Aishwarya Gangadhar

MS, Medical Biotechnology, University of Illinois, Chicago

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PROFILE

A diligent graduate researcher with extensive knowledge and training in nanomedicine, disease modeling, immunology, protein biochemistry, and molecular biology backed by strong critical thinking and troubleshooting abilities. Experienced in both *in vitro* and *in vivo* methodologies. Passionate about translating discoveries into therapeutics for human health. Seeking a challenging position to utilize my skills, explore new avenues, and contribute to meaningful advancements.

EDUCATION

Master of Science- Medical Biotechnology, University of Illinois at Chicago, Rockford, Illinois.

August 2022-May 2024

Relevant Coursework- Immunology, Molecular Biology, Cell Biology, Protein Biochemistry, Nanomedicine.

Bachelor of Technology- Biotechnology (Honors), Vignan's University, Guntur, India

August 2018-May 2022

Relevant Coursework- Biochemistry, Microbiology, Nanotechnology, Bioanalytical Techniques.

KEY SKILLS

Cell culture techniques	Aseptic techniques, Mammalian Cell culture, Cryopreservation, cancer biology/immunology assays: colony formation, spheroid assay, wound healing assay, immunocytochemistry, Trans-well, migration assay, cytotoxicity assays.
Nanomedicine	Polymeric, Lipid nanoparticle (LNP) synthesis, characterization (Dynamic Light Scattering (DLS), SEM).
Protein Biochemistry	Protein quantification assays, protein purification & modification, SDS-PAGE, protein desalting & western blotting.
Molecular Biology	DNA, RNA isolation, cDNA synthesis, agarose gel electrophoresis, real-time PCR, cloning, transformation, & restriction digestion.
Immunology	ELISA, immunocytochemistry, Cytokine Bead Array (CBA) assay, flow cytometry (BD FACS Calibur) & Magnetic-activated Cell Sorting (MACS).
Zebrafish Proficiency	Zebrafish husbandry, mating event set-up for zebrafish, toxicity evaluation through zebrafish embryos, execution of zebrafish embryo experiments.
Animal handling	Mice restraining, Optical imaging (UVP IBox), Tail snipping, Blood sample collection, and Injection techniques (IP, IV, IM, SC, RO).
Analytical Instruments	Fluorescence microscopy, confocal microscopy, scanning electron microscopy, Spectrophotometry, dynamic light scattering (DLS), HPLC.
Data analysis and design	GraphPad Prism, OriginPro, ImageJ, Minitab, Microsoft Office (Word, Excel & PowerPoint), and Biorender.

RESEARCH EXPERIENCE

1. **Evaluating Anti-Angiogenic Efficiency of Anti-Integrin PEG-b-PPS Micelles in Danio Rerio Diabetic Retinopathy Model.**

   May 2023- Present

   - Established Diabetic Retinopathy (DR) disease model in Zebrafish embryos.
   DR model validated by H & E staining, hyaloid retinal vasculature imaging, cardiac rhythm measurement, RNA isolation, qPCR, and toxicity study.
   Synthesized and characterized (zeta potential, DLS) polymeric nanoparticle (PEG-b-PPS) micelles.
   Assessed the uptake of tracking dye-loaded nanoparticles, and biocompatibility of micelles in DR model zebrafish embryos through flow cytometry analysis, AO staining, and toxicity study. Evaluated anti-angiogenesis efficiency.
   Skills: qPCR, RNA isolation, gel electrophoresis, H and E staining, toxicity studies, AO staining, Cell cycle analysis- Flow cytometry. Immunofluorescence, microscopy, nanoparticle synthesis, zeta potential measurement, and characterization (DLS, SEM).

2. **Evaluating the expression levels of novel predicted binding targets of tryptamine and tryptamine-derived nanoparticles.**   *May 2023- Present*

- Evaluated alterations in the expression levels of predicted binding targets of tryptamine in neuronal cells following treatment with gold-coated tryptamine liposomes and free tryptamine, employing immunocytochemistry techniques. **Skills:** LNP synthesis, characterization, evaluating encapsulation efficiency, release kinetics, immunofluorescence.

