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 Department of Biotechnology,
 P.E.S.'s Modern College, Ganeshkhind,
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Professional Recognition, Awards and Highlights

- a. SERB-DST (Government of India) Young Scientist, 2012
- b. Member, DBT (Govt. Of India) Expert Committee for Evaluating new grant proposals for Star College Scheme
- c. Member, Expert Panel for Evaluating Grant Proposals, The National Science Centre, Government of Poland, Poland
- d. Member, Reviewer/Expert Panel for Grant Proposals (REPRISE), Government of Italy, Italy
- e. Coordinator, DBT Star College Scheme, Modern College, Ganeshkhind, Pune since 2012, and the college is awarded with Star Status in 2017.
- f. Coordinator, DST-FIST Program, Modern College, Ganeshkhind, Pune
- g. Best Teacher Award (2015)

Current Position and Job Profile

- Faculty at the Department of Biotechnology, Progressive Education Society's Modern College, Ganeshkhind, Pune- 411 016 since 2008 and teaching subjects including Environmental Biotechnology, Recombinant DNA Technology, and Plant Biotechnology at Under- and Post- graduate levels.
- Visiting Faculty, Department of Environmental Science, Savitribai Phule Pune University, Pune
- Two PhDs awarded under my guidance, guiding 3 PhD students; guided 52 MSc (Biotech), 4 MSc (Env. Sci.), 2 MSc (Botany) and 32 BSc (Biotech) students for their research projects

Areas of Interest

- Plant Stress Molecular Biology, Crop Biotechnology, Natural Products, Antimicrobial Resistance, Environmental Biotechnology

Educational Qualifications

- **Ph.D. (Biotechnology)**
Title of the Thesis : Genetic transformation using P5CS gene for salt stress tolerance in local (Maharashtra) cultivar of rice (*Oryza sativa* L.)
Year of Passing : 2009
University/Institute : Savitribai Phule Pune University, Pune, and Bhabha Atomic Research Centre, Mumbai

Membership of Professional Bodies

- Life Member, the Biotech Research Society, India (BRSI), Trivandrum, India
- Member, Asian Federation of Biotechnology, Incheon, South Korea
- Member, Asian Council of Science Editors, UAE

Work Experience

S. No.	Institution/Place	Position	From (Date)	To (Date)
1.	Department of Biotechnology, Modern College, Ganeshkhind, Pune- 411 016	Assistant Professor of Biotechnology	01/12/2008	Till date
2.	Department of Botany, University of Pune, Pune- 411 007	Senior Research Fellow (DAE-BRNS)	21/05/2007	30/11/2008
3.	Department of Botany, University of Pune, Pune- 411 007	Junior Research Fellow (DAE-BRNS)	12/05/2005	20/05/2007
4.	Department of Botany, University of Pune, Pune- 411 007	Project Assistant (DBT)	19/06/2003	30/11/2003

Research Projects:

S. No.	Project Title	Funding Agency	Amount sanctioned (INR)	Duration of the Project	Remark (PI/Co-I)
1.	Biodegradation of ammonium perchlorate by phytoremediation approaches	ISRO, Govt. of India	10,52,000	2011-14 (Completed)	Co-Investigator
2.	Investigating the individual roles of Na ⁺ and Cl ⁻ in exerting the oxidative stress in rice and in activation of antioxidant machinery in-response-to it	University of Pune, Pune	2,00,000	2012-14 (Completed)	Principal Investigator
3.	Exploration of <i>Helicteres isora</i> L. as a source of diosgenin and enhancement of diosgenin production using plant tissue culture and genetic engineering approaches	UGC, Govt. of India	6,25,000	2012-15 (Completed)	Principal Investigator
4.	Investigating the individual roles and relative importance of Na ⁺ and Cl ⁻ in NaCl-induced salt stress, and in the activation of antioxidant machinery in-response	SERB-DST Govt. of India	18,37,000	2012-15 (Completed)	Principal Investigator
5.	Reviving Indian Rivers: Is nano-remediation the answer?	Australia-India Council	Aus \$ 45,000	2016-17 (Completed)	Co-Investigator
6.	Elicitation of diosgenin production in <i>Helicteres isora</i> suspension cultures	University of Pune, Pune	2,40,000	2016-18 (Ongoing)	Principal Investigator
7.	Identification of novel and conserved sodium-responsive miRNAs and their target genes modulating salinity stress during reproductive phase in rice cultivars	SERB-DST Govt. of India	26,51,330	2017-20 (Ongoing)	Principal Investigator
8.	Identification and functional characterization of salt responsive conserved and novel miRNAs in soybean	DAE-BRNS Govt. of India	34,63,150	2018-2021 (Ongoing)	Principal Investigator

As Coordinator

1.	DBT STAR College Scheme – Strengthening Component	DBT, Govt. of India	1.18 Crores	2012-15	Coordinator
2.	‘STAR STATUS’ from DBT	DBT, Govt. of India	3.07 Crores	2017-20	Coordinator
3.	DST-FIST Project	DST, Govt. of India	79 Lakhs	2013-18	Coordinator

Research guidance**Completed (PhD Degree Awarded):**

S. No.	Name of the student	Title	Subject	University	Role
1.	Ms. Samrin Shaikh	Optimization of <i>in vitro</i> production of diosgenin, a steroidal sapogenin, employing plant cell and hairy root cultures of <i>Helicteres isora</i> L.	Biotechnology	Savitribai Phule Pune University	Guide
2	Mr. Vikas Nanekar	In-vitro propagation, antioxidant activities and elicitation of secondary metabolites of <i>Eulophia nuda</i> Lindl.	Botany	Savitribai Phule Pune University	Co-Guide

Ongoing:

