Curriculum Vitae

Chandrama Prakash Upadhyay, Ph.D.

Assistant Professor,

Department of Botany

G. G. Central University

Bilaspur, C.G. INDIA

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Education

Ph.D. (2008): **Botany** from **University of Delhi**, Delhi, India in collaboration with **School of Life Sciences**, **Jawaharlal Nehru University, New Delhi, Supervisor:** Dr. Vishnu Bhat**, Co-supervisor**: Prof Neera Bhalla-Sarin

Thesis Title: Studies on genetic engineering of *Vigna mungo* (blackgram) for abiotic stress tolerance.

MSc (2000): Plant Biochemistry (First Division), **Lucknow University**, U.P., INDIA

B.Sc (1996): Bioscience (First Division), DDU Gorakhpur University, U.P., INDIA

Intermediate (1993): Biology Group (First Division), U.P. Board

Highschool (1991): Science Group (First Division), U.P. Board

Area of Research: Plant Molecular Biology, Plant Stress Physiology, Nutrigenomics and Plant Biotechnology

Academic Appointment

1. **June 2011 Till date: Assistant Professor** at Department of Botany, G.G. Central University, Bilaspur, C.G.
2. **March 2009 to June 2011**: **Asst Professor & Group leader:** Department of Molecular Biotechnology, **Konkuk University of Seoul, Korea Republic.**
3. **April 2008 to Dec 2008: Post doctoral Associate,** School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.

Training Abroad: Received four months advance training at Laboratory of Molecular Virology, **University of Basel, Switzerland** with Prof. Thomas Hohn Group. This training was funded by Department of Biotechnology, Govt of India as an exchange programme.

International Patents Online:

1. Chandrama P. Upadhyaya et al (**2012**), Characterization of a cinnamoyl derivative from broccoli (*Brassica oleracea* L. var. italica) florets. **(online patent No: 10-2012- 0054946).**

2. Chandrama P. Upadhyaya et al (2012), Characterization of a sulphoraphane derivative from broccoli (*Brassica oleracea* L. var. italica) florets. **(Online patent No: 10-2012- 0054947)**

Research Grant received from various funding agencies:

1. Role of 24-epibrassinosteroid in potato (*Solanum tuberosum)* development and abiotic stress tolerance: A physiological and molecular approach **(Funded from UGC under startup grant: INR: 6 Lak) Status; Ongoing**
2. Isolation, characterization and over-expression of CaM, a calcium dependant protein in tomato **(Funded from DBT under RGYI project (INR 34.2 Lakh) Status; Sanctioned**
3. Investigating and probing RBC-Endothelial cell interaction through ex-vivo cerebral malaria model to develop adjuvant therapy for malaria pathology. (**Funded from DBT under twinning programme in collaboration with IIT Guahati, INR: 1.20 Crore) Status; Sanctioned**

Recognition, Awards and Scholarships:

1. **Visiting Scientist award from Indian National Science Academy (INSA), New Delhi 2012.**
2. Research Fellowship for training Abroad for Young researcher, 2005 offered by Indo-Swiss collaboration in Biotechnology.
3. **2003 -2008** Ph.D. fellowship as SRF from Department of Biotechnology, Gove of India
4. **2002,** Qualified JRF and GATE
5. **1996,** Undergraduate Science faculty university topper award

Membership:

1. Member of American Society of Plant Biologist (ASPB)
2. Member of Korean Society of Environmental Biology
3. Member of Federation of European Society of Plant Biology (FESPB)
4. Member of Korean society of applied biological chemistry
5. Life member of Indian Science Congress

Journal Editorial Board:

1. Journal of Agricultural Science and Technology (Elsevier), Plant Science (Springer)

Reviewers of Major International Journal: Planta, Journal of Plant Physiology, Protoplasma, Botanical Studies,

Plant Cell Report, Scientia Horticulture, African J of Biotechnology, Hort Sci and Biotechnology

Publications List: (International Citation Index Journals)

2012:

26: Mayank A Gururani, **Chandrama Prakash Upadhyaya**, Reto J strasser, & Se W Park **(2012)** Evaluation of abiotic stress tolerance in transgenic potato plants with reduced expression of PSII manganese stabilizing protein. **Plant Science**,198 (2013) 7–16. **(Impact Factor 3.01)**

25: Chandrama P. Upadhyaya, R Prasad and DD Pandey **(2012)** "Effect of Light Quality on the Growth and Development of Indian Pepper (*Capsicum annum L.).* **Advances in Biological Research**, ISSN 0970-7956. In press, **First Author**) **(Impact Factor 0.6)**

