലോകാരോഗ്യ സംഘടനയുടെ (WHO) സഹായത്തോടെയുള്ള ഫീൽഡ്തല ഗവേഷണങ്ങളും ഇവിടെ നടക്കുന്നു. ഫേസ് III, ഫേസ് IV ക്ലിനിക്കൽ ട്രയലുകൾക്ക് മേൽനോട്ടം വഹിക്കുന്നതും ഈ യൂണിറ്റാണ്.

5. സൈറ്റോജെനറ്റിക്സ് ആൻഡ് ബയോകെമിസ്ട്രി ലബോറട്ടറി

ജീവിതശൈലീ രോഗങ്ങളുമായി ബന്ധപ്പെട്ട്

ബയോമാർക്കറുകളുടെ പഠനത്തിലാണ് ഈ ലാബ് ശ്രദ്ധ കേന്ദ്രീകരിക്കുന്നത്. ഔഷധഗുണമുള്ള നാനോ പാർട്ടിക്കിളുകളുടെ നിർമ്മാണം, ഫ്രീ റാഡിക്കൽ റിസർച്ച്, ഫൈറ്റോകെമിസ്ട്രി, മൈറ്റോകോൺട്രിയൽ ബയോളജി എന്നിവയാണ് പ്രധാന ഗവേഷണ വിഷയങ്ങൾ. ഹൃദ്രോഗങ്ങളിൽ മൈറ്റോകോൺട്രിയയുടെ പങ്ക്, നൂതനമായ മരുന്ന് വിതരണ സംവിധാനങ്ങൾ എന്നിവയിലും ഇവർ ശ്രദ്ധ കേന്ദ്രീകരിക്കുന്നു.

6. എച്ച്. എൽ.എ. ആൻഡ് ടിഷ്യൂ ടൈപ്പിംഗ് ലബോറട്ടറി

പാത്തോളജി വിഭാഗത്തിന് കീഴിലുള്ള ഈ ലബോറട്ടറിയിൽ ബയോപ്സി, സർജറിയിലൂടെ നീക്കം ചെയ്യുന്ന സാമ്പിളുകൾ എന്നിവയുൾപ്പെടെ നിരവധി സാമ്പിളുകൾ പരിശോധിക്കുന്നു. കൂടാതെ, ഈ കേന്ദ്രത്തിന്റെ ബയോറിപോസിറ്ററിയുടെ (ടിഷ്യൂ, ക്ലിനിക്കൽ സാമ്പിളുകൾ സൂക്ഷിക്കുന്ന ഇടം) ചുമതലയും ഈ ലബോറട്ടറിക്കാണ്. ഗവേഷണത്തിനും രോഗനിർണ്ണയത്തിനും ചികിത്സയ്ക്കും വിദ്യാഭ്യാസ ആവശ്യങ്ങൾക്കും ഈ ശേഖരം ഏറെ പ്രയോജനകരമാണ്.

7. മെഡിക്കൽ ബയോടെക്നോളജി & കമ്പ്യൂട്ടേഷണൽ ഡ്രഗ് ഡിസൈനിംഗ് ലബോറട്ടറി

ഭക്ഷ്യ ബയോടെക്നോളജി, പ്രത്യേകിച്ച് പ്രോബയോട്ടിക്കുകളിലാണ് ഈ ലാബ് ശ്രദ്ധ കേന്ദ്രീകരിക്കുന്നത്. നിരവധി പുതിയ പ്രോബയോട്ടിക് ബാക്ടീരിയകളെ ഇവിടെ വേർതിരിച്ചെടുത്തിട്ടുണ്ട്. മെഷീൻ ലേണിംഗ് ഉപയോഗിച്ചുള്ള ജീനോമിക്സ്, സിസ്റ്റംസ് ബയോളജി, സ്ട്രക്ച്ചറൽ ബയോ ഇൻഫർമാറ്റിക്സ് വിശകലനങ്ങൾ എന്നിവയിലും ഈ ലാബ് സജീവമാണ്. കമ്പ്യൂട്ടർ സഹായത്തോടെയുള്ള മരുന്ന് രൂപകല്പനയാണ് ഇവിടുത്തെ മറ്റൊരു പ്രധാന പ്രവർത്തനം.

