



CURRICULUM VITAE.

Name: Praveen Kumar Verma, Ph.D.

Designation:

Director (R&D), Jawaharlal Nehru University, New Delhi-110067, India

Professor, Cell and Molecular Biology, School of Life Sciences, Jawaharlal Nehru University, New Delhi-110067, India

Scientist VI (on lien), National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi-110067

Adjunct Faculty (Ayurveda Biology): SSIS, Jawaharlal Nehru University, New Delhi

Date of Birth: December 22, 1966

E.mail: praveenkverma@jnu.ac.in; praveenkverma@mail.jnu.ac.in pkv.jnu@gmail.com

Mobile Phone: 9911119929

Web page: http://www.nipgr.res.in/research/dr_pverma.php

Education (Graduation onwards)

Sl No.	Institution Place	Degree Awarded	Year	Field of Study
1.	University of Bihar, Muzaffarpur	B.Sc. (Hons.)	1988	Botany (Hons.), Zoology, Chemistry
2.	School of Life Sciences, Jawaharlal Nehru University, New Delhi	Post-graduation	1991	Life Sciences
3.	School of Life Sciences, Jawaharlal Nehru University, New Delhi	Ph.D.	1997	Plant-Molecular Biology, Molecular Genetics

Position and Employment:

Sl No.	Institution Place	Position	From (Date)	To (date)
1	School of Life Sciences, Jawaharlal Nehru University, New Delhi	Professor	December 7, 2020	Till date
2	National Institute of Plant Genome Research, New Delhi	Staff Scientist VI	15 April 2016	December 7, 2020
3	National Institute of Plant Genome Research, New Delhi	Staff Scientist V	15 April 2012	14 April 2016
4	National Institute of Plant Genome Research, New Delhi	Staff Scientist IV	15 April 2008	14 April 2012
5	National Institute of Plant Genome Research, New Delhi	Staff Scientist III	15 April 2003	14 April 2008
6	National Institute of Plant Genome Research, New Delhi	Staff Scientist II	15 April 1998	14 April 2003

Publications:

Research Articles:

Sinha M, Shree A, Singh K, Kumar K, Singh SK, Kumar V, **Verma PK** (2021), Modulation of fungal virulence through CRZ1 regulated F-BAR-dependent actin remodeling and endocytosis in chickpea infecting phytopathogen *Ascochyta rabiei*. **PLOS Genetics** 17(5): e1009137.

<https://doi.org/10.1371/journal.pgen.1009137>

Chaliha C, Kaladhar VC, Doley R, **Verma, PK**, Kumar A, Kalita E. (2021) Bipartite molecular approach for species delimitation and resolving cryptic speciation of *Exobasidium vexans* within the *Exobasidium* genus. **Comp. Biol. and Chem.** 92, 107496,

<https://doi.org/10.1016/j.compbiolchem.2021.107496>

Magotra S, Bhagat N, Ambardar S, Ali T, Hurek BR, Hurek T, **Verma PK*** and Vakhlu J* (2021) Field evaluation of PGP Bacillus sp. strain D5 native to *Crocus sativus*, in traditional and non-traditional areas, and mining of PGP genes from its genome. **Scientific Reports** 11: 5454.

<https://doi.org/10.1038/s41598-021-84585-z> (*corresponding authors)

