



CURRICULUM VITAE

SMITA RAI

Permanent address: H/No 204 village and post Lilkar, Sikandarpur, Dist-Ballia-277303
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Lucknow-226021

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Personal Information:

Father's Name	(LATE) Ishwari Prasad Rai
Mother's Name	Shashikala Rai
Gender	Female
Date of Birth	01, June, 1996
Nationality	Indian
Marital status	Unmarried
Language known	Hindi & English

Career Objectives:

To launch a career in an innovative and challenging environment where, I can improve my skills by fully utilizing my capabilities.

Academic Qualification:

Class/Course	Board/University	Year	%age
Ph.D. (Biotechnology)	Integral University	2020	Pursuing
M.Sc. (Biotechnology)	Integral University	2016	62%
B.Sc. (Biotechnology)	Mahatma Gandhi Kashi Vidyapeet, Varansi	2014	54%
Intermediate (PCB)	U.P. Board / GIC	2011	70.8%
High School	U.P. Board / GIC	2009	69%

❖ **Technical Qualification:**

Computer Knowledge (PGDCA)

Technical knowledge:

- DNA isolation from bacterial, plant & animal cell & its visualization on agarose gel electrophoresis.
- Enumeration of bacteria and fungi.
- Qualitative and Quantitative Estimation of DNA, RNA, Carbohydrate & protein.
- Planting and gram staining.
- Immunodiffusion and immunoelectrophoresis.

Teaching experience: 6 years (30 August, 2017 to till date)

Current status: I am a Lab Instructor in Microbiology laboratory, Department of Bioscience, **Integral University, Lucknow, (U.P.) India**

Research Interests and field of specialization:

Biotechnology
Immunology
Molecular Biology
Plants and Microbes
Microbiology

- ❖ **Project work:** Four months project work entitled “**Evaluation of anti-bacterial activity of *Grewia asiatica L.***” successfully done from Integral University, Lucknow-226026, (U.P. India).

❖ **National Conference, seminar & Webinar:**

1. International Seminar on National Seminar on **Recent Advances in Biochemistry and Biotechnology** held on March 16, 2024, organized by the Department of Biochemistry, Lucknow University, Lucknow. (Oral Presentation)
2. Attended National Conference on **Recent Advances in Biochemistry and Biotechnology (RABB-2021)**, organized by Department of Biochemistry, University of Lucknow, Lucknow, India. (March 20, 2021) (Poster Presentation)
3. Participate the poster presentation at “**National Conference on Interdisciplinary Advancements in Biochemistry**” 2019, Organized by Dr. Ram Manohar Lohia Avadh University, Ayodhya (U.P. India) (Oral Presentation)
4. Participate the poster presentation at “**India International Science Festival (IISF)**” topic entitled **The effect of Bio edible coatings for enhancing the shelf life and improving postharvest quality of Amla (*Phyllanthus emblica*) fruit-** held at Biswa Bangla Convention center, Kolkata November 5

to8, 2019.(Poster Presentation)

5. Participate one day seminar at “**Council of Science & Technology, U.P.**” on the theme **Latest trends in biotechnology for the benefits of Uttar Pradesh** on 12 March, 2019 held at Sir C.V. Raman Auditorium, C.S.T.,(U.P. India).
6. Participate International webinar on "**International Webinar on Looking Life Differently: A Fallout of COVID 19 Pandemic**" August 6-8, 2020 Organized by Department of Biochemistry, Dr. RML University, Ayodhya, 224001, India.
7. Participate in the National Webinar entitled, “**Impact of COVID-19 on the Environment: with Special Emphasis on Economically Important Fauna**” held on Saturday, 20th June, 2020, Dr. R. P. M. Degree College Lucknow, Department of Zoology.
8. Attended National seminar on “**Recent advances in Applied Biochemistry and Biotechnology (RAABB 2019)**” organized by Department of Biochemistry, University of Lucknow, India. (9 March 2019)

Attended National Conference on “**Biotrendz: Technological Advancement and Challenges in the field of Biotechnology**” organized by Department of Biotechnology, Noida Institute of Engineering and Technology, Greater Noida, India. (23-24 April, 2019)

❖ **Publications:**

Papers:

1. Gupta, A., **Rai, S.**, Bano, A., Khanam, A., Sharma, S. (2021). Comparative Evaluation of Different Salt-Tolerant Plant Growth-Promoting Bacterial Isolates in Mitigating the Induced Adverse Effect of Salinity in *Pisum sativum*. *Biointerface Research in Applied Chemistry*, 11, 13141–13154.
2. Bano, A., Gupta, A., **Rai, S.**, Pathak, N., and Sharma, S (2021). Elucidation of Bioactive potential of two commonly grown North Indian *Psidium guajava* viz., Lalit and Shweta against pathogenic food born and MDR bacteria. *Biointerface Research in Applied Chemistry*, 11.