8. മൈക്രോബിയൽ ടെക്നോളജി റിസർച്ച് & ഇൻഫെക്ഷ്യസ് ഡിസീസ് ലബോറട്ടറി

ആഗോള ആരോഗ്യരംഗത്തെ ഏറ്റവും വലിയ വെല്ലുവിളികളിലൊന്നായ ആന്റിമൈക്രോബിയൽ റെസിസ്റ്റൻസിന്റെ (മരുന്നുകളോടുള്ള സൂക്ഷ്മാണുക്കളുടെ പ്രതിരോധം) കാരണങ്ങളെക്കുറിച്ചാണ് ഈ ലാബ് പഠിക്കുന്നത്. ആശുപത്രികളിൽ നിന്ന് പകരുന്ന രോഗാണുക്കളെക്കുറിച്ച് പഠിക്കുകയും ഔഷധസസ്യങ്ങളിൽ നിന്നുള്ള സംയുക്തങ്ങൾ നിലവിലുള്ള ആന്റിബയോട്ടിക്കുകളുടെ ശേഷി വർദ്ധിപ്പിക്കാനുള്ള വഴികൾ കണ്ടെത്തുകയും ചെയ്യുക എന്നതും ഈ ലാബ് ലക്ഷ്യമിടുന്നു.

9. മോളിക്യുലാർ ബയോളജി ലബോറട്ടറി

മോളിക്യുലാർ ബയോളജി, ടോക്സിക്കോളജി, സെൽകൾച്ചർ എന്നീ മേഖലകളിലാണ് ഈ ലാബ് ശ്രദ്ധ കേന്ദ്രീകരിക്കുന്നത്. വിവിധ സസ്യ സംയുക്തങ്ങളുടെ ഔഷധഗുണങ്ങൾ ഇൻ-വിട്രോ, ഇൻ-വിവോ പരീക്ഷണ മാതൃകകളിലൂടെ കണ്ടെത്തുകയാണ് പ്രധാന ലക്ഷ്യം. അമിതവണ്ണം, ടൈപ്പ് 2 പ്രമേഹം, നോൺ-ആൽക്കഹോളിക് ഫാറ്റി ലിവർ, കാൻസർ തുടങ്ങിയ രോഗാവസ്ഥകളിൽ ഈ സംയുക്തങ്ങൾ എങ്ങനെ പ്രവർത്തിക്കുന്നുവെന്ന് മനസ്സിലാക്കാൻ ഈ ഗവേഷണം സഹായിക്കും.



10. പബ്ലിക് ഹെൽത്ത് ആൻഡ് കാൻസർ റിസർച്ച്

സമൂഹവുമായി നേരിട്ട് ബന്ധപ്പെട്ടുള്ള ഗവേഷണങ്ങളാണ് ഈ വിഭാഗം നടത്തുന്നത്. മധ്യതിരുവിതാംകൂറിലെ സ്ത്രീകൾക്കായുള്ള കാൻസർ സ്ക്രീനിംഗ് പ്രോഗ്രാമുകൾ ഇതിന്റെ ഭാഗമാണ്. ലബോറട്ടറിക്കപ്പുറം ആരോഗ്യപ്രവർത്തകരുമായും നയരൂപീകരണ വിദഗ്ദ്ധരുമായും സഹകരിച്ച്, ഗവേഷണ കണ്ടെത്തലുകളെ പ്രായോഗികമായ പൊതു



ജനാരോഗ്യ പദ്ധതികളാക്കി മാറ്റാനാണ് ഈ വിഭാഗം ശ്രമിക്കുന്നത്.

11. സ്റ്റെം സെൽ ആൻഡ് ടിഷ്യു എഞ്ചിനീയറിംഗ്

രോഗം മൂലമോ അപകടം മൂലമോ നഷ്ടപ്പെട്ട ശരീരകലകളെ പുനരുജ്ജീവിപ്പിക്കാൻ സഹായിക്കുന്ന സ്കാഫോൾഡുകൾ (കോശങ്ങൾക്ക് വളരാനുള്ള അടിസ്ഥാനം നൽകുന്ന ഘടനകൾ) നിർമ്മിക്കുന്നതിലാണ് ഈ ലബോറട്ടറി ശ്രദ്ധ കേന്ദ്രീകരിക്കുന്നത്. അസ്ഥി, ചർമ്മം, മോണയിലെ കലകൾ എന്നിവയുടെ പുനരുജ്ജീവനത്തിനാണ് പ്രത്യേക ഊന്നൽ. CadCam സഹായത്തോടെയുള്ള 3D പ്രിന്റിംഗ് ഉപയോഗിച്ച് സ്കാഫോൾഡുകൾ നിർമ്മിക്കുകയും ISO മാർഗ്ഗനിർദ്ദേശങ്ങൾ അനുസരിച്ച് അവയുടെ സുരക്ഷാ പരിശോധനകൾ നടത്തുകയും ചെയ്യുന്നു.

