Curriculum Vitae

Dr. Isha Sharma
Senior Scientist
Plant Biotechnology Division
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Education

- B.Sc. (2002-2005), Jammu University, India.
- M.Sc. Environmental Science (Hons.)(2005-2007), Guru Nanak Dev University, Amritsar, Punjab.
- M.Phil. Environmental Science (2007-2008), Guru Nanak Dev University, Amritsar, Punjab
- Ph.D. Environmental Science (2008-2014), Guru Nanak Dev University, Amritsar, Punjab

Research Experience

- DBT-Ramalingaswami Fellow, ICRISAT and Agribiotech Foundation (2019-2025)
- Post-doctoral Fellow, VIB-University of Gent, Belgium (2016-2018)
- Post-doctoral Fellow, Augusta University, Georgia, USA (2015-2016)
- Post-doctoral Fellow, Qatar University, Doha (2013-2015)
- Doctoral fellow, Fulbright-Nehru doctoral Fellow at North Carolina State University, NC, USA (2011-2012).

Awards

- Ramalingaswami Fellow (2019-2025) by Department of Biotechnology, Government of India.
- BELSPO Post-Doctoral Fellowship (2016-2018) by Belgian Science Policy Office, Government of Belgium
- Fulbright-Nehru Doctoral Fellowship (2011-2012) by United States-India Education Foundation

Research Scholars supervised:

- Post-doctoral Researchers: 1
- Project associates (M.Sc.): 2
- Graduate trainees (B.Sc. students): 5

Publications (ORCID- 0000-0001-7370-5659)

(*denotes corresponding author; journal impact factors are as per Clarivate 2023):

1. Talakayala, A., Jupally, Y., Asinti, S., **Isha Sharma***. Differences in the regulation of ion imbalance in response to high Na+ load hint at differential strategies for salt-tolerance in mungbean genotypes (Vigna radiata L.). Plant Growth Regulation 105, 89–109 (2025) **(I.F.-3.5).**
2. **Isha Sharma***, Talakayala A, Tiwari M, Asinti S, Kirti PB (2024). A synchronized symphony: Intersecting roles of ubiquitin proteasome system and autophagy in cellular degradation. Plant Physiology and Biochemistry 212:108700 **(I.F.-6.1).**

3. **Isha Sharma***, Pratap Kumar Pati, P.B. Kirti (2022). Autophagy: A game changer for crop improvement. Planta 28;256(6):103 **(I.F.-3.6).**
4. Nehal M. Elsherbiny, **Isha Sharma,** Dina Kira et al. (2020). Homocysteine Induces Inflammation in Retina and Brain. Biomolecules, 10, 393 **(I.F-4.65)**
5. **Isha Sharma**, Wim Dejonghe et al (2019). Disruption of endocytosis through chemical inhibition of clathrin heavy chain function. Nature Chemical Biology. 15:641-649 **(IF-13.04).**
6. Mishev K, Lu Q, Denoo B, Peurois F, Dejonghe W, Hullaert J, De Rycke RM, Boeren S, Bretou M, De Munck S, **Isha Sharma,** Goodman K et al (2018). Nonselective Chemical Inhibition of Sec7 Domain-Containing ARF GEFs in Arabidopsis. The Plant Cell. 30: 2573–2593. **(IF-11.277)**
7. **Isha Sharma** and Eugenia Russinova (2018) Probing Plant Receptor Kinase Functions with Labeled Ligands. Plant and Cell Physiology. 59(8): 1520–1527. (IF-4.98)
8. Khaled Elmasry, Riyaz Mohamed, **Isha Sharma** et al. (2018) Epigenetic modifications in hyperhomocysteinemia; Potential Role in Diabetic Retinopathy and Age-related Macular Degeneration. Oncotarget. 27(16): 12562–12590 **(IF-3.33)**
9. Riyaz Mohamed, **Isha Sharma**, Ahmed Ibrahim, Heba Saleh, Nehal Elsherbiny, Sadanand Fulzele, Khaled Elmasry, Sylvia B Smith, Mohamed Al-Shabrawey and Amany Tawfik. (2017) Hyperhomocysteinemia Alters Retinal Endothelial Cells Barrier Function and Angiogenic Potential via Activation of Oxidative Stress. Scientific Reports-Nature 7: 11952 **(IF-4.259)**
10. **Isha Sharma**, Navdeep Kaur, Pratap Kumar Pati (2017) Brassinosteroids: A Promising Option in Deciphering Remedial Strategies for Abiotic Stress Tolerance in Rice. Frontiers in Plant Science. 8:2151. **(IF-4.1)**
11. Navdeep Kaur, Kamal Kirat, Shivani Saini, **Isha Sharma,** Gantet Pascal, Pratap Kumar Pati (2016). Reactive Oxygen Species Generating System and Brassinosteroids are Linked to Salt Stress Adaptation Mechanisms in Rice. Plant Signaling and Behaviour. 11(12):e1247136. doi: 10.1080/15592324.2016.1247136 **(IF- 2.98).**
12. Navdeep Kaur, Manish Dhawan, **Isha Sharma**, Pratap Kumar Pati. (2016) Interdependency of Reactive Oxygen Species Generating and Scavenging System in Salt Sensitive and Salt Tolerant cultivars of Rice. BMC Plant Biology. 10;16(1):131. doi: 10.1186/s12870-016-0824-2 **(IF- 4.215)**
13. Navdeep Kaur, **Isha Sharma**, Kamal Kirat. (2016) Detection of Reactive Oxygen Species in Oryza sativa L. (Rice). Bio-protocol. DOI:10.21769/BioProtoc.2061
14. Shivani Saini, **Isha Sharma,** Pratap Kumar Pati (2015) Versatile roles of Brassinosteroid in Plants in the Context of its Homoeostasis, Signaling and Crosstalks. Frontiers in Plant Science. 4;6:950 **(IF-4.1)**
15. **Isha Sharma**, Renu Bhardwaj and Pratap Kumar Pati (2015) Exogenous Application of 28-Homobrassinolide Modulates the Dynamics of Salt and Pesticides Induced Stress Responses in an Elite Rice Variety Pusa Basmati-1. Journal of Plant Growth Regulation. 34, 509–518 **(IF - 3.5)**
16. **Isha Sharma**, Erwan Ching, Shivani Saini, Renu Bhardwaj and Pratap Kumar Pati (2013) Exogenous Application of Brassinosteroid Offers Tolerance to Salinity by Altering Stress Responses in Rice Variety Pusa Basmati-1. Plant Physiology and Biochemistry 69:17-26 **(IF-6.1)**
17. **Isha Sharma**, Renu Bhardwaj and Pratap Kumar Pati (2013) Stress modulation Response Of 24-Epibrassinolide Against Imidacloprid in an Elite Indica Rice Variety Pusa Basmati-1. Pesticide Biochemistry and Physiology 105: 144–153 **(IF-4.2)**
18. Shivani Saini, **Isha Sharma**, Navdeep Kaur, Pratap Kumar Pati (2013) Auxin: A Master Regulator in Plant Root Development. Plant Cell Reports 32:741-757 **(IF-5.3)**
19. **Isha Sharma**, Renu Bhardwaj and Pratap Kumar Pati (2012) Mitigation of Adverse Effects of Chlorpyrifos by 24-epibrassinolide and Analysis of Stress Markers in a Rice Variety Pusa Basmati-Ecotoxicology and Environmental Safety. 85: 72–81 **(IF-6.2)**

