Kavya Prakash

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PROFESSIONAL SUMMARY

M.Sc. graduate in Biology (Immunology and Microbiology) from Uppsala University with hands-on research experience in epigenetics, neurodevelopmental toxicology, and mammalian stem cell models. Proficient in qPCR, pyrosequencing, immunofluorescence, and stem cell differentiation protocols. After deliberate industry experience in quality systems, I returned to academic research to focus on the molecular mechanisms by which environmental exposures reshape the epigenome during development. Seeking a PhD position where wet-lab expertise in epigenetic techniques can contribute to mechanistic questions in epigenomics, circadian biology, or developmental toxicology.

TECHNICAL SKILLS

Epigenetics & Molecular Biology	qPCR, RT-qPCR, pyrosequencing (bisulfite-based DNA methylation), RNA extraction, DNA extraction, immunofluorescence staining
Additional Wet-Lab Techniques	ELISA, Western blotting, flow cytometry, whole-mount *in situ* hybridisation, live-cell imaging
Cell Culture & Models	Human and mouse embryonic stem cells (hESC, mESC), SH-SY5Y neuroblastoma, Caco-2 intestinal epithelial cells; mammalian differentiation protocols including cortical/dorsal forebrain lineage
Data Analysis	R (statistical analysis, data visualisation); sequencing data interpretation; experimental design and quality metrics
Laboratory & Regulatory	Good Laboratory Practices (GLP), equipment maintenance, safety compliance, QA/QC procedures
Languages	English (fluent, IELTS 8.0), Malayalam (native)

EDUCATION

M.Sc. in Biology — Immunology and Microbiology *2024 – 2026*
Uppsala University, Sweden

M.Sc. in Biotechnology *2019 – 2021*
Kerala University, India

B.Sc. in Biotechnology *2016 – 2019*
Kerala University, India

RESEARCH EXPERIENCE

Master's Thesis Researcher *Oct 2025 – May 2026*
Uppsala University — EpiTox Group, Department of Organismal Biology
Cellular and Molecular Impact of BPA and BPF on Human and Mouse Embryonic Stem Cell Models of Dorsal Forebrain Differentiation

- Established and optimised a dorsal forebrain differentiation protocol in human and mouse embryonic stem cells to model early cortical neurodevelopment in vitro.
- Characterised the effects of bisphenol A (BPA) and bisphenol F (BPF) on neuroectodermal differentiation markers and cellular stress responses using RT-qPCR and immunofluorescence staining.
- Integrated molecular and imaging data to evaluate endocrine-disrupting chemical (EDC) effects on epigenetic and transcriptional programmes during neural induction.

Research Trainee *Jul 2025 – Sep 2025*
Uppsala University, Department of Organismal Biology — Physiology and Environmental Toxicology

- Differentiated SH-SY5Y neuroblastoma cells toward a glutamatergic neuronal phenotype and validated neuronal marker expression by quantitative PCR.
- Optimised qPCR primer conditions and extraction protocols for downstream toxicological assays.
- Maintained Caco-2 and SH-SY5Y cell cultures supporting an advanced toxicology course, ensuring reproducibility across student experiments.

M.Sc. Thesis Researcher *2019 – 2021*
Kerala University, India
Identification of microRNAs Regulating Differentially Expressed Genes in Cisplatin-Resistant Ovarian Cancer Cells

- Profiled microRNA-mediated regulation of chemoresistance pathways in ovarian cancer using expression analysis and bioinformatics-assisted pathway interpretation.
- Identified candidate miRNA–mRNA regulatory axes relevant to platinum-based drug resistance mechanisms.

TEACHING EXPERIENCE

Laboratory Teaching Assistant *Nov 2025 – Jan 2026*
Uppsala University

- Instructed 20+ undergraduate and graduate students in advanced techniques including pyrosequencing, qPCR analysis, zebrafish whole-mount *in situ* hybridisation, *Drosophila* behavioural assays, and live-cell imaging.
- Managed daily laboratory operations — equipment setup, sample preparation, and data logging — while maintaining compliance with safety and ethical standards.
- Developed and structured student experiments to reinforce reproducibility and best practices in molecular biology.

INDUSTRY EXPERIENCE

Quality Assurance & Quality Control Specialist *Oct 2021 – Jun 2024*
Nexus Agro Farms, Kerala, India

- Designed and implemented systematic QA/QC protocols for hybrid crop batch testing, achieving consistent compliance with regulatory yield and germination standards.
- Led cross-functional troubleshooting to diagnose performance issues and optimise cultivation practices using data-driven quality metrics.
- Conducted field inspections and sampling programmes, building disciplined experimental documentation habits applied directly in subsequent academic research.

LEADERSHIP & COMMUNITY ENGAGEMENT

International Student Ambassador, Office of Science and Technology — Uppsala University *2025 – 2026*

CONFERENCE PRESENTATIONS

Kavya Prakash. "Environmental Pollutants and Brain Health: Insights from Human Cell Models of Neurodegeneration." *Uppsala University Student Conference in Science and Technology*, 2025.

REFERENCES

Available upon request.