ഗവേഷണ പങ്കാളിത്തം : PRC യിലെ അവസരങ്ങളും സൗകര്യങ്ങളും

വിദ്യാർത്ഥികളെയും ഗവേഷകരെയും അക്കാദമിക് വിദഗ്ദ്ധരെയും വ്യാവസായിക സ്ഥാപനങ്ങളെയും സഹകരണത്തിനായി PRC ക്ഷണിക്കുന്നു. നൂതന ആശയങ്ങൾക്കും പങ്കാളിത്ത ഗവേഷണങ്ങൾക്കുമായി ഈ കേന്ദ്രത്തിലെ പ്രധാന സൗകര്യങ്ങൾ ഉപയോഗിക്കാവുന്നതാണ്.

1. ഇൻ-വിവോ പഠനങ്ങൾക്കായി മികച്ച അനിമൽ ഹൗസ്

CCSEA അംഗീകാരമുള്ള ഈ കേന്ദ്രം അത്യാധുനിക ബയോമെഡിക്കൽ ഗവേഷണങ്ങൾക്കായി ധാർമ്മിക സുരക്ഷ ഉറപ്പാക്കിയ ഒരു അന്തരീക്ഷം നൽകുന്നു. താഴെപ്പറയുന്ന മേഖലകളിൽ ഗവേഷണം നടത്താം:

* ഫാർമക്കോളജിക്കൽ പഠനങ്ങൾ : മരുന്നുകളുടെ ഫലപ്രാപ്തി, ഡോസേജ്, സുരക്ഷാ പരിശോധനകൾ
* പെരുമാറ്റ-നാഡീശാസ്ത്ര പഠനങ്ങൾ : തലച്ചോറിന്റെ പ്രവർത്തനം, നാഡീക്ഷയം എന്നിവയെക്കുറിച്ചുള്ള പഠനങ്ങൾ.
* ശസ്ത്രക്രിയാ പഠനങ്ങൾ : ശസ്ത്രക്രിയാ പരിശീലനം, ശസ്ത്രക്രിയാനന്തര പരിചരണം.
* കാൻസർ ഗവേഷണം : ട്യൂമർ മോഡലിംഗ്, ഹിസ്റ്റോപാത്തോളജിക്കൽ വിശകലനം.
* മെറ്റബോളിക് പഠനങ്ങൾ : പ്രമേഹം, അമിതവണ്ണം തുടങ്ങിയവയെക്കുറിച്ചുള്ള ഗവേഷണങ്ങൾ.

2. ക്ലിനിക്കൽ ട്രയലുകൾക്ക് സമ്പൂർണ്ണ പിന്തുണ

ഗവേഷണ സംസ്കാരം പ്രോത്സാഹിപ്പിക്കുന്നതിനായി ഫേസ് 3, ഫേസ് 4 ട്രയലുകൾക്ക് ക്ലിനിക്കൽ എപ്പിഡെമിയോളജി യൂണിറ്റ് (CEU) പ്രൊഫഷണൽ പിന്തുണ നൽകുന്നു. സാമ്പിൾ സൈസ് കണക്കാക്കൽ, ഡാറ്റാ അനാലിസിസ്, പ്രോട്ടോക്കോൾ തയ്യാറാക്കൽ, പ്രബന്ധരചന എന്നിവയിൽ യൂണിറ്റ് ഗവേഷകരെ സഹായിക്കുന്നു. CDSCO രജിസ്റ്റേർഡ് എത്തിക്സ് കമ്മിറ്റിയുമായി ചേർന്ന് പ്രവർത്തിക്കുന്നതിനാൽ എല്ലാ ട്രയലുകളും ഗുഡ് ക്ലിനിക്കൽ പ്രാക്ടീസ് (GCP) മാനദണ്ഡങ്ങൾ പാലിക്കുന്നുണ്ടെന്ന് ഉറപ്പാക്കുന്നു.

