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Research Summary

The primary research focus is the metagenomic characterization of the diverse microbiome (like human gut microbiota, lung microbiota, skin microbiota, soil microbes, etc.) for their Native community structure, Physiological functions (biocatalytic potential), Survival strategies under abiotic stress (Salt, antibiotic, metal & metalloids, etc.), colonization factors (commensalism), Host microbial interactions (in diseases and healthy conditions), etc. In this direction, we have established an association between the human microbiome and the onset of celiac disease (CD) and chronic obstructive pulmonary disease (COPD). Using a comparative genomics approach, we explored the differential genetic elements imparting commensalism to human gut microbes. We recently established a correlation of microbial enterotypes with Ayurvedic host phenotype (Prakarti) in diverse human populations using the Ayurgenomics approach. Additionally, we have explored an association between microbial community dynamics and the onset of metabolic disorders to define microbial markers associated with the start of these diseases. These catalogs of microbial markers could be harnessed as therapeutic and diagnostic targets to treat infections. Simultaneously, we are trying to establish a link between Host & microbial genetics, nutrients, and physiological factors to understand the establishment and maturation of the host microbiome.

❖ *Education*

Degree	Year	Institute	
Bachelor of Science	2002	Dronacharya Govt. College, Gurugram, Haryana	<i>First Division</i>
Master of Science (Biochemistry)	2004	Maharshi Dayanand University, Rohtak	<i>Gold Medal</i>
Masters in Business administration (HR)	2012	IASE Deemed University, Rajasthan	<i>First Division</i>
PhD	2010	CSIR- Institute of Genomics and Integrative Biology, Delhi (Research Institute) & SV Pune University Pune	

❖ Work History

Work Duration	Work profile	Organization
2008-2010	Senior Application Scientist	Roche Applied Sciences, Mumbai, India
2010- March 2022	Assistant Professor	Maharshi Dayanand University Rohtak, Haryana,
March 2022- To date	Associate Professor	Maharshi Dayanand University Rohtak, Haryana,

❖ Research Focus

- ✚ Host -Microbe interactions
- ✚ Microbial System Biology
- ✚ Environmental Metagenomics
- ✚ Microbiome Therapeutics
- ✚ Material Science

❖ Research Profile

1. **Scopus Author Profile: H Index: 31,**

(<https://www.scopus.com/authid/detail.uri?authorId=36933325900>)

2. **Frontiers Loop Profile:**

<https://loop.frontiersin.org/people/312445/overview>

A. Research Publications

Year 2024	
1	Sharma P, Pandey R and Chauhan NS (2024) Biofertilizer and biocontrol properties of <i>Stenotrophomonas maltophilia</i> BCM emphasize its potential application for sustainable agriculture. <i>Frontiers in Plant Science</i> 15:1364807. doi: 10.3389/fpls.2024.1364807
2	Monika Yadav, Nar Singh Chauhan , Role of gut microbiota in disease severity and clinical outcomes, <i>Briefings in Functional Genomics</i> , Volume 23, Issue 1, January 2024, Pages 24–37, https://doi.org/10.1093/bfgp/elac037
3	Singh A., Midha V., Chauhan N.S. , Sood A. (2024) Current perspectives on fecal microbiota transplantation in inflammatory bowel disease. <i>Indian Journal of Gastroenterology</i> , 43(1),129-144.10.1007/s12664-023-01516-8
4	Rasgania J., Gavadia R., Sahu N., Sharma P., Chauhan N.S. , Saharan V., Kapoor R.K., Jakhar K. (2024) Design, synthesis, and exploration of novel triazinoindoles as potent quorum-sensing inhibitors and radical quenchers. <i>Future Medicinal Chemistry</i> ,16 (5), 399-416.
5	Debankona Marik, Pinki Sharma, Nar Singh Chauhan , Neelam Jangir, Rajveer Singh Shekhawat, Devanshu Verma, Manasi Mukherjee, Moses Abiala, Chandan Roy, Pankaj Yadav, Ayan Sadhukhan, <i>Peribacillus frigoritolerans</i> T7-IITJ, a potential biofertilizer, induces plant growth-promoting genes of <i>Arabidopsis thaliana</i> , <i>Journal of Applied Microbiology</i> , 2024;, 1xae066, https://doi.org/10.1093/jambio/1xae066
6	Ravi V, Shamim U, Khan MA, Swaminathan A, Mishra P, Singh R, Bharali P, Chauhan NS

