



Dr. Krishna Kant Sharma

(Assistant Professor)

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H-index 19 (Scopus); **H-index** 23 (Google):

Total International Publication: 45; **Citations:** 1680

Teaching and Research experience:

- Assistant Professor (Senior Grade) in Department of Microbiology, Maharshi Dayanand University, Rohtak (since 24th February, 2010).

Academic Qualification:

Ph.D (2008) entitled “Screening, Production, Structural properties, Molecular characterization and application of Laccase from *Ganoderma sp-rckk02*”

Department of Microbiology, **University of Delhi South Campus**, New Delhi-110021.

M.Sc. (2001) Environmental Biology, **University of Delhi South Campus**, New Delhi-110021.

Awards

- INSA Visiting Scientist Fellowship for 2017-2018
- Governor of Haryana (Chancellor) felicitation for ‘Teaching and Dedicated Research’ on Teachers Day, 5th Sept, 2021.**

Research Projects Awarded/Completed/Ongoing:

S. No.	Name of the Research Project (Minor/ Major)	Amount of the Research Project	Funding Agency	Period	Status of the Project
1.	Concomitant production of multiple enzymes, scale up and application in the deinking of news paper pulp	25 lakh	CSIR	2012-15	completed
2.	Production, cloning and characterization of laccase	13 lakh	UGC	2011-16	completed

	from soil bacteria				
3.	Molecular screening for the existence of laccase gene family in different white rot fungi	23 lakh	DST	2012-15	completed
4.	Isolation and characterization of bioactive molecules from Microbes and Plant (Co-ordinated project)	200 lakh	DBT	2011-17	completed
5.	Molecular insight into the emerging antibiotic resistance pattern of <i>Vibrio cholera</i> (Co. P.I)	9.79 lakh	DRDO	2016-18	completed
6.	Development of an ideal pretreatment and saccharification process for rice straw using microbial cellulase (Co. P.I)	9.25 lakh	DST-Haryana	2017-19	completed
7.	Effect of urbanization on gut microbiome, mycobiome and virome in patients with Inflammatory Bowel Disease from Northern India	65.0 lakh	ICMR, New Delhi	2019-22	ongoing

Research Supervision:

S. No.	Students	Number of Students Supervised/Mentored	Status
1.	PhD	4	Thesis submitted: 0 Ongoing:5
2.	MSc	43	Supervised: 43 Ongoing: 8
3.	National Post-Doctoral Fellow (DST-SERB)	1	Completed

- **Department Coordinator, DST-FIST Program; Budget Sanctioned: 90 Lakh; S. No. SR/FST/LS-I/2017/4 Dated: 16/01/2018**

Publications (Last 5 years): (I.F- Clarivate Impact Factor)

1. Saini S, **Sharma KK** (2021) Fungal lignocellulolytic enzymes and lignocellulose: A critical review on their contribution to multiproduct biorefinery and global

- biofuel research. Int J Biol Macromol. 15;193(Pt B):2304-2319. doi: 10.1016/j.ijbiomac.2021.11.063. **(I. F. 6.15)**
2. Pandey, M., Bhati, A., Priya, K. **KK Sharma**, B Singha (2021) Precision Postbiotics and Mental Health: the Management of Post-COVID-19 Complications. Probiotics & Antimicro. Prot. (2021). <https://doi.org/10.1007/s12602-021-09875-4> **(I. F. 4.54)**
 3. Harish Chandra, **Krishna Kant Sharma**, Olli H. Tuovinen et al., (2021) Pathobionts: mechanisms of survival, expansion, and interaction with host with a focus on *Clostridioides difficile*. Gut Microbes. doi.org/10.1080/19490976.2021.1979882 . **(I. F. 10.24)**
 4. Ahlawat S, Shankar A, Vandna, Mohan H, **Sharma KK** (2021). *Yersinia enterocolitica* and *Lactobacillus fermentum* induces differential cellular and behavioral responses during diclofenac biotransformation in rat gut. Toxicol Appl Pharmacol. 5;431:115741. doi: 10.1016/j.taap.2021.115741. **(I. F. 4.2)**
 5. Ahlawat, S., Singh, A.K., Shankar, A., Asha Yadav., **Sharma, K.K** (2021) Infected insect gut reveals differentially expressed proteins for cellular redox, metal resistance and secretion system in *Yersinia enterocolitica-Helicoverpa armigera* pathogenic model. Biotechnol Lett. <https://doi.org/10.1007/s10529-021-03157-3> **(I. F. 2.4)**
 6. Ahlawat, S., Kumar. P., Mohan H., Goyal, S., **Sharma, K.K** (2021) Inflammatory Bowel Disease: tri-directional relationship between microbiota, immune system and intestinal epithelium. Critical Reviews in Microbiology 47(2); 254-273. **(I. F. 8.6)**
 7. Neelam, Ahlawat, S., Shankar, A.**Sharma, K.K** (2021) Bioevaluation and molecular docking analysis of novel phenylpropanoid derivatives as potent food preservative and anti-microbials.3 Biotech 11, 70. <https://doi.org/10.1007/s13205-020-02636-0> **(I. F. 2.4)**
 8. Kumar A, Ahlawat S, Mohan H, **Sharma KK** (2021) Stabilization-destabilization and redox properties of laccases from medicinal mushroom *Ganoderma lucidum* and human pathogen *Yersinia enterocolitica*. Int J Biol Macromol. 167:369-381. **(I. F. 6.15)**

