Bharathkumar Rajagopal

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Skills

[1] **Molecular Biology:** RT-PCR, SDS-PAGE, Western Blotting, DNA Sequencing, Immunoelectrophoresis
[2] **Analytical Techniques:** HPLC, GC-MS/MS, DLS, NTA, UV-Vis, FTIR, FACS
[3] **Bioinformatics:** Library Preparation, SWISS-MODEL, Mega X, PyMol, Mothur, QIIME 2
[4] **Statistical Analysis:** GraphPad
[5] **Language:** Python (Biopython), R, LaTeX

Research Experience

Independent Researcher | Under Scholarly Mentorship — Jul 2024 – Present

Skills: Sample Collection, Mothur, R, Manuscript Preparation

- Research in microbial bioremediation and ecotoxicology under Dr. Boobal Rangaswamy.
- Contribution to scientific manuscripts for peer-reviewed publication.

Dissertation Trainee | CSIR-IITR, Lucknow — Jan 2024 – May 2024

Skills: Nanomaterial/pollutant Characterisation, Mammalian Cell Culture, Handling *in vivo* models, Cyto- & Genotoxicity Assessments

- Conducted *in vitro* toxicity assessment of polystyrene nanoplastics on mammalian lung fibroblast cells
- Characterised nanoplastics using DLS and NTA; performed cytotoxicity assessment (MTT, LDH, NRU, Trypan Blue Dye Exclusion, and ROS generation assays), and Genotoxicity assessment (Comet assay). BALF assessment in murine model (*in vivo*)
- Analysed data via GraphPad; identified ROS-mediated toxicity pathways

Postgraduate Research Assistant | Amity University — Jul 2023 – Dec 2023

Skills: Microbial Culture, Nanodelivery systems, Bioremediation

- Developed pesticide-degrading microbial consortia microbeads.
- Optimised bacterial release efficiency for environmental remediation.

Summer Research Intern | Centre for Bioscience and Nanoscience Research — May 2023 – Jun 2023

Skills: Microbial Culture, Sequencing and Sequence Analysis, Nanoparticle Synthesis & Characterisation, Mammalian Cell Culture, Antimicrobial & Anticancer Assays

- Isolated Bacteria *Priestia megaterium* and sequeced (GenBank: OR234764.1)
- Biogenically synthesised silver nanoparticles (AgNPs)
- Characterised nanoparticles via UV-Vis, FTIR, and SEM
- Evaluated antimicrobial (MIC, Time kill assay, Antimicrobial textile test) & anticancer (Hep-G2) properties

Education

Amity University, Noida | MSc Biotechnology | First Class with Distinction | (≥97th percentile in class) — 2022 – 2024

- Advanced Microbiology, Advanced Molecular Biology, Applied Genomics & Proteomics, Plant & Animal Biotechnology, Python

PSG College of Arts & Science, Coimbatore | BSc Biotechnology | First Class — 2019 – 2022

- Microbiology, Genetics, Environmental Science, Bioinformatics, Analytical Techniques, Computer Applications in Biotechnology

Publications

[1] **Rajagopal, B.**, Abiraj, V., & Ragunathan, R. (2025). Biogenic synthesis of silver nanoparticles using endophytic bacteria from Andrographis paniculata. In preparation.
[2] Sakthivel, I., Shanmugam, L., **Rajagopal, B.**, & Rangaswamy, B. (2025). Integrating kinetic models, gene circuits, and biofilm dynamics. In Review - Journal of Microbiological Methods. SSRN Preprint: doi:10.2139/ssrn.5235712
[3] Kongaserry, A., Shanmugam, L., **Rajagopal, B.**, & Rangaswamy, B. (2025). Development of Artocarpus heterophyllus Lam. nanosuspension. In Review - Nanotechnology for Environmental Engineering.

Certificates

[1] Introduction to Professional Scientific Communication | NPTEL — Jan 2024 – Feb 2024
[2] Certificate Course on Bionanotechnology | Association of Indian Biologists — May 2020
[3] Certificate course in Bioinformatics | PSGCAS — Sep 2019 – May 2020
[4] Hands-on Training: HPLC & GC-MS/MS | ICFRE-IFGTB — Feb 2020
[5] Human Molecular Genetics | NPTEL — Jan 2020 – Feb 2020

Referees

[1] **Dr. Boobal Rangaswamy** – Assistant Professor, PSG College of Arts & Science | boobal@psgcas.ac.in
[2] **Dr. Shashi Sharma** – Assistant Professor, Amity University | ssharma@amity.edu
[3] **Dr. Ravi Kant Singh** – Professor, Amity University | rksingh1@amity.edu