2 | Academic profile (Dr. Narsingh Chauhan, Department of Biochemistry, MDU Rohtak)

	and Pandey R (2024) Unraveling the genetic evolution of SARS-CoV-2 Recombinants using mutational dynamics across the different lineages. <i>Frontiers in Medicine</i> 10:1294699. doi: 10.3389/fmed.2023.1294699
Year 2023	
8	Yadav M, Kumar T, Maurya R, Pandey R and Chauhan NS (2023) Characterization of <i>Cellulomonas sp.</i> HM71 as potential probiotic strain for human health. <i>Frontiers in Cellular and Infection Microbiology</i> 12:1082674. doi: 10.3389/fcimb.2022.1082674
9	Sharma P., Chauhan N.S. (2023) Sources of endogenous biostimulants, Biostimulants in Alleviation of Metal Toxicity in Plants: Emerging Trends and Opportunities, pp 51-73. 10.1016/B978-0-323-99600-6.00015-3
10	Monika Yadav, Nar Singh Chauhan (2023) Wastewater surveillance: a quick guide to check community health in Genomic Surveillance and Pandemic Preparedness, Academic Press, Pages 187-224, ISBN 9780443187698. https://doi.org/10.1016/B978-0-443-18769-8.00012-X .
11	Deepa, Punam Kundu, Gopal Kalwan, Ritu Gill, Nar Singh Chauhan , Sarvajeet Singh Gill (2023) Effects of nanoparticles on the plant growth under salinity stress conditions, In Nanomaterial-Plant Interactions, The Impact of Nanoparticles on Agriculture and Soil, Academic Press, Pages 239-257, ISBN 9780323917032, https://doi.org/10.1016/B978-0-323-91703-2.00014-2 .
12	Deepa, Ashima Nehra, Gopal Kalwan, Ritu Gill, Nar Singh Chauhan , Sarvajeet Singh Gill (2023) Impact of nanoparticles on agriculture and soil: an introduction, In Nanomaterial-Plant Interactions, The Impact of Nanoparticles on Agriculture and Soil, Academic Press, Pages 1-12, ISBN 9780323917032, https://doi.org/10.1016/B978-0-323-91703-2.00013-0 .
13	Pinki Sharma, Nar Singh Chauhan (2023) Economic aspect of nanomaterial-based agriculture solutions, In Nanomaterial-Plant Interactions, The Impact of Nanoparticles on Agriculture and Soil, Academic Press., Pages 363-383, ISBN 9780323917032, https://doi.org/10.1016/B978-0-323-91703-2.00016-6 .
14	Pinki Sharma, Nar Singh Chauhan (2023) Effect on nanoparticles on plant cell morphology, physiology, and metabolism, In Nanomaterial-Plant Interactions, The Impact of Nanoparticles on Agriculture and Soil, Academic Press, Pages 95-113, ISBN 9780323917032, https://doi.org/10.1016/B978-0-323-91703-2.00004-X
15	Nar Singh Chauhan (2023) Personalized nutrition, personalized medicine, and microbiome therapeutics, <i>Microbiome Therapeutics</i> , Academic Press, Pages 387-399, ISBN 9780323993364, https://doi.org/10.1016/B978-0-323-99336-4.00017-3 .
16	Shankar Sharma, Pinki Sharma, Anuj Mittal, Anuradha Sharma, David E. Motaung, Nar Singh Chauhan , Naveen Kumar (2023) Development of TiO ₂ /Bi ₂ O ₃ /PANI as a novel glucose biosensor and antimicrobial agent, <i>Inorganic Chemistry Communications</i> , Volume 155, 110994, ISSN 1387-7003, https://doi.org/10.1016/j.inoche.2023.110994 .
17	Nar Singh Chauhan (2023) The impact of nanoparticles in agriculture and soil: conclusion and future recommendations, In Nanomaterial-Plant Interactions, The Impact of Nanoparticles on Agriculture and Soil, Academic Press, Pages 403-408, ISBN 9780323917032, https://doi.org/10.1016/B978-0-323-91703-2.00005-1 .
18	Monika Yadav, Pinki Sharma, Nar Singh Chauhan (2023) Metal oxide-based heterostructures

