

Curriculum Vitae

Preeti Jain, PhD

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Summary

Pharmacist with strong research experience and a flair for teaching. PhD trained in Pharmaceutical biotechnology, molecular biology, microbiology, cell biology and molecular phylogeny. Creative researcher with skills in experimental design, data analysis, communication, organization, and problem-solving. Broad experience and knowledge of advanced techniques in molecular cloning, genomic library constructions, mutant isolations, PCR technology, Primer designs, DNA sequencing, RFLP analysis, Fluorescence in situ hybridization (FISH) and enzyme assays. Determined to make a strong contribution in the field of pharmacy education and research.

Academic Background

2008	PhD, Pharmaceutical Biotechnology Jadavpur University, Kolkata, India
2001	Master of Technology (M. Tech), Biotechnology Jadavpur University, Kolkata, India, 1 st Division (Ranked 1 st)
1999	Bachelor of Pharmacy Jadavpur University, Kolkata, India, 1 st Division

Honors & Awards

2008	Postdoctoral Research Fellowship , Department of Biotechnology, Govt. of India
2007	Best Poster Award , Society of Biological Chemists India
2004	Senior Research Fellowship from Council of Scientific and Industrial Research (CSIR), Govt. of India
2001	Research Fellowship from Indian Council of Medical Research (ICMR), Govt. of India
2001	University Gold Medal for securing the topmost rank in the M. Tech (Biotechnology) examination

Positions and Research Experience:

Professor, Dept. of Pharmaceutical Sciences, North South University, Bangladesh (April 2022-till date)

Associate Professor, Dept. of Pharmaceutical Sciences, North South University, Bangladesh
(2018-March 2022)

Current Research Focus:

- Antimicrobial Resistance Profiling and detection of antibiotic resistance genes in bacterial strains
- Molecular characterization of multidrug-resistant bacteria using next-generation sequencing
- Analysis of heavy metal tolerance and multiple antibiotic resistance among bacteria isolated from polluted sites
- Screening of medicinal plant extracts for various pharmacological activities

Research projects/ Grants as Principal Investigator

- Prevalence, Phenotypic, and Genotypic Characterization of multidrug-resistant and ESBL-producing Enterobacteriaceae from Poultry Farms in Bangladesh (CTRG-24-SHLS-26) (Ongoing)
- Molecular characterization of antibiotic resistance genes and prevalence of antibiotic resistance phenotypes in raw milk in Bangladesh (CTRG-22-SHLS-26) (2022-2023)
- Evaluation of antioxidant and hepatoprotective effects of three local varieties of mushroom (CTRG-20/SHLS/35) (2020-2021)
- Microbial risk assessment of drinking water sources in Dhaka City: Prevalence of antibiotic-resistant bacteria and their resistance genes (CTRG-19/SHLS/30) (2019-2020)

Technical Skills

- Construction of DNA libraries and analysis of metagenomic libraries
- Gene cloning and expression
- PCR, DNA sequencing, Fluorescence in situ Hybridization (FISH)
- Drug analysis
- Microbial Assays, Pure culture development and characterization, Microscopy
- Mutant isolation
- Western blot hybridization
- Protein isolation and analysis by SDS-Polyacrylamide Gel Electrophoresis (PAGE)
- Phylogenetic & RFLP analysis
- Mammalian cell culture & Transfection
- Setup, operation and monitoring of fermentation processes
- Development & optimization of upstream and downstream processes for the production of biologics
- Proficient in aseptic techniques (BSL1 and BSL2) for microbial growth as well as testing

- Pharmacological activity assays of natural products

Recent Publications (Journals)