- Singh Y, Nair AM, **Verma PK** (2021) Surviving the odds: from perception to survival of fungal phytopathogens under host-generated oxidative burst, **Plant Communications**, <https://doi.org/10.1016/j.xplc.2021.100142>
- Randhawa A, Pasari N, Sinha T, Gupta M, Nair AM, Ogunyewo OA, Verma S, **Verma PK**, Yazdani SS (2021) Blocking drug efflux mechanisms facilitate genome engineering process in hypercellulolytic fungus, *Penicillium funiculosum* NCIM1228 **Biotechnology for Biofuels** 14, 31 <https://doi.org/10.1186/s13068-021-01883-4>
- Sharma S, Singh Y, **Verma PK**, Vakhlu J (2021) Establishment of *Agrobacterium rhizogenes*-mediated hairy root transformation of *Crocus sativus* L. **3 Biotech** 11:82 <https://doi.org/10.1007/s13205-020-02626-2>
- Ogunyewo OA, Randhawa A, Gupta M, Kaladhar VC, **Verma PK**, Yazdani SS. (2020). Synergistic action of a lytic polysaccharide monoxygenase and a cellobiohydrolase from *Penicillium funiculosum* in cellulose saccharification under high-level substrate loading. **Appl. Environ. Microbiol.** 86:e01769-20. <https://doi.org/10.1128/AEM.01769-20>
- Maurya R, Singh Y, Sinha M, Singh K, Mishra P, Singh SK, Verma S, Prabha K, Kumar K, **Verma PK** (2020) Transcript profiling reveals potential regulators for oxidative stress response of a necrotrophic chickpea pathogen *Ascochyta rabiei*. **3Biotech**, 10:117. <https://doi.org/10.1007/s13205-020-2107-8>
- Ogunyewo OA, Randhawa A, Gupta M, Kaladhar VC, **Verma PK**, Yazdani SS (2020) Synergistic Action of a Lytic Polysaccharide Monoxygenase and a Cellobiohydrolase from *Penicillium funiculosum* in Cellulose Saccharification Under High Substrate Loading. **Appl. Environ. Microbiol.** DOI: <https://doi.org/10.1128/AEM.01769-20>
- Chaliha C, Kalita E, **Verma PK** (2019) Optimizing in vitro culture conditions for the biotrophic fungi *Exobasidium vexans* through response surface methodology, **Indian Journal of Microbiology**, DOI <https://doi.org/10.1007/s12088-019-00846-6>
- Kumar K, Purayannur S, Kaladhar VC, Parida SK and **Verma PK** (2018) mQTL-seq and classical mapping implicates the role of an *AT-HOOK MOTIF CONTAINING NUCLEAR LOCALIZED (AHL)* family gene in *Ascochyta* blight resistance of chickpea. **Plant, Cell & Environment** 41:2128-2140. <https://doi.org/10.1111/pce.13177>
- Kumar M, Verma S, Gazara RK, Kumar M, Pandey A and **Verma PK***, Thakur IS* (2018) Genomic and proteomic analysis of lignin degrading and polyhydroxyalkanoate accumulating β -proteobacterium *Pandoraea* sp. ISTKB. **Biotechnology for Biofuels** 11:154 <https://doi.org/10.1186/s13068-018-1148-2> (*corresponding authors)
- Verma S, Gazara RK, **Verma PK** (2017) Transcription Factor Repertoire of Necrotrophic Fungal Phytopathogen *Ascochyta rabiei*: Predominance of MYB Transcription Factors as Potential Regulators of Secretome. **Frontiers in Plant Sciences** 8:1037. <https://doi.org/10.3389/fpls.2017.01037>
- Srivastava V, **Verma PK** (2017). The plant LIM proteins: Unlocking the hidden attractions. **Planta** 246(3):365-375. <https://doi.org/10.1007/s00425-017-2715-7>
- Purayannur S, Kumar K, Kaladhar VC, **Verma PK** (2017) Phylogenomic analysis of MKKs and MAPKs from 16 legumes and detection of interacting pairs in chickpea divulge MAPK signalling modules. **Scientific Reports** 7:5026. <https://doi.org/10.1038/s41598-017-04913-0>