Publications:

Patent: Official journal of the patent office

Application No: 202211024871 A

Title of the invention:

Biogenic antimicrobial chitosan based nanoparticals and process of their synthesis using plant (*Ocimum sanctum*) leaf extract.

*Dr. Swati Sharma, prof. Neelam Pathak, **Smita Rai**, Archana Vimal, Ambreen Bano and Anmol Gupta.*

Research articles and Review:

1. **Smita Rai**, Shefali Singh, Neelam Pathak, and Swati Sharma. "Assessing the potential of chitosan based coatings in modulation of bacteriome on tomato carposphere." *Postharvest Biology and Technology* 209 (2024): 112684. IUMCN: IU/R&D/2023-MCN0002045.

2. **Smita Rai**, Shefali Singh, Neelam Pathak, and Swati Sharma. Prolongation of the shelf life of Amla fruit through the application of edible coatings and assessment of antibacterial and antioxidant attributes of coatings. *Biochemical and cellular archive*; IUMCN: IU/R&D/2024-MCN0002740.
3. Jabeen, S., Siddiqui, V. U., Sharma, **S., Rai**, S., Bansal, P., Bala, S., ... & Khan, T. (2024). A Novel Green Synthesis of CuFe₂O₄ NPs from *Cissus rotundifolia* for Photocatalytic and Antimicrobial activity evaluation. *Journal of Alloys and Compounds*, 174020. (MCN: IU/R&D/2024-MCN0002353).
4. Jabeen, S., Siddiqui, V. U., Mishra, N., Mishra, A., Sharma, **S., Rai**, S., Sharam & Khan, T. (2024). Quantum Mechanical Calculation of Graphene Oxide Nanosheet Prepared via Modified Hummer Method: Role in Dye Degradation and Antibacterial Activity. *Russian Journal of General Chemistry*, 94(3), 666-674. (MCN: IU/R&D/2024-MCN0002355).
5. Gupta, A., Bano, A., **Rai, S.**, Dubey, P., Khan, F., Pathak, N and Sharma, S. Plant Growth Promoting Rhizobacteria (PGPR): A Sustainable Agriculture to Rescue the Vegetation from the Effect of Biotic Stress: a Review. *Letters in Applied NanoBioscience*, 10(3), 2459-2465.

Book chapter:

2. **Rai, S.**, Gupta, A., Bano, A., Pathak, N., & Sharma, S. (2020). Biobased Coatings: An Alternative Approach in Managing Postharvest Diseases. In *Bio-management of Postharvest Diseases and Mycotoxigenic Fungi* (pp. 71-88). CRC Press.
3. Gupta, A., Bano, A., **Rai, S.**, Mishra, R., Sharma, S. and Pathak, N. (2021). Mechanistic insights of plant-microbe interaction towards abiotic stress in plants for enhancing the sustainable agriculture. In *Plant stress physiology- Perspectives in Agriculture, IntechOpen (In-Press)*
4. Gupta, A., Bano, A., Pandey, N., **Rai, S.**, Sharma, S., Pathak, N. (2021). Recent advances for biotic and abiotic stresses of solanum melongena crop. “*Solanum melongena: Production, Cultivation and Nutrition*”. *Nova Science Publishers, Inc USA. (In-Press)*
5. Bano, A., Gupta, A., **Rai, S.**, Fatima, T., Pathak, N., Sharma, S. (2021). Mechanistic role of ROS and its regulation via Antioxidants system under Environmental Stress. In *Plant stress physiology- Perspectives in Agriculture, IntechOpen (In-Press)*

Abstracts published:

1. **Smita Rai, Anmol Gupta, Ambreen Bano, Neelam Pathak, Swati Sharma.** Use of Chitosan based Bio-edible coatings to reduce the post-harvest loss of Amla (*Embllica Officinalis*) on October 4-6, 2020, International conference on Perspective on Agricultural and Applied Sciences in COVID-9 Scenario [PASS-2020], jointly organized by Agricultural & Environmental Technology Development Society (AETDS), U.S. Nagar, India (Abstract and Oral presentation).
2. **Smita Rai, Anmol Gupta, Ambreen Bano, Neelam Pathak, Swati Sharma.** The effect of Bio-edible coatings for enhancing the shelf life and improving post-harvest quality of Amla (*Phyllanthus emblica*), held on 7-9 November 2019, *India International Science Festival (IISF), Kolkata, India. (Abstract and Poster presentation)*
3. **Smita Rai, Neda Waheed, Anmol Gupta, Ambreen Bano, Neelam Pathak, Swati Sharma.** **Microbiology and microbial technology studies on management of fungal post-harvest penicillium rot of amla fruits (*Embllica officinalis*)** on March 20, 2021, *Recent Advances in Biochemistry and Biotechnology (RABB-2021)*, organized by Department of Biochemistry, University of Lucknow, Lucknow-PP35 (Abstract and Poster presentation)

