



# RESEARCH CENTRE NEWS

## **MoU Signing & Visit to Institute of Advanced Virology, Trivandrum**

For strengthening collaborative research in virology, a delegation from PRC comprising Director Research Rev. Dr. Mathew Mazhavancheril, George Varghese (Assistant Professor Microbiology & In-charge Pushpagiri Center for Virology), Dr. Aniket Naha (Scientist, PRC) and Dr. Soumya R.S (Scientist, PRC) visited the Institute of Advanced Virology (IAV), Trivandrum, on 11<sup>th</sup> February 2025.

The visit led to a partnership between the two institutions, culminating in the signing of a Memorandum of Understanding (MoU) aimed at fostering scientific cooperation, knowledge exchange, and joint research initiatives. Dr. Sreekumar E, Director IAV, & Dr. Agiesh Kumar B, Senior Principal Scientist, Clinical Virology along with other faculty members welcomed PRC delegation. Director IAV elaborated an overview of ongoing projects, contributions of IAV on various aspects of infectious virus diseases and its management. The discussions on possible future research associations between both institutes guided to the signing of an MoU with IAV and PRC. The visit concluded with a guided tour led by the Director IAV to show the specialized research laboratories, high-containment facilities, and, providing the PRC team with valuable insights into the advanced methodologies and technologies employed at the institute.

This MoU is expected to pave the way for transformative research and impactful innovations in virology, strengthening both institutions' commitment to addressing public health concerns through scientific excellence.

## **Visit to Kerala University's Department of Zoology and Advanced Centre for Regenerative Medicine and Stem Cell Research in Cutaneous Biology (AcREM-Stem)**

Our Research Director Rev. Dr. Mathew Mazhavancheril, George Varghese (Assistant Professor, Incharge Virology), Dr. Aniket Naha (Scientist) and Dr. Soumya R.S (Scientist) visited Department of Zoology, University of Kerala, on 11<sup>th</sup> February 2025, and the team explored the ongoing research initiatives and academic advancements in various fields of biological sciences. The department, fosters interdisciplinary studies that bridge fundamental and applied sciences.

A key highlight of our visit was to explore Advanced Centre for Regenerative Medicine and Stem Cell Research in Cutaneous Biology, (AcREM-Stem), University of Kerala, where we gained insights into cutting-edge research on stem cells, regenerative medicine, and skin biology. This center is at the forefront of developing novel therapeutic approaches for tissue repair and regeneration.

Centre for Regenerative Medicine and Stem Cell Research in Cutaneous Biology, and Dr. Malini Laloria, ICMR Emeritus Scientist, AcREM-Stem, University of Kerala whose expertise in regenerative medicine and stem cell research provided us with a deeper understanding of the latest advancements in the field. Their discussion on translational research and its potential impact on medical applications was both enlightening and inspiring and the center offered collaborative research in regenerative medicine and translational research with both the institution for advancing healthcare and biomedical sciences.





MoU moment: Dr Agiesh Kumar B, Senior Principal Scientist, Clinical Virology, IAV Rev. Dr. Mathew Mazhavancheril, Director Research, PRC, Dr Sreekumar E, Director IAV, & George Varghese, Assistant Professor Microbiology & In-charge Pushpagiri Center for Virology.



Inauguration of new website for PRC by CEO



# Congratulations, Dr. Nebu George Thomas!

Heartiest congratulations to Dr. Nebu George Thomas, Professor and Scientist at Pushpagiri Research Centre, for successfully delivering an invited talk on "Development and Preclinical Evaluation of Tissue Engineering Scaffolds for Soft Tissue and Heart Tissue Regeneration" at Chinmaya Vishwavidyalaya during the six-day ATAL Faculty Development Program on Engineered Materials for Multidisciplinary Applications (February 17–22, 2025), sponsored by All India Council for Technical Education (AICTE). This insightful session, aimed at research scholars, faculty members, and industry professionals, reflects Dr. Nebu's dedication to advancing biomedical research. His contribution brings great pride to Pushpagiri Research Centre, strengthening its reputation in cutting-edge tissue engineering and regenerative medicine





# PUBLICATIONS

## Journal of Materials Chemistry B



### PAPER

[View Article Online](#)[View Journal](#)

Cite this: DOI: 10.1039/d4tb01731e

### Effect of surface-engineered AuNPs on gene expression, bacterial interaction, protein denaturation, and toxicology assay: an *in vitro* and *in vivo* model†

A. Sowndarya,<sup>a</sup> T. Daniel Thangadurai,<sup>b</sup> Nebu George Thomas,<sup>bc</sup> Renjith Sreedharan,<sup>d</sup> Sukumaran Anil,<sup>e</sup> N. Manjubaashini,<sup>f</sup> T. G. Satheesh Babu<sup>gh</sup> and S. Megha Kumar<sup>gh</sup>

We investigated the *in vitro* and *in vivo* uses of pamoic acid functionalized gold nanoparticles (PA@AuNPs), with a focus on determining their safety and potential toxicity in living beings. To test this theory, the bacterial interaction of PA@AuNPs was studied using *Escherichia coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa* cultures, as well as the inhibition of the bovine serum albumin (BSA) protein. The real-time polymerase chain reaction (RT-PCR) is used to measure the expression of target genes. PA@AuNPs caused dose-dependent cell death in MDA-MB-231, a triple-negative breast

Accepted by Aston University on 1/18/2025 9:22:16 AM.

### Original Article

## Evaluation of the Anticandidal Effect of Medicinal Plant Extracts to Drug Resistant *Candida Albicans* Isolates from Type Two Diabetic patients with Stage Three Periodontitis

Jayachandran V. Prabhakaran<sup>1</sup>, Nibu Varghese<sup>2</sup>, Rupesh S<sup>3</sup>, Annie Susan Thomas<sup>4</sup>, Sameer KM<sup>5</sup>, Nebu George Thomas<sup>6</sup>

<sup>1</sup>Department of Applied Biology, College of Applied Sciences, University of Technology and Applied Sciences, Alkhuwair, Muscat, Sultanate of Oman, <sup>2</sup>Department of Biosciences, Mar Athanasios College for Advanced Studies (MACFAST), Tiruvalla, Kerala, India, <sup>3</sup>Department of Pediatric and Preventive Dentistry, Malabar Dental College and Research Centre, Manoor Chekannur Road, Malappuram, Kerala, India, <sup>4</sup>Department of Prosthodontics, Anoor Dental

#### ABSTRACT

**Objectives:** To assess the anticandidal efficacy of nine medicinal plants to drug resistant *Candida albicans* isolates from diabetic patients with chronic periodontitis. A comparison was done with chlorhexidine gluconate. **Methods:** Isolates from the periodontal pockets of 121 diabetics with severe periodontitis was obtained. Sensitivity to four antifungal antibiotics was assessed by disc diffusion method. Anticandidal activity of cold ethanol and hot aqueous extracts of nine plants were evaluated by well diffusion method. Minimum inhibitory concentration (MIC) was determined by microtube broth dilution method. **Results:** *C. albicans* was found to be the predominant species. None of the isolates extended resistance to amphotericin B. Aqueous and ethanol extracts of *Punica granatum*, *Terminalia bellerica*, *Terminalia chebula* extended notable anticandidal efficacy, and the ethanol extracts were more active. Chlorhexidine extended better efficacy than the plant extracts. **Conclusions:** *C. albicans* is the prevalent yeast among diabetics with periodontitis. Presence of multidrug resistant for *C. albicans* is a challenge. *P. granatum*, *T. bellerica* and *T. chebula* can be explored for the development of