3. സൂക്ഷ്മമായ ഗവേഷണത്തിന് കേന്ദ്രീകൃത ഉപകരണ സൗകര്യം

PRC യിൽ ഉയർന്ന നിലവാരമുള്ള ഉപകരണങ്ങളോടുകൂടിയ ഒരു സെൻട്രൽ ഇൻസ്ട്രമെന്റേഷൻ യൂണിറ്റുണ്ട്. ഈ ഉപകരണങ്ങൾ മിതമായ നിരക്കിൽ പുറത്തുനിന്നുള്ളവർക്കും ലഭ്യമാണ്.

പ്രധാന ഉപകരണങ്ങൾ:

* ഹൈ-പെർഫോമൻസ് കമ്പ്യൂട്ടിംഗ് : മോളിക്യുലാർ ഡോക്കിംഗ്, ഡൈനാമിക്സ് സിമുലേഷനുകൾ, മെഷീൻ ലേണിംഗ് അധിഷ്ഠിത ജീനോമിക് വിശകലനങ്ങൾ എന്നിവയ്ക്കായുള്ള വർക്ക് സ്റ്റേഷനുകൾ.
* BSL-2, മൈക്രോബയോളജി ലാബുകൾ :

രോഗാണുക്കളെ കൈകാര്യം ചെയ്യാനുള്ള സൗകര്യം, ഓർബിറ്റൽ ഷേക്കിംഗ് ഇൻകുബേറ്ററുകൾ, ഇലക്ട്രോഫോറെസിസ് യൂണിറ്റുകൾ.

* വൈറോളജി ഉപകരണങ്ങൾ : റിയൽ-ടൈം പിസിആർ സിസ്റ്റങ്ങൾ, ഓട്ടോമേറ്റഡ് ഇമ്മ്യൂണോ അസ്സേ അനലൈസറുകൾ.

* അനലിറ്റിക്കൽ, ഇമേജിംഗ് ഉപകരണങ്ങൾ : HPLC, മൈക്രോപ്ലേറ്റ് റീഡറുകൾ, യു.വി. വിസിബിൾ സ്പെക്ട്രോഫോട്ടോമീറ്റർ, ഫ്ളൂറെസൻസ് മൈക്രോസ്കോപ്പ്.

* പാത്തോളജി, ഹിസ്റ്റോളജി ടൂളുകൾ : മൈക്രോടോം, ക്രയോസ്റ്റാറ്റ്, ഓട്ടോമേറ്റഡ് ടിഷ്യു പ്രോസസറുകൾ.

* സെൽ കൾച്ചർ ഫെസിലിറ്റി : CO_2 ഇൻകുബേറ്ററുകളും ഹൈ-എൻഡ് മൈക്രോസ്കോപ്പുകളും അടങ്ങിയ അത്യാധുനിക സൗകര്യം.

* ബയോറിപോസിറ്ററി : സാമ്പിളുകൾ ദീർഘകാലം സൂക്ഷിക്കുന്നതിനുള്ള -20°C, -80°C ഡീപ് ഫ്രീസറുകൾ.

ഭാവിയെക്കുറിച്ചുള്ള കാഴ്ചപ്പാട്

ശാസ്ത്രജ്ഞർ, ഗവേഷണ പരിശീലകർ, പി.എച്ച്.ഡി. വിദ്യാർത്ഥികൾ എന്നിവരടങ്ങുന്ന സമർപ്പിത സംഘവുമായി, മനുഷ്യന്റെ ആരോഗ്യം മെച്ചപ്പെടുത്തുന്നതിനായി മെഡിക്കൽ, അടിസ്ഥാന ശാസ്ത്ര ശാഖകളിൽ മുന്നേറാൻ PRC പ്രതിജ്ഞാബദ്ധമാണ്. അമ്പതിലധികം ബാഹ്യ ഫണ്ടഡ് പ്രോജക്റ്റുകളും നിരവധി ആന്തരിക പ്രോജക്റ്റുകളും വിജയകരമായി പൂർത്തിയാക്കിയ ഈ കേന്ദ്രം, നൂതന ആശയങ്ങളുടെ ഒരു സംസ്കാരം വളർത്തുന്നത് തുടരുന്നു. ശാസ്ത്രീയമായ കണ്ടെത്തലുകളിലൂടെ മനുഷ്യന്റെ ദുരിതങ്ങൾ ലഘൂകരിക്കുകയും, ഗവേഷണ ശാലയിലെ കണ്ടെത്തലുകളെ മികച്ച രോഗീപരിചരണമാക്കി മാറ്റുകയുമാണ് ഞങ്ങളുടെ പ്രധാന ലക്ഷ്യം. ഈ ലക്ഷ്യം പങ്കിടുന്ന ഏവർക്കും സഹകരിക്കാവുന്ന ഒരു പങ്കാളിയായി പുഷ്പഗിരി റിസർച്ച് സെന്റർ നിലകൊള്ളുന്നു.