S. No.	Name of the student	Title	Subject	University	Role
1	Mr Tushar Khare	Studies on rice responses and adaptive strategies to sodium toxicity	Environmental Science	Savitribai Phule Pune University	Guide
2	Mr. Dhananjaya Randhye	<i>In vitro</i> production and elicitation of Acetoxychavicol acetate from <i>Alpinia galanga</i> (L) Willd. and its bioactivity studies against drug-resistant microbes	Botany	Savitribai Phule Pune University	Co-Guide
3	Ms. Priyanka Patil	Heavy metal tolerance and concurrent drug resistance in microbes from Mula-Mutha River in Pune	Environmental Science	Savitribai Phule Pune University	Guide Co-Guide: Prof. N. R. Karmalkar

Research Publications:

No. of research papers: 41
Books Edited: 04 03 (Springer Nature, Switzerland), 1 (Wiley, UK)
Book Chapters: 17 (Taylor and Francis, Springer, Elsevier and Academic Press)

Cumulative Impact Factor: 76 [©JCR, Thomson Scientific, 2019]

Citations

<https://scholar.google.co.in/citations?user=QWhTh3YAAAAJ&hl=en>

Total citations	1446
h-index	20
i10 index	27

- 41 Yu Z, Tang J, Khare T, Kumar V*. 2019. The Alarming Antimicrobial Resistance in ESKAPEE pathogens: Can Essential Oils come to the Rescue? *Fitoterapia* doi: 10.1016/j.fitote.2019.104433 **Impact Factor: 2.91**
- 40 Wani SH, Kumar V, Khare T, Tripathi P, Shah T, Ramkrishna C, Aglawe S, Mangrauthia SK. 2019. miRNA applications for engineering abiotic stress tolerance in plants. Accepted (In Press). *Biologia* **Impact Factor: 0.9**

- 39 Verma SK, Das AK, Gantait S, **Kumar V**, Gurel A. 2019. Applications of carbon nanomaterials in the plant system: A perspective view on the pros and cons. *Science of the Total Environment* (Elsevier) 667:485-499. doi: 10.1016/j.scitotenv.2019.02.409 **Impact Factor: 5.589**
- 38 Yang B, Tang J, Yu Z, Khare T, Srivastav A, Datir S, **Kumar V***. 2019. Light stress responses and prospects for engineering light stress tolerance in crop plants. *Journal of Plant Growth Regulation* doi: 10.1007/s00344-019-09951-8 (Springer). **Impact Factor: 2.179**
- 37 Nanekar V, Shriram V, Khare T, **Kumar V*** 2019. Nrf2/HO-1 mediated antioxidant activities, cytotoxicity analysis and LC-ESI/MS profiling of *Eulophia nuda* L. *The Natural Products Journal* (In press) (Bentham Science). doi: 10.2174/2210315509666190215101646
- 36 **Kumar V***, Shriram V, Bhagat R, Khare T, Kapse S, Kadoo N. 2019. Phytochemical profile, antioxidant, anti-inflammatory and antiproliferative activities of *Pogostemon deccanensis* essential oils. *3 Biotech* doi: 10.1007/s13205-018-1560-0. **Impact Factor: 1.786**
- 35 Shriram V, Khare T, Bhagwat R, Shukla R, **Kumar V***. 2018. Inhibiting bacterial drug efflux pumps via phyto-therapeutics to combat threatening antimicrobial resistance. *Frontiers in Microbiology* doi: 10.3389/fmicb.2018.02990. **Impact Factor: 4.259**
- 34 Xu J, Hou Q-M, Khare T, Verma SK, **Kumar V***. 2019. Exploring miRNAs for developing climate-resilient crops: A perspective review. *Science of the Total Environment* 653:91-104. doi: 10.1016/j.scitotenv.2018.10.340 (Elsevier) **Impact Factor: 5.589**
- 33 Wani SH, Tripathi P., Zaid A, Challa GS, Kumar A, **Kumar V**, Upadhyay J, Joshi R, Bhatt M. 2018. Transcriptional regulation of osmotic stress tolerance in wheat (*Triticum aestivum* L.). *Plant Molecular Biology*, doi: 10.1007/s11103-018-0761-6 (Springer) **Impact Factor: 3.928**
- 32 Shaikh S, Shriram V, Srivastav A, Barve P, Kumar V*. 2018. A critical review on Nepal Dock (*Rumex nepalensis*): A tropical herb with immense medicinal importance. *Asian Pacific Journal of Tropical Medicine* 11(7): 405-414. doi: 10.4103/1995-7645.237184 (Kluwer) **Impact Factor: 1.772**
- 31 Verma SK, Das AK, Patel MK, Shah A, **Kumar V**, Gantait S. 2018. Engineered nanomaterials for plant growth and development: A perspective analysis. *Science of the Total Environment* 630:1413-1435 doi: 10.1016/j.scitotenv.2018.02.313 (Elsevier) **Impact Factor: 5.589**
- 30 Shaikh S, Shriram V, Khare T, **Kumar V***. 2018. Establishment of Callus and Cell Suspension Cultures of *Helicteres isora* L. *Research in Plant Biology*, 8:1-7. doi: 10.25081/ripb.2018.v8.3366
- 29 **Kumar V***, Khare T, Sharma M, Wani SH. 2018. Engineering crops for future: A phosphoproteomics approach. *Current Protein and Peptide Science* 19:413-426. doi: 10.2174/1389203718666170209152222. (Bentham Science, USA) **Impact Factor: 1.885**
- 28 **Kumar V***, Khare T, Shriram V, Wani SH. 2017. Plant small RNAs: the essential epigenetic regulators of gene expression for salinity stress responses and tolerance. *Plant Cell Reports* 37:61-75. doi: 10.1007/s00299-017-2210-4. (Springer) **Impact Factor: 3.499**
- 27 Shriram V, **Kumar V***, Devarumath RM, Khare T, Wani SH. 2016. MicroRNAs as potent targets for abiotic stress tolerance in plants. *Frontiers in Plant Science* 7:817. doi: 10.3389/fpls.2016.00817 (Frontiers Media, Switzerland) **Impact Factor: 4.106**
- 26 **Kumar V*** and Khare T. 2016. Differential growth and yield responses of salt-tolerant and susceptible rice cultivars to individual (Na⁺ and Cl⁻) and additive stress effects of NaCl. *Acta Physiologiae Plantarum* 38(7):170. doi: 10.1007/s11738-016-2191-x (Springer) **Impact Factor: 1.608**
- 25 Mapara N, Sharma M, Shriram V, Bharadwaj R, Mohite KC, **Kumar V***. 2015. Antimicrobial potentials of *Helicteres isora* silver nanoparticles against extensively drug resistant (XDR) clinical isolates of *Pseudomonas aeruginosa*. *Applied Microbiology and Biotechnology* 99:10655-10667; DOI: 10.1007/s00253-015-6938-x. (Springer) **Impact Factor: 3.67**
- 24 Khare T, **Kumar V***, and Kavi Kishor PB. 2015. Na⁺ and Cl⁻ ions show additive effects under NaCl stress on induction of oxidative stress and the responsive antioxidative defense in rice. *Protoplasma*