	for antimicrobial activity, In Metal Oxides, Metal Oxide-Based Heterostructures, Elsevier, Pages 535-570, ISBN 9780323852418, https://doi.org/10.1016/B978-0-323-85241-8.00008-6 .
Year 2022	
19	Chauhan NS , Mukerji M and Gupta S (2022) Role of microbiome in diseases diagnostics and therapeutics. <i>Frontiers in Cellular and Infection Microbiology</i> . 12:1025837. doi: 10.3389/fcimb.2022.1025837
20	Yadav M, Kumar T, Kanakan A, Maurya R, Pandey R, Chauhan NS . Isolation and Characterization of Human Intestinal Bacteria <i>Cytobacillus oceanisediminis</i> NB2 for Probiotic Potential. Frontiers in Microbiology , 2022 Jul 13;13:932795. doi: 10.3389/fmicb.2022.932795.
21	Yadav M, Chauhan NS . Microbiome therapeutics: exploring the present scenario and challenges. Gastroenterol Rep (Oxf) . 2022 Nov 15;10:goab046. doi: 10.1093/gastro/goab046.
22	Chauhan NS , Joseph N, Shaligram S, Chavan N, Joshi A, Dhotre D, Lodha T, Shouche Y. <i>Paenibacillus oleatilyticus</i> sp. nov., isolated from soil. Arch Microbiol . 2022 Jul 22;204(8):516. doi: 10.1007/s00203-022-03116-0.
23	Saifi S, Ravi V, Sharma S, Swaminathan A, Chauhan NS , Pandey R. SARS-CoV-2 VOCs, Mutational diversity and clinical outcome: Are they modulating drug efficacy by altered binding strength? <i>Genomics</i> . 2022 Aug 27;114(5):110466. doi: 10.1016/j.ygeno.2022.110466.
24	Mehta P, Ravi V, Devi P, Maurya R, Parveen S, Mishra P, Yadav A, Swaminathan A, Saifi S, Khare K, Chattopadhyay P, Yadav M, Chauhan NS , Tarai B, Budhiraja S, Shamim U, Pandey R., Mutational dynamics across VOCs in International travellers and Community transmission underscores importance of Spike-ACE2 interaction. <i>Microbiol Res</i> . 2022 Sep;262:127099. doi: 10.1016/j.micres.2022.127099
25	Sharma, S., Kumar, N., Makgwane, P.R., Chauhan, N.S. , Kumari, K., Rani, M., Maken, S. (2022) TiO ₂ /SnO ₂ nano-composite: New insights in synthetic, structural, optical and photocatalytic aspects, <i>Inorganica Chimica Acta</i> , 529:120640, ISSN 0020-1693. https://doi.org/10.1016/j.ica.2021.120640 .
26	Sharma S., Mittal A., Chauhan N.S. , Saini S., Yadav J., Kushwaha M., Chakraborty R., Sengupta S., Kumari K., Kumar N. (2022) Mechanistic investigation of RhB photodegradation under low power visible LEDs using a Pd-modified TiO ₂ /Bi ₂ O ₃ photocatalyst: Experimental and DFT studies. <i>Journal of Physics and Chemistry of Solids</i> , 162, 110510. 10.1016/j.jpics.2021.110510
27	Shankar Sharma, Anuradha Sharma, Nar Singh Chauhan , Muhammad Tahir, Kavitha Kumari, Anuj Mittal, Naveen Kumar. (2022) TiO ₂ /Bi ₂ O ₃ /PANI nanocomposite materials for enhanced photocatalytic decontamination of organic pollutants, <i>Inorganic Chemistry Communications</i> , Volume 146, 110093. https://doi.org/10.1016/j.inoche.2022.110093 .
28	Kumar T., Chauhan NS . (2022), Microbiome therapeutics: a path toward sustainable healthcare, Reference Module in Food Science, Elsevier, https://doi.org/10.1016/B978-0-12-819265-8.00010-3 . & Chauhan NS (Editor) Microbiome, therapeutics application and epigenetics, Elsevier, Academic Press, USA, ISBN 9780081005965,
29	Monika Yadav, Nar Singh Chauhan , Bhavana Prasher, Mitali Mukerji (2022) Dissecting Human Microbiome for Personalized Therapy, Editor: Maria Glibetic, <i>Comprehensive Gut Microbiota</i> , Elsevier, USA, Pages 274-285, ISBN 9780128220368, https://doi.org/10.1016/B978-0-12-819265-8.00024-3 .

30	Monika Yadav, Nar Singh Chauhan (2022) Spatial distribution of arsenic species in soil ecosystem and their effect on plant physiology, in HAZARDOUS AND TRACE MATERIALS IN SOIL AND PLANTS: SOURCES, EFFECTS AND MANAGEMENT" Elsevier, Inc., USA.
31	Chauhan NS (2021) Lung Microbiome in Human Health and Diseases in Reference Module in Food Science, Elsevier, 2021, ISBN 9780081005965, https://doi.org/10.1016/B978-0-12-819265-8.00077-2
32	Chauhan NS (2022) Microbiome, therapeutics application and epigenetics: Conclusion and Future Perspective, Reference Module in Food Science, Elsevier, https://doi.org/10.1016/B978-0-12-819265-8.00025-5
Year 2021	
33	Yadav M, Lomash A, Kapoor S, Pandey R, Chauhan NS . (2021) Mapping of the benzoate metabolism by human gut microbiome indicates food-derived metagenome evolution. Scientific Reports (Nature). 2021 Mar 10;11(1):5561. doi: 10.1038/s41598-021-84964-6.
34	Mehta P, Yadav M, Ahmed V, Goyal K, Pandey R and Chauhan NS (2021) Culture-Independent Exploration of the Hypersaline Ecosystem Indicates the Environment-Specific Microbiome Evolution. Front. Microbiol. 12:686549. doi: 10.3389/fmicb.2021.686549
35	Gupta, S., Shariff, M., Chaturvedi, G., Sharma A., Goel N., Yadav M., Mortensen MS., Sørensen SJ., Mukerji M. & Chauhan NS (2021) Comparative analysis of the alveolar microbiome in COPD, ECOPD, Sarcoidosis, and ILD patients to identify respiratory illnesses specific microbial signatures. Sci Rep 11, 3963 (2021). https://doi.org/10.1038/s41598-021-83524-2
36	Sharma,P., Kumar, T., Yadav, M., Gill, SS., Chauhan, NS. (2021)Plant-microbe interactions for the sustainable agriculture and food security. Plant Gene, 28: 100325, 2021, ISSN 2352- 4073. https://doi.org/10.1016/j.plgene.2021.100325 .
37	Sharma,S., Mittal, A., Chauhan, NS. , Makgwane, PR., Kumari,K., Maken,S., Kumar,N.(2021) Developments in visible-light active TiO ₂ /SnX (X = S and Se) and their environmental photocatalytic applications – A mini-review. Inorganic Chemistry Communications, 133, 108874. https://doi.org/10.1016/j.inoche.2021.108874
38	Kumar, N., Chauhan, N.S. (2021) Nano-Biocatalysts: Potential Biotechnological Applications. Indian J Microbiol 61, 441–448 (2021). https://doi.org/10.1007/s12088-021-00975-x
39	Naveen Kumar, Anuj Mittal, Monika Yadav, Shankar Sharma, Tarun Kumar, Rahul Chakraborty, Shantanu Sengupta & Nar Singh Chauhan . (2021) Photocatalytic TiO ₂ /CdS/ZnS nanocomposite induces <i>Bacillus subtilis</i> cell death by disrupting its metabolism and membrane integrity. Indian J Microbiol 61, 487–496 (2021). https://doi.org/10.1007/s12088-021-00973-z
40	S Sharma, N Kumar, B Mari, NS Chauhan , A Mittal, S Maken, K Kumari. Solution combustion synthesized TiO ₂ /Bi ₂ O ₃ /CuO nano-composites and their photocatalytic activity using visible LEDs assisted photoreactor, Inorganic Chemistry Communications (2021), 125, 108418. https://doi.org/10.1016/j.inoche.2020.108418
41	Yadav M, Chauhan NS . (2021) Overview of the rules of microbial engagement in the gut microbiome: a step towards microbiome therapeutics. J Appl Microbiol. 2021 May;130(5):1425-1441. doi: 10.1111/jam.14883. Epub 2020 Oct 20. PMID: 33022786.
Year 2020	
42	Yadav M, Pandey R, Chauhan NS . (2020) Catabolic Machinery of the Human Gut Microbes Bestow Resilience Against Vanillin Antimicrobial Nature. Frontiers in Microbiology,. 2020 Oct