24. Akula Nookaraju, **Chandrama P. Upadhyaya**, Se Chul Chun, Doo Hwan Kim, Se Won Park **(2012)** Role of Ca2+/ Calmodulin-Mediated Signaling in Potato Tuberization: An Overview. **Botanical Studies 53: 177-189. (Impact Factor 1.41)**

23. Mayank A Gururani, **Chandrama Prakash Upadhyaya**, N. Akula and Se Won Park **(2012)** Plant disease resistance genes: Current status and future directions. **Physiological and Molecular Plant Pathology (78).51-65 (Impact Factor 2.2)**

22. Mayank A Gururani, **Chandrama Prakash Upadhyaya**, Jelli Venkatesh, Reto J strasser, & Se Won Park **(2012)** Photosynthetic response of transgenic potato plants with altered expression of PSII manganese stabilizing protein indicates its role in potato tuberization. **Plant Physiology and Biochemistry** 58, 182–194. **(Impact Factor 3.0)**

21. Jae W Yu, **Chandrama Prakash Upadhyaya**, Jong-Soon Choi, Sang Oh Kwon, Mayank Anand Gururani, Nookaraju Akula, Jae Heung Jeon and Se Won Park **(2012)** Dynamic proteomic profile of potato tuber during its in vitro development . **Plant Science,** 195, 1–9**. (Impact Factor 3.01)**

20. Mayank A Gururani, **Chandrama Prakash Upadhyaya**, Jelli Venkatesh, V Baskar and Se Won Park **(2012)** "Plant growth promoting rhizobacteria enhance abiotic stress tolerance in Solanum tuberosum through inducing changes in the expression of ROS scavenging enzymes and improved photosynthetic performance". **Journal of Plant Growth Regulation, Online available, (**DOI 10.1007/s00344-012-9292-6**) (Impact Factor 2.91)**

19. Venkatesh jelly, **Chandrama P. Upadhyaya** and Park Se Won **(2012)** Chlorophyll a fluorescence transient studies of transgenic potato overexpressing *GalUR* gene for salinity stress tolerance. **Hort. Environ. Biotechnol**. 53(4):17-26. 2012.**) (Impact Factor 2.01)**

18. D Kumar, P Singh, M A Yusuf , **Chandrama P Upadhyaya** , S Deb Roy, T Hohn and Neera B Sarin **(2012)** The Xerophyta viscosa Aldose Reductase (ALDRXV4) Confers- Enhanced Drought and Salinity Tolerance to Transgenic Tobacco Plants by Scavenging Methylglyoxal and Reducing the Membrane Damage. **Molecular Biotechnology,** Online First™, 8 June 2012, DOI 10.1007/s12033-012-9567-y. **(Impact Factor 2.01)**

2011

17. Chandrama Prakash Upadhyaya, Jelli Venkatesh, Mayank Anand Gururani, Leonid Asnin, Kavita Sharma, and Se Won Park **(2011)** Transgenic potato overproducing L-ascorbic acid resisted an increase in methylglyoxal under salinity stress via maintaining higher reduced glutathione level and glyoxalase enzyme activity. **Biotech letters, Vol 29(8) 56-63 (First Author) (Impact Factor 1.61)**

16. Nookaraju Akula,, **Chandrama P. Upadhyaya,** Shashank pandey, Chun Se Chul, Kim Do Hwan and Se Won Park **(2011),** Biotechnological approaches for improving abiotic stress tolerance in tomato. **Crop Science: Vol 51 (2011), 167-174 (Impact Factor 2.2)**

15. Baskar.V, **Chandrama P. Upadhyaya**, Jae-Woong Yu and Se Won Park **(2011)** Genetic engineering of Glyoxylase I gene in Potato for salinity resistance. J of Life and Environmental science 123 (1) 24-31.

14. Chandrama P. Upadhyaya, Jelli Venkatesh, Mayank A. Gururani, So Hyan Moon and Se Won Park (2011) Overexpression of ascorbate pathway gene in transgenic potato alleviates abiotic stress: Physiological and chlorophyll a fluorescence measurements. **J of Life and Environmental science** 123 (1) 45-49 (First Author)

2010:

13. Hemavathi, **Chandrama Prakash Upadhyaya,** Nookaraju Akula, Ko Eun Young, and Se Won Park **(2010),"** Molecular and biochemical analysis of the proteins for abiotic stress tolerance in transgenic potato tubers overexpressing *GalUR* gene. **Molecular Breeding**, 25 (1), 76-87, (**(Impact Factor 3.1)**)

12. Chandrama Prakash Upadhyaya, Akula Nookaraju, Mayank Anand Gururani, Devanshi Chandel Upadhyaya, Doo-Hwan Kim, Se Chul Cun and Se Won Park **(2010)** An insight update on the recent approaches employed towards marker-free transgenics. **Botanical Studies;** Vol. 51 (No. 3) 152-165**; (1.41)**

