



Mr. Anirudh Gururaj Patil

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DOB: 03 December 1993

Education

Dayananda Sagar University, Bengaluru

August, 2018 – January, 2022

- **Ph.D.** in Biochemistry under faculty of Basic & Applied sciences
- **DST-PhD KSTePS Fellowship recipient: DST/KSTePS/Ph.D. Fellowship/LIF-02:2019-20**
- Title of the thesis **“Phytochemical Interventions in Lithiatic Drosophila Model and Its Related Microbiome”**
- The work emphasised on using food or food derivatives (Pure/formulation) for treating kidney stones using study model – *Drosophila melanogaster* (Fly) with motto of making food as medicine.

Jain University, Jakkasandra Post Bengaluru

August, 2016 – July, 2018

- **M.Tech, Food Technology**, CGPA: 9.30/10
- **First rank with gold medal**
- Graduate Aptitude Test in Engineering (GATE) in **Food Science (XL)**, Score: **524** Rank: **596**
- Qualified **FSSAI Junior Food Analyst**, Rank: **28**
- Project work entitled **“Effect of potential probiotic lactic acid bacteria on physio-chemical composition and functional properties of beetroot juice”**

B.V.B College of Engineering & Technology, Hubballi

September, 2011 – June, 2015

- Bachelor of Engineering, Biotechnology, **CGPA: 8.47/10**
- **Awardee of FAER-Motorola scholar awards** for the year 2014-15 for best capstone project
- Project work entitled **“Production, Purification of pigment from *Monascus purpureus* and its application in food”**

Research Experience

Dayananda Sagar University (DSU)

August, 2018 – December, 2021

Ph.D. Research scholar

- *Drosophila melanogaster* (fly) care and husbandry
- Induction and treatment of disease model (**Urolithiasis – Kidney stone**)
- Study drug interactions in lithiatic fly (Stone dissolution & Behavioural assays)
- Use **Polarisation microscopy** to study Malpighian tubules of induced and treated groups
- Study disease **biomarkers gene expression** (Claudin and enzymes) using **RT PCR**
- Study **microbiome dysbiosis** in lithiatic model
- **Homology modelling** of claudin proteins and drug interaction using **dynamics studies**

- Use *invitro* model (HK-2 Cell line) for studying urolithiasis and drug interaction
- Presented at **International & National conferences**
- Winner of **best Oral presentation** at National Conference on Emerging Trends in Food Technology and Advanced Chemistry, SET, JAIN (Deemed-to-be-University), Bengaluru - 2019
- Presented poster presentation on “*Microbial dysbiosis and epigenetics of claudins in Urolithiatic fly model: A molecular-level landscape of gut kidney axes*” at **ICMR-Microbiome International conference, Pune - 2018**

Jain University, Jakkasandra Post Bengaluru
Master of Technology in Food Technology

August, 2016 – July, 2018

- Probiotic Beetroot juice production
- Culturing of **probiotic cultures** and studying bile and pH tolerance
- Study **physio-chemical properties** of fermented juice
- Sensory evaluation of the product

BVBCET, Hubballi
Bachelor of Engineering in Biotechnology

September, 2011 – June, 2015

- Isolate and screen fungal samples for Itaconic acid production
- Molecular studies on LAB and transformation studies
- Presented in national conference- Chemexcel, 2014 on biofuels

Work Experience

1. Industrial Experience

TrueTech Solutions, Bangalore (Start-up)
Member of Technical staff

June, 2015 – March, 2016

- Performed competitor analysis by investigating companies with related products on market or in pipelines
- **Isolation & Screening of methanogenic bacteria** from waste treatment plants and landfills
- **Fluorescent microscopy** for isolated and cultured samples for methanogens
- **Optimisation of food waste parameters** (Particle size, feed temperature, inoculum size) and additives to enhance methane production and lower the overall process time
- **Design and fabricate** pilot scale **food waste digester** for methane production
- Represented company at **BIRAC, 2015** as **Lead PI**
- **Trained two interns** as a part of industry – academic collaboration
- Evaluated challenges to facilitate strategy development

Enwire Solutions Private limited, Bangalore
Food Technologist (Part – Time)

April, 2020 – November, 2020

- Apply scientific engineering principles in research and development (**new product development-Breakfast and snack division**).