കൂടുതൽ വിവരങ്ങൾക്കും വിശദാംശങ്ങൾക്കും ദയവായി ബന്ധപ്പെടുക:

1. ഗവേഷണ സഹകരണങ്ങൾ, ധാരണാപത്രങ്ങൾ (MoU), സ്ഥാപനങ്ങളുമായുള്ള ബന്ധങ്ങൾ എന്നിവയ്ക്ക്	Rev. Dr. Mathew Mazhavancheril. M.Sc., Ph.D., Post Doc (France) (Director & Head)	Mail: researchdirector@pushpagiri.in academicdirector@pushpagiri.in Contact: +91 – 9744685302
2. വിദ്യാർത്ഥികളുടെ ഇന്റേൺഷിപ്, ഡിസേർട്ടേഷൻ പ്രോജക്റ്റുകൾ, പരിശീലനം എന്നിവയ്ക്ക്	Dr. Aniket Naha. M.Sc., Ph.D. (Student Coordinator)	Mail: draniketnaha@pimsrc.edu.in Contact: +91 – 8473912790
3. ക്ലിനിക്കൽ ട്രയലുകൾക്ക്	Dr. Rosin George Varghese. MD (Coordinator)	Mail: rosingv@gmail.com Contact: +91 – 7736153385
4. ഐ.ആർ.ബി. ക്ലിയറൻസിന്	Dr. Nebu George Thomas. MDS, Ph.D. (Member Secretary)	Mail: pushpagiriirb@pushpagiri.in Contact: +91 – 9447044726
5. മൃഗങ്ങളിലെ പരീക്ഷണങ്ങൾക്ക് (Pre-Clinical Trials)	Dr. Ampadi AN. M.VSc, PGDAW (Veterinarian Officer)	Mail: drampadian@pimsrc.edu.in Contact: +91 – 8921667742
6. പി.ആർ.സി. സന്ദർശിക്കുന്നതിന്	Mr. Jacob P Ouseph (Secretary)	Mail: prc@pushpagiri.in Contact: +91 – 9400502740
ഔദ്യോഗിക വെബ്സൈറ്റ്	https://www.prc.pushpagiri.in/	
വിലാസം	6th Floor, Mother & Child Block Pushpagiri Institute of Medical Sciences & Research Centre, Tiruvalla, Pathanamthitta, Kerala – 689101	



Dr Vani and students from DB Pampa College, Parumala visited PRC (18.10.2025)



Dr. R. Sindhu, (Research Director and Chief Scientist, SSIRI, Trivandrum) Dr. Reshmy R, (Managing Director, Cellupro) and Dr. Remyaprabha Jnana Thapaswani (Santhigiri Ayurveda Medical College, Palakkad) visiting PRC



Pushpagiri Research Centre - Fire & Safety meeting conducted on 8th December 2025



Ms. Silpa S, internship student, received the Best Paper Award for her oral presentation at the National Seminar on Advancements and Innovations in Phytochemistry and Therapeutic Translation December 15, 2025, at Fatima Mata National College (Autonomous) Kollam. Her presentation, titled "In vitro anti-inflammatory and antioxidant evaluation of *Allamanda cathartica* flower extract in RAW 264.7 cells," was conducted in the Cytogenetics and Biochemistry Laboratory under the supervision of Dr Soumya (13.12.2025)



Ms. Elizabeth Annie George, Ph.D. Scholar under Dr. Aniket Naha receiving 'Best Oral Presentation Award' at the "International Conference cum Workshop on Global Summit on Innovative Drug Design, Discovery, and Translational Research", held on 29-31st October 2025, organized by Department of Bioinformatics Pondicherry University and the Bioinformatics and Drug Discovery Society (BIDDS).

PRC Annual Report 2025 - 2026











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