

Name: Dr. Praveen Kumar Mehta
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(Department of Nanoscience and Materials)
Qualification: Ph.D. (Biotechnology)
Specialization: Enzyme Technology, Microbial Biotechnology,
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Project Completed:

SERB – Early Career Research Grant (INR 48 lacs): Microbial isolation and screening for acyltransferase activity on amides for the production of industrially important hydroxamic acids from thermal springs of Northern India.

University Start-up Grant (INR 02 lacs): Characterization and profiling of gut microbiome in different gastrointestinal cancer types from J&K populations.

Area of Interest:

Protein and Enzyme Engineering, Exploitation of enzymes and whole cell systems for synthesis of pharmaceutical important drugs, Molecular Directed Evolution of Enzymes, Enzymes in Organic solvents, Bioprocess and Biosystems Engineering, Flavor chemistry, Pigments and Nutraceuticals.

Educational qualifications

Ph.D. (Biotechnology), Himachal Pradesh University (HPU), Shimla, India (2007-2013)

M.Sc. (Biotechnology) Himachal Pradesh University, Shimla, India (2004-2006)

B.Sc. (G) Deen Dyal Upadhyaya college, Delhi University (DU), India (2000-2003)

Professional Training & Research Experience:

- ✓ Post-doctorate from the Laboratory for Molecular and Applied Biocatalysis, Faculty of Biotechnology and Food Engineering, **Israel Institute of Technology (IIT)-Technion**, Haifa, Israel. The work was focused on “Improving lipase stability in methanol for generating a robust biocatalyst for biodiesel synthesis using iterative saturation mutagenesis. (2015-2016)
- ✓ Post-doctorate from Department of Biotechnology, **Federal University of Sergipe**, Brazil. The work was focused on “Development of Aroma Essences from Northeastern Regional fruits for application in the food industry” (2014-2015).
- ✓ **Ph.D. from Department of Biotechnology**, Himachal Pradesh University, Shimla, India under the guidance of **Prof. Tek Chand Bhalla** entitled “Isolation, characterization and application of thermostable amidase of *Geobacillus* sp. RL-2a” (2013).

- ✓ Hands on training in the UGC-NRCBS summer school training programme on “**PCR applications**” organized by NRCBS centre of Madurai Kamraj University during 17th March-31st March 2010.
- ✓ Two-month external internship on project entitled “**Cloning and expression of GS from *Camellia sinensis***” under the direct supervision of Dr. Sudesh kumar, scientist (Biotechnology) at Institute of Himalayan Bioresource Technology, Palampur (H.P).

Awards and achievements

- ✓ Awarded a Postdoctoral Fellowship in Technion's Faculty of Biotechnology and Food Engineering, **Israel Institute of Technion (IIT)** (2015-2016)
- ✓ Received the National Program of Post Doctorate **PNDP/CAPES scholarship**, Government of Brazil (2014-2015) in Federal University of Sergipe, Aracaju, Brazil.
- ✓ Qualified for **National Overseas Scholarship (NOS)**, Govt. of India (2012-2013) for Post Doctoral research in biotechnology.
- ✓ Qualified UGC (NET) - June 2007 **All India National Level Test** examination essential for Junior Research Fellowship and Lecturership in Indian Universities
- ✓ Qualified DBT-JRF - June 2007 **All India National Level Test** examination essential for Junior Research Fellowship (DBT)
- ✓ Awarded Scholarships from **Department of Biotechnology (DBT)**, Govt. of India (July 2004-June 2006) for M. Sc. Biotechnology programme.

Publications:

- 1) Bhatia, S. K., **Mehta, P. K.**, Bhatia, R. K., & Bhalla, T. C. (2013). An isobutyronitrile-induced bienzymatic system of *Alcaligenes* sp. MTCC 10674 and its application in the synthesis of α -hydroxyisobutyric acid. ***Bioprocess and biosystems engineering***, 36(5), 613-625. ISSN: 1615-7591, IF: 3.2 Published 05-09-2012
- 2) Bhatia, R. K., Bhatia, S. K., **Mehta, P. K.**, & Bhalla, T. C (2013). Production and characterization of acyl transfer activity of amidase from *Alcaligenes* sp. MTCC 10674 for synthesis of hydroxamic acids. ***Journal of Microbial & Biochemical Technology***. 5:1 ISSN: 1948-5948 IF 2.16 10.4172/1948-5948.1000090
- 3) **Mehta, P. K.**, Bhatia, S. K., Bhatia, R. K., & Bhalla, T. C. (2013). Purification and characterization of a novel thermo-active amidase from *Geobacillus subterraneus* RL-2a. ***Extremophiles***, 17(4), 637-648. ISSN: 1431-0651, IF: 3.035. <https://doi.org/10.1007/s00792-013-0547-3>
- 4) Bhatia, R. K., Bhatia, S. K., **Mehta, P. K.**, & Bhalla, T. C. (2013). Bench scale production of benzohydroxamic acid using acyl transfer activity of amidase from *Alcaligenes* sp. MTCC 10674. ***Journal of industrial microbiology & biotechnology***, 40(1), 21-27. ISSN: 1367-5435, IF: 2.993 <https://doi.org/10.1007/s10295-012-1206-x>
- 5) Bhatia, S. K., **Mehta, P. K.**, Bhatia, R. K., & Bhalla, T. C. (2014). Simultaneous purification of nitrile hydratase and amidase of *Alcaligenes* sp. MTCC 10674. ***3 Biotech***, 4(4), 375-381. ISSN: 2190-5738, IF: 2.893
- 6) Bhatia, S. K., **Mehta, P. K.**, Bhatia, R. K., & Bhalla, T. C. (2014). Purification and characterization of arylacetonitrile-specific nitrilase of *Alcaligenes* sp. MTCC 10675. ***Biotechnology and applied biochemistry***, 61(4), 459-465. ISSN:1470-8744, IF: 2.724 <https://doi.org/10.1002/bab.1192>
- 7) **Mehta, P. K.**, Bhatia, S. K., Bhatia, R. K., & Bhalla, T. C. (2014). Bench scale production of nicotinic acid using a versatile amide-hydrolysing *Geobacillus subterraneus* RL-2a isolated from thermal spring

- of Manikaran, India. *Journal of Molecular Catalysis B: Enzymatic*, 105, 58-65. ISSN: 1381-1177, IF:5.089 <https://doi.org/10.1016/j.molcatb.2014.04.001>
[Journal of Molecular Catalysis A, Chemical, and Journal of Molecular Catalysis B, Enzymatic merge to form Molecular Catalysis - News - Molecular Catalysis - Journal - Elsevier](#)
- 8) Bhatia, S. K., **Mehta, P. K.**, Bhatia, R. K., & Bhalla, T. C. (2014). Optimization of arylacetonitrilase production from *Alcaligenes* sp. MTCC 10675 and its application in mandelic acid synthesis. *Applied microbiology and biotechnology*, 98(1), 83-94. ISSN: 0175-7598, IF: 5.56. <https://doi.org/10.1007/s00253-013-5288-9>
 - 9) Bhatia, R. K., Bhatia, S. K., **Mehta, P. K.**, & Bhalla, T. C. (2014). Biotransformation of nicotinamide to nicotinyln hydroxamic acid at bench scale by amidase acyl transfer activity of *Pseudomonas putida* BR-1. *Journal of Molecular Catalysis B: Enzymatic*, 108, 89-95. ISSN: 1381-1177, IF:5.089 <https://doi.org/10.1016/j.molcatb.2014.07.001>
 - 10) **Mehta, P. K.**, Bhatia, S. K., Bhatia, R. K., & Bhalla, T. C. (2015). Thermostable amidase catalyzed production of isonicotinic acid from isonicotinamide. *Process Biochemistry*, 50(9), 1400-1404. ISSN: 1359-5113, IF: 4.88 <https://doi.org/10.1016/j.procbio.2015.05.013>
 - 11) Bhatia, R. K., Bhatia, S. K., **Mehta, P. K.**, & Bhalla, T. C. (2016). Bio-statistical enhancement of acyl transfer activity of amidase for biotransformation of N-substituted aromatic amides. *The Journal of general and applied microbiology*, 62(2), 90-97. ISSN: 0022-1260, IF:1.45 <https://doi.org/10.2323/jgam.62.90>
 - 12) Singh R, Kumar M, Mittal A, and **Mehta P.K** (2016). Lignocellulolytic enzymes: Biomass to biofuel. *International Journal of Advanced Research*. 10: 2175-2182. ISSN: 2319-7064
 - 13) Singh R, Kumar M, Mittal A, and **Mehta P.K** (2016). Microbial Cellulases in Industrial Applications. *Annals of Applied Bio-Sciences*. 3 (4). ISSN: 2349 - 6991
 - 14) Singh R, Mittal A, Kumar M and **Mehta P.K** (2016). Amylases: A Note on Current Applications. *International Research Journal of Biological Sciences*. 11: 27-32. ISSN: 2663-5968
 - 15) **Mehta P.K**, Bhatia S.K, Bhatia R.K and Bhalla T.C. (2016) Enhanced production of thermostable amidase from *Geobacillus subterraneus* RL-2a MTCC 11502 via optimization of physicochemical parameters using Taguchi DOE methodology. *3 Biotech*. 6: 1-12. ISSN: 2190-5738, IF: 2.4 <https://doi.org/10.1007/s13205-016-0390-1>
 - 16) Singh R, Mittal A, Kumar M and **Mehta P.K** (2016). Microbial Proteases in Commercial Applications. *Journal of Pharmaceutical Chemical and Biological Sciences*. 4: 365-374. ISSN: 2320-1924
 - 17) Singh R, Kumar M, Mittal A, and **Mehta P.K** (2016). Microbial enzymes: industrial progress in 21st century. *3 Biotech*. 6:174. ISSN: 2190-5738, IF:2.893 <https://doi.org/10.1007/s13205-016-0485-8>
 - 18) Singh R, Mittal A, Kumar M and **Mehta P.K** (2016). Microbial metabolites in nutrition, healthcare and agriculture. *3 Biotech*. 7(1) 1-14. ISSN: 2190-5738, IF: 2.893 <https://doi.org/10.1007/s13205-016-0586-4>
 - 19) Ganaie, M. A; Soni, H.; Naikoo; G. A; Oliveira; L. T. S, Rawat, H. K, **Mehta, PK.**, Narain, N. (2017). Screening of low-cost agricultural wastes to maximize the fructosyltransferase production and its applicability in generation of fructooligosaccharides by solid state fermentation. *International Biodeterioration and Biodegradation* 118, 19. ISSN: 0964-8305, IF:3.82 <https://doi.org/10.1016/j.ibiod.2017.01.006>
 - 20) **Mehta PK**; Galvo M S; Soares A C; Nogueira J P; Narain N. (2018). Volatile Constituents of Jambolan (*Syzygium cumini* L.) Fruits at three Maturation Stages and Optimization of HS-SPME GC-MS Method Using a Central Composite Design. *Food Analytical Methods*, 11(3), 733-749. ISSN: 1936-9751 IF:3.49 <https://doi.org/10.1007/s12161-017-1038-4>
 - 21) **Kumar P**; **Kim-K**; **Mehta PK**; Lisak, LG. (2019). Progress and challenges in electrochemical

