

**ANUPAMA GIDHI**

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### ACADEMIC QUALIFICATION

Degree	College/University	Year
PhD in Science	Department of Bioengineering and Biotechnology, Birla Institute of Technology, Mesra, Ranchi, Jharkhand	2023
M.Sc. (Biotechnology)	College of Biotechnology, Birsa Agricultural University, Kanke, Ranchi, Jharkhand	2014
B.Sc. (Biotechnology)	Ranchi Women's College, Ranchi University, Ranchi, Jharkhand	2011
10+2 (Science, Biology stream)	Gems English School, ICSE, Dehri-ON-Sone, Sikaria, Rohtas, Bihar	2008
10 <sup>th</sup>	W. John Multipurpose Boarding High School, ICSE, Piska Nagri, Ranchi	2006

### RESEARCH EXPERIENCE

#### PhD (Thesis submitted)

**Title:** Uncovering roles of auxin response factors and F-Box genes during Leaf rust infection in wheat (*Triticum aestivum* L.)”

**Publications:**

- **Gidhi, A.**, Kumar, M., Mukhopadhyay, K., (2021). The auxin response factor gene family in wheat (*Triticum aestivum* L.): Genome-wide identification, characterization and expression analyses in response to leaf rust. South African Journal of Botany, 140:312-325.
- **Anupama Gidhi**, Archit Mohapatra, Mehar Fatima, Shailendra Kumar Jha, Manish Kumar, Kunal Mukhopadhyay (2022). Insights of Auxin signaling F-box genes in wheat (*Triticum aestivum* L.) and their dynamic expression during the leaf rust infection. Protoplasma DOI: 10.1007/s00709-022-01808-4.
- **Anupama Gidhi**, Shailendra Kumar Jha, Manish Kumar, Kunal Mukhopadhyay. The F-box protein encoding genes of the leaf-rust fungi *Puccinia triticina*: Genome-wide identification, molecular characterization and expression dynamics during wheat infection. (**Manuscript for communication**).

#### Conference Precedings:

- **Anupama Gidhi**, Kunal Mukhopadhyay, Manish Kumar. “Identification and characterization of Auxin Response Factor genes in wheat (*Triticum aestivum* L.) using in silico approaches”. 17th International Conference on Bioinformatics (InCoB), JNU, New Delhi, India, 26 to 28 September 2018, Abstract Book Page Number:163.
- **Anupama Gidhi**, Shailendra Kumar Jha, Manish Kumar, Kunal Mukhopadhyay. “Insights of Auxin signaling F-box genes in wheat (*Triticum aestivum* L.) and their expression during the leaf rust infection”. International symposium on Plant Biotechnology Towards Improving Agri-food industry and Healthcare products (ISPB), BIT, Mesra, Ranchi, Jharkhand, India, 27-30 October, 2021, Abstract Book Page Number:153.
- **Anupama Gidhi**, Manish Kumar, Kunal Mukhopadhyay. “Investigation of F-box protein-encoding genes in *Puccinia triticina* genome and their roles in pathogenicity during leaf-rust infection in wheat”. The Borlaug Global Rust Initiative, September 9, 2022.

**Place:** Dept of Bioengineering and Biotechnology, Birla Institute of Technology, Mesra, Ranchi

**Guide:** Professor, Dr. Kunal Mukhopadhyay

**Co-Guide:** Associate Professor, Dr. Manish Kumar

#### M.Sc. Dissertation

**Title:** Two-dimensional Protein profiling of *Rhizobium* isolates of *Pisum sativum* L. collected from acid soils of Jharkhand.

**Descriptions:** The study was aimed to identify the protein alterations in *Rhizobium* isolates of Pea collected from very strongly acidic to strongly acidic pH regimes of the state of Jharkhand. *Rhizobium* cultures were purified and grown under controlled conditions (28°C, 200 rpm). Bacterial cell lysis was carried for protein purification and quantification. Then 2-D was carried out to visualize the proteins. The unique proteins observed in response to different pH regimes which reflected their molecular interplay of mechanism in *Rhizobium* isolates of Pea to combat the phenomenon of abiotic stress i.e., Acidic stress.

