

Biodata



Name : Dr Priyanka Sharma

Designation: Assistant Professor

Qualification: M.Sc. (Hons. School) in Botany, Ph. D in Botany (Spz: Plant Physiology, Plant Stress Management, Secondary Metabolites, Plant Molecular Biology)

Experience: 14 years Research & Teaching

Nationality: Indian; **Category:** Open

E-mail: priyanka@moderncollegegk.org

ACADEMIC BACKGROUND

DBT GOI, New Delhi BioCARE Scientist (2012—2015) at Department of Biotechnology, Savitribai Phule Pune University, Pune, India, with mentor of **Prof. W.N. Gade**.

Postdoctoral Fellowships (2009-2012):

UGC-Dr. D.S. Kothari Post Doctoral Fellow (From 6th Jan, 2009 to 5th Jan 2012) at Department of Biotechnology, Savitribai Phule Pune University, Pune, India, with mentor of **Prof. W.N. Gade**. **Title: Gene expression analysis of brassinosteroid regulated stress proteins in rice under heavy metals stress**

Ph. D. in Botany: 2008—Degree in subject of Botany (Life Sciences) has been awarded (Specialization in: Biochemistry, Toxicology, Genotoxicity and Phytoremediation, Plant Physiology, Plant Growth Regulation,)-Place: Department of Botanical and Environmental Sciences, **Guru Nanak Dev University, Amritsar (India)**

M. Sc. (Hons School) in Botany – 2003, Guru Nanak Dev University, Amritsar, India

B. Sc. (Hons School) in Botany – 2001, Guru Nanak Dev University, Amritsar, India

Senior Higher Secondary – 1998, CBSE, Chandigarh

Matriculation - 1995, H.P. Board, Merit in Board

Research/Teaching experience:

- ✓ Served as, **Botany Lecturer** in Hindu College of Amritsar, Punjab (From July, 2006 to March, 2007).
- ✓ Served as **Teaching Research Associate in Department of Biotechnology, University of Pune, Pune, India** (From 18th Feb, 2008 to 31st Dec, 2008). **Taught various subjects (Theory as well as practicals) to M.Sc. Biotechnology (JNU students):** Plant Molecular Biology, Cell Biology, Plant Tissue Culture and Plant Biotechnology.

- ✓ Working as **Assistant Professor in Department of Biotechnology**, Modern College of Arts, Science & Commerce, Ganeshkhind, Pune. (From **7th July 2017 to continue.....**). My teaching expertise is Advanced Biochemistry, Genetic Engineering, Biochemical and Biophysical techniques, Botany, Biodiversity, Environmental Biotechnology,

Professional Experience:

- Appointed as External Examiner for undergraduate and post-graduate course of Biotechnology by Savitribai Phule Pune University
- Appointed Examiner for the Central Assessment Programme (CAP) by the Savitribai Phule Pune University.
- Appointed as Paper-Setters and Moderators for course of Biotechnology by Savitribai Phule Pune University.
- Member of NAAC criterion III Research, Innovations and Extension at college level

Administrative activity:

Coordinated various workshops and training programs for students other than academic

Awards/Honors:

- ✓ **Postdoctoral Fellowships (2009-2012): UGC-Dr. D.S. Kothari Post Doctoral Fellow** (From 6th Jan, 2009 to Jan 2012) at Department of Biotechnology, University of Pune, Pune, India, with mentor of Prof. W.N. Gade.
- ✓ **DBT BioCARE Scientist (2012—September, 2015)** Department of Biotechnology, New Delhi **awarded a 40.6 Lakh Project under BioCARE Scheme at Dept. of Biotechnology**, SPPU, Pune, India, with mentor of Prof. W.N. Gade for the implementation of project entitled “Anti-inflammatory and Apoptosis –promoting activities of Brassinosteroids isolated from medicinal plant
- ✓ **Elected by Pearl Foundation**, A foundation for Educational Excellence, Bangalore & Madurai, India for the “**Best Women Young Scientist Award**” in **Biotechnology for the year 2020**

Technical Expertise

Spectrophotometer, Atomic Absorption Spectrophotometer, Mercury Analyzer, Gel Documentation, ELISA, Electrophoresis, Plant Tissue Culture, Animal Tissue Culture Techniques, DNA & RNA isolation, PCR, Real Time-PCR, SDS,

native- PAGE, 2D, Western Blot, Chromosomal aberration assay, Ames assay, Chromatography technique like HPLC, GC-MS, LC-MS and Flow Cytometer.