- Test new products in test kitchen and **develop specific processing methods** at laboratory scale, and confers with fellow engineers and packaging specialists to resolve problem statements.

Karnataka Milk Federation, Vijayapura

October, 2017 – December, 2017

Intern in processing division

- To **examine, test parameters** with team at milk receiving bay
- Monitor parameters at **chilling and storage** facility with team
- Monitor and study **milk homogenization, centrifugation and pasteurisation** process
- Study milk variants (Full cream, toned and standardized) and process
- Study packaging and dispatch protocols
- Learn **biochemical and microbiological** quality testing

2. Teaching Experience

Visiting/ Guest faculty

August, 2018 – February, 2020

Dayananda Sagar University, Bengaluru

- Conduct university courses for undergraduate (BSc.) students
- Teach one or more subjects, like **Basic Principles of Biochemistry and Biophysics, Principles of Immunology and Basics of Animal Biotechnology** (Lab)
- **Industrial microbiology** (Theory and Lab), **Principles of Microbiology and Biostatistics** (Theory), **Bioethics, Biosafety and IPR** (Theory) and
- Teach biological sciences for engineering students
- Prepare delivers lectures and practical sessions to students
- **Compile, administer, and grades examinations**
- Internal **question paper setter** and **evaluator** for theory and practical examinations

Additional Experiences

Training program in Microbial Biotechnology

June, 2013 – August, 2013

Sangenomics Labs, Bengaluru

- **Microbial pure culture** techniques and biosafety protocols
- Screening for microbes producing **industrial important enzymes** (Amylase and Protease)
- **Qualitative and quantitative estimation** of enzyme producing microbes and enzyme activity
- Learn *in situ* sterilisation and handling of **pilot scale fermenter**
- Study **fermenter parameters** – Temperature, agitation, aeration and inoculum volume
- **Product extraction and basic downstream processing**

Training program in Molecular Biotechnology

June, 2013 – August, 2013

Sangenomics Labs, Bengaluru

- **Basic molecular biology techniques** – DNA & RNA isolation, purification, purity estimation using spectrophotometer, Agarose gel & formaldehyde **gel electrophoresis**
- **Competent cell preparation** (CaCl₂ method), **transformation and screening** (x-gal method)
- **RAPD PCR and Q-PCR**

Grape Processing and Wine Fermentation

May, 2013 – June, 2013

Hampi Heritage vinery, Vijayapura

- Basics of red wine production and different unit operations involved (**Crushing, Sterilisation, filtration, and chilling**)
- Fermentation – **Yeast strains, fermentation conditions**, inoculum preparation, wine fermentation and malolactic fermentation
- Bottling, sealing, packing and **basics of excise regulations**

Azyme Certified Quality Analyst (ACQA)

June, 2014 – July, 2014

Azyme Biosciences Pvt Ltd, Bengaluru

- **Quantitative estimation** of carbohydrates and proteins
- Isolation of protein and purification (**extraction, dialysis**)
- **Chromatographic techniques** – TLC, Column, Gel permeation, ion exchange
- Instrumentation – **Gas chromatography, HPLC**
- Electrophoresis – **Native PAGE, SDS PAGE & Zymography**
- **Southern and northern blotting** technique, Ag/Ab interactions – **diffusion and ELISA**

