Dr. Monica Sharma
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School of Life Sciences

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Webpage:
https://sites.google.com/view/microbialenzymetechlab106/home

Education Qualification

	Organization	Year of award
Undergraduate	**Himachal Pradesh University**	**2001**
Post-graduation	**Himachal Pradesh University**	**2003**
Ph.D.	**Himachal Pradesh University**	**2009**
Post-Doctoral Training	**-**	**-**

Professional Experience (In Years)

Teaching Experience: 11 years
Research Experience: 17 years

Areas of Research (Maximum Five Bullet Points)

- Extremophilic microbes and thermostable enzymes as industrial catalyst
- Plastic degrading microbes
- Directed Evolution of enzymes
- Plant microbe interaction
- Enzymes of weed plants as a potential enzyme resource

Research/Consultancy Grants

Title of Projects	Funding Agency	Duration (Specific Dates)	Total grant	Role (PI/CO-PI)
Development and Manufacture of Cost- Effective Glucose Biosensor for Clinical Diagnostics	ICMR	2012-2014	144 Lakhs	CoPI
Investigational analysis of thermal spring for novel thermophilic enzymes of	CST-UP	2018-2020	6.8 lakhs	PI

biotechnological importance using metagenomics approach				

Publications

International

1. **Sharma M**, Akhter Y, Chatterjee S (2019) A review on remediation of cyanide containing industrial wastes using biological systems with special reference to enzymatic degradation. World J Microbiol Biotechnol 35: 70. https://doi.org/10.1007/s11274 -019-2643-8
2. Augustine S, Singh J, Srivastava M, **Sharma M**, Das A, Malhotra BD (2017) Recent advances in carbon based nanosystems for cancer theranostics. R S C Biomaterials Science, **5:**901-952.
3. **Sharma M*,** Bhalla TC (2015) Isolation and characterization of culture conditions of a thermoactive amidase from *Geobacillus pallidus* BTP-5x MTCC 9225. International Journal of Advanced Biotechnology and Bioinformatics 4 (1): 6-15.
4. **Sharma M***, Rawat P, Mehta A (2015) Denovo Designing, Virtual Screening and Lead Optimization of Potential Drug Candidate for Herpes Disease. J Microb Biochem Technol 7: 367-373. doi:10.4172/1948-5948.1000240.
5. **Sharma M***, Singh S, Sharma S (2015) New Generation Antibiotics/Antibacterials: Deadly Arsenal for Disposal of Antibiotic Resistant Bacteria. J Microb Biochem Technol 7: 374-379. doi:10.4172/1948-5948.1000241.
6. **Sharma M***, Thukral N, Soni NK, Maji S (2015) Microalgae As Future Fuel: Real opportunities and challenges. Journal of thermodynamics and Catalysis 6:1 http://dx.doi.org/10.4172/2157-7544.1000139 .
7. **Sharma M**, Sharma NN and Bhalla TC (2013) Purification studies on a thermo-active amidase of Geobacillus pallidus BTP-5x MTCC 9225 isolated from thermal springs of Tatapani (Himachal Pradesh). Appl Biochem Biotechnol. 169(1):1-14. doi: 10.1007/s12010-012-9945-8.
8. **Sharma M**, Sharma NN, and Bhalla TC (2012) Biotransformation of acetamide to acetohydroxamic acid at bench scale using acyl transferase activity of amidase of *Geobacillus pallidus* BTP-5x MTCC 9225. *Indian Journal of Microbiology*, 52, 76-82. DOI: 10.1007/s12088-011-0211-5.
9. Sharma NN, **Sharma M** and Bhalla TC (2012) Nocardia globerula NHB-2 nitrilase catalysed biotransformation of 4-cyanopyridine to isonicotinic acid. AMB Express 2:25. doi:10.1186/2191-0855-2-25.

10. Amit Pratush, **Monica Sharma,** Amit Seth and Tek Chand Bhalla (2011) Seeds of rosary pea, *Abrus precatorius*: A novel source of hydroxynitrile lyase. *J Biochem Tech* 3(2): 274- 279 ISSN: 0974-2328. (impact factor 0.962)
11. Sharma NN, **Sharma M** and Bhalla TC (2010) An improved nitrilase- mediated bioprocess for synthesis of nicotinic acid form 3-cyanopyridine with hyper induced Nocardia globerula NHB-2. *Journal of Industrial Microbiology and Biotechnology*. 38, 1235-1243. DOI: 10.1007/s10295-010-0902-7. (impact factor 2.624)
12. **Sharma M**, Sharma NN, and Bhalla TC (2009) Amidases: Versatile Enzymes. In Nature. *Reviews in Environmental Science and Biotechnology*, **8**, 343-366
13. Sharma NN, **Sharma M**, Kumar H and Bhalla TC (2006) *Nocardia globerula* NHB-2: Bench scale production of nicotinic acid. *Process Biochemistry*, **41**, 2078-2081.
14. **Sharma M**, Sharma NN, and Bhalla TC (2005) Hydroxynitrile lyases: At the interface of biology and chemistry. *Enzyme and Microbial Technology*, **37**, 279-294.