- 252:1149-1165**. DOI: 10.1007/s00709-014-0749-2. ISSN: 0033-183X (Springer); **Impact Factor: 2.663**
- 23 Wani SH, **Kumar V***, Shriram V, Sah SK. 2016. Phytohormones and their metabolic engineering for abiotic stress tolerance in crop plants. *The Crop Journal* **4(3):162-176**. doi: 10.1016/j.cj.2016.01.010 (Elsevier). **Impact Factor: 3.179**
- 22 **Kumar V*** and Khare T. 2015. Individual and additive effects of Na⁺ and Cl⁻ ions on rice under salinity stress. *Archives of Agronomy and Soil Science* **61: 381-395**. DOI: 10.1080/03650340.2014.936400. **Impact Factor: 1.681**
- 21 Wani SH, **Kumar V**. 2015. Plant Stress Tolerance: Engineering ABA: A Potent Phytohormone. *Transcriptomics* **3(2):1000113**. doi: 10.4172/2329-8936.1000113
- 20 Shriram V, Nanekar V, **Kumar V**. 2014. *In vitro* regeneration and ploidy level analysis of *Eulophia ochreatea* Lindl. *Indian Journal of Experimental Biology* **52:1112-1121**. **Impact Factor: 0.934**
- 19 Nanekar V, **Shriram V**, Kumar V, Kavi Kishor PB. 2014. Asymbiotic seed germination and seedling development of *Eulophia nuda* L., an endangered medicinal orchid. *Proc. Natl. Acad. Sci. India Sec. B. Biol. Sci.* **84:837-846**, DOI: 10.1007/s40011-014-0353-4 (Springer). **Impact Factor: 0.40**
- 18 **Kumar V***, Desai D., Shriram. 2014. Hairy root induction in *Helicteres isora* and production of diosgenin in hairy roots. *Natural Products and Bioprospecting* **4:107-112**. DOI: 10.1007/s13659-014-0011-9 (Springer)
- 17 Shriram V, **Kumar V**, Mulla J, Latha C. 2013. Curing of plasmid-mediated antibiotic resistance in multi-drug resistant human pathogens using *Alpinia galanga* rhizome extract. *Advanced Biotech*, **13(1): 1-5**
- 16 **Kumar V***, Lemos M, Sharma M, Shriram V. 2013. Antioxidant and DNA damage protecting activities of *Eulophia nuda* Lindl. *Free Radicals & Antioxidants*, **3:55-60**. DOI:10.1016/j.fra.2013.07.001 (Elsevier). **Impact Factor: 1.2**
- 15 **Kumar V***, Sharma M, Lemos M, Shriram V. 2013. Efficacy of *Helicteres isora* against free radicals, lipid peroxidation, protein oxidation and DNA damage. *Journal of Pharmacy Research*, **6(6): 620-625**. doi: 10.1016/j.jopr.2013.05.017 (Elsevier)
- 14 **Kumar V***, Shriram V, Mulla J. 2013. Antibiotic resistance reversal of multiple drug resistant bacteria using *Piper longum* fruit extract. *Journal of Applied Pharmaceutical Science*, **3(3): 112-116**. doi:10.7324/JAPS.2013.30322
- 13 Desai D, Khare T, **Kumar V***. 2012. Sulfate & chloride salinity induced effects on physiological and biochemical parameters of sorghum. *International Journal of Biochemistry and Biotechnology*, **1(2): 5-10**.
- 12 Khare T, Desai D, **Kumar V***. 2012. Effect of MgCl₂ stress on germination, plant growth, chlorophyll content, proline content and lipid peroxidation in sorghum cultivars. *Journal of Stress Physiology and Biochemistry*, **8(4): 169-178**
- 11 Danai-Tambhale S, **Kumar V**, Shriram V. 2011. Differential Response of Two Scented Indica Rice (*Oryza sativa*) Cultivars under Salt Stress. *Journal of Stress Physiology and Biochemistry* **7(4): 387-397**
- 10 Shriram V, Jahagirdar S, Latha C, **Kumar V**, Dhakephalkar P, Rojatkhar S, Shitole MG. 2010. Antibacterial and antiplasmid activities of *Helicteres isora* L. *Indian Journal of Medical Research*, **132: 94-99** (ICMR, New Delhi). **Impact Factor: 1.251**
- 9 Shriram V, **Kumar V**, Suryawanshi SB, Upadhyay AK, Bhat MK. 2010. Cytotoxic activity of 9,10-dihydro-2,5-dimethoxyphenanthrene-1,7-diol from *Eulophia nuda* against human cancer cells. *Journal of Ethnopharmacology* **128: 251-253**. doi :10.1016/j.jep.2009.12.031 (Elsevier, Ireland). ISSN: 0378-8741; **Impact Factor: 3.414**
- 8 **Kumar V**, Shriram V, Kavi Kishor PB, Jawali N, Shitole MG. 2010. Enhanced proline accumulation and salt stress tolerance of transgenic indica rice by over expressing P5CSF129A gene. *Plant*