1. Biswas A, Emran T, Khan S, Sadia S, **Jain P**, Bepari A, Shill MC, Hossain M, Reza HM (2025). Transforming Growth Factor- β -mediated attenuation of cardio-renal oxidative stress, inflammation and fibrosis by L-arginine in fludrocortisone acetate induced-hypertensive rats. *European Journal of Pharmacology*. 996. 177559. 10.1016/j.ejphar.2025.177559.
2. Imtiaz R, Saha P, Brishty ES, Kamal S, Shill MC, Reza HM, **Jain P** (2024). Prevalence of multiple antibiotic resistance among *Salmonella* isolates from clinical samples in Dhaka, Bangladesh. *Oman Medical Journal* DOI 10.5001/omj.2024.105
3. Johra FT, Hossain S., **Jain P**, Bristy AT, Emran T, Ahmed R, Sharker SM, Bepari AK, Reza HM (2023). Amelioration of CCl₄-induced oxidative stress and hepatotoxicity by *Ganoderma lucidum* in Long Evans rats. *Scientific Reports* **13**, 9909.
4. Rahman M, Chowdhury F, Uddin K, Ahmed KS, Hossain H, **Jain P**, Reza HM, Lee K, Sharker SM (2023). Nanostructured chitosan-polyphenolic patch for remote NIR-photothermal controlled dermal drug delivery. *International Journal of Biological Macromolecules*, Volume 241
5. Bristy AT, Islam T, Ahmed R, Hossain J, Reza HM, **Jain P** (2022). Evaluation of Total Phenolic Content, HPLC Analysis, and Antioxidant Potential of Three Local Varieties of Mushroom: A Comparative Study. *International Journal of Food Science*. 2022 Oct 19;2022
6. **Jain P**, Hossain KR, Islam T, Gias ZT, Hossain M and Reza H M (2021). Antioxidant and antibacterial activities of different solvent extracts of *Citrus acida* leaf and correlation with phenolic content. *Medicinal Plants - International Journal of Phytomedicines and Related Industries*.13 (2):302-312.
7. **Jain P**, Bepari AK, Sen PK, Rafe T, Imtiaz R, Hossain M, Reza HM (2021). High prevalence of multiple antibiotic resistance in clinical *E. coli* isolates from Bangladesh and prediction of molecular resistance determinants using WGS of an XDR isolate. *Scientific Reports* **11**, 22859
8. Lamia SS, Emran T, Rikta JK, Chowdhury NI, Sarker M, **Jain P**, Islam T, Gias ZT, Shill MC, Reza HM (2021). Coenzyme Q10 and silymarin reduce CCl₄-induced oxidative stress and liver and kidney injury in ovariectomized rats—Implications for protective therapy in chronic liver and kidney diseases. *Pathophysiology*.28(1):50-63.
9. Reza HM, Saleh R, **Jain P**, Rahman GMS and Bepari AK. (2020). c-MAF expression in adult human ocular surface and its implication in pterygium pathogenesis. *Reports of Biochemistry and Molecular Biology*. 8(4):419-423.
10. Gias ZT, Afsana F, Debnath P, Alam MS, Ena TN, Hossain MH, **Jain P**, Reza HM (2020). A mechanistic approach to HPLC analysis, antinociceptive, anti-inflammatory and postoperative analgesic activities of panch phoron in mice. *BMC Complementary Medicine and Therapies*. 20:102.
11. **Jain P**, Haque A, Islam T, Md. Alam MA, Reza HM (2019). Comparative evaluation of *Ziziphus mauritiana* leaf extracts for phenolic content, antioxidant and antibacterial activities, *Journal of Herbs, Spices & Medicinal Plants*, 25:3, 236-258.

12. Al-Amin MM, Chowdury MIA, Saifullah ARM, Alam MN, **Jain P**, Hossain M, Alam MA, Kazi M, Ahmad A, Raish M, Alqahtani A, Reza HM (2019). Levocarnitine improves AlCl₃-induced spatial working memory impairment in swiss albino mice. *Frontiers in Neuroscience*. 13:278.
13. Islam M, Jarna RK, **Jain P**, Alam MA, Reza HM, Hossain M, Paul S, Kabir SMR, Rahamn M (2019). Potential antidiabetic medicinal plants in Bangladesh, A comprehensive review. *World Journal of Pharmaceutical Research*. 8(6): 140-150.
14. Ulla A, Alam MA, Mosfiquir R, Khan IO, Biswajit S, Monirul I, Tarikur R, Rahman N, Reza HM, **Jain P**, Nusrat S (2019). Supplementation of *Citrus maxima* fruits peel powder improves glucose intolerance and prevents oxidative stress in liver of alloxan-induced diabetic rats. *Mediterranean Journal of Nutrition and Metabolism*. 12:1, 33-44.

