Dr. Sanjay Kumar
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Research Specialization: Bioprocess Engineering, Recombinant protein production, and Microbial Biotechnology

Education Qualifications

S.No.	Degree	Institution	Year
1	Ph.D. in Biotechnology	School of Biotechnology, Jawaharlal Nehru University, New Delhi, India	2009
2	M. Sc in Biotechnology	School of Biotechnology, Devi Ahilya University, Indore, India	2002
3	B. Sc Botany (Hon)	Ramjas College, University of Delhi	2000

Teaching Experience

S.No.	Position & Organization	Nature of Job	Place of work	Period
	Associate Professor	Teaching and Research	MDU Rohtak, Haryana	2022 till Date
1	Assistant Professor	Teaching and Research	MDU Rohtak, Haryana	2010-2022
2	Assistant Professor (Contractual)	Teaching and research	Delhi Technological University, Delhi	2009 to 2010

Fellowship and awards

1	Senior Research Fellowship	Senior research fellowship (Dept. of Science and Technology, Govt. of India).	Jawaharlal Nehru University, Delhi	2009
2	Junior/Senior research fellowship	Senior research fellowship (Council of Scientific and Industrial Research, Govt. of India).	Jawaharlal Nehru University, Delhi	2004-2008
3	Junior research fellow	Junior research fellow (Department of Science and Technology)	Jawaharlal Nehru University, Delhi	2003 to 2004

Sponsored Research Projects

S.No	Title	Sponsoring Agency	Period
1.	Development of a cost-effective strategy for production of recombinant human tumor necrosis factor alpha (TNF alpha) in *Escherichia coli*.	UGC	3 yrs (Completed)
2	Screening and isolation of PHB producing microbes from soil	Dr. Radha Krishnan Foundation Funds	1 Year (Completed)
3	Isolation screening and identification of potent melanin-producing bacteria from soil and water samples	Dr. Radha Krishnan Foundation Funds	1 Year (Completed)

Workshops/seminars organized as Organizing secretary

1. Avenues in Microbiology Challenges and Prospects (NAMCAP-2015) on 11 March 2015
2. International Conference on "Microbes for Health and Wealth" on 14 November 2017

Ph.D. Supervision

Completed 01,

Ongoing 04

Book Chapter(s)

1. Sawraj Singh, Rajeev Kumar Kapoor, Sanjay Kumar. 2022. Microbial Melanin: Role, Biosynthesis, and Applications. Microbial Products. Taylor & Francis (ISBN: 9781003306931)

Journal Publications

1. Mehta, L., Kumar, S., & Mohanty, A. (2022). *In silico* Analysis of Native Cyclotides with Antibacterial Activity against Gram-negative Bacteria. *Applied Biochemistry and Microbiology*, 58(6), 715-725.
2. Gavadia, R., Rasgania, J., Basil, M. V., Chauhan, V., Kumar, S., & Jakhar, K. (2023). Synthesis of isoniazid analogs with promising antituberculosis activity and bioavailability: Biological evaluation and computational studies. *Journal of Molecular Structure*, 1283, 135325.
3. Kaula, B.C., Mishra, R., Kumar, S. and Mohanty, A., 2022. Phytoconstituents and ethnopharmacological activities of Abrus precatorius L.(Fabaceae): a review. *Vegetos*, pp.1-11.
4. Singha, T. K., Dagar, V. K., Gulati, P., & Kumar, S. (2021). Kinetic study and optimization of recombinant human tumor necrosis factor-alpha (rhTNF-α) production in *Escherichia coli*. *Preparative Biochemistry & Biotechnology*, 51(3), 267-276.
5. Mehta, L., Dhankhar, R., Gulati, P., Kapoor, R. K., Mohanty, A., & Kumar, S. (2020). Natural and grafted cyclotides in cancer therapy: an insight. *Journal of Peptide Science*, 26(4-5), e3246.
6. Tammineni, R., Gulati, P., Kumar, S., & Mohanty, A. (2020). An overview of acyclotides: past, present and future. *Phytochemistry*, 170, 112215.
7. Dhankhar, R., Kumar, A., Kumar, S., Chhabra, D., Shukla, P., & Gulati, P. (2019). Multilevel

algorithms and evolutionary hybrid tools for enhanced production of arginine deiminase from Pseudomonas furukawaii RS3. *Bioresource technolog*y, 290, 121789.