- Biotechnology Reports* 4(1): 37-48. DOI:10.1007/S11816-009-0118-3 (Springer, New York). ISSN: 1863-5466, **Impact Factor: 1.259**
- 7 **Kumar V**, Shriram V, Nikam TD, Jawali N, Shitole MG. 2009. Antioxidant enzyme activities and protein profiling under salt stress in indica rice genotypes differing in salt tolerance. *Archives of Agronomy and Soil Sciences*, 55(4):379-394. DOI:10.1080/03650340802595543 (Taylor and Francis, UK). **Impact Factor: 1.681**
 - 6 **Kumar V**, Shriram V, Nikam TD, Kavi Kishor PB, Jawali N, Shitole MG. 2008. Assessment of tissue culture and antibiotic selection parameters useful for transformation of indica rice. *The Asian & Australasian Journal of Plant Science & Biotechnology*, 2(2):84-87. (Global Science Books, Japan).
 - 5 Shriram V, Jahagirdar S, Latha C, **Kumar V**, Puranik V, Rojatkar S, Dhakephalkar P, Shitole MG. 2008. A potential plasmid curing agent 8-epidiosbulbin E acetate from *Dioscorea bulbifera* L. against multiple-drug resistant bacteria. *International Journal of Antimicrobial Agents*, 32:405-410. DOI:10.1016/j.ijantimicag.2008.05.013 (Elsevier). ISSN: 0924-8579; **Impact Factor: 4.615**
 - 4 **Kumar V**, Shriram V, Nikam TD, Jawali N, Shitole MG. 2008. Sodium chloride induced changes in mineral elements in indica rice cultivars differing in salt tolerance. *Journal of Plant Nutrition*, 31(11):1999-2017. DOI:10.1080/01904160802403466 (Taylor and Francis, USA). **Impact Factor: 0.753**
 - 3 Shriram V, **Kumar V**, Shitole MG. 2008. Indirect organogenesis and plant regeneration in *Helicteres isora* L., an important medicinal plant. *In Vitro Cellular and Developmental Biology- Plant*, 44:186-193. DOI:10.1007/s11627-008-9108-3(Springer, the Netherlands). **Impact Factor: 1.454**
 - 2 **Kumar V**, Shriram V, Jawali N, Shitole MG. 2007. Differential response of indica rice genotypes to NaCl stress in relation to physiological and biochemical parameters. *Archives of Agronomy and Soil Sciences*, 53(5):581-592. DOI: 10.1080/03650340701576800 (Taylor and Francis, UK). ISSN: 0365-0340; **Impact Factor: 1.681**
 - 1 Shriram V, **Kumar V**, Shitole MG. 2007. *In vitro* propagation through nodal explants in *Helicteres isora* L., a medicinally important plant. *Journal of Plant Biotechnology* 34(3):1-7. DOI:10.5010/JPB.2007.34.3.189 (Korean Society for Plant Biotechnology). **Impact Factor: 0.34**

Books:

Year	Title	Editors	Publisher	ISBN	DOI
2018	Salinity Responses and Tolerance in Plants: Vol I	Kumar V , Wani SH, Suprasanna P, Tran Lam-Son P.	Springer International, Switzerland	978-3-319-75671-4	10.1007/978-3-319-75671-4
2018	Salinity Responses and Tolerance in Plants: Vol II	Kumar V , Wani SH, Suprasanna P, Tran Lam-Son P.	Springer International, Switzerland	978-3-319-90317-0	10.1007/978-3-319-90318-7
2019	Osmoprotectant-Mediated Abiotic Stress Tolerance in Plants	Hossain MA, Kumar V , Burritt D, Fujita M, Mäkelä P.	Springer International, Switzerland	978-3-030-27422-1	10.1007/978-3-030-27423-8
2020	Heat Stress Tolerance in Plants	Wani SH, Kumar V .	John Wiley & Sons Limited, UK	978-1-119-43236-4	In press

Chapters in Edited Books

17. Khare T, Oak U, Verma SK, **Kumar V***. 2019. Biologically synthesized nanomaterials and their antimicrobial potentials. Verma SK, Das AK (Eds) *Analysis, Fate and Toxicity of*