Conference Publications & Presentations

1. Khan TA, Mahee HA, Das S, Maruf YH, Brishty EMS and **Jain P**. High Prevalence of Antibiotic-Resistant Genes in Water Bodies of Bangladesh, 3rd International Conference on Advancement of Life Sciences 2025, , Bangladesh; January 2025
2. Popy MN, Sarker S, Chowdhury RH, Brishty EMS and **Jain P**. Antibiotic resistance patterns and presence of resistance genes in *Escherichia coli* isolates from street foods in Dhaka, Bangladesh. Accepted, ICPHS 2024, December 2024, Bangladesh.
3. TasnimF, Salsabil SN, Islam KS, Nusrat S, Brishty EMS and **Jain P**. High prevalence of multidrug resistance in *Escherichia coli* isolates from poultry farms and retail market in Bangladesh. Accepted, ICPHS 2024, December 2024, Bangladesh.
4. Jahan T, Zahir F, Arnob TA, Imtiaz R, Reza HM and **Jain P**. Prevalence of antibiotic resistance genes among *Escherichia coli* isolated from milk samples in Bangladesh. 36th Annual Conference, Bangladesh Society of Microbiology (BSM). January 2023, Bangladesh.
5. Imtiaz R, Kamal S, Brishty EMS, Reza HM and **Jain P**. Antibiotic resistance among *Staphylococcus* isolates obtained from clinical samples in Dhaka, Bangladesh. 36th Annual Conference, Bangladesh Society of Microbiology (BSM). January 2023, Bangladesh.
6. Imtiaz R, Saha P, Aqib MA, Reza HM and **Jain P**. Antibiotic resistance among *Escherichia coli* isolated from drinking water sources in Dhaka, Bangladesh. International Conference on Genomics, Nanotech & Bioengineering. June 2022, Bangladesh.
7. Kamal S, Zaman TS, Shathi ST, Reza HM and **Jain P**. Chromium (VI) reduction by chromate-resistant bacteria isolated from industrial waste contaminated rivers in Bangladesh. International Conference on Genomics, Nanotech & Bioengineering. June 2022, Bangladesh.
8. Arnob TA, Zahir F, Jahan T, Imtiaz R, Reza HM and **Jain P**. Prevalence of antibiotic resistance among *Escherichia coli* isolated from milk samples in Dhaka, Bangladesh.

International Conference on Genomics, Nanotech & Bioengineering. June 2022, Bangladesh.

9. Bristy AT, Islam T, Ahmed R, Hossain J, Reza HM and **Jain P**. Evaluation of total phenolic content, HPLC analysis and antioxidant potential of three local varieties of mushroom: A comparative study. International Conference on Genomics, Nanotech & Bioengineering. June 2022, Bangladesh.
10. Brishty EMS, Imtiaz R, Saha P, Reza HM and **Jain P**. Antibiotic resistance among *Salmonella* isolated from clinical samples in Dhaka, Bangladesh. International Conference on Genomics, Nanotech & Bioengineering. June 2022, Bangladesh.
11. Johra FT, Hossain S, Bristy AT, Emran T, Bepari AK, **Jain P** and Reza HM. Evaluation of the hepatoprotective effect of *Ganoderma lucidum* on CCl₄-induced toxicity. International Conference on Genomics, Nanotech & Bioengineering. June 2022, Bangladesh.
12. Islam MS, Reza HM and **Jain P**. Antibacterial and antinociceptive activities of *Artocarpus lakoocha* Roxb (Moraceae) fruit pericarp extract. PSE-NPS Summit on Natural Products for Healthy Living. January 2020, Bangladesh.
13. Nakshy NT, Rashid MM and **Jain P**. Comparative antioxidant and antibacterial activities of ethanolic pulp extracts of three varieties of *Ziziphus mauritiana* Lam. found in Bangladesh. PSE-NPS Summit on Natural Products for Healthy Living. January 2020, Bangladesh.