20. Ashutosh Sharma, **Isha Sharma**, and Pratap Kumar Pati (2011) Post-Infectional Changes Associated with the Progression of Leaf Spot Disease in Withania somnifera (L.) Dunal. J Plant Pathology. 93 (2), 397-405 **(IF-2.2)**

Book Chapters

1. Shivani Saini, **Isha Sharma**, Priya, Aparna Maitra Pati, Pratap Kumar Pati (2021). Plant Hormonal Crosstalk: A Nexus of root development. Rhizobiology: Molecular Physiology of Plant Roots, 129-147. Springer
2. Shivani Saini, **Isha Sharma**, Pratap Kumar Pati (2017) Integrating the Knowledge of Auxin Homeostasis with Abiotic Stress Tolerance in Plants. In: Girdhar Kumar Pandey (ed.) Mechanism of Plant Hormone Signaling under Stress. Wiley (In Press)
3. **Isha Sharma**, Navdeep Kaur, Shivani Saini and Pratap Kumar Pati (2014) Emerging Dynamics of Brassinosteroids Research. In: R.K. Salar, S.K. Gahlawat, P. Siwach and J.S. Duhan (eds.), Biotechnology: Prospects and Applications. Springer-verlag. ISBN 978-81-322-1683-4. pp1-17.

List of selected conference presentations

1. **Isha Sharma**, Wim Dejonghe, Bram Denoo et al. New Small Molecule Inhibitors of Clathrin-Mediated Endocytosis in Plants. 20th European Network for Plant Endomembrane Research meeting September 12.- 15. Prague, Czech Republic
2. **Isha Sharma**, Rizwan Shaikh, Khaled Elmasry, Riyaz Mohamed, Amany Tawfik. Elevated Homocysteine in the Vitreous of Diabetic Patients and Blood of Type 1 And 2 Diabetic Animal Models; Potential Role of Homocysteine in Blood Retinal Barrier Dysfunction. 2016 ARVO Annual Meeting, Research: A Vision of Hope, May 1-5, 2016, in Seattle, Washington
3. **Isha Sharma**, Nasser Rizk, Amina Sadeh Falel, Mohamed Al-Shabrawey. Docosahexaenoic acid (DHA)- A Novel Therapeutic Intervention for Mitigating Hypoxia Induced Retinal Endothelial Dysfunction 2015 ARVO Annual Meeting, May 3-7, 2015, Denver, Colorado
4. **Isha Sharma**, Amina Fadel, Nasser Rizk, Mohamed Al-Shabrawey, Docosahexaenoic Acid (DHA) Remedies Hyperglycemia-Induced Retinal Endothelial Dysfunction: A Potential Therapeutic Intervention for Diabetic Retinopathy. Annual Research Convention held at Doha, Qatar, November 18-19, 2014.
5. **Isha Sharma**, Kevin Blackburn, Tara E. Nash, Pratap Kumar Pati, Michael B. Goshe and Steven D. Clouse. Proteomic Analysis of Brassinolide Treated Arabidopsis Seedlings under Salt Stress by LC/MS/MS. 62nd American Society for Mass Spectrometry, Baltimore, MD held on June 15 - 19, 2014.
6. **Isha Sharma**, Pratap Kumar Pati and Steven D. Clouse. Effect of Brassinosteroids on Plant Responses to Salinity. 26th Annual Plant Molecular Biology Retreat, Wrightsville Beach, North Carolina, September 7-9, 2012.
7. **Isha Sharma**, Pratap Kumar Pati and Renu Bhardwaj. Effect of Nickel on Anti-Oxidative Defence System of Brassica juncea L. and Helianthus annuus L. International conference on 'Advances in Free Radical Research: Natural products, Antioxidants and Radioprotectors' organized on March 19-21, 2009 by Department of Biochemistry, C.S.M. medical University & Era's Lucknow Medical College, Lucknow, India.