National-Nil

Book Chapters

1. **Sharma M** (2018) Thermophiles Vs Psychrophiles: Cues from microbes for sustainable industries, Chapter 13. In : Environmental Biotechnology: for sustainable future", Eds, Ranbir Chander Sobti, Naveen Kumar Arora, Richa Kothari by Springer-Nature p. 323-340.
2. **Sharma M** (2018) Transdermal and Intravenous Nano Drug Delivery Systems: Present and Future, Chapter 18. In: Applications of Targeted Nano Drugs and Delivery Systems, Eds: Shyam S Mahopatra. Shivendu Ranjan, Nandita Dasgupta, Raghvendra Kumar Mishra, Sbu Thomas. Elsevier Inc. p. 499-550.
3. **Sharma M** (2018) Traditional fermented Foods/ Therapeutic Foods: Wellness Mantra for Improving Health. In: The Nature Health and Wellness Trinity. The Way Forward For Tourism in India, Eds: Shubhini A Saraf, Priyanka Maurya, Shailendra K. Saraf. White Falcon Publishing p. 68-82.
4. Bhalla TC, **Sharma M** and Sharma NN (2009) Nitrile metabolizing yeasts. In: Yeast Biotechnology: Diversity and Applications, eds T. Satyanarayana and Kunze, pp Springer New York Inc. p. 696-713 (cited: 3(.
5. Bhalla, T C, Sharma, M, Sharma, NN (2008) Microbial production of flavours and fragrances; fats and oils; dyes; bioplastics (PHAS); polysaccharides; pharmacologically active substances from marine microbes; anticancer agents and

microbial transformation. Applied Microbiology 7, 1-34.

6. Bhalla TC, Sharma NN and **Sharma M** (2007) Applications of Biotechnology in Forestry, for Y.S. Parmar University of Horticulture and Forestry.
7. Bhalla TC, Sharma NN and **Sharma M** (2007) Production of Metabolites, Industrial enzymes, Amino acid, Organic acids, Antibiotics, Vitamins and Single Cell Proteins. National Science Digital Library, India.

Authored Books NIL

Edited Books NIL

Patents

	Inventors	Title and Award/Application no.
Awarded		
Published		
Filed		

Research Supervision

	Completed	Ongoing
PG/M.Phil	27	5
Ph.D		3
Post-Doctoral		

Honors, Recognition and Awards

- Two times Gold medalist in Foreign German Language Category (2005-2007) equivalent to graduation.
- National scholarship during M. Sc. course from Department of Biotechnology, Govt. of India.
- Junior Research Fellowship from Council of Scientific and Industrial Research, New Delhi during PhD programme (Sept 2003-Aug 2005)
- Senior Research Fellowship from Council of Scientific and Industrial Research, New Delhi during PhD programme (Sept 2005-Septemer 2008)
- Qualified CSIR-UGC (NET) - Dec 2002 and June 2005 essential for Junior Research Fellowship (CSIR) and Lecturership in Indian Universities
- 72 nd rank in Matriculation Examination 1996 conducted by Himachal Pradesh Board of School Examination.

Membership of Professional Bodies

*Association of Microbiologist of India (AMI). Lifetime member (since 2005)
*Organization For Women in Science for the Developing World. Lifetime member (since 2020).

Seminar/Conference/Symposia /Workshops Organised

ICUCPR-2017 International Conference on Updates in Cancer Prevention and Research 14th-16th Feb 2017 (Organizing Secretary)

Countries Visited

*China
*Germany

Invited Lectures/Talks/Chair/Co-Chair in Seminar/Conference/Symposia /Workshops

"Industrial Biocatalyst mining using metagenomics" International conference on Environmental Sustainability: Innovations, Translational Dimension and Way Forward from 11-12 February 2020 organised by Department of Energy and Environment, Babasaheb Bhimrao Ambedkar University.

"Metagenomics: A mining Tool for robust PGPR microbiome from hot springs of Indian states" In progressive Horticulture Conclave (PHC)-2019 held at ICAR-IISR, Lucknow UP, December 8-10-2019 organised by ICAR-Central Institute for Subtropical Horticulture Lucknow.

Additional Information (If Any)

MTech Dissertation Supervised:

Ankita Mehta: DENOVO DRUG DESIGN AGAINST ICP-47 OF HSV (2011)(Minor)

Atisha Jain: STRUCTURE AND LIGAND BASED DRUG DESIGNING OF AMINO ACID HYDROXYLASE ENZYMES INVOLVED IN NEURO-DEGENERATION (2012) (Major)

Saumya Bharti: IN SILICO APPROACH TO DESIGN A NOVEL INHIBITOR

OF SHP1/2:ENHANCEMENT OF HSCS PROLIFERATION (2014) (Major)

Puneet Rawat : LEAD OPTIMIZATION FOR HERPES SIMPLEX VIRUS DISEASE (2014) (Minor)

Puneet Rawat: MTech Bioinformatics - "IDENTIFICATION OF DNA FEATURES AT THE TRANSITION REGION OF VARIOUS CHROMATIN STATES" (2015). (Major)

Ashok Kr. Dev: production and characterization of recombinant cellulolytic enzymes (2015). (Major)

Monika Geetanjaly: isolation, production and reaction condition optimization of amidase of Bacillus sp. MNB-1 (2015). (Major)

Sandeep Kumar Pathak: studies on thermophililc nitrile metabolising enzyme isolated from kirti nagar industrial area (2015). (Major)

Administrative Roles:

Member Internal Complaints Committee, BBAU Lucknow
Administrative Warden (Chitralekha Women Hostel July 2019- continuing), Babasaheb Bhimrao Ambedkar University.
Warden (Yashodhra Women Hostel July 2017-June 2019)