4. **Smita Rai**, Neda Waheed, Anmol Gupta, Ambreen Bano, Neelam Pathak, Swati Sharma. Participate the poster presentation at “**National Conference on Interdisciplinary Advancements in Biochemistry**” 2019, Organized by Dr. Ram Manohar Lohia Avadh University, Ayodhya (U.P. India) **(Abstract and oral presentation)**
5. Pooja Yadav, **Smita Rai**, Anmol Gupta, Ambreen Bano, Swati Sharma. **Use of Edible coatings to reduce the postharvest loss of Amla (*Emblica Officinalis*)** on March 28-29, 2019, *National Conference on Interdisciplinary Advancements in Biochemistry* (NCIAB-2019), organized by Department of Biochemistry, Dr. Rammanohar Lohia Avadh University, Ayodhya U.P., India. **(Abstract)**
6. Anmol Gupta, Ambreen Bano, **Smita Rai**, Ritu Rai, Haya Hashmat, Swati Sharma, Neelam Pathak. **Salinity resistant producing Plant Growth Producing Rhizobacteria (PGPR) competent Bacillus spp. in promoting the growth of *Pisum sativum*** on March 20, 2021, *Recent Advances in Biochemistry and Biotechnology* (RABB-2021), organized by Department of Biochemistry, University of Lucknow, Lucknow-PP10 **(Abstract and Poster presentation)**.
7. Anmol Gupta, Ambreen Bano, **Smita Rai**, Shruti Rai, Swati Sharma, Neelam Pathak. **Plant-growth Promoting Rhizobacteria (PGPR) Promote Plant Growth and Alleviate Salt Stress in *Pisum sativum*** on October 4-6, 2020, *International conference on Perspective on Agricultural and Applied Sciences in COVID-19 Scenario* [PASS-2020], jointly organized by Agricultural & Environmental Technology Development Society (AETDS), U.S. Nagar, India **(Abstract and Poster presentation)**.
8. Anmol Gupta, Ambreen Bano, **Smita Rai**, Priya Dubey, Fahad Khan, Swati Sharma, Neelam Pathak. **Effect of Plant-Growth Promoting Rhizobacteria (PGPR) on *Pisum Sativum* under Biotic Stress** on October 8-9th, 2020, *International Conference on Biotredz Advancement & Challenges in Science and Technology*, organized by Department of Biotechnology, Noida Institute of Engineering & Technology, Greater Noida. **(Abstract and Paper presentation)**
9. Anmol Gupta, Ambreen Bano, **Smita Rai**, Swati Sharma and Neelam Pathak. **The influence of plant growth-promoting rhizobacteria in response to abiotic stress: A survival strategy** on March 09, 2019, National Seminar on Recent Advances in Applied Biochemistry and Biotechnology (RAABB 2019), sponsored by Department of Higher Education and organized by Department of Biochemistry, University of Lucknow, U.P. India **(Abstract and Poster Presentation)**
10. Anmol Gupta, Ambreen Bano, **Smita Rai**, Neelam Pathak and Swati Sharma. **Role of *acdS* positive PGPB (Plant Growth Promoting Bacteria) and its efficacy in improving the plant health under stress conditions** on March 28-29, 2019, *National Conference on Interdisciplinary Advancements in Biochemistry* (NCIAB-2019), organized by Department of Biochemistry, Dr. Rammanohar Lohia Avadh University, Ayodhya U.P., India **(Abstract and Oral Presentation)**
11. Anmol Gupta, Ambreen Bano, **Smita Rai**, Swati Sharma and Neelam Pathak. **Role of *acdS* positive bacterial isolates in promoting plant growth and mitigating salinity stress** on December 8-10, 2019, *Progressive Horticulture Conclave (PHC)-2019 on Futuristic Technologies in Horticulture*, organized by Indian Society of Horticulture Research & Development (ISHRD), Uttarakhand and ICAR-CISH, Lucknow (UP) **(Abstract and Poster presentation)**
12. Ambreen Bano, Anmol Gupta, **Smita Rai**, Lubna Ansari, Swati Sharma, Neelam Pathak. **The seasonal variation in phytochemical profile of *Psidium guajava* fruit during ripening** on March 20, 2021, *Recent Advances in Biochemistry and Biotechnology* (RABB-2021), organized by Department of Biochemistry, University of Lucknow, Lucknow-PP04 **(Abstract and Poster presentation)**
13. Ambreen Bano, Anmol Gupta, **Smita Rai**, Swati Sharma, Neelam Pathak. **Effect of Bioedible Coating on *Psidium Guajava* to Enhance the Shelf Life After Post Harvest**, on October 4-6, 2020, *International conference on Perspective on Agricultural and Applied Sciences in COVID-9 Scenario* [PASS-2020], jointly organized by Agricultural & Environmental Technology Development Society (AETDS), U.S. Nagar, India **(Abstract and Poster presentation)**
14. Ambreen Bano, Anmol Gupta, **Smita Rai**, Swati Sharma, Neelam Pathak. **Elucidation of Antimicrobial Potential of *Psidium guajava* bark extracts** on October 8-9th, 2020, *International Conference on Biotredz Advancement & Challenges in Science and Technology*, organized by Department of Biotechnology, Noida Institute of Engineering & Technology, Greater