9. Ahlawat, S., Asha, **Sharma, K.K.** (2020) Gut–organ axis: a microbial outreach and networking. *Lett. Appl. Microbiol.* 72(6):636-668 <https://doi.org/10.1111/lam.13333>. (**I. F. 2.8**)
10. Ahlawat S, Asha, **Sharma K.K.** (2020) Immunological co-ordination between gut and lungs in SARS-CoV-2 infection. *Virus Res.* 286:198103. Doi:10.1016/j.virusres.2020.198103 (**I. F. 3.3**)
11. Saini, S., Chandel, A. K, & **Sharma, K. K.** (2020). Past practices and current trends in the recovery and purification of first generation ethanol: A learning curve for lignocellulosic ethanol. *Journal of cleaner production*, 268. doi: 10.1016/j.jclepro.2020.122357 (**I. F. 9.29**)
12. Amit Kumar, Sakshi Arora, Kavish Kumar Jain and **Krishna Kant Sharma** (2020) Metabolic coupling in the co-cultured fungal-yeast suite of *Trametes ljubarskyi* and *Rhodotorula mucilaginosa* leads to hyper secretion of laccase isozymes. *Fungal Biology* 123 (12), 913-926. (**I. F. 3.09**)
13. Sonu Saini, Preeti Chutani, Prabhat Kumar and **Krishna Kant Sharma** (2020) Development of an eco-friendly deinking process for the production of bioethanol using diverse hazardous paper wastes. *Renewable energy* 146, 2362-2373 (**I. F. 8.0**)
14. Kavish Kumar Jain, Amit Kumar, Akshay Shankar, Dhananjay Pandey, Bhupender Chaudhary and **Krishna Kant Sharma** (2020) *De novo* transcriptome assembly and protein profiling of copper-induced lignocellulolytic fungus *Ganoderma lucidum* MDU-7 reveals genes involved in lignocellulose degradation and terpenoid biosynthetic pathways. *Genomics.* 112(1):184-198. doi: 10.1016/j.ygeno.2019.01.012. (**I. F. 5.73**)
15. Neelam, Khatkar A, **Sharma KK** (2019). Phenylpropanoids and its derivatives: biological activities and its role in food, pharmaceutical and cosmetic industries. *Critical Reviews in Food Science and Nutrition.* DOI: 10.1080/10408398.2019.1653822. (**I. F. 10.5**)
16. Ahlawat, S., Singh, D., Yadav, A.,.... Sharma K. K. (2020). Proteomic analysis reveals the damaging role of low redox laccase from *Yersinia enterocolitica* strain

- 8081 in the midgut of *Helicoverpa armigera*. *Biotechnol Lett* 42, 2189–2210.
<https://doi.org/10.1007/s10529-020-02925-x> (I. F. 2.4)
17. **Sharma KK**, Singh D and Rawat S (2018) Molecular dynamics simulation studies suggests unconventional roles of non-secretary laccases from enteropathogenic gut bacteria and *Cryptococcus neoformans* serotype D. *Computational Biology and Chemistry*. 73: 41-48. (I. F. 2.3)
 18. Singh B, **Sharma KK**, Kumari A, Kumar A and Gakhar, SK (2018) Molecular modeling and docking of recombinant HAP-phytase of a thermophilic mould *Sporotrichum thermophile* reveals insights into molecular catalysis and biochemical properties. *International J of Biological Macromolecules*. 115: 501-508. (I. F. 6.2)
 19. Pramod K, Yadav P, Deshmukh D, Bulle P, Singh D, Singh N, **Sharma KK**, Jain M, Ingole K, Goel A and Yadava P (2017) *Vibrio cholerae* O1 with Haitian variant genotype acquired qnrVC mediated ciprofloxacin resistance in Yavatmal an endemic region for cholera in India. *Clinical Microbiology and Infection*. 23: 1005-1006. (I. F. 8.0)
 20. Kumar A, Singh D, **Sharma KK**, Arora S, Singh AK, Gill SS and Singhal B (2017) Gel-Based Purification and Biochemical Study of Laccase Isozymes from *Ganoderma* sp. and Its Role in Enhanced Cotton Callogenesis. *Front. Microbiol*. 8:674. doi: 10.3389/fmicb.2017.00674 . (I. F. 4.2)
 21. Gill SS, Gill R, Trivedi DK, Anjum NA, **Sharma KK**, Ansari MW, Ansari AA, Johri AK, Prasad R, Pereira E, Varma A and Tuteja N (2016) *Piriformospora indica*: Potential and Significance in Plant Stress Tolerance. *Frontiers in Microbiology*. 7:332. doi: 10.3389/fmicb.2016.00332. . (I. F. 4.2)
 22. Chutani, P and **Sharma, K. K.** (2016) Concomitant production of xylanases and cellulases from *Trichoderma longibrachiatum* MDU-6 selected for the deinking of paper waste. *Bioprocess and Biosystem Engineering*. 39: 747-758. (I. F. 3.21)
 23. Singh, D., Rawat, S., Waseem, M., Gupta, S., Lynn, A., Nitin, M., Ramchiary, N., **Sharma, K.K.** (2016) Molecular modeling and simulation studies of recombinant laccase from *Yersinia enterocolitica* suggests significant role in the