List of Extramural Projects

1. Department of Biotechnology (DBT), New Delhi under BioCARE-Women Scientist Scheme **sanctioned** a project entitled “**Anti-inflammatory and Apoptosis-promoting activities of Brassinosteroids isolated from medicinal plant**” for 3.6 years (March, 2012 to September, 2015). **Total Cost of Project: Rs. 40,61,550/-**

Membership of Societies and other academic bodies

- ✓ Member, Aagaaz- Earth & Resources Care Group, Amritsar
- ✓ Member, International Journal “Bioscience Reporter” (Journal of Current Bioscience)
- ✓ Member of The Indian Botanical Society

Reviewer:

1. Acta Physiologiae Plantarum - Springer
2. Ecotoxicology and Environmental Safety - Journal - Elsevier
3. International Journal of Green Pharmacy
4. Journal of Hazardous Materials –Elsevier
5. Natural Products Journal

Project Students supervised:

1. Anju Meshram (JRF in DBT Biocare Project)
2. Sarita Tripathi (JRF in DBT Biocare Project)
3. B.Sc Biotechnology students (8 students) under DBT star Scheme program

MentX program:

Selected as a **Mentor** under MentX program which has been initiated as one amongst many activities of a new young academy: **Young Academy of India (YAI)** during the COVID-19 lockdown period. Under this program **Mentoring** two students

1. Harbhajan Patel M.Sc. Botany Central University MP
2. Mohabbat Singh MSc Botany, Central University of Punjab Bathinda

LSM software learned:

- 1. Moodle LSM (e-content development and students' progress assessment)**
Hands on Training full FDP under the scheme of Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT), MHRD, Govt. of India.
- 2. Google Classroom, Google meet, Google form etc**
3. Effective and Efficient Online Teaching in the Age of Corona: A Hands On Workshop organised by the Teaching Learning Centre (ICT) at IIT Bombay, funded by the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT), MHRD, Govt. of India.
4. The **BodhiTree and SAFE Tools** for Effective Online Teaching: A Hands On Workshop organised by the Teaching Learning Centre (ICT) at IIT Bombay, funded by the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT), MHRD, Govt. of India.
- 5. E- content developed**

WORKSHOPS/ / TRAINING PROGRAMMES

1. "On Job Training" on Seed Technology at Seed Technology Department of Punjab Agricultural University, Ludhiana, Punjab, June – July, 2001.
2. 51st BRNS- IANCAS National Workshop On Radiochemistry & Applications of Radioisotopes held at Department of Physics, Guru Nanak Dev University, Amritsar, November 10-17, 2003.
3. Sixth (Fulbright)- SAARC IAELP International Workshop on Water Saving Technologies held at Dept. of Botanical & Env. Sciences, G.N.D.U, Amritsar (Punjab), February 22-24, 2006.
4. **5 Days Hand-on Workshop** 5 days Hands-on Workshop on Molecular Biotechnology and **Bioinformatics**, held at **International Center for Stem Cells, Cancer and Biotechnology (ICSCCB), Pune, India, December 24-28, 2012.**
5. International Interdisciplinary Science Conference (I-ISC, 2012) On Protein Folding and Diseases", organized by the Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, on December 8-10, 2012