- Engineered Nanomaterials in Plants*. Comprehensive Analytical Chemistry, Vol 87: 263-289. Elsevier. doi: 10.1016/bs.coac.2019.09.002
16. Oak U, Srivastav A, **Kumar V***. 2019. Perspectives of Plant Growth-Promoting Rhizobacteria in Conferring Salinity Tolerance in Crops. In: Singh DP, Prabha R (Eds.) *Microbial Interventions in Agriculture and Environment*, Springer Nature, Singapore. doi: 10.1007/978-981-32-9084-6_14
 15. **Kumar V***, Khare T. 2019. Potent Avenues for Conferring Salinity Tolerance in Rice. In: Verma DK, Nadaf AB (Eds.) *Rice Science- Biotechnological and Molecular Advancements*, pp 29-52. Apple Academic Press Inc., USA ISBN: 97-8-177-18869-25
 14. **Kumar V***, Datir S, Khare T, Shriram V. 2019. Advances in Biotechnological Tools: Improving Abiotic stress Tolerance in rice. In: Hasanuzzaman M., Fujita M, Nahar K, Biswas JK (Eds.) *Advances in Rice Research for Abiotic Stress Tolerance* pp.615-632 Elsevier, doi: 10.1016/B978-0-12-814332-2.00030-7
 13. **Kumar V**, Khare T, Srivastav A, Surekha C, Shriram V, Wani SH. 2019. Oxidative stress and leaf senescence: Important Insights. In: Maryam Sarwat (Ed.), *Senescence Signalling and Control in Plants*. Elsevier, doi: 10.1016/B978-0-12-813187-9.00009-3
 12. Yahiya N, Wani SH, **Kumar V*** 2018. CBF-Dependent and CBF-Independent Transcriptional Regulation of Cold Stress Responses in Plants. In: Wani SH, Herath V. (Eds.) *Cold Tolerance in Plants*, Springer, doi: 10.1007/978-3-030-01415-5_5
 11. Srivastav A, Khare T, **Kumar V***. 2018. Systems biology approach for the elucidation of the plant responses to salinity stress. In: **Kumar V**, Wani SH, Suprasanna P, Son-Tran LP. (Eds.) *Salinity responses and tolerance in plants: Exploring RNAi, Genome Editing and Systems Biology*. Springer, pp. 307-326. doi: 10.1007/978-3-319-90318-7_13
 10. Khare T, Srivastav A, Shaikh S, **Kumar V***. 2018. Polyamines and their metabolic engineering for plant salinity stress tolerance. In: **Kumar V**, Wani SH, Suprasanna P, Son-Tran LP. (Eds.) *Salinity responses and tolerance in plants: Targeting sensory, ion-transport and signaling mechanisms*. Springer, pp. 339-358. doi: 10.1007/978-3-319-75671-4_13
 9. Khare T, Shriram V, **Kumar V***. 2018. RNAi Technology: Role in development of abiotic stress tolerant crops. In: Wani SH (Ed.) *Biochemical, Physiological and Molecular Avenues for Combating Abiotic Stress Tolerance in Plants*. Elsevier, pp. 117-133. doi:10.1016/B978-0-12-813066-7.00008-5
 8. **Kumar V**, Khare T, Shaikh S, Wani SH. 2018. Compatible Solutes and Abiotic Stress Tolerance in Plants. In: Akula Ramakrishna, & Sarvajeet Singh Gill (Eds). *Metabolic Adaptations in Plants during Abiotic Stress*, pp 213-220, Taylor & Francis (CRC Press), USA; ISBN 9781138056381
 7. **Kumar V**, Khare T, Arya S, Shriram V, Wani SH. 2017. Effects of toxic gases, ozone, carbon dioxide, and wastes on plant secondary metabolism. In: Mansour Ghorbanour and Ajit Varma (Eds) *Environmental Challenges and Medicinal Plants*, Springer-Verlag, Germany, doi: 10.1007/978-3-319-68717-9_5
 6. **Kumar V**, Sharma M, Khare T, Wani SH. 2017. Impact of nanoparticles on oxidative stress and responsive antioxidative defense in plants. In: Tripathi et al. (Eds.) *Nanomaterials in Plants, Algae and Micro-organism: Concepts and Controversies*, pp. 393-406. Elsevier, doi: 10.1016/B978-0-12-811487-2-00018-9
 5. **Kumar V**, Khare T, Sharma M, Wani SH. 2017. ROS induced signaling and gene-expression in crops under salinity stress. In: Khan MIR, Khan N (Ed.) *Reactive Oxygen Species and Antioxidant Systems: Role and Regulation under Abiotic Stress*. Springer Nature, Switzerland, doi: 10.1007/978-981-10-5254-5_7
 4. **Kumar V**, Shriram V, Hoque TS, Hasan MM, Burritt DJ, Hossain MA. 2017. Glycinebetaine mediated abiotic oxidative-stress tolerance in plants: physiological and biochemical mechanisms. In: Sarwat M et al. (Eds.). *Stress Signaling in Plants: Genomics and Proteomics Perspective, Volume 2* p111-133, Springer International Publishing, Switzerland, doi: 10.1007/978-3-319-42183-4_5

3. **Kumar V**, Wani SH, Sah SK, Khare T, Shriram V. 2016. Engineering Phytohormones for Abiotic Stress Tolerance in Crop Plants. In: Ahammed GJ, Yu J (Eds.) *Plant hormones under challenging environmental factors*. Springer Science + Business Media, Dordrecht. doi: 10.1007/978-94-017-7758-2_10
2. Wani SH, Sah SK, Hussain MA, **Kumar V**, Balachandra SM. 2016. Transgenic Approaches for Abiotic Stress Tolerance in Crop Plants. In: Al-Khayri JM, Jain SM, Johnson DV (Eds) *Advances in Plant Breeding Strategies, Vol 2: Agronomic, Abiotic and Biotic Stress Traits*. Springer International Publishing, Switzerland, ISBN 978-3-319-22517-3, doi: 10.1007/978-3-319-22518-0
1. **Kumar V***, Shriram V, Hussain MA, Kavi Kishor PB. 2015. Engineering proline metabolism for enhanced plant salt stress tolerance. In: Wani SH, Hussain MA (Eds.) *Managing salinity tolerance in plants: molecular and genomic perspectives*. CRC Press, Taylor & Francis Group, pp353-372; ISBN: 978-1-4822-4513-4

Sequences submitted to GenBank: 24

MH685524	MH636868	KR677082	KR677083	KR677084	KR677085
MF039480	MF039481	MF039714	MF039715	MF040166	MF040188
MF040170	MF040217	MF00988	MF040220	MF00985	MF00986
MF040219	MF040224	MF040223	MF040225	MF040226	MF040227