3. **Assessing the reconstitution level of immune cells after the adoptive transfer of lymphocytes from donor ApoE Foxp3 mice to the recipient rag-/- mice using flow cytometry.**   *Jan 2023-May 2023*

- Executed adoptive transfer of splenocytes from ApoE Foxp3 to Rag -/- mice, monitoring immune cell reconstitution over 12 weeks.
- Conducted weekly tail snip bleeding and analyzed PBMC, emphasizing diverse B and T lymphocytes via multi-color flow cytometry.

PROFESSIONAL EXPERIENCE

Graduate Teaching Assistant (UIC, Rockford):
Skills Training   *Aug 2023- Dec 2023*
- Conducted and organized laboratory sessions and provided guidance and training to students in fundamental laboratory skills such as pipetting, protein assays, mammalian cell culture, cryopreservation, as well as cell assays.

Protein Biochemistry   *Jan 2024- Present*
- Organizing lab sessions and training students in various biochemical techniques such as protein assays, protein purification, modification, chromatography, electrophoresis, and conjugation chemistry in collaboration with ThermoFisher Scientific, Rockford.

Laboratory Assistant (UIC, Rockford):   *Apr 2023- Aug 2023*
- Oversee the maintenance of multiple university laboratories, ensuring the calibration and basic repair of diverse laboratory equipment. Collaborate closely with professors to comprehend practical class needs, prepare necessary materials. Efficiently manage inventory, including procurement from vendors, and undertake cleanup responsibilities post-classes.

Office Assistant (UIC, Rockford):   *Feb 2023- May 2023*
- Manage and oversee the daily operations of the department cafeteria, ensuring a well-maintained environment.

Intern in the Microbiology Department at Somerset Therapeutics: *Feb 2022- June 2022*
- Received training and actively conducted microbiological tests for the validation of sterile pharmaceuticals.

PEER-REVIEWED PUBLICATIONS

1. Karlapudi, A. P., Thirupati, C. V., Srirrama, K., Nageswaran, D. C., Mikkili, I., Ayyagari, V. S., ... & **Gangadhar Aishwarya.** (2020). **Design of CRISPR-based Targets for the Development of a Diagnostic Method for SARS-CoV-2: An in Silico** Approach. Eurasian Journal of Medicine and Oncology, 304-308.
2. Krupanidhi, S., Abraham Peele, K., Venkateswarulu, T. C., Ayyagari, V. S., Nazneen Bobby, M., John Babu, D., ... & **Aishwarya, G.** (2021). **Screening of phytochemical compounds of Tinospora cordifolia for their inhibitory activity on SARS-CoV-2: an in silico study**. Journal of Biomolecular Structure and Dynamics, 39(15), 5799-580

POSTERS

1. Poster on "Evaluating Biocompatibility and Anti-Angiogenesis Efficiency of Anti-Integrin PEG-b-PPS Micelles in Danio rerio Diabetic Retinopathy Model." at TRI-CON Precision Medicine Conference, San Diego, CA, USA. (2024)
2. Poster on "*In vivo* anti-angiogenic therapeutic efficiency of SDV peptide decorated PEG-b-PPS Micelles in Danio rerio Diabetic Retinopathy Model". at UIC Research Day, Rockford, IL, USA. (2024), and IBTN Symposium.

AWARDS AND HONORS

- Won the Best Basic Science Research Poster Award at the 29th Annual Research Day at UIC College of Medicine Rockford.
- Won the 1st place for Best Poster Presentation at the 10th IBTN Research Symposium at UIC College of Dentistry.
- Won "Best Paper Award" at the National Seminar on Science for Sustainable Rural Development (JKC College, Guntur 2020).
- MBT Merit Scholarship Recipient.