- Mallik B, Dwivedi MK, Mushtaq Z, Kumari M, **Verma PK**, and Kumar V (2017) Regulation of neuromuscular junction organization by Rab2 and its effector ICA69 in *Drosophila*. **Development** 144:2032-2044. <https://doi.org/10.1242/dev.145920>
- Kumar M, Singhal A, **Verma PK** and Thakur IS (2017) Production and characterization of polyhydroxyalkanoate from lignin derivatives by *Pandoraea* sp. ISTKB. **ACS Omega** 2: 9156-9163. <https://doi.org/10.1021/acsomega.7b01615>
- Verma, S, Gazara, RK, Nizam, S, Parween, S, Chattopadhyay, D, **Verma PK** (2016) Draft genome sequencing and secretome analysis of fungal phytopathogen *Ascochyta rabiei* provides insight into the necrotrophic effector repertoire. **Scientific Reports**, 6:24638. <https://doi.org/10.1038/srep24638>
- Kumar K, Srivastava V, Purayannur S, Kaladhar VC, Cheruvu PJ and **Verma PK** (2016) WRKY domain-encoding genes of a crop legume chickpea (*Cicer arietinum*): comparative analysis with *Medicago truncatula* WRKY family and characterization of group-III gene(s). **DNA Research** 23(3):225-239. <https://doi.org/10.1093/dnares/dsw010>
- Kumar M, Gazara RK, Verma S, Kumar M, **Verma PK***, Thakur IS* (2016) Genome Sequence of *Pandoraeasp.* ISTKB, a lignin degrading β -proteobacterium, isolated from the rhizospheric soil. **Genome Announcements** 4(6):e01240-16 (*Corresponding authors)
- Kumar M, Gazara RK, Verma S, Kumar M, **Verma PK***, Thakur IS* (2016) Genome sequence of carbon dioxide sequestering *Serratia* sp. ISTD04 isolated from marble mining rocks. **Genome Announcements** 4(5):e01141-16. (*Corresponding authors)
- Jaijyan, DK, **Verma PK**, Singh AP (2016) A novel FIKK kinase regulates the development of mosquito and liver stages of the malaria **Scientific Reports** 6:39285.
- Srivastava V and **Verma PK** (2015) Genome wide identification of LIM genes in *Cicer arietinum* and response of *Ca-2LIMs* in development, hormone and pathogenic stress. **PLoS ONE** 10(9):e0138719.
- Trivedi DK, Srivastava A, **Verma PK**, Tuteja N and Gill SS (2016) *Piriformospora indica*: a friend in need is a friend in deed. **Journal of Botanical Sciences** 5:16-19.
- Chandra A, **Verma PK**, Islam MN, Grisham MP, Jain R, Sharma A, Roopendra K, Singh K, Singh P, Verma I and Solomon S (2015) Expression analysis of genes associated with sucrose accumulation in sugarcane (*Saccharum* spp. hybrids) varieties differing in content and time of peak sucrose storage. **Plant Biology** 17:608-617.
- Srivastava S, Bharti RK, **Verma PK** and Thakur IS (2015) Cloning and expression of gamma carbonic anhydrase from *Serratia* sp. ISTD04 for sequestration of carbon dioxide and formation of calcite. **Bioresource Technol** 188:209-213.
- Nizam S, Gazara RK, Verma S, Singh K and **Verma PK** (2014) Comparative structural modeling of six old yellow enzymes (OYEs) from the necrotrophic fungus *Ascochyta rabiei*: Insight into novel OYE classes with differences in cofactor binding, organization of active site residues and stereopreferences. **PLoS ONE** 9(4):e95989.
- Hasan S, Singh K, Danisuddin M, **Verma PK**, Khan AU (2014) Inhibition of major virulence pathways of *Streptococcus mutans* by Quercitrin and Deoxynojirimycin: a synergistic approach of infection control. **PLoS ONE** 9(3):e91736.

