



Dr. Priyanka Jain

Assistant Professor II

Specialization: Bioinformatics, Systems biology approaches for correlation of genome to phenome, Machine learning based prediction models, Transcriptional regulation, miRNA and lncRNA regulation, Coding and Non coding RNA interaction, LncRNA-miRNA-mRNA modules, Omics/NGS pipelines for data analysis and integration, host pathogen interaction.

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Priyanka Jain, did her graduation and post-graduation from Banaras Hindu University, Varanasi. She obtained her PhD in Bioinformatics under joint mentorship from National Institute for Plant Biotechnology (NIPB), New Delhi and Banasthali Vidyapith, Rajasthan. During PhD She worked on transcriptional changes during blast disease. She worked for three years at Institute of genomics and integrative biology (IGIB). Further, she worked at National Institute of plant genome research (NIPGR) and Indian Agricultural Statistical Research Institute (IASRI), New Delhi for her post doctoral work. She has total 24 publications in Scopus indexed journals with h-index of 11 and citations of 471. She has presented number of posters and oral presentations in national and international conferences. She served as reviewer for several international journals like Frontiers and BMC. She has been involved in regular teaching and training program for master students and scientific faculty. She has generated and analyzed several genomic resources which are submitted at NCBI. She is interested in development of new omics

pipelines for coding and non coding RNA identification and interaction. She is also interested in development of marker kit for deciphering gene regulatory network in host pathogen interaction using integrative multi-omic approaches. Her areas of expertise includes analysis of different types of genomics (whole/organelle genome assembly, bulk and single-cell transcriptome sequencing, exome sequencing, Bisulphite seq, Chip-Seq, ATAC-Seq) data, Network Analysis, R, Python, shell scripting, and Machine Learning based predictions for disease management.

Fellowship and Awards:

- 1) INSc Young Researcher Award 2022.
- 2) CSIR-SRF conducted by CSIR-UGC, India for the year 2013.
- 3) Graduate aptitude test examination (GATE) for the year 2009 and 2010.
- 4) CSIR-NET conducted by CSIR-UGC, India for the year 2008 and 2009.
- 5) Summer research Fellowship from Indian Academy of Sciences (IAS), Bangalore, Indian National Science Academy New Delhi, National Academy of sciences, Allahabad for the year 2008.

Selected Recent Publications

- 1) **Jain P.**, Singh A., Iquebal M.A., Jaiswal S., Kumar S., Kumar D., Rai A. Genome-Wide Analysis and Evolutionary Perspective of the Cytokinin Dehydrogenase Gene Family in Wheat (*Triticum aestivum* L.). *Frontiers in Genetics* 19;13:931659. doi: 10.3389/fgene.2022.931659 (2022) [IF=4.8].
- 2) Priya S., Tripathi G., Singh DB., **Jain P.**, Kumar A. Machine learning approaches and their applications in drug discovery and design. *Chemical Biology & Drug Design*. <https://doi.org/10.1111/cbdd.14057> (2022) [IF=2.817].

- 3) **Jain P**, Hussain S, Nishad J, Dubey H, Bisht DS, Sharma TR, Mondal TK. Identification and functional prediction of long non-coding RNAs of rice (*Oryza sativa L.*) at reproductive stage under salinity stress. *Molecular Biology Reports*. 10.1007/s11033-021-06246-8 (2021) [IF=2.4].
- 4) **Jain P**, Dubey H, Singh PK, Solanke AU, Singh AK, Sharma TR. Deciphering signalling network in broad spectrum Near Isogenic Lines of rice resistant to *Magnaportheoryzae*. *Scientific Reports*. 9: 16939 (2019) [IF=5].
- 5) **Jain P**, Singh PK, Kapoor R, Khanna A, Solanke AU, Singh AK, Gopala Krishnan S, Sharma V, Sharma TR. Understanding Host-Pathogen Interactions with Expression Profiling of NILs Carrying Rice-Blast Resistance Pi9 Gene. *Frontiers in Plant Science* 8:1-20 (2017) [IF=5.7].
- 6) **Jain P**, Vig S, Datta M, Jindel D, Mathur AK, Mathur SK, Sharma A. Systems Biology Approach Reveals Genome to Phenome Correlation in Type 2 Diabetes. *PLoS One* 8: e53522 (2013) [IF=3.24].
- 7) Panda, A.K., Rawal, H.C., **Jain, P.**, Mishra, V., Nishad, J., Chowrasia, S. et al. Identification and analysis of miRNAs-lncRNAs-mRNAs modules involved in stem-elongation of deepwater rice (*Oryza sativa L.*). *Physiologia Plantarum*, 174(4), e13736. Available from: <https://doi.org/10.1111/ppl.13736> (2022) [IF=4.5].
- 8) Devanna, B. N., **Jain, P.**, Solanke, A. U., Das, A., Thakur, S., Singh, P. K., Sharma, T. R. et al. Understanding the Dynamics of Blast Resistance in Rice-Magnaportheoryzae Interactions. *Journal of Fungi*, 8(6), 584(2022) [IF=5.816].
- 9) Kumar V, **Jain P**, Venkadesan S, Karkute SG, Bhati J, Abdin MZ, Sevanthi AM, Mishra DC, Chaturvedi KK, Rai A, Sharma TR, Solanke, AU. Understanding Rice-MagnaportheOryzae Interaction in Resistant and Susceptible Cultivars of Rice under Panicle Blast Infection Using a Time-Course Transcriptome Analysis. *Genes-Basel*.12 (2021) [IF=4].
- 10) Devanna BN, Jaiswal R, Singh PK, Kapoor R, **Jain P**, Kumar G, Sharma Y, Sharma TR. Role of transporters in plant disease resistance. *Physiologia Plantarum* ppl.13377 (2021) [IF=4.5].