6. UGC Sponsored National Seminar on “Biodiversity and Environment” organized by Shahzada Nand College, Amritsar, on January 24-25, 2013
7. UGC Sponsored National Conference on “Medical Biotechnology (NCMB-13)” held at DAV College, Jalandhar, on February 02, 2013.
8. DST Sponsored Indo-Mexico Workshop on Bioechnology : Beyond Borders organized at NCL, Pune on 7-9 September,2013.
9. **Priyanka Sharma**, AnjuMesharam, **SaritaTripathi***, Renu Bhardwaj and W.N. Gade. (2014). **Isolation of Brassinosteroids from medicinal plant *Bacopamonnieri L.* and their cytotoxic effects on human cancer cell lines.** Presented a poster at National Seminar on ‘Medicinal Plants: Bioprospecting, Agrotechniques& Enhancement of Secondary Metabolites’ organized at Department of Botany, University of Pune, Pune from 13-14 Februrary,2014
10. Tripathi, S., Sharma, P. and Gade, W.N. (2015). Apoptosis promoting activities of brassinosteroids isolated from *Bacopa monnieri L.* in human cancer cell lines. Presented a poster at **International Symposium on “Current Advances in Radioloy, Stem Cells and Cancer Research’** organized at JNU, 19th to 21st Feb, 2015.
11. DBT Sponsored short **term hands on training course on “Methodologies used in gene expression analysis”** held at **Department of Botany, SPPU, Pune, from September, 29 to October 20, 2015**
12. Participated in International Conference on “Recent Trends In Life Sciences” ICRLTS-2018 sponsored by SPPU 2nd and 3rd February 2018, organized by Department of Zoology, Modern College of Arts, Science and Commerce Ganeshkhind, Pune
13. Attended Knowledge Bridge sponsored “**E-Content Development Workshop**” Organized by Modern College of Arts, Science and Commerce Ganeshkhind, Pune, 26th to 27th April 2019.
14. Attended LMS Training at Vinsys IT Services(I) Pvt Ltd. Kothrud, Maharashtra on 6th July 2019.
15. Completed FDP on Teaching and planning organized by PES Modern BED College on 11-13th of July, 2019.
16. Actively participated and worked as committee member in one Day National seminar on Innovative and Best Practices in Higher Education organized by Modern College, Ganeshkhind in Collaboration with NAAC, Bangalore on 26 July 2019

17. Actively participated in Science Popularization Program Science Fair-2019, sponsored by DBT, Govt of India on Aug 30,2019
18. Actively participated in Anubhuti – “Regional Science Project and Poster Competition held on 5th February 2020
19. Attended A Webinar on Programme and Course outcomebased learning under higher education on April 4th, 2020.
20. A Webinar attended on An Overview in Advancements of Gas Chromatography Columns and Technology for Pharma and Non-Pharma Applications organized by PhenomenexWebinars@phenomenex.com on 7.4.2020.
21. A Webinar attended on Plantae Webinar: Plant Science Careers in Space Biology organized by **American Society of Plant Biologists** on 9.4.2020.
22. One Day Online Workshop attended on Planning and Organizing Research using Scopus and Mendeley on Friday 10th April, 2020 organized by School of Education-Guru Nanak Dev University in Collaboration with Elsevier Organize.
23. Participated in one day Faculty Development Programme on “**ICT tools for Online Teaching**” organised by Global Society for Basic and Applied Science (GSBAS), in Association with Sanjivani College of Engineering, Dept. of MBA, Kopergaon on 5/19/2020, with passing score of 100%.
24. Attended e-content development methodology: Four Quadrant Method, OERs and copyright issues organised by GNDTLC, SGTB Khalsa College University of Delhi under PMMMNMNTT, MHRD, center Govt. of India on 15th May 2020
25. Attended webinar entitled “Challenges & Opportunities before Indian Higher education due to covid 19 organised by GNDTLC, SGTB Khalsa College University of Delhi under PMMMNMNTT, MHRD, center Govt. of India on 2nd May 2020
26. Workshop on Data Analysis through SPSS for Effective Research Productivity organized by GNDU, AMRITSAR School of Education PMMMNMNTT), MHRD, Govt. of India in Collaboration with SPSS South Asia Pvt. Ltd. organizes
27. Science Leadership Workshop organized by CU Bathinda, Punjab from 22nd June-28th June 2020
28. Workshop Completed on Development of Teacher's e-kit and MOOCs in Four Quadrant Format of e-Content with GRADE “A+” organised by Guru Angad Dev Teaching Learning Centre SGTB Khalsa College, University of Delhi
29. Workshop On Omics Data Analysis organized by Dept. of Biotechnology IIIT Noida from 16th April to 17th April 2021.

a) Workshops/Conferences Organized

1. Organized one day workshop on “Advanced Techniques in Chromatography” **under board of Students'** Development programme of SPPU for undergraduate students on 27th January 2020.
2. Organized two days **International Conference on “Biotechnology: Perspective & Challenges”** under SPPU Quality Improvement Program on 14th -15th February, 2020

d) Faculty Development Courses completed and E-Content developed:

1. A six-week (30 July 2019) **agMOOCs** online course successfully completed with **distinction and HONOR CODE (i.e >90% score)** in subject of Employment Generation among Rural Youth through Agripreneurship and certificate issued by the **Centre for Development of Technical Education, IIT Kanpur & Commonwealth of Learning, Canada.**
2. Full FDP of one week (8week course of NPTEL, 30th September 2019) successfully completed in subject of **BIOENERGY with a consolidated score of 88% NPTEL-AICTE** Faculty Development Programme funded by the Ministry of HRD Govt. of India.
3. A six-week (3rd December 2019) **agMOOCs** online course successfully completed with **distinction and HONOR CODE (i.e >90% score)** in subject Detection, Diagnosis and Management of Plant Diseases and certificate issued by the **Department of Mycology & Plant Pathology Banaras Hindu University, Varanasi, IIT Kanpur & Commonwealth of Learning, Canada.**
4. E-Content Developed at SPPU site <http://econtent.unipune.ac.in> on “Aqueous Solution and Preparation” for TY. B.Sc. Biotechnology (2013 Pattern).
5. E-Content Developed at SPPU site <http://econtent.unipune.ac.in> on “Chromatography: Principle and Application ” for TY. B.Sc. Biotechnology (2013 Pattern).
6. E-Content Developed at YouTube video on topic of different solution preparation for practical performance. The link for this is <https://youtu.be/xB2CdavEB5k>.
7. webinar series 2020 **Bioinformatics Webinar series on Practical Bioinformatics on a wet - lab set - up**, Organised by the Sathyabama Institute of Science and Technology in Association with Indian Association of Applied Microbiology (IAAM) and the Georgetown University, Washington DC, USA. May 11th to May 16th May 2020.
8. Participated in the Webinar series on **Novel Microbes and Newer Threats**, Organised by the Sathyabama Institute of Science and Technology in Association with Indian Association of Applied Microbiology (IAAM) and the California University of Science and Medicine, USA. 20th April to 2nd May 2020.

9. LMS-Moodle organized by SNDT Women's University Mumbai 27th July to 2nd Aug 2020
10. VIRTUAL COURSE ON **VACCINE PRODUCTION: BASICS, PITFALLS AND TROUBLE-SHOOTING** organized by Pune Knowledge Cluster (PKC) in partnership with Serum Institute of India Pvt. Ltd., 15th Jan to 5th Feb 2021

Full List of Publications:

Book Published:

A Text Book on **Bioanalytical Techniques** published (SY B.Sc Biotechnology as per CBCS SPPU Syllabus) ISBN: 978-93-90506-231; Nirali Publication

Research Papers/Review Articles/Book Chapters:

1. **Sharma, P.** and Bhardwaj, R. (2007). Effects of 24-epibrassinolide on growth and metal uptake in *Brassica juncea* L. under copper stress. *Acta Physiologiae Plantarum* **29(3): 259-263. IF: 1.65**; Citations: 43. ISSN: 01375881; UGC no. 339
2. **Sharma, P.,** Bhardwaj, R., Arora, N. and Arora, H.K. (2007). Effect of 28-homobrassinolide on growth, zinc metal uptake and antioxidative enzyme activities in *Brassica juncea* L. seedlings. *Brazilian Journal of Plant Physiology*. **19: 203-210. IF: 1.12**, Cited by 13; ISSN:16770420, 16779452
3. **Sharma, P.** and Bhardwaj, R. (2007). Effect of 24-epibrassinolide on seed germination, seedling growth and heavy metals uptake in *Brassica juncea* L. *J. 'General and Applied Plant Physiology'* **33: 59-73. Citation:5**
4. Bhardwaj, R. **Sharma, P.,** Arora, H.K. and Arora, N. (2008). 28-Homobrassinolide regulated Mn-uptake and growth of *Brassica juncea* L. *Canadian Journal of Pure and Applied Sciences*. **2(1): 149-154. IF 2**, citation: 5; ISSN 1715-9997, UGC no 48
5. **Sharma, P.,** Bhardwaj, R., Arora, N., and Arora, H.K. and Kumar, A. (2008). 28-Homobrassinolide - regulated effects of nickel on metal uptake, protein content and antioxidative defence system in *Brassica juncea* L. *Biologia Plantarum*. **52(4): 767-770. Impact factor 1.8; Citation: 19; ISSN: 0006-3134, UGC no: 523**
6. Arora, N., Bhardwaj, R., **Sharma, P.** and Arora, H.K. (2008). Effect of 28-homobrassinolide on growth, lipid peroxidation and antioxidative enzyme activities in seedlings of *Zea mays* L. under salinity stress. *Acta Physiologiae Plantarum*. **30(6): 833-839. Impact factor: 1.5, Citations: 23; IF: 1.65**; Citations: 43. ISSN: 01375881, UGC no. 339

