Vikhram Ravi

Chennai, India +91 7904763387
vikhramravi2002@gmail.com
LinkedIn Portfolio

SUMMARY

Interdisciplinary researcher currently pursuing a dual M.Tech in Nanobiotechnology (ASNSMM) and MS in Immunobiology (University of Arizona). I possess a technical background in molecular docking, drug discovery, and bioinformatics, with a special focus on integrating nanotechnology and immunology. My research goal aims on how we can leverage nanomaterial's potential to modulate immune responses, personalized medicine through SMART nanocarriers and gene-based therapies. I enjoy troubleshooting problems and identifying the most optimal strategies for performing any work.

EDUCATION

University of Arizona, USA — **December 2024 - Present**
Department of Immunobiology, College of Medicine, Tucson
Master of Science, Immunobiology — **4/4 (Ongoing)**

Amrita Vishwa Vidyapeetham, Coimbatore — **August 2024 - Present**
Amrita School of Nano Sciences and Molecular Medicine, Kochi
Master of Technology, Nanobiotechnology — **9.35/10 (Ongoing)**

Saveetha Institute of Medical and Technical Sciences, Chennai — **July 2020 - June 2024**
Saveetha School of Engineering, Chennai
Bachelor of Technology, Biotechnology — **9/10**

National Institute of Open Schooling, India — **June 2016 - May 2019**
Open Schooled, Chennai
Senior Secondary, Physics, Chemistry, Biology, Computer Science — **78.6 %**

Central Board of Secondary Education, India — **June 2016 - May 2019**
Vikhe Patil Memorial School, Pune
Secondary, Class X — **6.72/10**

EXPERIENCE

Sri Projects, Chennai — **February 2024 - July 2024**
Intern — **On-Site**

- Biogas yields of various substrates, VBA Macros involving various conditions / real time scenarios from field data, Biogas Output Mass Balance Calculations for Biogas Plants.
- Basics of AFT Fathom for fluid dynamics analysis in Biogas Plants, Stress Analysis for Bio-related plants using CEASAR II.

NyBerMan Bioinformatics, France — **February 2024 - July 2024**
Intern — **Remote**

- Analyzing the data from COSMIC database for Breast cancer mutations.
- Molecular Docking to identify a suitable drug which is effective against specific mutations.

TECHNICAL SKILLS

Characterization	SEM, DLS/ZETA, XRD, H-NMR, FTIR
Bioinformatics	Molecular Docking, PyMOL, DSV, Binding Site Prediction, BLAST, MD Simulation, Linux
Polymer Chemistry	Linear Polymer Synthesis, Carothers Equation
Gene Delivery	Polyplex systems, Core-Shell systems
Molecular Biology	DNA/RNA Extraction, Plasmid Isolation, TLC, SDS PAGE, ELISA, ROS/Toxicity Assays
Cell Culture	L929, RAW 264.7, HEK 293, PBMC Isolation, Transfection Experiments, in vitro Assays
Statistical Analysis	Origin Lab, SPSS, GraphPad PRISM
Industrial Biotechnology	Biogas Mass Balance, PFD, AFT Arrow, CAESAR II Stress Analysis
Documentation	MS Office Suite, LaTeX, Markdown, VBA Macros

SOFT SKILLS

Conflict Resolution **Flexible & Adaptive**
Time Management **Listening**

PROJECTS

Master's Thesis **June 2025 - Ongoing**
A Novel Non-Viral Gene Vector: PBAE based Core-Shell Nanoparticle System for Gene Delivery

- Synthesis of PBAE, Troubleshooting approaches and Optimization
- Core-shell system design, Cell Culture, GFP-Transfection studies (in progress)

Bachelor's Thesis **May 2024**
Examining the Therapeutic effects of Camphene Conjugated with Zinc Oxide Nanoparticles on Zebrafish Larvae

- Developmental Toxicity Studies in Zebrafish in-vivo model.
- Neurotoxicity analysis by using locomotory parameter.
- Effects on ROS Enhancement Levels using GPx and GST parameters.
- Lipid Peroxidation level analysis using DCFH-DA staining fluorescent Assay

GenAI Project (Hobby/Personal) **May 2024**
Caraoke, Offline Karaoke app for syncing Lyrics with song

- Source code was developed using AI with prompts.
- APK was built using Android Studio.