- biotransformation of non-steroidal anti-inflammatory drugs. *Biochemical and Biophysical Research Communication*. 469(2):306-312. **(I. F. 3.57)**
24. **Sharma, K.K** (2016) Fungal Genome Sequencing: Basic Biology to Biotechnology. *Critical Reviews in Biotechnology*. 36(4):743-759. **(I. F. 8.90)**
25. Chutani, P and **Sharma, K. K.** (2015) Biochemical evaluation of xylanases from various filamentous fungi and their application for the deinking of ozone treated newspaper pulp. *Carbohydrate Polymers*. 127: 54-63. **(I. F. 9.38)**

Book Chapters:

- 1) Akula Ramakrishna, Sarvajeet S. Gill, **Krishna K. Sharma**, Narendra Tuteja, and Gokare A. Ravishankar (2016) Indoleamines (Serotonin and Melatonin) and Calcium-Mediated Signaling in Plants. Ch. 7, pp. 85-95. Gokare A. Ravishankar Akula Ramakrishna (eds.), *Serotonin and Melatonin: Their Functional Role in Plants, Food, Phytomedicine, and Human Health*, Taylor and Francis. ISBN: 978-1-4987-3905-4.
- 2) **Krishna K. Sharma**, Deepti Singh and Amit Kumar (2016) Biochemical and structural studies of laccase isozymes from *Ganoderma lucidum* MDU-7 pp. 390-396. A. Méndez-Vilas (eds.), *Microbes in the spotlight: recent progress in the understanding of beneficial and harmful microorganisms*, Brown Walker Press. ISBN-13: 9781627346122
- 3) Amit Kumar, Deepti Singh, Anuj K. Chandel and **Krishna K. Sharma** (2017) Technological Advancement in Sustainable Production of Second Generation Ethanol Development: An Appraisal and Future Development pp. 299-336. A. K. Chandel and R. K. Sukumaran (eds.), *Sustainable Biofuel Development in India*, Springer International Publishing. ISBN 978-3-319-50219-9
- 4) **Krishna Kant Sharma** (2017) Yeast Genome Sequencing: Basic Biology, Human Biology, and Biotechnology: pp. 201-226. *Developments in Fungal Biology and Applied Mycology* T. Satyanarayana et al. (eds.), Springer International Singapore Pvt. Ltd. ISBN 978-981-10-4768-8
- 5) **Krishna K. Sharma**, Deepti Singh, Bijender Singh, Sarvajeet S. Gill, Amarjeet Singh, Bhuvnesh Shrivastava (2018) *Plant-Microbe Interaction and Genome*

- Sequencing: An Evolutionary Insight. Ch.22, pp. 427-449. Crop Improvement through Microbial Biotechnology. Ram Prasad, SS Gill and N Tuteja (eds.), Elsevier. ISBN: 978-0-444-63987-5.
- 6) Punam Kundu, Ritu Gill, Shruti Ahlawat, Naser A. Anjum, **Krishna K. Sharma** et al. (2018) Targeting the redox regulatory mechanisms for abiotic stress tolerance in crops. Ch. 10, Biochemical, physiological and molecular avenues for combating abiotic stress tolerance in plants. S. H. Wani (eds.), Elsevier Inc. ISBN 978-0-12-813066-7.
- 7) Punam Kundu, Ritu Gill Krishna Kant Sharma (2020) Reactive oxygen species (ROS) management in engineered plants for abiotic stress tolerance. Ch. 20, Advancement in crop improvement techniques. Elsevier Inc. ISBN: 9780128185827

➤ **Lecture for UGC ePG-Pathshala**

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