	16;11:588545. doi: 10.3389/fmicb.2020.588545.
43	Kumar T, Pandey R and Chauhan NS , (2020) Hypoxia Inducible Factor-1 α : The Curator of Gut Homeostasis. <i>Frontiers in Cellular and Infection Microbiology</i> , 2020, 10, 227. doi: 10.3389/fcimb.2020.0022
44	Singh UP, Singh S, Kumar R, Chauhan NS , Kumar A, (2020) Effects of allelochemicals from leachates of larvae of <i>Leucinodes orbonalis</i> Guenee and leaves of Brinjal, Chilli and Tomato on the foraging behaviour potential of Trichogrammatids. <i>Allelopathy Journal.</i> , 2020, 50 (2), 195-212. DOI: 10.26651/ALLELO.J/2020-50-2-1284
45	Yadav, S., Mittal, A., Sharma, S., Kumari, K., Chauhan, NS. , Kumar, N. (2020) Low temperature synthesized ZnO/Al ₂ O ₃ nano-composites for photocatalytic and antibacterial applications, <i>Semiconductor Science and Technology</i> 35(5):055008. Print ISSN: 0268- 1242
46	Sharma P., Monika, Goyal K., Kumar T., Chauhan N.S. (2020) Inimical Effects of Arsenic on the Plant Physiology and Possible Biotechnological Solutions to Mitigate Arsenic-Induced Toxicity. In: Naeem M., Ansari A., Gill S. (eds) <i>Contaminants in Agriculture</i> . Springer, Cham. ISBN-9783030415549, https://doi.org/10.1007/978-3-030-41552-5_20
47	Chauhan NS. , Yadav M., Tarun Kumar T., Sharma P., Goyal K., (2020) RNA beyond humans in Pandey R (Editor) <i>RNA-Based Regulation in Human Health and Disease</i> , Elsevier, Academic Press, USA, ISBN: 9780128171936
48	Mittal, A., Sharma, S., Kumar, T., Chauhan NS. , Kumari K., Maken S., Kumar N., Surfactant-assisted hydrothermally synthesized novel TiO ₂ /SnS@Pd nano-composite: structural, morphological and photocatalytic activity. <i>J Mater Sci: Mater Electron</i> 31, 2010–2021 (2020). https://doi.org/10.1007/s10854-019-02720-z , ISSN 0957-4522
49	G Kumar, E Lathwal, B Saroha, S Kumar, S Kumar, NS Chauhan , T Kumar Synthesis and Biological Evaluation of Quinoline-Based Novel Aurones. <i>Chemistry Select</i> 5 (12), 3539-3543 (2020). Online ISSN:2365-6549
Year 2019	
51	Mittal A, Sharma S, Kumari V, Yadav S, Chauhan NS , Kumar N. Highly efficient, visible active TiO ₂ /CdS/ZnS photocatalyst, study of activity in an ultra low energy consumption LED based photo reactor. <i>J Mater Sci: Mater Electron</i> 30, 17933–17946 (2019). https://doi.org/10.1007/s10854-019-02147-6
52	NS Chauhan (2019), <i>Metagenome analysis and interpretation in The Data Processing Handbook for Complex Biological Data Sources</i> Gauri Misra (Editor) Elsevier, Academic Press, USA, Elsevier, Academic Press, USA, ISBN: 9780128165485, pp. 139
53	Khushboo Goyal, Tarun Kumar, Pinki Sharma, Monika Rao, Vasim Ahmed, and Nar Singh Chauhan (2019) <i>Crop Improvement Through Microbial Biotechnology: A Cross- Talk in Salt Stress, Microbes, and Plant Interactions: Mechanisms and Molecular Approaches</i> , Mohd Sayeed Akhtar (Editor), Springer Nature, ISBN: 9789811388040, pp. 139.
54	Nar Singh Chauhan , 2019, <i>Human and Microbes in health and Diseases, in Role of Microbes in Human Health and Diseases</i> “ Chauhan NS (Editor) Intech Open, London, UK, ISBN 978183880233
55	Mittal A, Kumar N, Chauhan NS. (2019) Curcumin Encapsulated PEGylated Nanoliposomes: A Potential Anti-Infective Therapeutic Agent. <i>Indian Journal of Microbiology</i> , 59: 336– 343 (2019). https://doi.org/10.1007/s12088-019-00811-3
Year 2018	
56	Ahmed V, Verma MK, Gupta S, Mandhan V and Chauhan NS (2018) Metagenomic Profiling of Soil Microbes to Mine Salt Stress Tolerance Genes. <i>Front. Microbiol.</i> 9:159. doi: 10.3389/fmicb.2018.00159

