

Vaibhav Tiwary

Curriculum Vitae

Rostock, Germany

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Research Interests

Epigenetics and Inheritance, aging biology, mitochondria and metabolism, stress resilience, and epigenetic rejuvenation.

Education and Training

- Sept 2021 – **Ph.D. in Metabolism and Aging**, *University of Rostock / Leibniz Institute of Farm Animal Biology (FBN)*, Germany
Aug 2025 University Website | FBN Lab Website
- July 2018 – **M.Sc. Biotechnology**, *Vellore Institute of Technology*, India
June 2020 CGPA: 8.6 | <https://vit.ac.in/>
- July 2015 – **B.Sc. Biotechnology (Hons.)**, *St. Xavier's College, Ranchi*, India
June 2018 CGPA: 7.92 | <https://sxcran.ac.in/>

Work Experience

- Sept 2021 – **Ph.D. Researcher**, *Leibniz Institute of Farm Animal Biology / University of Rostock*, Germany
Aug 2025 Focus: Characterization of light-activated proton pump in *Drosophila melanogaster* and its implications on aging.
- Decemeber 2019 – Mar 2021 **Project Trainee + Master thesis**, *CSIR–Centre for Cellular and Molecular Biology (CCMB)*, Hyderabad, India
Focus: Transgenerational epigenetic inheritance via male germ line in *Drosophila melanogaster* induced by heat-stress.
- May 2019 – **Intern**, *ICMR–National Institute for Cancer Prevention and Research (NICPR)*, Noida, India
June 2019 Focus: Screening of cervical samples for HPV detection in the context of cervical cancer prevention.

Publications

1. **Tiwary**, V., Trakooljul, N., Peleg, S. (2026). *Reserpine prolongs lifespan but compromises heat-stress resilience in Drosophila melanogaster*. (<https://www.nature.com/articles/s41514-026-00329-1>)
2. **Tiwary**, V., Kovvali, B., Umair, M.B., Peleg, S. (2025). *Human Longevity: Bringing Radical Disruptive Ideas into Light*. In: Betz, U.A.K. (ed.) *Science for a Better Tomorrow*. DOI: 10.1007/978-3-031-93623-4_7. Published 19 Aug 2025. ISBN: 978-3-031-93623-4.
3. **Tiwary**, V., Galow, A.M., Wojtovich, A.P., Peleg, S. (2023). *Using light to drive energy transduction in metazoan aging*. Trends in Biochemical Sciences.
4. Kumarasamy, C., **Tiwary**, V., et al. (2021). *Prognostic Utility of Platelet-Lymphocyte Ratio, Neutrophil-Lymphocyte Ratio and Monocyte-Lymphocyte Ratio in Head and Neck Cancers: A PRISMA Systematic Review and Meta-Analysis*. Cancers, 13(16), 4166.
5. Kharat, P., Sarkar, P., Mouliganesh, S., **Tiwary**, V., et al. (2020). *Ellagic acid prolongs the lifespan of Drosophila melanogaster*. GeroScience, 42(1), 271–285.
6. **Tiwary**, V., Sarkar, P., & Thirumurugan, K. (2020). *Naringenin and ellagic acid reduce tetrazolium salt in the absence of cells*. The Natural Products Journal, 10.

Conferences and Seminars

- 2024 Gordon Research Conference (GRC) – Systems Aging, Barcelona (02–07 June). Focus: Systems Modeling, Aging Biomarkers, and Longevity Interventions. [Link](#)
- 2024 Gordon Research Seminar (GRS) – Systems Aging, Barcelona (01–02 June). Focus: Integrative Omic Methods to Measure Stochastic and Programmed Aspects of Aging. [Link](#)

- 2019 Poster Presentation: "Effect of ellagic acid on HeLa & HEK 293 cells" at the 43rd Annual Conference of Environmental Mutagen Society of India (EMSI) and International Symposium on Impact of Environmental Mutagenesis on Human Genome, VIT, Vellore, India.
- 2017 Participated in the 104th Indian Science Congress, SV University, Tirupati.

Achievements

- 2019 3rd Position, Biomimicry Make-a-thon, BID-FEST 2019, Biomimicry India, VIT, Vellore.

Projects

- Master Thesis **Role of Polycomb (PcG) and Trithorax (TrxG) proteins in transgenerational inheritance of epigenetic memory induced by heat-stress. (Dec 2019 – June 2020)** | Guide: Dr. Rakesh Mishra, CSIR-CCMB.
- Master Project **Cytotoxic effect of bioaccessible fraction of combined phytochemicals (*Piper nigrum*, *Zingiber officinale*, etc.) against MCF-7 cells. (2019)** | Guide: Dr. Gothandam K.M., VIT.
- Master Project **Gene expression in lifespan extension of Drosophila treated with ellagic acid. (2019)** | Guide: Dr. Kavitha Thirumurugan, VIT.
- Master Project **Effect of Cobalt Chloride on development of zebrafish embryos. (2018)** | Guide: Dr. Everette Remington N., VIT.
- Bachelor Project **XRCC1 Arg399Gln polymorphism in Chronic Kidney Disease. (2017)** | Guide: Dr. Sabitha Kotra, NTHRYS Lab, Hyderabad.

Workshops and Training

- 2019 **Training, "Basic Molecular Biology Techniques Relevant to Cancer Research"**, National Institute of Cancer Prevention and Research (NICPR)-ICMR, Noida, India
- 2016 **Training, "Production, Processing, and Utilization of Natural Resins and Gums"**, Indian Institute of Natural Resins and Gums (IINRG)-ICAR, Ranchi, India
- 2019 Attended 'Phaging out Antibiotics' Symposium, iGEM, VIT, Vellore.
- 2019 Attended Biomimicry Workshop, Bio-inspired Design Fest, Biomimicry India, VIT, Vellore.
- 2018 Attended workshop conducted by NOVOZYMES, VIT Vellore.

Technical Skills

- Molecular Biology DNA/RNA extraction, PCR, qPCR, RFLP, Agarose gel electrophoresis, SDS-PAGE, Western blotting, gene expression analysis, ATP assay (from isolated mitochondria and fly heads).
- Cell Biology Mammalian cell culture, cell viability assays (MTT Assay).
- Model Systems *Drosophila melanogaster* (genetic analysis, sperm isolation, eye pigmentation assay), Zebrafish (basic husbandry, breeding, embryo handling), Microbiology.
- Biochemical Techniques Plant extractions (Soxhlet, Rotavap, Lyophilisation).
- Bioinformatics RNA-seq sample prep, RNA-seq data analysis, KEGG pathway analysis, Gene Ontology (GO) enrichment, R, GraphPad Prism.
- Visualization BioRender, Keynote and R-figure generation for publications.
- Optogenetics Light-activated proton pumps, LED, confocal imaging.
- Writing Peer-reviewed publications, book chapter, scientific reviews.
- Clinical Screening Cervical cancer detection assays, HPV detection methods.

Languages

- Hindi Mother tongue
- English C2 – Listening, Reading, Speaking, Writing

Management and Leadership

Organizer – 8th International Bio Summit, 2019, VIT, Vellore

Coordinator – 43rd Annual EMSI Conference, 2019, VIT, Vellore

Coordinator – 7th International Bio Summit, 2018, VIT, Vellore

References

Dr. Shahaf Peleg

Group Leader, Epigenetics, Metabolism, and Longevity

Forschungsinstitut für Nutztierbiologie (FBN), Dummerstorf, Germany

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Dr. Kavitha Thirumurugan

Professor and Group Leader, School of Biosciences and Technology

Vellore Institute of Technology (VIT), Vellore, Tamil Nadu, India

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