8. Kaushik, M., Kumar, S., Kapoor, R. K., & Gulati, P. (2019). Integrons and antibiotic resistance genes in water-borne pathogens: threat detection and risk assessment. *Journal of medical microbiology*, 68(5), 679-692.
9. Kaushik, M., Khare, N., Kumar, S., & Gulati, P. (2019). High prevalence of antibiotic resistance and integrons in *Escherichia coli* isolated from urban river water, India. *Microbial drug resistance*, 25(3), 359-370.
10. Multilevel algorithms and evolutionary hybrid tools for enhanced production of arginine deiminase from Pseudomonas furukawaii RS3, R Dhankhar, A Kumar, S Kumar, D Chhabra, P Shukla (2019).*Bioresource technology*
11. Singh, J., Saharan, V., Kumar, S., Gulati, P., & Kapoor, R. K. (2018). Laccase grafted membranes for advanced water filtration systems: a green approach to water purification technology. *Critical reviews in biotechnology*, 38(6), 883-901.
12. Dhankhar, R., Gulati, P., Kumar, S., & Kapoor, R. K. (2018). Arginine-lowering enzymes against cancer: a technocommercial analysis through patent landscape. *Expert Opinion on Therapeutic Patents*, 28(8), 603-614.
13. Kaushik, M., Kumar, S., Kapoor, R. K., Virdi, J. S., & Gulati, P. (2018). Integrons in Enterobacteriaceae: diversity, distribution and epidemiology. *International journal of antimicrobial agents*, 51(2), 167-176.
14. Singha, T. K., Gulati, P., & Kumar, S. (2018). Nonconventional induction strategies for production of recombinant human tumor necrosis factor-alpha in *Escherichia coli*. *Journal of Applied Biology and Biotechnology*, 6(1), 23-27.
15. Singha T. K Mohanty A, Khasa Y. P, Kapoor R. K, Kumar S. GP, Gulati P, Mohanty A, Pal Y. Efficient genetic approaches for improvement of plasmid-based expression of recombinant protein in *Escherichia coli* : A review. *Process Biochemistry* 2017;55:17–31. doi:10.1016/j.procbio.2017.01.026.
16. JK Abat, S Kumar, A Mohanty Ethnomedicinal, phytochemical and ethnopharmacological aspects of four medicinal plants of Malvaceae used in Indian traditional medicines: a review (2017). *Medicines*
17. Kumar S, Gulati P, Kapoor RK. In vitro studies in Solanum xanthocarpum to compare the potential of different explants towards callus induction and shoot formation. *Int J Curr Res* 2013;5:1360–2.
18. Kapoor* RK, Kumar S, Gulati P, Malik U. 10 Innovative Technologies for Yogurt Making Shortlisted Through Patent Research. *The Indian Buffalo Journal* 2012;9:38–44.

Conference Presentation/Abstract Publication

1. Sawraj Singh, Sanjay Kumar. Natural Melanin Production from Endophytic Bacteria Isolated from *Datura stramonium*. 63rd Annual Conference of Association of Microbiologists of India (AMI-2023). Maharshi Dayanand University Rohtak, Haryana
2. Varsha Chauhan, Astha Giri , Kamal Shrivastava , Chanchal Kumar , Anupriya Singh,. A search for alternative mechanisms of Ethambutol resistance in M. tuberculosis. 63rd Annual Conference of Association of Microbiologists of India (AMI-2023). Maharshi Dayanand University Rohtak, Haryana
3. Ankita and Sanjay Kumar. Isolation and screening of extracellular urease producing bacteria from different soil samples. 63rd Annual Conference of Association of Microbiologists of India (AMI-2023). Maharshi Dayanand University Rohtak, Haryana
4. Varsha Chauhan, Chanchal Kumar, Kamal Shrivastava, Anupriya Singha, Sanjay Kumar, Mandira Varma-Basila. Contribution of efflux pump gene Rv0842 in drug resistance due to kanamycin and ethambutol. IAMM2022
5. Rajeev Kumar Kapoor, Sanjay Kumar, Pooja Gulati, Biotechnological means to get a firm grip on the challenges posed by climate change, a national seminar on climate change and agriculture: impact and adaptation strategies in Haryana: 6th February 2017
6. Sanjay Kumar, Pooja Gulati, Madhu Sahni, Rajeev Kumar Kapoor*, Benefits Provided to Startups by 'Startup India Plan' for Patenting their Innovation, "Startup India Recipe for Inclusive Entrepreneurship and Innovation: Issues and Challenges " March 2-3, 2017.
7. Rajeev Kumar Kapoor*, Sanjay Kumar, Pooja Gulati, Madhu Sahni, Impact and Role of Big Data analytics on the Intellectual Property: especially patent analytics, National Conference On "Emerging Trends in Cloud Computing and Big Data Analytics" Venue: Seminar Hall, Swaraj Sadan, M. D. University, Rohtak March 6, 2017
8. Tapan Sinha and Sanjay Kumar. 2016 'kinetics of recombinant human tumor necrosis factor-alpha (rhtnf-α) expression in *Escherichia coli* with different induction strategies: a comparative approach' in the 103rd India Science Congress Association held at University of Mysore, Mysore, Karnataka. January 03-07, 2016.
9. Tapan Sinha and Sanjay Kumar.2015 ''optimization of recombinant human tumor necrosis factor-alpha (rhtnf-α) production in *Escherichia coli*'' in the 56th annual conference of Association of Microbiologists of India, jnu, New Delhi, India and ''international symposium on 'emerging discoveries in microbiology'' December 07-10, 2015.
10. Gulshan Kumar, Amit, Neha Khare, Megha Kaushik, Sanjay Kumar, Pooja Gulati. (2014) Isolation and characterization of strains of *E. coli* from various farm animals in and around Rohtak. National Conference on Pollution mitigation for a sustainable future. Maharshi Dayanand University, Rohtak, Haryana, 26th March 2014.
11. Tapan Sinha and Sanjay Kumar. 2013 ''over-expression of recombinant human ten-alpha in *Escherichia coli* by using codon optimized gene sequence with t7 promoter-based expression system'' in the 54th annual conference of Association of Microbiologists of India, Maharshi Dayanand University, Rohtak, Haryana, India, November 17-20, 2013