57	Chauhan NS , Pandey R, Mondal AK, Gupta S, Verma MK, Jain S, Ahmed V, Patil R, Agarwal D, Girase B, Shrivastava A, Mobeen F, Sharma V, Srivastava TP, Juvekar SK, Prasher B, Mukerji M and Dash D (2018) Western Indian Rural Gut Microbial Diversity in Extreme Prakriti Endo-Phenotypes Reveals Signature Microbes. <i>Front. Microbiol.</i> 9:118. doi: 10.3389/fmicb.2018.00118
58	Verma, M.K., Ahmed, V., Gupta, S., Kumah J., Pandey, R., Mandhan, V., Chauhan, N.S. (2018) Functional metagenomics identifies novel genes <i>ABCTPP</i> , <i>TMSRP1</i> and <i>TLSRP1</i> among human gut enterotypes. <i>Sci Rep</i> 8 , 1397 https://doi.org/10.1038/s41598-018-19862-5
59	Kundu P, Gill R, Ahlawat S, Anjum NA, Sharma KK, Ansari AA, Hasanuzzaman M, Ramakrishna A, Chauhan N , Tuteja N, Gill SS (2018) Targeting the Redox Regulatory Mechanisms for Abiotic Stress Tolerance in Crops In: <i>Biochemical, Physiological and Molecular Avenues for Combating Abiotic Stress Tolerance in Plants</i> , Wani SH (Editor), Elsevier, Academic Press, USA, ISBN: 9780128130667.
60	Kumar N, Chauhan NS , Mittal A, Sharma S. (2018) TiO ₂ and its composites as promising biomaterials: a review. <i>Biometals</i> 31 , 147–159 (2018). https://doi.org/10.1007/s10534-018-0078-6
61	Kumar, J., Verma, M.K., Kumar, T. Pandey R, Chauhan NS , (2018) S9A Serine Protease Engender Antigenic Gluten Catabolic Competence to the Human Gut Microbe. <i>Indian J Microbiol</i> 58 , 294–300 (2018). https://doi.org/10.1007/s12088-018-0732-2
62	Yadav, M., Verma, M.K. & Chauhan, N.S. (2018) A review of metabolic potential of human gut microbiome in human nutrition <i>Archives in Microbiology.</i> 200(2):203-217. doi: 10.1007/s00203-017-1459-x. Epub 2017 Nov 29.
Year 2017	
63	Mondal AK, Kumar J, Pandey R, Gupta S, Kumar M, Bansal G, Mukerji M, Dash D and Chauhan NS (2017) Comparative Genomics of Host–Symbiont and Free-Living <i>Oceanobacillus</i> Species, <i>Genome Biology and Evolution</i> , 9, 1175–1182, https://doi.org/10.1093/gbe/evx076
64	Kumar, J., Kumar, M., Gupta, S., Ahmed, V., Bhambi, M., Pandey, R., Chauhan, N.S. (2016). An Improved Methodology to Overcome Key Issues Associated with the Methods of Human Fecal Metagenomic DNA Extraction. <i>Genomics Proteomics and Bioinformatics</i> , 14 (2016), 371–378. https://doi.org/10.1016/j.gpb.2016.06.002 .
65	S. Gupta, M. Kumar, J. Kumar, V. Ahmad, R. Pandey & N. S. Chauhan (2017) Systemic analysis of soil microbiome deciphers anthropogenic influence on soil ecology and ecosystem functioning. <i>International Journal of Environmental Science and Technology.</i> (2017) 14: 2229. https://doi.org/10.1007/s13762-017-1301-7 .
66	Kumar, J., Kumar, M., Pandey, R. and Chauhan, N.S. (2017), Physiopathology and Management of Gluten-Induced Celiac Disease. <i>Journal of Food Science</i> , 82: 270-277. doi: 10.1111/1750-3841.13612
67	Chauhan, N.S. , Nain, S. & Sharma, R. Identification of Arsenic Resistance Genes from Marine Sediment Metagenome. <i>Indian J Microbiol</i> 57, 299–306 (2017). https://doi.org/10.1007/s12088-017-0658-0
68	Monika, Manoj Kumar Verma, Vasim Ahmed and Nar Singh Chauhan (2017), Human Gut Microbiome: an Imperative Element for Human Survival. <i>Curr Trends Biomedical Eng & Biosci</i> , Volume 6 Issue 1 - July 2017; DOI: 10.19080/CTBEB.2017.06.555680