Workshops / Short Training

- One day workshop on **Computer Aided Drug Designing (CADD)** at BioAxis DNA Research Centre Pvt Ltd, Hyderabad (India) - *October, 2014*
- Two days Training program on **Food additives, Ingredients and Contaminants: Regulations and compliance**. Organized by: AIBTM, AFST(I) and NSDC at EL LLP, Hyderabad (India) – *July, 2016*
- One-week Chromatographic Techniques (**GC & HPLC**): Analytical Approaches in Food Analysis at **CFTRI, Mysuru (India)** – *July, 2017*
- Two days international workshop Embracing Industry 4.0 Revolution-**Bioimaging trends & applications in life sciences** organised by TEQIP III, SJCE, Mysuru (India) - *October, 2019*
- **Quantum Mechanics, Molecular Mechanics and Metadynamics** at SIT, Tumakuru (India) - *February, 2020*
- Global Immersion Program (**GIP**) - 2020 at Department of Applied Sciences **AIMST University, Kedah (Malaysia)** - *January, 2020*
- One day international workshop on **Tools and Techniques to perform molecular modelling and computer aided drug design** (MMTT) by National Institute of Pharmaceutical education & Research, Guwahati (India) – *June, 2021*
- Faculty development program on “**Entrepreneurship – 2019**” at SCMS, Dayananda Sagar University, Bengaluru.

Memberships

- Member of Association of Food Scientists & Technologists India (**AFSTI**)
 - Member of Indian Academicians and Researchers Association (**IARA**)
 - Member of People for the Ethical Treatment of Animals (**PETA, India**), PETA ID: 52990
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Publications

- **Anirudh Gururaj Patil et. al**, *Exploring Banana Phytosterols (Beta-sitosterol) on Tight Junction Protein (Claudin) as anti-urolithiatic contributor in Drosophila: A Phyto-Lithomic approach*. PROTEINS: Structure, Function, and Bioinformatics (2022). Informatics in Medicine Unlocked.
- *Dysbacteriosis mediated Urolithiasis via Claudin Epigenetics: Insights into gut-kidney trafficking*, **Anirudh G. Patil**, Sunil S More Farhan Zameer. Proceedings - National Conference on “Emerging Trends in Food Technology and Advanced Chemistry (2019). 211-222. ISBN: 978-81-936882-4-3- DFTO026.
- *Nutraceutical Attributes of Tamarindus indica L. - Devils’ Tree with Sour Date*. **Anirudh G. Patil**.. Sunil S. More, Farhan Zameer. Science of Spices & Herbs (2019). Bentham Science – International.
- Satapathy P, Aishwarya S, Shetty MR, Simha NA, Dhanapal G, Shree RA, Biswas A, Kounaina K, **Patil Anirudh G.**, Avinash MG, Devi AT. *Phyto-Nano-Antimicrobials: Synthesis, Character-ization, Discovery, and Advances*. Frontiers in Anti-Infective Drug Discovery: Volume 8. 2020 Oct 5;8:196.
- Mathew, T., Sree, R. A., Aishwarya, S., Kounaina, K., **Patil, A. G.**, Satapathy, P., ... & Zameer, F. (2020). *Graphene-based functional nanomaterials for biomedical and bioanalysis applications*. FlatChem, 23, 100184.
- Swarna Haldar, **Anirudh G. Patil**, Soumitra Banerjee, and H. B. Muralidhara (2021). *3D Printing Applications in Food Processing*. Computer Science & Information Management, CRC Press
- Soumitra Banerjee, **Anirudh G. Patil** et al., (2021). *Prospects of 3D Printing Technology in Promoting Academic Education*. Computer Science & Information Management, CRC Press
- **Anirudh G. Patil**, Soumitra Banerjee, Gouri Patil, Swarna Haldar (2020). *Importance of Polyphenols in Food and its Health Benefits*. Journal of Nutritional Science and Food Technology (2020): 1:1-7
- **Anirudh G. Patil**, Ajar Nath Yadav et al., Zameer F* (2020). *Fungal Amylases and their Industrial Applications*. Recent Trends in Mycological Research. Springer-Nature (Edited by Yadav, Ajar Nath).
- **Anirudh G. Patil**, Haider Alrafas, Ajar Nath Yadav et al., Zameer F* (2020). *Myco-Nanotechnology for Sustainable Agriculture: Challenges and Opportunities*. Recent Trends in Mycological Research. Springer (Edited by Yadav, Ajar Nath)
- **Patil, A. G.**, & Banerjee, S. (2017). Variants of ice creams and their health effects. MOJ Food Processing and Technology, 4(2), 00088
- Satapathy, P., **Patil, A. G** et al., Zameer F* (2019). *Synthetic gutomics: Deciphering the microbial code for futuristic diagnosis and personalized medicine*. Nanotechnology, 46, 197
- **Anirudh Gururaj Patil** et. al *Targeting human claudins in HK-2 cells to lithiasis and its mitigation using phytosterol: An In-Silico Herbapharmaco Approach.*, Biomedical research international. (Under Review)