- Nizam S, Verma S, Borah NN, Gazara RK, **Verma PK** (2014) Comprehensive genome-wide analysis reveals different classes of enigmatic old yellow enzyme in fungi. **Scientific Reports** 4:4013.
- Kumar K, Yadav S, Purayannur S, **Verma PK** (2013) An alternative approach in Gateway cloning when the bacterial antibiotic selection cassettes of the entry clone and destination vector are the same. **Molecular Biotechnology** 54(2):133-140.
- Purwar S, Sundaram S, **Verma P**, Srivastava S and Kumar A (2012) A physiologically regulated multidomain cystatin of wheat shows stage-dependent immunity against karnal bunt (*Tilletia indica*). **Applied Biochemistry Biotechnology** 168(8):2344-2357.
- Hasan S, Danishuddin M, Adil M, Singh K, **Verma PK**, Khan AU (2012) Efficacy of *E.officinalis* on the cariogenic properties of *Streptococcus mutans*: a novel and alternative approach to suppress quorum sensing mechanism. **PLoS ONE** 7(7):e40319.
- Yadav S, Kushwaha HR, Kumar K, **Verma PK** (2012) Comparative structural modelling of a Monothiol GRX from chickpea: Insight in Iron-Sulfur Cluster assembly. **International Journal of Biological Macromolecules** 51:266–273.
- Khan R, Adil, M, Danishuddin, **Verma PK**, Khan AU (2012) *In vitro* and *in vivo* inhibition of *Streptococcus mutans* by *Trachyspermum ammi* seeds: An approach of alternative medicine. **Phytomedicine** 19(8-9):747-755.
- Singh K, Nizam S, Sinha M and **Verma PK** (2012) Comparative transcriptome analysis of the necrotrophic fungus *Ascochyta rabiei* during oxidative stress: insight for fungal survival in the host plant. **PLoS ONE** 7(3):e33128.
- Nizam S, Verma S, Singh K, Aggarwal R, Srivastava KD and **Verma PK** (2012) High reliability transformation of the wheat pathogen *Bipolaris sorokiniana* using *Agrobacterium tumefaciens*. **Journal of Microbiological Methods** 88(3):386-392.
- Jaiswal P, Cheruku JR, Kumar K, Yadav S, Singh A, Kumari P, Dube SC, Upadhyaya KC and **Verma PK** (2012) Differential transcript accumulation in chickpea during early phases of compatible interaction with a necrotrophic fungus *Ascochyta rabiei*. **Molecular Biology Reports** 39:4635-4646.
- Islam MN, Nizam S and **Verma PK** (2012) A highly efficient *Agrobacterium* mediated transformation system of chickpea wilt pathogen *Fusarium oxysporum* f. sp. *ciceri* using DsRed-Express to follow root colonization. **Microbiological Research** 167(6):332-338.
- Kushwaha HR, Kumar G, **Verma PK**, Singla-Pareek SL and Pareek A (2011) Analysis of a salinity induced BjsOS3 protein from *Brassica* indicate it to be structurally and functionally related to its ortholog from *Arabidopsis*. **Plant Physiology and Biochemistry** 49:996-1004.
- Nizam S, Singh, K and **Verma PK** (2010) Expression of the fluorescent proteins DsRed and EGFP to visualize early events of colonization of the chickpea blight fungus *Ascochyta rabiei*. **Current Genetics** 56(4):391-399.
- Singh A, Singh IK and **Verma PK** (2008) Differential Transcript Accumulation in *Cicer arietinum* L. in Response to a Chewing Insect *Helicoverpa armigera* and Defense Regulators Correlate with Reduced Insect Performance **Journal of Experimental Botany** 59(9):2379-2392.
- Anjanasree KN, **Verma PK** and Bansal KC (2005) Differential expression of tomato ACC oxidase gene family in relation to fruit ripening. **Current Science** 89(8):1394-1399.

Boominathan P, Shukla R, Kumar A, Manna D, Negi D, **Verma PK** and Chattopadhyay D (2004) Long term transcript accumulation during the development of dehydration adaptation in *Cicer arietinum* L. **Plant Physiology** 135(3):1608-1620.

Thakur IS, **Verma PK** and Upadhyaya KC (2002) Molecular cloning and characterization of pentachlorophenol-degrading monooxygenase genes of *Pseudomonas* sp. from the chemostat. **Biochemical and Biophysical Research Communications** 290:770-774.

Thakur IS, **Verma PK** and Upadhyaya KC (2001) Involvement of plasmid in degradation of pentachlorophenol by *Pseudomonas* sp. from a chemostat. **Biochemical and Biophysical Research Communications** 286:109-113.

Verma PK and Upadhyaya KC (1998) A multiplex RT-PCR assay for analysis of relative transcript levels of different members of multigene families: Application to *Arabidopsis* calmodulin gene family. **Biochemistry & Molecular Biology International** 46(4):699-706.

Text Book:

Kumar P, Meena U, **Verma PK** (2018) “**Biotechnology-A Practical Approach**” 5th edition. Pathfinder Publications, New Delhi

Book Chapters:

Dwivedi A, Kumar K, **Verma PK** (2020) Constructing Synthetic Pathways in Plants: Strategies and Tools. In: Singh SP, Pandey A, Du G, Kumar S. (eds.), Current Developments in Biotechnology and Bioengineering: Synthetic Biology, Cell Engineering and Bioprocessing Technologies. Elsevier B.V., pp. 77-113.