11. Hemavathi, **Chandrama Prakash Upadhyaya**, Nookaraju Akula, Ko Eun Young, Se Chul Chun , Doo Hwan Kim, and Se Won Park **(2010)** "Enhanced ascorbic acid accumulation in transgenic potato confers tolerance to various abiotic stresses." **Biotech Letters** 32(2) 112-123**; ((Impact Factor 1.61))**

10. Akula Nookarajua, **Chandrama P. Upadhyaya**, Shashank K. Pandey, Ko Eun Young, Se Won Park (2010) Molecular approaches for enhancing sweetness in fruits and vegetables. **Scientia Horticulturae** 127 (2010) 1–15**) (Impact Factor 1.51)**

9. Nazneen S Survay, **Chandrama P. Upadhyaya,** Brijesh Kumar and Se Won Park **(2010)** High performance liquid chromatography and tendem mass spectrometry coupled with ESI for identification and quantification of intact glkucosinolates from broccoli. **Fitotherapia, 121 (4): 151-167. ((Impact Factor 2.7)**

8**.** Nazneen Shaik Survay, **Chandrama Prakash Upadhyaya**, Brajesh Kumar, and Se-Won Park **(2010)** "New Genera of Flavonols and Flavonol Derivatives as Therapeutic Molecules" **J Applied Biological Chemistry**. Volume 54, Issue 1, pp 1-18. **(Impact Factor 1.1)**

7. Nazneen S. Survay, Eun Young Ko, **Chandrama P. Upadhyay**, Do- Young Yoon, Yi-Sok Jung and Se-Won Park **(2010)** Hypoglycemic effects of fruits and vegetables in hyperglycemic rats for prevention of type-2 diabetes **Hort Sci** (152) 134- 146. **(Impact Factor 2.3)**

6. **Chandrama P. Upadhyaya**, Mayank A. Gururani, Se-Won Park **(2010)** Investigating the Role of 33kDa Oxygen Evolving Complex Protein in *in vitro* Potato tuberization. **K Journal** of **Journal of Life and Environmental sciences,** 122 (2): 42-49. (**First author**)

5. Nazneen S, **Chandrama P Upadhyaya,** and Se Won Park **(2010)** High Performance Liquid Chromatography and Tandem Mass Spectrometry Coupled with ESI for Identification and Quantification of Intact Glucosinolates from Broccoli. **K Journal of Life and Environmental sciences,** 122 (1): 11-16.

4.Akula Nookaraju, **Chandrama Prakash Upadhyaya** and Se Won Park (2010) *In vitro* Tuberization of Potato as Influenced by Plant Growth Promoting Rhizobacteria. **K Journal Journal of Life and Environmental sciences,** 122 (1): 32-38.

2009:

3.Hemavathi, **Chandrama Prakash Upadhyaya**, Ko Eun Young, Nookaraju Akula, Se Won Park **(2009)**"Over-expression of strawberry D-galacturonic acid reductase in potato leads to accumulation of vitamin C with enhanced abiotic stress tolerance. **Plant Science** (177), 659-677 (**(Impact Factor 3.1)**)

2. **Chandrama P. Upadhyaya**, Mayank A. Gururani and Se-Won Park (2009) "Generation of Marker free transgenic potato (*Solanum tuberosum*) with enhanced alfa tocopherol (Vit E) production through metabolic engineering" J**ournal of Life and Environmental sciences,** 121 (2): 41-46. (**First author**)

2008:

1**. Chandrama P. Upadhyay**, Prasanna Bhomkar**,** Muxena Saxena, N. Shiva Prakash Mikhail Pooggin, Thomas Hohn and Neera B. Sarin, **(2008)** "Salt stress alleviation in transgenic *Vigna mungo* L. Hepper (blackgram) by overexpression of the *glyoxalase I* gene using a novel *Cestrum* yellow leaf curling virus (CmYLCV) promoter". **Molecular Breeding** 22 (2), 169-181. (**(Impact Factor 3.1)**)

Book:

Biotechnological approach for improvement of abiotic stress tolerance in blackgram (2011): Lap-Lambert Academic Publisher, Germany.