Mini Projects

Ammo Mist, Ammonia sensor for Aquariums **October 2023 - March 2024**

- Developed a module with IoT support for detecting dissolved ammonia in Aquariums
- The setup is different from the conventional electrode-based ammonia detection.
- Received Institutional Patent for the invention.

Clin Mist, Natural Surface Disinfectant **July 2022 - December 2022**

- A novel surface disinfectant utilizing the antimicrobial properties of terpinen-4-ol extracted from Green tea extract.
- The product received institutional patent

COURSES & CERTIFICATIONS

Fundamentals in Biotechnology and Genetics **June 2024**
Issuer: Alison (NPTEL)

- DNA tools, Basics of Heredity and Genetic terms, Mendelian Genetics

Google Business Intelligence **April 2024**
Issuer: Google (Coursera)

- Obtained the Professional Certificate by completing the three courses, Foundations of Business Intelligence, The Path to Insights: Data Models and Pipelines, Decisions, Decisions: Dashboards and Reports

Drug Discovery **March 2024**
Issuer: UC San Diego (Coursera)

- The phases in the development of drug, parameters involved in bringing a drug from the laboratory to the market.

Introduction to the Biology of Cancer **March 2024**
Issuer: Johns Hopkins University (Coursera)

- Obtained the certificate with Honors by completing the optional course on Introduction to Liver Cancer

Drug Delivery: Principles and Engineering **October 2022**
Issuer: IISc Bangalore (NPTEL)

- Obtained the certificate with Honors by completing the optional course on Introduction to Liver Cancer

CONFERENCES & WORKSHOPS

8th Indian Myeloma Congress, Annual Conference of IMAGe, Amrita Institute of Medical Sciences, Kochi **Jan 2026**

- Attended the workshop on Flow Cytometry for MRD, Demonstration of Gating strategies and viewpoint on MRD clinical decisions based on NGF. Expert viewpoint on Flow Cytometry vs NGS.

Workshop on "Electrospinning for Nanofibre production", Sathyabama, Chennai **May 2024**

14th International Conference on Science & Innovative Engineering, Chennai **April 2024**

- Paper Presentation titled, "Evaluating the Pharmacological Profile of Novel Drug Camphene conjugated with Zinc Oxide Nanoparticles using Zebrafish Larvae model".

Workshop on "Biomass Fermentation and Distillation for Bioethanol Production", Sathyabama, Chennai **May 2024**

Workshop on "Biomimetic Scaffolds Fabrication for Tissue Engineering using Novel Electrospinning Strategies", Binghamton University **June 2021**

PUBLICATIONS

Springer – BioNanoScience **September 2024**

Investigating the Protective Effect of Camphene-Conjugated Zinc Oxide Nanoparticles Against *Pseudomonas aeruginosa* Infection in *Danio rerio*

DOI : 10.1007/s12668-024-01561-3

AWARDS

Institute Scholarship, ASNSMM, Amrita Vishwa Vidyapeetham **July 2024 – Present**

- Top Rank Holder of the Nanobiotechnology Department.

Best Outgoing Student, SSE, SIMATS University **November 2024**

- Best Outgoing Student of 2024 Batch
- First mark in Plant Biotechnology and Molecular Biology

CHESS:

VALOR represented team Zelos**,** ASNSMM**,** 1st Place **March 2025**

SIMAM represented team Samudra**,** SIMATS**,** 1st Place **May 2022**

CBSE Nationals represented Jawahar Vidyalaya**,** 2nd Runner Up **November 2014**

CBSE Zonals represented Jawahar Vidyalaya**,** 1st Runner Up **October 2014**

REFEREE

Dr. Dhanya Narayanan *(Assistant Professor, ASNSMM, Kochi)* dhanyan@aims.amrita.edu
Dr. I. Praveen Kumar *(Assistant Professor, SIMATS, Chennai)* praveenkumarissac@gmail.com