

Harshita srivastav

Curriculum Vitae

University of Hyderabad, Telangana

(+91) 8178336010

✉ srivastavharshita24@gmail.com

Seeking a challenging job opportunity in the field of molecular biology, Passionate about leveraging molecular techniques to unravel complex biological mechanisms and drive innovative solutions in agricultural biotechnology.

EDUCATION

Master of Science Life sciences, University of Hyderabad, Telangana, **GPA (current) – 8.79/10**.
Specialisation: Plant biology and biotechnology

Bachelor of Science (Honors) Zoology, Maharshi Dayanand University, Rohtak, Haryana, **GPA – 7.8/10**, Division: **First**, Elective: Chemistry.

MASTER THESIS

01/2024-05/2024 **Screening and characterization of DAO1 mutant lines for fruit ripening traits in tomato.**

Supervisor Prof. Rahul Kumar

Description Mutant lines of *DAO1* gene were characterized in the T_1 generation, showing both monoallelic and biallelic deletions. Line *dao1 CR_L5* exhibited a 115-bp heterozygous deletion. Fruit ripening in *dao1 CR_L5* showed heterogeneity and delayed progression compared to wild type. Despite no significant changes in ethylene, respiration, or total soluble solids, *dao1 CR_L5* fruits were firmer at early stages. No significant alterations in lutein levels were observed, but *dao1 CR_L5* fruits had lower lycopene and β -carotene levels compared to wild type, suggesting a role for *DAO1* in fruit ripening.

RESEARCH EXPERIENCE

07/2023 - 12/2023 **Comprehensive Proteomic Profiling: From Gel Electrophoresis to Mass Spectrometry Analysis**

Supervisor Prof. Y. Sreelakshmi, University of Hyderabad

From isoelectric focusing and electrophoresis to 2D gel scanning and MALDI/TOF mass spectrometry, protein fixing, staining, and destaining processes, followed by image analysis for identifying differentially expressed proteins. Further, engaged in spot picking, trypsin digestion, and MALDI-MS/MS analysis, performed data analysis using MASCOT and protein sequence databases to assign identities to digested proteins.

03/2023 - 06/2023 **Integrative Genomic Profiling: From RNA Isolation to Primer Design**

Supervisor Prof. Irfan Ahmad Ghazi, University of Hyderabad.

Performed RNA isolation from plant leaves, assessing its quality and quantity with agarose gel electrophoresis and a nanodrop spectrophotometer. then performed cDNA synthesis via RT-PCR and conducted real-time PCR for gene expression analysis using gene-based primers. I gained hands-on experience with microarray experiments for high-throughput gene expression analysis. Additionally, explored genome annotation through bioinformatics tools, including DNA sequence retrieval, gene and protein prediction, and comparative analysis and primer designing

11/2022 - 02/2023 **Exploring Microbial Ecology and Techniques in Microbiology**

Supervisor Prof. Ch. Venkataramana, University of Hyderabad

Isolating microorganisms from diverse environments using spread plate, streak plate, and membrane filtration methods. Enumeration techniques such as pore and spread plate were employed to quantify microbial abundance. Additionally, investigated microbial growth kinetics and conducted biomass analysis to understand population dynamics and metabolic activities.

RESEARCH SKILLS AND EXPERTISE

Molecular biology Proficiency in techniques such as PCR, gel electrophoresis, DNA/RNA extraction, cloning, gene editing (**CRISPR/Cas9**), and genetic analysis.

Skilled in molecular techniques like Western blotting, ELISA, and various molecular biology assays for gene expression.

	DNA Sequencing (Sanger sequencing).
Metabolomics	Gas chromatography (GC), High performance liquid chromatography (HPLC).
Fruit quality analysis	Penetrometer (Firmness Testing), Refractometer (Soluble Solids Content (SSC) Measurement), Respirometer (Respiration Rate Measurement). Fruit Grading, Sensory Evaluation, Texture Analysis, Image Analysis for Size, Shape, and External Defect Detection.
Tools	Msoffice (Excel, Word, PPT), \LaTeX . SnapGene, CLC Genomics Workbench , Sol Genomics Network (SGN), NCBI BLAST , Phytozome,.