Year 2016-2008	
69	Vasim A, Kumar J, Kumar M, Chauhan MB, Dahiya P and Chauhan NS (2015). Functionalized iron nanoparticle-penicillin G conjugates: a novel strategy to combat the rapid emergence of β -lactamase resistance among infectious microorganism. <i>Journal of Experimental Nanoscience</i> 10(9): 718-728.
70	Kumar M, Kumar J, and Chauhan NS (2015). Metagenomics: A Systemic Approach To Explore The Microbial World. In: <i>Microbial Factories: Biodiversity, Biopolymers, Bioactive molecules</i> . V. C. Kalia Eds. Springer-Heidelberg, pp 281-298.
71	Kumar J, Kumar M and Chauhan NS . (2015) <i>Oceanobacillus sp</i> HM6, a novel glutenase positive microbe isolated from human gut, <i>Journal of Biotechnology and Biomaterial</i> 5(6) pp 309.
72	Vasim A, Kumar M, Kumar J, Chauhan MB and Chauhan NS (2014). Nanogold/Polyaniline/Penicillin G Nanoconjugates: A Novel Nanomedicine. <i>International Journal of Polymeric Materials</i> 63: 87-92.
73	Vasim A, Kumar J, Kumar M, Chauhan MB and Chauhan NS (2014). Silver nanoparticles encapsulated polyacrylamide nanospheres: an efficient DNA binding nanomatrix. <i>International Journal of Polymeric Materials</i> 63: 1-5.
74	Vasim A, Kumar J, Kumar M, Chauhan MB, Vij M, Ganguli M and Chauhan NS (2013). Synthesis, Characterization of Penicillin G Capped Silver Nanoconjugates To Combat β -Lactamase Resistance In Infectious Microorganism. <i>Journal of Biotechnology</i> 163: 419- 424.
75	Kumar R, Wani SI, Chauhan NS , Sharma R, Sareen D (2011) Cloning and characterization of an epoxide hydrolase from <i>Cupriavidus metallidurans</i> -CH34, <i>Protein Expression and Purification</i> 79(1):49-59. doi: 10.1016/j.pep.2011.04. 007.
76	Gupta HK, Gupta RD, Singh A, Chauhan NS , Sharma R. (2011) Genome sequence of <i>Rheinheimera sp.</i> strain A13L, isolated from Pangong Lake, India, <i>Journal of Bacteriology</i> ;193(20):5873-4. doi: 10.1128/JB.05636-11. Epub 2011 Jul 8.
77	Ajit Singh, Nar Singh Chauhan , H.V. Thulasiram, Vibha Taneja, Rakesh Sharma (2010) Identification of two flavin monooxygenases from an effluent treatment plant sludge metagenomic library, <i>Bioresource Technology</i> , Volume 101, Issue 21, Pages 8481-8484, ISSN 0960-8524, https://doi.org/10.1016/j.biortech.2010.06.025 .
78	Chauhan NS , Ranjan R, Purohit HJ, Kalia VC, Sharma R (2009) Identification of genes conferring arsenic resistance to <i>Escherichia coli</i> from an effluent treatment plant sludge metagenomic library, <i>FEMS Microbiology Ecology</i> 67(1) 2009,130-9
79	C.S. Pundir, Manu Bhambi and Nar Singh Chauhan (2009) Chemical activation of egg shell membrane for covalent immobilization of enzymes and its evaluation as inert support in urinary oxalate determination, <i>Talanta</i> 77 1688-1693.
80	C.S. Pundir, N S. Chauhan , M. Bhambi (2008) Activation of polyvinyl chloride sheet surface for covalent immobilization of oxalate oxidase and its evaluation as inert support in urinary oxalate determination. <i>Analytical Biochemistry</i> 374, 272-277.

(B) Research Projects

1. Correlation of Microbial Enterotypes and Prakriti in diverse populations using Metagenomic approach. Project cost: (19.15372 lakhs), funded by CSIR Ayurgenomics Unit: TRISUTRA (2012-2016). Status: Completed.
2. Synthesis, Characterization of Nanocurcumin and its medicinal applications. Project cost: (22.79631 lakhs), funded by Department of Biotechnology, Govt of India, (2012-2015). Status: Completed.