7. Arora, N., Bhardwaj, R., **Sharma, P.** and Arora, H.K. (2008). 28-Homobrassinolide alleviates oxidative stress in salt treated maize maize (*Zea mays* L.) plants. ***Brazilian Journal of Plant Physiology.* 20(2): 153-157. Impact factor: 1.12; ISSN:16770420, 16779452**
8. Arora, N., Bhardwaj, R., **Sharma, P.** and Arora, H.K. (2008). Amelioration of Zn toxicity by 28-homobrassinolide in *Zea mays* L. ***Canadian Journal of Pure and Applied Sciences.* 2(3):503-509, Impact factor: 2.6; Citations: 9; ISSN 1715-9997, UGC no: 48**
9. Bhardwaj, R. **Sharma, P.,** Arora, N. and Arora, H.K. (2011). Amelioration of Mn toxicity by brassinosteroids in *Brassica juncea* L. ***International Journal of Environment and Waste Management.* 8(1-2): 114-122 Impact Factor: 1.06. UGC no. 515**
- 10 Kanwar, M.K., Bhardwaj, R., Arora, P., Chowdhary, S.P., **Sharma, P.** and Subodh Kumar (2012) Plant steroid hormones produced under Ni stress are involved in the regulation of metal uptake and oxidative stress in *Brassica juncea* L. ***Chemosphere.*86(1): 41-49 Impact Factor: 4.25 Citations 10; ISSN: 0045-6535, UGC no: 434**
11. Mukesh Kumar Kanwar, Renu Bhardwaj, Sikandar Pal Chowdhary, Priya Arora, **Priyanka Sharma** and Subodh Kumar (2013) Isolation and characterization of 24-epibrassinolide from *Brassica juncea* L. and its effect on growth, Ni ion uptake, antioxidant defense of Brassica plants and in vitro cytotoxicity. ***Acta Physiol Plant.* (35): 1351-1362 IF: 1.5.; ISSN: 01375881, UGC no. 339**
12. **Sharma, P*.,** Anil K., and Bhardwaj, R. (2016). Plant steroidal hormone epibrassinolide regulate – Heavy metal stress tolerance in *Oryza sativa* L. by modulating antioxidant defense expression. ***Environ. Exp. Bot.* 122, 1–9 Impact Factor: 4.4; ISSN :0098 8472 (Corresponding Author), UGC no: 547**
13. Tripathi, S. and **Sharma, P.* (2015).** Characterization of Brassinosteroid isolated from *Bacopa monnieri* L. and their free radical scavenging activity. *International Journal of Science and Research.* 4(4): 2738-2743. Impact Factor 4.4.; ISSN: 2229-5518 (**Corresponding Author**) UGC no 2659
14. Bhardwaj, R., Arora, N., **Sharma, P.,** Arora, H.K., Thukral, A.K. (2013). Stress protective properties of brassinosteroids. In: Prof. S.B.Saksena Commemoration