Book Chapters:

1. Chandrama P. Upadhyaya, and Ajit Verma, Chapter Title: Role of *P indica* fungus in tuberization of potato**,** In Edited Book: Mycota 9 (2011) by Ajit Verma and Roulf Oullmer , Springer-Verlag
2. Prasad R, Kumar A,Upadhyaya CP, and Varma A (2012) Biotechnology: A global scenario. In:Environment and Biotechnology (Prasad R and Kumar A) LAP LAMBERT Academic Publishing, Germany pp. 1-22

Total national Conferences attended: 16, International Conferences attended: 11

Total Impact Factor: 56, Total Publication with book chapters: 30 Total Citation= 97

Abstracts published in recognized International conferences:

1. P. Bhomkar, S.D. Roy, **Chandrama P. Upadhyaya**, Mikhail pooggin, Thomas Hohn and Neera Bhalla Sarin **(2004)** "Transformation of *Vigna mungo* (blackgram) for abiotic stress tolerance using marker free approach In: Proceedings, 4th Int. **Crop Science Congress, Brisbane, Australia** (Available online)
2. **Chandrama P. Upadhyay**, Bhalla-Sarin, N, M Pooggin and Thomas Hohn **(2005)** Development of salt tolerant marker free transgenics of *Vigna mungo*. **4th International Food Legume Research Conference**, IARI, New Delhi, October 18- 22. (Available online).
3. **Chandrama P. Upadhyay**, P. Bhomkar, Ravi Rajwanshi and Neera Bhalla Sarin (2006) Antibiotic marker free approach for obtaining salt stress tolerant *Vigna mungo*" at the International conference organized by **Society for *In vitro* biology**" at Minneapolis, Minnesota, USA in June **2006**.
4. **Chandrama P. Upadhyay**, P. Bhomkar, M. Saxena, Ravi Rajwanshi, Nisha Kant, Deepak Kumar,M.Pooggin, T.Hohn and N.B. Sarin. Development and evaluation of transgenic Blackgram (*Vignamungo*) for salt stress tolerance by overexpression of the *glyoxalase I* gene. *International Meeting on Biotic and Abiotic Stress Responses in Plants*, I.C.G.E.B., New Delhi, India, **(2006)** P-44.
5. Neera Bhalla Sarin, **C.P. Upadhyay**, P. Bhomkar, Nishakant, N. Shiva Prakask, M. Pooggin and Thomas Hohn (2007) "Developing salt stress tolerance in the legume *Vigna mungo* (Blackgram) using the

transgenic approach" at the **"International Conference on Stress Biology" at Greece** (Athens) in August **2007.**

6. Neera Sarin, **Chandrama P. Upadhyaya**, Prasanna Bhomkar, Ravi Rajwanshi**,** Suchandra Deb Roy, Nishakant Pandey, Mikhail Pooggin and Thomas Hohn. Stress Tolerance and **Value addition in Brassica juncea and Vigna mungo through Transgenic approach.** *5th International Crop Science Congress &Exhibition*, **(2008)** p.p.-202-203.
7. Neera Bhalla Sarin, **C.P.Upadhyaya**, P.Bhomkar, R.Rajwanshi**,** Nishakant Pandey, N. Shiva Prakash, Mikhail Pooggin and Thomas Hohn. **Developing salt stress tolerance in the legume *Vigna mungo* (Blackgram) using the transgenic approach.** 3rd cell stress society international congress on stress responses in biology and medicine and 2nd world conference of stress, Budapest, Hungary, **(2007)** p.p.-222.
8. **Chandrama P. Upadhyay**, Nookaraju A, Mayank A G and Se-Won Park," Molecular and biochemical analysis of the proteins for abiotic stress tolerance in transgenic potato tubers overexpressing *GalUR* gene" at the **Federation of European Society of Plant Biology**, at Velencia, Spain **2010.**

Technical Expertise:

Plant Tissue Culture: Expertise in regeneration and transformation of diverse plants as *Vigna mungo*, *Cajanus cajan*, Tomatto, Ground nut, *Brassica* and *Arabidopsis.*

Molecular Biology and Biotechnologyy: Isolation of plasmid, Genomic DNA & RNA, PCR, DDRT-PCR, C-DNA cloning, preparation of RNAi constructs, Gene isolation techniques, Techniques involved in gene expression of transgenics such as Southern Northern and Western Blottings, RT-PCR, Real time PCR, ELISA and promoter studies.

Protein Biochemistry: Amino acid separation using TLC, SDS-PAGE, 1-D and 2- protein gel electrophoresis, In-gel protein kinase assay, gene expression studies.

Biophysics: Absorption spectroscopy, Fluorometry, Gas Chromatography & HPLC, NMR, LC-MS

Analytical chemistry: Food and analytical chemistry assays based on new existing extraction methodologies for the analysis of samples from various sources to provide information on compounds or quantities of compounds present.

Computers: MS-Office, Analysis of molecular data using Bioinformatics software like BLAST and other popular software for data mining from NCBI for DNA sequences

C.P. Upadhyaya