3. Metagenomic analysis of the Human Gut Microbiome and elucidation of genes involved in the catabolism of wheat dietary proteins. Project cost: (9.48288 lakhs), funded by University Grants Commission New Delhi (2012- 2015). Status: Completed.
4. Functional Metagenomics to Mine the Human Gut Microbiome for Dietary Fiber, Gluten, and Polyphenol Catabolic Enzymes. Project cost: (43.19851lakhs), funded by CSIR, New Delhi (2012-2015). Status: Completed
5. Microbiome of the human lung in COPD patients attending Vallabh Bhai Patel Chest Institute, Delhi. Project cost: (27.4 lakhs), funded by the Department of Biotechnology, Govt. of India. (2015-2017). Status: Completed.
6. Bioactive molecules from Microbes and plant sources, Project cost: (Total Sanctioned grant to Scheme: 230.96572 lakhs, project sanction: 6.8 lac), funded by Department of Biotechnology, Govt. of India (2013-2018). Status: Completed
7. Water Security theme under Delhi Research Implementation and Innovation (DRIIV) Sanctioning agency: Principal Scientific Advisor, Govt of India, Duration: 3 years (2020- 2023); Total Grant Sanctioned: Rs. 11.41/- lakhs
8. Next Generation Genome Sequencing Laboratory, Sanctioning agency: Rockefeller Foundation USA & PATH, Total Grant:~1.2 Cr. Duration 3 months (2021)
9. Genomic Sequencing of SARS CoV2, Sanctioning agency: Health Department, Haryana Government, Total Grant:~1.3 Cr. Duration: 2021-2022
10. Microlab-based SARS Cov2 genome surveillance, Sanctioning agency: CSIR-IGIB and FIND,USA Total Grant:86Lakhs, Duration: (Jan 2022-June 2023).

(C) Patents

One Research patents were published on "IMPROVED IMMOBILIZED PROTEINS COMPOSITION AND ITS PROCESS THEREOF" Application No. 2394/DEL/2004, Publicationdate (U/S 11A): 08/09/2006.

(D) Books

1. **Nar Singh Chauhan** and Suneel Kumar (2023) Microbiome Therapeutics Personalized Therapy Beyond Conventional Approaches, Academic Press, USA, ISBN : 978-0-323-99336-4, <https://doi.org/10.1016/C2021-0-01533-9>
2. **Nar Singh Chauhan** and SS Gill (2023) The Impact of Nanoparticles on Agriculture and Soil, Academic Press, USA, ISBN: 978-0-323-91703-2, <https://doi.org/10.1016/C2021-0-00981-0>
3. **Chauhan NS**, Mukerji M and Gupta S (2022) Role of Microbiome in Disease Diagnostics and Therapeutics, Frontiers Media SA, Avenue du Tribunal-Fédéral 34, 1005 Lausanne,

Switzerland. ISBN 978-2-83250-190-0, DOI 10.3389/978-2-83250-190-0

4. **Nar Singh Chauhan (2022)** Microbiome, Therapeutics Application and Epigenetics, Comprehensive Gut Microbiota, Elsevier, USA, ISBN: 978-0-12-822036-8
5. **Nar Singh Chauhan (2019)** Role of Microbes in Human Health and Diseases, ISBN No. 978-1-83880-234-9, IntechOpen Limited, 5 Princes Gate Court, London, SW7 2QJ, UNITED KINGDOM, DOI: 10.5772/intechopen.76595

(E) Awards/Honours

1. Ranked within the Top 2% of Scientists -2022 (Ranked 86610 among all world researchers of various fields (Science, management, etc.) Published by Stanford University (October 2023 data-update for "Updated science-wide author databases of standardized citation indicators" - Elsevier BV (digitalcommonsdata.com)
2. Maharshi Dayanand University Research Appreciation Awards (2021 & 2022), Maharshi Dayanand University, Rohtak, Haryana -124001
3. Gold Medal with Certificate of Appreciation, Roche Diagnostics & Applied Sciences, 2009 at Pattaya, Thailand
4. First Prize at 3rd BRSI Convention & International Conference, 2006 at Vallabh Vidya Nagar, Gujrat
5. RS Rana Memorial Award in Annual Meeting of Microbiologists of India (AMI) 2005 at Osmania University, Hyderabad
6. University Gold Medal and Merit Certificate in Post Graduation (Biochemistry) 2004 at M. D. University Rohtak
7. Merit Certificate in Academics in Undergraduate (B.Sc. III (Medical) for Session 2001-2002
8. University Grant Commission/CSIR Research Fellowship, 2004-2008
9. Haryana State Government Silver Jubilee Fellowship (2002-2004)

(F) Invited Lectures

1. "**Overview of Genome sequencing**" at Department of Botany, MDU Rohtak on 20th October 2010.
2. "**Genome Sequencing: Applications & Future Perspective**" at the Department of Botany, MDU Rohtak on 20th October 2010.
3. "**Functional Metagenomics: Experimental Strategies**" in Human Microbiome Jamboree organized by CSIR - Institute of Genomics & Integrative Biology, Mall Road Delhi on 28th July 2012.
4. "**Importance of Next Generation Sequencing in Biology & Medicine**" in

National Symposium at PGIMER Chandigarh on 17th December 2012.

5. **"Sample preparation for Human Microbiome Research"** in National Workshop on Training in sample processing for Metagenomic analysis using stool samples organized by CSIR Ayurgenomics unit: TRISUTRA, CSIR IGIB, New Delhi on 23rd September 2013.

6. **"Real-Time PCR-Basics and Applications"** in National workshop on Real-Time PCR: Introduction and applications at Centre for Medial Biotechnology MDU on 18th September 2015.