Gupta), Aavishkar Publishers, Jaipur. pp. 55-71. ISBN: 978-81-7910-418-7

15. Anjali Khajuria, Shagun Bali, **Priyanka Sharma**, Ravinderjit Kaur, Shivam Jasrotia, Poonam Saini, Puja Ohri and Renu Bhardwaj (2019). S-nitrosoglutathione (GSNO) and plant stress responses *In: Reactive Oxygen, Nitrogen and Sulfur Species in Plants: Production, Metabolism, Signaling and Defense Mechanisms, Vol 1, 1Edition*, Edited, Vasileios Fotopoulos, Kamrun Nahar, Masayuku Fujita. Hoboken NJ, USA, 2019, **John Wiley & Sons Ltd. Publisher**.
16. Pooja Sharma, **Priyanka Sharma**, Priya Arora, Vinod Verma, Kanika Khanna, Poonam Saini, Renu Bhardwaj (2019). **Role and Regulation of ROS and Antioxidants as Signaling Molecules in Response to Abiotic Stresses**. *In: Plant Signaling Molecules: Role and Regulation Under Stressful Environments*. Pages 141-156. DOI: <https://doi.org/10.1016/B978-0-12-816451-8.00008-3>. © 2019 **Elsevier Inc**.
17. Kanika Khanna, **Priyanka Sharma**, Dhriti Kapoor, Palak Bakshi, Pooja Sharma, Poonam Saini, Puja Ohri, Bilal Ahmad Mir, Rupinder Kaur and Renu Bhardwaj (2020). **Plant-Microbe Interactions under Adverse Environment**. In: *Plant Ecophysiology and Adaptation under Climate Change: Mechanisms and Perspectives I - General Consequences and Plant Responses, Vol 1*, Edited, Dr. Mirza Hasanuzzaman. ISBN 978-981-15-2155-3, **Springer Nature**.
18. Arun Dev Singh, Pooja Sharma, Sukhmeen Kaur Kohli, Pardeep Kumar, Ravinder Singh, Priya Arora, Priyanka Sharma, Rupinder Kaur, Ashutosh Sharma and Renu Bhardwaj (2020). Role of growth regulators (PGRs) in mitigation of heavy metal phytotoxicity in plants. In: *Cellular and Molecular Phytotoxicity of Heavy Metals*. Editors: Faisal, M., Saquib, Q., Alatar, A.A., Al-Khedhairi, A.A. (Eds.). ISBN 978-3-030-45975-8, **Springer Nature**.
19. Shalini Dhiman, Palak Bakshi, Nitika Kapoor, **Priyanka Sharma**, Sukhmeen Kaur Kohli, Bilal Ahmad Mir and Renu Bhardwaj (2020). **Nanoparticle induced oxidative stress in plant**. In: **Plant Responses to Nanomaterials: Recent Interventions, and Physiological and Biochemical Responses**. Edited: Singh, V.P., Singh, S., Prasad, S.M., Chauhan, D.K., Tripathi, D.K. 1st ed., VIII, 302 p. ISBN 978-3-030-36739-8. **Springer Nature**
20. Shalini Dhiman¹, Tamanna Bhardwaj¹, Kanika Khanna¹, Ravdeep Kaur¹, Pardeep Kumar¹, **Priyanka Sharma**², Priya Arora¹, Nitika Kapoor³ (2021). Molecular mechanism of plants defense under heavy metal stress. *Environment Innovation and Technology Journal*. (Communicated).
21. Rutuja Kale, Riddhi Kantesaria Richa Deshpande, Ankita Punde, **Priyanka Sharma*** (2021). Microbe-mediated alleviation management against abiotic stress: Biotechnological tools. *Environmental and Experimental Botany* (Communicated).
***Corresponding Author**

22. Rutuja Kale, Riddhi Kantesaria Richa Deshpande, Ankita Punde, Anil Kumar, **Priyanka Sharma*** (2021) The pharmacology of *Bacopa monnieri*: As an Emerging Medicinal Plant. Journal of Ethnopharmacology (Communicated).
23. Tripathi, S. Meshram A; Bhardwaj, R. and Sharma, P* (2021). Brassinosteroids-caused apoptosis of human cervical cancer cells (HeLa) is mediated via modulation of apoptotic pathways. Journal of Ethanopharmacology (Communicated)
24. Sharma, P*; Tripathi, S. Meshram A.and Bhardwaj, R. (2021). Induction of antiproliferative effect by natural brassinosteroids through activation of apoptosis and modulation of caspase activity in HepG2 cell lines. Food Chemistry. Communicated.

Interest & Activities: Reading, Writing, Cooking

Strength: Good at time and resource management, analytical, quick learner

I, hereby declare that all the above-mentioned particulars are correct.

Priyanka Sharma

(Dr. Priyanka Sharma)