Editorial/ Review Work:

Editor:

1. The Natural Products Journal (Bentham Science)
2. Biotechnology (ANSI)

Reviewer:

1. <i>Journal of Photochemistry and Photobiology, C: Photochemistry Reviews</i> (Elsevier)	2. <i>Planta</i>
3. <i>Scientific Reports</i> (Nature Publishing Group)	4. <i>Phytotherapy Research</i>
5. <i>Science of the Total Environment</i> (Elsevier)	6. <i>Frontiers in Plant Science</i> (Frontiers Media, Switzerland)
7. <i>Frontiers in Microbiology</i> (Frontiers Media, Switzerland)	8. <i>Food Chemistry</i> (Elsevier)
9. <i>Environmental Science and Pollution Research</i> (Springer-Verlag)	10. <i>Functional and Integrative Genomics</i> (Springer)
11. <i>Applied Microbiology and Biotechnology</i> (Springer)	12. <i>Future Microbiology</i> (Future Medicine Group)
13. <i>Journal of Food Biochemistry</i> (Wiley-VCH)	14. <i>Pedosphere</i> (Elsevier)
15. <i>Current Protein and Peptide Science</i> (Bentham Science)	16. <i>Biomed Research Interna</i>
17. <i>Archives of Agronomy and Soil Science</i> (Taylor and Francis)	18. <i>Journal of Rare Earths</i> (Elsevier)
19. <i>Plos One</i> (PLOS)	20. <i>Physiology and Molecular Biology of Plants</i> (Springer)
21. <i>3 Biotech</i> (Springer)	22. <i>Acta Physiologiae Plantarum</i> (Springer)
23. <i>Proceedings of National Academy of Sciences, India Sect B: Biological Sciences</i> (Springer)	24. <i>Journal of Herbal Medicine</i> (Elsevier)
25. <i>South African Journal of Botany</i> (Elsevier)	26. <i>South African Journal of Botany</i> (Elsevier)

Research Collaborations

- Prof. Andrew Ball, Dr. Ravi Shukla, RMIT University, Australia
- Dr. Son Tran, Senior Scientist, RIKEN, Japan
- Dr. Sandeep Verma, Izzat Abant University, Turkey
- Prof. P. B. K. Kishor, Osmania University, Hyderabad, India
- Dr. Suprasanna P, Scientist G, Bhabha Atomic Research Centre, Mumbai, India
- Dr. Ashish Kumar Srivastava, Scientist F, Bhabha Atomic Research Centre, Mumbai, India
- Dr. Atish Paul, Head, Pharmaceutical Sciences, BITS, Pilani, India
- Prof. Renu Bhardwaj, B.J. Govt. Medical College, Pune, India

Seminar/Conference/Workshop Organised:

1. **Coordinator, DBT (Govt. of India)** funded Science Popularization Program held at Modern College of Arts, Science and Commerce, Ganeshkhind, Pune on 30/08/2019
2. **Coordinator, Science Academies' Lecture Workshop** jointly organized by Indian Academy of Sciences, Bangalore; Indian National Science Academy, New Delhi and National Academy of Sciences, Allahabad, themed on "Understanding and Exploring the Interfaces Between Biology and Biotechnology", from 01/11/2017 to 03/11/2017, held at Modern College of Arts, Science and Commerce, Ganeshkhind, Pune.
3. **Coordinator**, Research Induction Program for M.Sc. students under DST-FIST program from 06/09/2016 to 07/09/2016 at Modern College of Arts, Science and Commerce, Ganeshkhind, Pune.
4. **Coordinator**, Summer Training on "Gene isolation and amplification" under DBT star college scheme for B. Sc students from 20/06/2016 to 25/06/2016 at Modern College of Arts, Science and Commerce, Ganeshkhind, Pune.
5. Organised workshop (hands-on-training) on "Advanced Techniques in Biotechnology" at the Department of Biotechnology, Modern College of Arts, Science and Commerce, Pune, from 14/10/2010 to 15/10/2010.

Resource Person/Invited Talks Delivered

1. Worked as Resource Person at UGC Academic Staff College Refresher Course held at the Department of Environmental Science, Savitribai Phule Pune University, Pune and delivered a lecture on 'Developing Biotech-Crops for Saline Environments' on 19/10/2015
2. Resource Person at Post-Graduate Research Centre, Department of Zoology, Modern College, Shivajinagar, Pune for Course Work for PhD students and delivered a lecture on 'Research Methodologies' on 21/11/2015
3. Resource Person at UGC Academic Staff College Refresher Course held at the Department of Environmental Science, Savitribai Phule Pune University, Pune and delivered a lecture on "Antimicrobial Resistance", 12/07/2017
4. Resource Person for Faculty Development Program for the IQAC Coordinators/Members for Colleges organized by UGC-HRD Centre, Savitribai Phule Pune University, Pune on 22/03/2018.
5. Resource Person for Savitribai Phule Pune University, Pune sponsored Faculty Development Program at Abeda Inamdar College, Pune, and delivered a lecture on 'Research based Teaching' on 09/05/2018.
6. Resource Person for Faculty Development Program at Mamasahab Mohol College, Pune and delivered a lecture on 'Research, Innovation and Extension', on 19/06/2018.
7. Resource Person for Faculty Development Program at H.V. Desai College, Pune and delivered a lecture on "Research Writing- Research Papers, General Purpose Writing" on 21/06/2018.
8. Resource Person at UGC Academic Staff College Refresher Course held at the Department of Environmental Science, Savitribai Phule Pune University, Pune and delivered a lecture on "Threatening Antimicrobial Resistance and Combating it", 30/11/2018.

