VANISHA SHARMA

M.Sc. Biotechnology | Dissertation Trainee at CSIR-CDRI
Mail | LinkedIn | Portfolio

PROFESSIONAL SUMMARY

Ambitious and accuracy-driven MSc Biotechnology graduate with strong hands-on experience in human cell culture and molecular biology techniques. Experienced with genome-related pathways (PARP-2, ILK/ILKAP signalling), 3D cell culture systems, and animal models. Motivated to investigate genomic instability and apply findings to translational therapies. Skilled at quickly learning new technologies and contributing both independently and within multidisciplinary teams.

EDUCATION

Manipal University, Jaipur
Master of Science
Biotechnology, 2023-2025
CGPA: 7.91/10

The IIS (deemed to be) University
Bachelor's in Science and Education
Life Science and Education, 2019-2023
CGPA: 8.29/10

TECHNICAL SKILLS

Molecular & Cell Biology: Mammalian cell culture (ovarian & endometrial cells), RNA isolation, cDNA synthesis, RT-PCR, SDS-PAGE, Western blotting, plasmid purification, fluorescence microscopy
Model Systems: DHEA-induced PCOS and surgical endometriosis mouse models; ethical animal handling, dosing, and tissue collection
Functional & Mechanistic Studies: Overexpression systems (RhoG/RhoH), inflammatory chemokine analysis, compound perturbation (UPF1069, chloroquine, ILK modulation)
Computational / Bioinformatics: R for statistics and visualisation, image-based quantification, omics data analysis training
Software & Tools: GraphPad Prism, ImageJ, Adobe Illustrator, BioRender, MS Office, Google Workspace

RESEARCH EXPERIENCE

Dissertation Intern, Skill Development Programme **Jan 2025 – June 2025**
CSIR-CDRI, Lucknow
Project: "Functional Analysis of RhoG/RhoH Overexpression and ILK–ILKAP Axis in Endometriotic Cells**"**

1. Developed an in vitro overexpression system in IHECs to study RhoG/RhoH functions in cell movement and inflammation pathways
2. Performed cloning, RNA isolation, gene expression profiling, and Western blotting to evaluate ILK/ILKAP signaling changes
3. Established experimental workflows with scope for future validation and translational research
4. Linked chemical modulation with endometrial cell signaling responses

Summer Training, Skill Development Programme **May 2024 – Sept 2024**
CSIR CDRI, Lucknow
Project: "Role of PARP-2 in Regulating Inflammatory Chemokines in Endometriotic Cells"

1. Investigated PARP-2 inhibition (UPF1069) in IHECs using RNA extraction, cDNA synthesis, qPCR, and Western blotting
2. Engineered 3D spheroid and co-culture models that revealed differential chemokine responses to

PARP-2 inhibition and Danazol treatment
3. Conducted compound exposure assays (chloroquine, ILK modulation) to study downstream inflammatory signaling
4. Contributed to cell culture maintenance, troubleshooting, and internal presentations

Hands-on Training on Fundamentals of Animal Handling **September 2024**
CSIR CDRI, Lucknow

1. Trained in ethical handling, dosing, and termination in rodents
2. Assisted in developing DHEA-induced PCOS and surgical endometriosis models
3. Performed ovarian tissue collection for histological and molecular analysis.

PUBLICATIONS

Gupta, S., Tripathi, R., Kawale, A. K., Sarkar, S., Singh, A., Verma, R. K., Sankhwar, P. L., **Sharma, V**., & Jha, R. K. (2025). *PARP-2 acts on ILK signalling, and pharmacological targeting of PARP-2 ameliorate endometriosis in a mouse model*. Biochemical and biophysical research communications, 754, 151509. https://doi.org/10.1016/j.bbrc.2025.151509

CONFERENCES AND WORKSHOP

1. NaviClar–EURAXESS Symposium (Sept 2025): Presented research paper and actively engaged with scientists from around the world on early-career research pathways, molecular and computational biology, and translational approaches in biomedical science.
2. Next-Generation Sequencing and Precision Oncology – Specialised Training Course (2025): Acquired practical and analytical skills in high-throughput sequencing workflows and precision-medicine applications.
3. CRISPR–Cas9 Genome Editing Workshop (2024): Gained theoretical and practical understanding of genome-editing approaches, including construct design, delivery, and validation, with emphasis on off-target effects and control design.
4. Johns Hopkins University Online Module (2024): Completed "Cellular and Molecular Mechanisms of Disease" with a focus on genomic mechanisms and theory-driven approaches to disease modelling and therapeutic targeting.

LEADERSHIP AND OTHER ACTIVITIES

1. Coordinated as Core Committee Member, National Science Day, Manipal University, Jaipur (Feb 2024)
2. Supported as Stage Committee Member, RAMSACT Conference, Manipal University Jaipur (April 2024)
3. Edited departmental newsletter as Student Editor, Bioscience Patrika (Jun 2024–Dec 2024)
4. Anchored the 74th CSIR-CDRI Annual Day (Feb 2025)

REFERRENCES

1. **Dr Sandeep K. Srivastava**
   Associate Professor and Head at Manipal University, Jaipur
   Email: sandeepkumar.srivastava@jaipur.manipal.edu
2. **Dr. Mousumi Debnath**
   Associate Professor at Manipal University, Jaipur
   Email: mousumi.debnath@jaipur.manipal.edu