Noida. **(Abstract and Poster presentation)**

15. Ambreen Bano, Anmol Gupta, **Smita Rai**, Swati Sharma, Neelam Pathak. Biochemical And Cell Wall Hydrolasing Enzymes Changes During Different Stages of *Psidium guajava* L. Fruit Ripening on March 28-29, 2019, *National Conference on Interdisciplinary Advancements in Biochemistry* (NCIAB-2019), organized by Department of Biochemistry, Dr. Rammanohar Lohia Avadh University, Ayodhya U.P., India **(Abstract and Oral presentation)**
16. Ambreen Bano, Anmol Gupta, **Smita Rai**, Swati Sharma, Neelam Pathak. Changes In Activities of Cell Wall Hydrolases and Functional Food Components During Different Stages of *Psidium guajava* L. Fruit Ripening, held on 7-9 November 2019, *India International Science Festival (IISF), Kolkata, India. (Abstract and Poster presentation)*
17. Ambreen Bano, Anmol Gupta, **Smita Rai**, Swati Sharma, Preeti Bajpai, Neelam Pathak. ***Psidium guajava* L. A Medicinal Plant for the Treatment of Various Human Ailments** on 23-25 January 2017, at Second Indo-Russian meet Integral University, Lucknow, India. **(Abstract)**
18. Saurabhra, Anmol Gupta, Ambreen Bano, **Smita Rai**, Neelam Pathak and Swati Sharma. **Role of PGPR (Plant Growth Promoting Rhizobacteria) in plant growth** on March 28-29, 2019, *National Conference on Interdisciplinary Advancements in Biochemistry* (NCIAB-2019), organized by Department of Biochemistry, Dr. Rammanohar Lohia Avadh University, Ayodhya U.P., India. **(Abstract)**
19. Shrikant Verma, Anmol Gupta, Ambreen Bano, **Smita Rai**, Neelam Pathak, Swati Sharma. **Effect of stress on plants under salinity condition and its amelioration** on March 28-29, 2019, *National Conference on Interdisciplinary Advancements in Biochemistry* (NCIAB-2019), organized by Department of Biochemistry, Dr. Rammanohar Lohia Avadh University, Ayodhya U.P., India. **(Abstract)**
20. Mushfa Khatoon, Anmol Gupta, Ambreen Bano, **Smita Rai**, Mohammad Ashfaque. **Bioconversion of agricultural waste for the production of value-added products** on March 28-29, 2019, *National Conference on Interdisciplinary Advancements in Biochemistry* (NCIAB-2019), organized by Department of Biochemistry, Dr. Rammanohar Lohia Avadh University, Ayodhya U.P., India. **(Abstract)**
21. Shalini Mishra, Ambreen Bano, Anmol Gupta, **Smita Rai**, Swati Sharma, Neelam Pathak. **Antibacterial potential of leaf extracts of Guava (*Psidium Guajava* L.)** on March 28-29, 2019, *National Conference on Interdisciplinary Advancements in Biochemistry* (NCIAB-2019), organized by Department of Biochemistry, Dr. Rammanohar Lohia Avadh University, Ayodhya U.P., India. **(Abstract)**

Declaration:

I **Smita Rai** assure that all the above information given by me is true to the best of my knowledge and belief if I get chance, I assure, I will do my best.

Place: Lucknow

Date:

SMITA RAI