9. Resource Person at 'National Conference on Innovations and Developments in Computational and Applied Science' held at MIT Arts, Commerce and Science College, Pune, and delivered a keynote on 'Research Quality Benchmarks and Publications', 22/12/2018.
10. Resource Person at the Workshop on "Recent Trends in Laboratory Diagnosis of Infectious Disease" organized by the Moving Academy of Medicine and Biomedicine, Pune for resident doctors and medical faculty, 09/02/2019.
11. Resource Person at the State Level Workshop on "Revised Methodology of Accreditation by NAAC" organized by Institute of Business Management and Research, Pune and delivered a lecture on Criterion III 'Research and Innovation', 22/02/2019.
12. Judge/Panel Member at 'Abhikalp 2019' (A Design competition for Innovative Projects and Proof-of-Concept development) organized by Design Innovation Centre, Savitribai Phule Pune University, Pune, 6-7 March 2019
13. Delivered an invited 'Lead Presentation' on Star College Scheme at Pondicherry University, Pondicherry organized by DBT, Govt of India, on 19/04/2019.
14. Delivered an Invited Special Talk on Star College Scheme of DBT at Karnatak College, Bidar, Karnataka on 08/06/2019.

Curriculum enrichment duties

Appointed and worked as Chairman, for developing a Handbook for Practical Examinations of B.Sc. Biotechnology students, Savitribai Phule Pune University.

University Assignments

Worked as Chairman/Member of S. P. Pune University's Local Inquiry Committees for PhD (Biotechnology) and MSc (Biotechnology) courses permission for affiliation/continuation
 Worked as Chairman, Practical Examinations, MSc Biotechnology
 Worked as Chairman, Practical Examinations, BSc Biotechnology
 Worked as Chairman, Paper Settings and Paper Checking for MSc Biotechnology
 Worked as Chairman, Paper Settings and Paper Checking for BSc Biotechnology
 Worked as Chairman, Skeleton for TYBSc Practical Examination of Savitribai Phule Pune University

Participated in Refresher/ Orientation Course/Workshops

1. Attended a Ministry of Earth Sciences sponsored Brain Storming Session on "***Renewing the tradition of natural product research in India***" held at CSIR- Central Drug Research Institute, Lucknow from 21 – 23 January 2016.
2. Attended Academies' Refresher Course on "***Advances in Biotechnology***" organised jointly by Indian Academy of Sciences, Bangalore; Indian National Science Academy, New Delhi and National Academy of Sciences, Allahabad at National Institute of Research in Reproductive Health, Mumbai from 1 – 16 March 2011.
3. Participated in a DBT Sponsored workshop entitled "***Modern Techniques in Studies of Abiotic Stress Response and Stress-inducible Genes in Plants***" held at the Institute of Life Sciences Bhubaneswar, 21-24 March 2006.
4. Attended a workshop entitled "***Environmental protection, challenges and issues***" held at A. M. College, Hadapsar, Pune, 7th January 2004.

Paper presented in International Symposia / Seminars:

10

1. Barathe P, Sharma M, Kumar V (2018). Antibiotic-potential activity of *Cassia surattensis* against multi-drug resistant (MDR) bacteria. Presented at International Conference on Frontiers in Life Sciences and Earth Sciences, organized by Prof. Ramkrishna More College, Akurdi, Pune, from 18-19 January 2018.
2. Iqbal G, Bhagwat R, Kumar V (2018). Microbial diversity and physico-chemical analyses of leachate collected from a municipal waste disposal site in Pune. Presented at International

Conference on Recent Trends in Life Sciences, held at Modern College, Ganeshkhind, Pune from 2-3 February 2018.

3. **Kumar V, Desai D, Shriram V** (2013). Exploration of *Helicteres isora* L. as a source of diosgenin and its enhancement using biotechnological tools. Presented at International Conference on Advances in Biotechnology and Bioinformatics, held at Dr. D Y Patil Vidyapeeth, Pune, from 25-27 December 2013.
4. **Khare T, Kumar V.** (2013). Individual and additive effects of sodium and chloride ion stress on rice. Presented at International Conference on Advances in Biotechnology and Bioinformatics, held at Dr. D Y Patil Vidyapeeth, Pune, from 25-27 December 2013.
5. **Kumar V, Mulla J** (2013). Effect of salt tolerant bacterial priming on growth and biochemical parameters of sorghum under salt stress. Presented at International Conference on Advances in Biotechnology and Bioinformatics, held at Dr. D Y Patil Vidyapeeth, Pune, from 25-27 December 2013.
6. **Kumar V, Mapara N** (2013). Green synthesis of silver nanoparticles from aqueous extracts of *Helicteres isora* and their evaluation for antibiotic resistance reversal. Presented at International Conference on Advances in Biotechnology and Bioinformatics, held at Dr. D Y Patil Vidyapeeth, Pune, from 25-27 December 2013.
7. Shriram V, **Nanekar V, Kumar V** (2013). In vitro plant regeneration via PLB derived callus in medicinal orchid *Eulophia ochreatea* Lindl. Presented at International Conference on Advances in Biotechnology and Bioinformatics, held at Dr. D Y Patil Vidyapeeth, Pune, from 25-27 December 2013.
8. **Kadam A., Kumar V, Shriram V** (2012). Hairy root induction in *Helicteres isora* for production of diosgenin- a steroidal sapogenin. Presented at International Conference on Current Trends in Medicinal Plant Research, held at Department of Botany, University of Pune, Pune from 10-12 January 2012.
9. **Vinay Kumar**, A. Vaze, N. Jawali and M. G. Shitole (2006). Comparative antioxidant enzyme activities and protein profiling in rice cultivars under salt stress. Presented at “2nd International Rice Congress” held at National Academy of Agricultural Sciences, IARI Campus, New Delhi, 9-13 October 2006.
10. **Vinay Kumar** and M. G. Shitole (2006). Biochemical analyses and protein profiling under NaCl stress in rice (*Oryza sativa* L.). Presented at “International Symposium on frontiers in genetics and biotechnology- retrospect and prospect” held at the Department of Genetics, Osmania University, Hyderabad, 8-10 January 2006.