Singh J, Kumar K, and **Verma PK** (2020) Functional Characterization of Genes Involved in Legume Nodulation Using Hairy Root Cultures In: Srivastava V, Mehrotra S, Mishra S (eds.) **Hairy Root Cultures based Applicatio**. Springer Nature Singapore Pte Ltd. Pp.217-228.

Dwivedi A, Kumar K, **Verma PK** (2019) Constructing Synthetic Pathways in Plants: Strategies and Tools. In: Singh SP, Pandey A, Du G, Kumar S. (eds.), **Current Developments in Biotechnology and Bioengineering: Synthetic Biology, Cell Engineering and Bioprocessing Technologies**. Elsevier B.V., pp. 77-113.

Purayannur S, Kumar K, **Verma PK** (2017) Genetic engineering to improve biotic stress tolerance in plants. In: Abdin MZ, Khantwal U, Kamaluddin M, Ali A. (eds.), **Plant Biotechnology: Principles and applications**. Springer science + Business Media Singapore Pvt Ltd. pp. 207-232.

Singh SK, Verma S, **Verma PK** (2016) Genetically engineered crops against bacterial and fungal diseases: a war of attrition. In: Dubey S. K, Pandey A, Sangwan R. S (eds.), **Current Developments in Biotechnology and Bioengineering: Crop Modification, Nutrition and Food Production**. Elsevier pp. Vol. VI 125-147.

Srivastava V, Mehrotra S, **Verma PK** (2016) Biotechnological interventions for production of therapeutic secondary metabolites using hairy root cultures of medicinal plants. In: Dubey SK,

Pandey A, Sangwan RS (eds.), **Current Developments in Biotechnology and Bioengineering: Crop Modification, Nutrition and Food Production**. Elsevier, Vol. VI pp. 259-282.

Verma S, Nizam Shadab, **Verma PK** (2013) Biotic and abiotic stress signalling in plants. In Sarwat M, Ahmad A and Abdin MZ (eds.) **Stress Signaling in Plants: Genomics and Proteomics Perspective**, Springer, Vol. 1. pp. 25-49.

Kumar K and **Verma PK** (2012) Plant pathogen interactions: crop improvement under adverse conditions. In: Tuteja N, Gill SS (eds.), **Plant Acclimation to Environmental Stress**. Springer, New York, USA, pp. 433-459.

Kumar K and **Verma PK** (2012) Genomics of filamentous phytopathogens: new insight in pathogenesis and virulence. In: Chowdappa, P (eds.), **Molecular Approaches for Plant Fungal Disease Management**. Westville Pub., New Delhi, India, pp 133-151.

Verma PK and Nizam S (2011) Genome sequencing and its reference to plant pathogens. In: Thind TS, Jain RK, Sharma P, Khurana SMP, Aggarwal R, Sharma RK, Singh D, Dubey SC, Kumar A (compiled by), **Plant Pathology in India: Vision 2030**. Indian Phytopathological Society, New Delhi, India, pp. 186-190.

Mishra SK and **Verma PK** (2000) Application of radionuclides in biomedical research. In Pant GS (ed.) **Radiation Safety for Unsealed Sources**. Himalaya Publishing House, pp 112-118.

Research Guidance:

Ph.D degree (awarded):

1. Purnima Jaiswal (Jointly with SLS, Jawaharlal Nehru University)
2. Archana
3. Kamal Kumar
4. Eeshan Kalita (Jointly with Department of Biotechnology, Guwahati University)
5. Saurabh Yadav
6. Kunal Singh
7. Shadab Nizam
8. Nivedita Lal (Jointly with SLS, Jawaharlal Nehru University)
9. Sandhya Verma
10. Manisha Sinha
11. Savithri Purayannur
12. Chandra Kaladhar Vemula (Jointly with SLS, Central University of Gujarat, Gandhinagar)
13. Shreenivas K. Singh

Current Ph.D. students:

1. Yeshvir Singh
2. Jawahar Singh
3. Ritu Singh
4. Ankita Shree
5. Athira Mohandas Nayar