sensing of volatile organic compounds using metal-organic frameworks. **Critical Reviews in Environmental Science and Technology** pp.1-33 ISSN: 1064-3389, IF: 12.2
<https://doi.org/10.1080/10643389.2019.1601489>

- 22) Debnath, N., Kumar, R., Kumar, A., **Mehta, P. K.**, & Yadav, A. K. (2021). Gut-microbiota derived bioactive metabolites and their functions in host physiology. *Biotechnology and Genetic Engineering Reviews*, 37, 105-153. IF: 4.37 ISSN: 0264-8725 <https://doi.org/10.1080/02648725.2021.1989847>
- 23) Singh R, Kim W Si, Kumari A and **Mehta P K**. An overview on microbial α -amylase and recent biotechnological developments. *Current Biotechnology* (2022). 11(1): 11-26. ISSN: 2211-5501. DOI: 10.2174/2211550111666220328141044
- 24) Kumar, A., Shahul, R., Singh, R., Kumar, S., Kumar, A., & **Mehta, P. K.** *Geobacillus thermoleovorans* MTCC 13131: An Amide-Hydrolyzing Thermophilic Bacterium Isolated from a Hot Spring of Manikaran. *Indian J Microbiol* 62, 618–626 (2022). <https://doi.org/10.1007/s12088-022-01042-9> ISSN: 0046-8991
- 25) Debnath, N., Yadav, P., **Mehta, P. K.**, Gupta, P., Kumar, D., Kumar, A., ... & Yadav, A. K. (2023). Designer probiotics: Opening the new horizon in diagnosis and prevention of human diseases. *Biotechnology and Bioengineering*. <https://doi.org/10.1002/bit.28574>
- 26) Peter, JK, Singh, R., Kothari, R., Kumar, A., & **Mehta, P. K.** (2023). Toxicity of nitriles/amides-based products in the environment and their enzymatic bioremediation. *Journal of Hazardous Materials Advances*

Total Citations	1365
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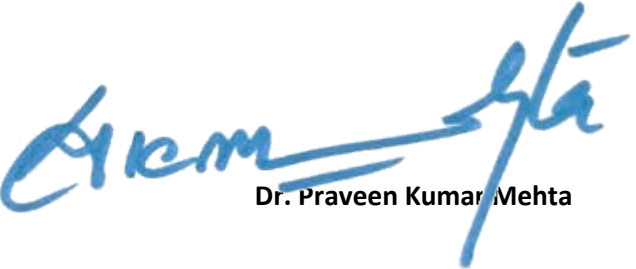
Book Chapter:

- ✓ Bhalla TC, **Mehta P K**, Bhatia SK, Thakur N and Pratish A (2012) *Microorganisms for Food and Feed*. In: *Food Biotechnology principle and practices*, IK International Publishing House, New Delhi. ISBN: 848 pp, ISBN: 9789381141496.
- ✓ **Mehta P K**, Yadav, A K and Kumar D (2018). *Secondary Metabolites from Microorganisms*. Nova Science Publisher Inc. February 2018 ISBN: 978-1-53613-186-4
- ✓ **Mehta P.K.**, Sehgal S. (2019) *Microbial Enzymes in Food Processing*. In: Husain Q., Ullah M. (eds) *Biocatalysis*. Springer, Cham. DOI: https://doi.org/10.1007/978-3-030-25023-2_13
ISBN: 978-3-030-25022-5, 04 September 2019
- ✓ Arun K, Kumar A, Kumar R, **Mehta P.K.**, *Microbial Biomarkers Based Sensors for Detection of Environmental Pollution*. In: *Biomarkers in Environmental and Human Health Biomonitoring*. Elsevier Inc.

Oral and Poster presentation

- ✓ **Mehta PK**, Bhatia SK, Bhatia RK, Kumar V and Bhalla T C (2014) "Amidase of *Geobacillus subterraneus* RL-2a MTCC 11502: A potential biocatalyst for synthesis of nicotinic acid". In: **XXIV Congress and Brazilian Science and Food Technology (xxiv CBCTA), 25-29 Sep. Centre for Sergipe conventions, Aracaju, Brazil.**
- ✓ Bhalla TC, **Mehta PK**, Sharma NN and Bhatia SK (2009) Production of isonicotinic acid using agar entrapped whole cells of *Nocardia globerula* NHB-2. In: **XVII International Conference on Bioencapsulation, 24-26 Sept. Groningen, Netherland.**

- ✓ Gihaz S, Weiser D, Poppe L, **Mehta PK** and Fishman A (2015) Immobilization of a methanol-stable lipase in a ternary sol-gel system for biodiesel production. In: **3rd Conference of Israel Society for Biotechnology Engineering (ISBE), December 13, 2015, Tel Aviv, Israel.**
 - ✓ **Mehta PK**, Bhatia SK, Bhatia RK, Kumar V and Bhalla T C (2011) Thermostable amidase from *Geobacillus* sp. RL-2A: isolation and screening. In: **52nd annual conference of Association of Microbiologist of India on internal conference on microbial biotechnology for sustainable development. 3-6 Nov. Chandigarh, India.**
 - ✓ **Mehta PK**, Bhatia SK, Bhatia RK, Kumar V and Bhalla TC. Optimization of production conditions for biosynthesis of nicotinic acid from nicotinamide using resting cells of thermostable *Geobacillus* sp. RL-2a. **Poster presented in International conference on Advances in Biological Sciences (ICABS-2012) March 15-17, 2012.** Department of Biotechnology and Microbiology, Kannur, Kerala, India.
 - ✓ **Mehta P K.** Analysis of volatile components of Jenipapo (*Genipa americana* L.) fruits using HS-SPME/GC-MS. **Oral presentation in Industry-Academia Meet on Opportunities and Challenges in Fermentation Based Industrial Processes (IAMF-2018) September 13-14, 2018.** CSIR-IIIM, Jammu, India.
 - ✓ **Mehta P K.** Engineering *Geobacillus stearothermophilus* lipase T6 for improved stability in methanol by directed evolution using B-Fit model. Oral presentation conference on Science and Technology: **Emerging trends and innovation in 12th JK Science Congress March 2-4, 2017** Organised by University of Jammu. India
 - ✓ **Mehta P K.** Volatile Constituents of Jenipapo (*Genipa americana* L.) fruits at three maturation stages and optimization of HS-SPME GC-MS method using a central composite design. **Oral presentation in International conference (ICBN-2-18) on Bio and Nano technologies for sustainable agriculture food health energy and industry 21 – 23rd march 2018** organized by department of Bio and Nano technology Hisar, India.
 - ✓ **Mehta PK.** Solid-phase microextraction for human biomonitoring and trace element speciation: methodological aspects and applications. **Invited Talk in Winter School-2023, Hands on Training on Instrumentation and Analytical Techniques for Atmospheric Aerosol Measurements and Source Apportionment Studies 20- 25 February, 2023** jointly organized by Department of Environmental Sciences, Central university of Jammu and Indian National Young Academy Of Science (INAYAS).
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