Paper presented in National/Regional Symposium / Seminar: 15

- 1) **Mapara N and Kumar V***. (2013). *Helicteres isora* Fruit Extract Mediated Green Synthesis of Silver Nanoparticles. Presented at National Conference on Nanomaterials: Applications and properties, held at Arts, Science and Commerce College, Sonei, Ahmednagar from 22-23 February 2013.
- 2) Desai D, **Kumar V***, Shriram V (2013). Ecogeographical variations in diosgenin content isolated from *Helicteres isora* L. Presented at National Conference on Current Prospects and Challenges in Life Sciences, held at New Arts, Commerce and Science College, Ahmednagar, from 26-27 July 2013.
- 3) **Khare T**, Desai D and **Kumar V***. (2012). Comparative effects of three different salts on seed germination, seedling growth and biochemical parameters of sorghum genotypes. Presented at National seminar on Physiological and Molecular Approaches for Development of Climate Resilient Crops, held at Acharya N G Ranga Agricultural University, Hyderabad, from 12-14 December 2012.
- 4) **Nanekar V, Kumar V.** and Varsha Shriram (2012). Micropropagation of *Eulophia nuda* L., a medicinally important endangered orchid. Presented at National seminar on Physiological and Molecular Approaches for Development of Climate Resilient Crops, held at Acharya N G Ranga Agricultural University, Hyderabad, from 12-14 December 2012

- 5) Mulla J, Kadam A, **Kumar V** and Shriram V. (2012). Evaluation of *Helicteres isora* L. from different localities of Western Ghats for diosgenin content and its enhancement using hairy root cultures. Presented at National seminar on Physiological and Molecular Approaches for Development of Climate Resilient Crops, held at Acharya N G Ranga Agri University, Hyderabad, from 12-14 December 2012
- 6) Mulla J, **Kumar V*** and V. Shriram (2011). Genetic transformation in *Helicteres isora* L. to enhance diosgenin content. Presented at State Level Seminar on 'Recent Trends in Life Sciences' held at Arts, Commerce and Science College, Pirangut, Pune from 11-12 February 2011.
- 7) Sirdeshmukh V and **V. Kumar*** (2011). *In vitro* shoot multiplication and direct regeneration in medicinally important plant *Phyllanthus niruri*. Presented at State Level Seminar on 'Recent Trends in Life Sciences' held at Arts, Commerce and Science College, Pirangut, Pune from 11-12 February 2011.
- 8) Desai D. and **V. Kumar** (2011). Direct *in vitro* plant regeneration of *Rauwolfia serpentina* L.: an important medicinal plant. Presented at State Level Seminar on 'Recent Trends in Life Sciences' held at Arts, Commerce and Science College, Pirangut, Pune from 11-12 February 2011.
- 9) Khare T. and **V. Kumar** (2011). *In vitro* callus cultures of *Rauwolfia serpentina* L. Benth: an important medicinal plant. Presented at State Level Seminar on 'Recent Trends in Life Sciences' held at Arts, Commerce and Science College, Pirangut, Pune from 11-12 February 2011.
- 10) **Vinay Kumar**, V. Shriram and M. G. Shitole (2009). NaCl-induced mineral deficiency and nutrient imbalances in *indica* rice genotype 'Kalarata'. Presented at National Conference on 'Recent Trends in Life Sciences', held at A. M. College, Hadapsar, Pune – 411 028, 18-19 December 2009.
- 11) **Vinay Kumar**, V. Shriram, N.Jawali, T. D. Nikam and M. G. Shitole (2008). Embryogenic callus induction and plant regeneration of *indica* rice. Presented at National Seminar on 'In the Role of Care-Takers of Biosphere', held at Vidya Pratishthan, Baramati, 14-16 February 2008. [Won Best Paper Prize.](#)
- 12) **Vinay Kumar**, V. Shriram and M G Shitole (2007). Optimisation of Callus cultures in rice (*Oryza sativa* L. cv. Karjat-3). Presented at National Seminar on Utilization of Plant Resources. Held at the Department of Botany, University of Pune, February 2007.
- 13) **Vinay Kumar** and M. G. Shitole (2006). Effect of NaCl stress on lipid peroxidation, proline accumulation and antioxidant enzyme activities in rice cultivars. Presented at "**National Seminar on Plant Physiology**" held at Kerala Agricultural University, Thrissur, Kerala, October, 2006.
- 14) **Vinay Kumar** and M. G. Shitole (2005). Germination and biochemical studies in relation to salinity stress in rice (*Oryza sativa* L.). Presented at "**National Seminar on Plant Physiology**" held at Navsari Agricultural University, Gujarat, November 2005.
- 15) Kondetti P., **Vinay Kumar**, N. K. Jawali, S. K. Apte and M. G. Shitole (2004). Biodiversity and its Importance with special reference to genetic diversity and its evaluation by molecular methods" at the "**National Seminar on Assessment, Conservation and Utilization of Biodiversity**" at Dept. of Botany, University of Pune, Pune, 26 – 27 March 2004.

Personal Details

Date of Birth:	01 / 07 / 1978
Gender:	Male
Languages known:	Hindi, English, and Marathi
Nationality:	Indian

Declaration:

I hereby declare that the information given above is true as per my knowledge.

Place: Pune

Date: 18 December, 2019

Vinay Kumar