Protein homology structure submission, Swiss Institute of Bioinformatics (SIB)

- **Anirudh G. Patil** et al. Hypothetical model of **Claudin-19 in Human** (2021). Model Archive, Swiss Institute of Bioinformatics, University of Basel, (DOI: ma-2udt0).
- **Anirudh G. Patil** et al. Hypothetical model of **Claudin-16 in Human** (2021). Model Archive, Swiss Institute of Bioinformatics, University of Basel, (DOI: ma-dq8ia).

- **Anirudh G. Patil** et al. Hypothetical model of **Claudin- 14 in Human** (2021). Model Archive, Swiss Institute of Bioinformatics, University of Basel, (DOI: ma-vzx02).
- **Anirudh G. Patil** et al. Claudin like Protein **Megatrachea (Mega) in Drosophila** (2021). Model Archive - Swiss Institute of Bioinformatics (DOI: ma-xwe5k).
- **Anirudh G. Patil** et al. Claudin like Protein **Sinuuous (Sinu) in Drosophila** (2021). Model Archive - Swiss Institute of Bioinformatics (DOI: ma-ue7v2).
- **Anirudh G. Patil** et al. Claudin like Protein **Kune-Kune (Kune) in Drosophila** (2021). Model Archive - Swiss Institute of Bioinformatics (DOI: ma-196k5).

Skills and Interests

Language:

English – Full professional proficiency, *Kannada* – Native or bilingual proficiency, *Hindi* - Advanced proficiency, *Marathi* – Intermediate proficiency

Instruments: Spectrophotometer, **PCR**, **Gel Documentation**, **Gas Chromatography** (Chemito), **HPLC** (Waters 545 and Agilent 1260 infinity), **Nano – drop**, **PCR**, **Ultrafiltration**, **Fermenter** (Scigenics, Biofirm), **Lyophilizer**, **Light, fluorescent and polarised microscope**

Software/tools: Databases using **Blast** and **ClustalW** for the identification of related proteins/nucleic acids, **primer 3**, **String** and **stitch** database for association study, **SPSS**, **Prism Graphpad**, Microsoft word, PPT and Excel (Basic), **Uniprot**, **Flybase**, **SWISS ADMET**, **Patch Dock**.

Contributed Talks and other accomplishments

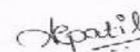
- **Resource person** for lecture and hands-on-training workshop entitled *Bio-analytical and microbial techniques in Food Safety: An outlook to ensure safe food* at Department of Food Technology, Jyothy Institute of Technology, Bengaluru (India) – January, 2020
- **Resource person** for the session on *Food drying and Thermal processing, Food Biotechnology*, organized Jyothy Institute of Technology in Association with Centre for Incubation, NSTEDB, Department of Science & Technology (DST), New Delhi to promote entrepreneurs /startups in Food processing sector at Bengaluru campus - February, 2021
- **Member of Board of Studies (BOS)**, **Department of Food Technology**, School of engineering, Jain University, Bengaluru for academic year 2018 - 19

Public Profile

- **Linkedin:** [linkedin.com/in/mr-anirudh-g-p-2a3b201bb](https://www.linkedin.com/in/mr-anirudh-g-p-2a3b201bb)
- **Google scholar:** <https://scholar.google.com/citations?user=4srXG9cAAAAJ&hl=en>

Declaration:

I hereby declare that the contents of my resume are accurate to the best of my knowledge and verify their authenticity.



Mr. Anirudh Gururaj Patil

References

1. Dr. Farhan Zameer

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Alva's Ayurveda Medical College, Sundari Ananda Alva's Campus, Vidyagiri,
Moodubidire, Dakshina Kannada, Karnataka – 574 227.
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2. Dr. Sunil S. More

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Bangalore, Karnataka – 560 111.
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