**Place:** College of Biotechnology, Birsa Agricultural University, Kanke, Ranchi

**Guide.** Dr. Himanshu Dubey, Jr. Scientist cum Assistant

### B.Sc. Dissertation

**Title:** Phenotyping of Gamma Irradiated Ber (*Ziziphus mauritiana*) Plants

**Description:** Lac is a resinous exudation from the body of female scale insect. The lac insects generally found as parasite living on the sap of trees like kusum, palas, ber etc. Thorns in Ber offers hindrance during cultural operations making the lac cultivation laborious. Therefore, efforts to either reduce or nullify the difficulty due to thorns are catching more research attention in the recent past. Gamma irradiation is one of the methods used for mutagenesis for plant improvement. The aim was to evaluate the variation in gamma irradiated *ber* plants with special reference to thorn character by phenotyping. The gamma irradiated plant population used in the study were planted at IINRG, Namkum, Ranchi, Jharkhand and were of two years. The phenotypic characters pertaining to thorn were length, basal diameter and arrangement of the thorn. The CCI value was significantly high in gamma irradiated leaf compared to control. Due to gamma irradiation, the basal diameter and length of the thorn was decreased, along with internodal length. This indicated the effect of mutation on phenotypic expression imparted as a positive sign for using gamma irradiation as a technique for developing ber plant with no thorn or with soft thorn

**Place:** Lac Production Division, Indian Institute of Natural Resins and Gums, Namkum, Ranchi

**Guide:** Mr. Anees Kumar, Scientist (Plant Biochemistry)

### Experience

**Laboratory experiences:**

Experience of Handling Molecular biology lab. tools such as Ultracentrifuge, Autoclave, Real time PCR, PCR Machine, Agarose gel electrophoretic system, UV trans illuminator, Gel documentation system, shaker incubator, Laminar Air Flow, Hot air oven, magnetic stirrer, spectrophotometer etc.

Molecular techniques such as DNA/RNA Isolation, Plasmid isolation, cDNA synthesis, Electrophoresis, GEL Documentation, Cloning and Transformation.

**Bioinformatics tools:**

Familiar with CLC Genomics workbench, HMMER suite, EMBOSS 2.0.0, CDD, Pfam, PhenoGram, SubCeLLular Localization, ClustalW, MEGA7, BLAS2GO, WEGO, BLAST, BLASTKOALA, Circos, HADDOCK, Cytoscape, TBtools, STRING database, SCHRODINGER workbench.

**Workshops attended:**

- Participated as Foldscope trainer and member of core committee in Department of Biotechnology, Government of India sponsored foldscope workshop organized by Biotech Consortium India Limited (BCIL), New Delhi (October 22-23, 2019).
- Participated in the workshop on “Statistical Methods in Biological Sciences and R Programming” on 15.04.2019.
- “Molecular Docking” held on July 12-14, 2021
- “RNA Seq Data Analysis” held on July 24, 2021
- Participated in cloud-based Hands-On-Workshop on “Computational chemistry, Molecular Modelling, Drug Design, and Biologics” held on 21-23 December, 2021, co-organized by Department of chemistry, Birla Institute of Technology, Mesra and Schrödinger.

**Awards and Achievements**

<b>CSIR (NET)-JRF</b>	Jan, 2017-Jan, 2019
<b>CSIR (NET)-SRF</b>	Feb, 2019- Jan, 2022

**Personal Details**

Date of Birth	13.06.1991
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Gender	Female
Caste	ST
Tribe	Oraon
Religions	Christian

## REFERENCES

1. Dr. Kunal Mukhopadhyay, Professor, Department of Bioengineering and Biotechnology, Birla Institute of Technology, Mesra, Ranchi, Jharkhand- 835215 (India). Contact No. +919431382720 Email: kmukhopadhyay@bitmesra.ac.in
2. Dr. Manish Kumar, Associate Professor, Department of Bioengineering and Biotechnology, Birla Institute of Technology, Mesra, Ranchi, Jharkhand- 835215 (India). Contact No. +919431173860 Email: manish@bitmesra.ac.in

Anupama Ghosh

SIGNATURE