PUBLICATION

Characterization of CRISPR Mutated Lines for Auxin Homeostasis Genes *UGT1*, *GH3.2* and *DAO1* in Tomato Fruits: Phenotypic and Genotypic Analysis.

Kujur, S, Kumar, R, Srivastav, H, and Mahesh, V. Manuscript in preparation (2024)

SCHOLARSHIPS AND FELLOWSHIPS

11/2022 - 05/2024 **University of Hyderabad, Telangana (UoH) SA(Students assistantship)/DAG.**

CONFERENCES, WORKSHOPS AND VOLUNTEERING EXPERIENCES

Conferences and workshops

05/2023 **Plant breeder and applications**, by Dr. B.P Mallikarjuna swamy from the International Rice Research Institute, Philippines in, UoH.

08/2023 **Biomolecular Condensation in Neurodegeneration**, by Prof. Dr. Markus Zweckstetter (Max Planck Institute for Multidisciplinary Sciences/German Center for Neurodegeneration, Goettingen, Germany) in, UoH.

09/2023 **Workshop on Advancements in LCMS and OMICS Applications**, this workshop presents a valuable opportunity for professionals and academics to enhance their expertise in the field of mass spectrometry and OMICS applications in, UoH.

Volunteering experiences

03/2024 Volunteered in 15th Plant Sciences Colloquium. **International Symposium on Plant Biology and Functional Genomics (ISPFBG 2024)** organized by University of Hyderabad, India.

01/2024 Volunteered in **SDG Conference 2024**, a pre-conference workshop on "Empowering Students and Young Researchers to Contribute to **Sustainable Development Goals**, organized by IQAC

02/2023 Volunteered in **colloquium CTFPPB Conference**, international Conference on 'Current Trends and Future Prospects of Plant Biology' organized by Dept. of Plant Sciences, University of Hyderabad, Telangana, India.

12/2022 Volunteered in **MILLET-UTOPIA**, one of the UoH-IYoM events, an awareness program has been organized for school students, focusing on the theme 'Millets for food and nutrition.'

COURSES

Relevant Courses

UoH, Telangana Genetics, Macromolecular Structure and Function, Cell Biology, Molecular Biology, Microbiology, Environmental Biotechnology, Genetic Engineering, Molecular Plant Pathology, Plant Biochemistry, In Vitro Plant Biology, Genomics, Plant Physiology, Proteomics, Plant Systematics, Secondary Plant Products and Metabolic Engineering, Plant Developmental Biology, Plant Biotechnology, Phylogenomic Biology, Cancer biology.

MDU, Rohtak, Haryana Life and Diversity from Protozoa to Helminthes, Cell Biology, Life and Diversity from Annelida to Hemichordata, Genetics, Mammalian Physiology, Fish and fisheries, Ecology and Evolution, Entomology, Developmental Biology.

TEACHING ACTIVITIES

- Chegg.com Chemistry and Biology tutor at **Chegg.com, an American online education technology company,**
Advisor **AIRTELBLACK** for 3months, provided guidance and support to thousands of customers utilizing international roaming services
- Academic Worked for six months at Collegedekho.com, provided mentorship and direction to hundreds of high school and undergraduate students throughout India

Oral presentation

Presented Seminar on the topic "Autophagy induced changes in algal system" under guidance of **HOD: - Prof. 'Rajagopal Subramanyam'** in University of Hyderabad, India.

AWARDS

Qualified **NEET** medical entrance exam with **580 marks** AIR under 20,000.
Been a **topper** in the batch of Undergraduate on under first distinction affiliated with MDU Rohtak
1st rank in School, Secondary School Examination with (CGPA - 9.6/10.0).

LANGUAGES

Mother tongue **Hindi**
Proficient **English**

Con conversationally fluent