7. **"Experimental Strategies for Human Microbiome analysis"** in National Workshop on Computational Analysis of Genomes, Transcriptome, and Metagenome at CSIR IGIB, New Delhi on 3rd March 2016.

8. **"Dissecting Human Microbiome for Personalized Therapy"** in Microbiome Matters: Data, Diet, and Treatment" workshop from September 29 to October 1, 2019, at the Shillim Hilton, Maharashtra.

9. **"Microbiome and its association with Prakriti"** Centre of Excellence (CoE) for Applied Development of Ayurveda Prakriti and Genomics during CME Training the trainers workshop on November 25th, 2019 at CSIR- IGIB, Mathura Road New Delhi

10. **Drug Abuse and Tuberculosis eradication from society** during a National Youth Day celebration 13th Jan. 2020 at Government College, Mahendergarh, Haryana.

11. **"Good Research practices for an effective outcome"** on 24th Jan 2020 during a Two-day induction program organized by the Chaudhry Ranbir Singh Institute of Social & Economic Change, MDU Rohtak.

12. **"Human Gut Microbiome profiling with culture-independent approaches"** on 5th Feb 2020 during National Seminar on Metagenomics and Genome Editing organized by the Department of Microbiology at Ram Lal Anand College, New Delhi 110021

13. **Research Metrics** on 7th Feb 2020 during one week workshop on research methodology in the Social Sciences: An Introductory Workshop, organized by the Chaudhry Ranbir Singh Institute of Social & Economic Change, MDU Rohtak.

14. **Dissecting Human Microbiome for Personalized Therapy** on 10th Feb 2020 during 4th VV Modi Memorial, National Seminar on Genomics and Metagenomics of Microbial Ecosystems organized by the Department of Microbiology at Maharaja Sayajirao University of Baroda, Vadodara 390002, Gujrat

15. **Research Metrics, Indicators of Research quality and performance** on 15th Jan 2021 during a 21-day National level Refresher course organized by FDC, MD University Rohtak

16. **Research In Higher Education** on 2nd March 2021 during one month national level induction programme (2nd March -31st March 2021) organized by organized by FDC, MD University Rohtak

17. **Governance and Accreditation in Higher Education System** on 11th March 2021 during one month national level induction programme (2nd March -31st March 2021) organized by organized by FDC, MD University Rohtak

(G) Paper Presentations:

International Conference /Symposia

1. "**Microbial diversity of white-hot spring mat: A Culture-independent analysis**" in International Conference on Microbial Diversity 2005 organized by the Department of Microbiology, University of Delhi South Campus Delhi 16th to 20th April 2005.
2. "**Metagenomic Elucidation of Arsenic Resistance mechanisms in unculturable bacteria**" in 3rd BRSI Convention & International Conference on Exploring Horizons in Biotechnology, A Global Avenue, BRD School of Bioscience at SP University from 2nd to 4th November 2006.
3. "**454 GS FLX Next-generation sequencing Technology**" in International Symposium on the Role of Genomics in Clinical Practice at the SGPGIMS, Lucknow during 6th to 8th March 2010.
4. "**Gene Mining for Human Gut Microbiome**" in 2013 Next Gen Genomics and Bioinformatics (NGBT) International Conference at CSIR -IGIB, NewDelhi from 14-16th November 2013.
5. "**Novel Halotolerance Genes from Human gut Microbiome**" in International Symposium on Frontier Discoveries and innovations in Microbiology and its Interdisciplinary Relevance (FDMIR-2013) organized by the Department of Microbiology, at MDU Rohtak from 17th to 20th November 2013.
6. "**Anthropogenic influence on Ecosystem functioning and native Soil Microbiome**" in International Conference on Emerging Areas of Environmental Science & Engineering (EAESE-2017) at GJU S&T, Hisar from 16th to 18th Feb 2016.
7. "**Metagenomic Profiling of Human Gut Microbiome Unveils Antigenic Gluten Catabolic Machinery**" in the International EMBO event Big Data in Biomedicine Organized by CSIR-IGIB & EMBO J, Germany during 25th to 28th Feb 201

National Conference / Symposia/ Workshops

8. "**Characterization of oxalate oxides purified from leaves of grain sorghum**" in

National Seminar on Role of Biochemistry in Modern-day agriculture held at CCS HAU Hisar on 24th Jan 2004.

9. **"Immobilization of Lipase onto untreated & acetylated muslin cloth affixed on the plastic strip"** in the 73rd Annual Meeting, Society of Biological Chemists (India) at GB Pant University, Pant Nagar during 21- 24 November 2004.
10. **"Novel genes for arsenic tolerance using a Metagenomic approach"** in the 46th Annual Conference, Micro Biotech 2005, Department of Microbiology, Osmania University, Hyderabad during 8th-10th December 2006.
11. **"Metagenomic Survey Of Hot Spring Microbial Mat"** in 48th Annual Conference AMI at IIT Madras, during 18th-21st December 2007.
12. **"Human Gut Metagenomics-A Culture Independent Insights of Gut Microbial Communities"** in National Conference on Biodiversity: Challenges and opportunities, at Department of Botany, MDU Rohtak, from 18th-19th Feb 2011.
13. **"Microbial Genomics: a potential tool for crop improvement"** in National Workshop on Genomics in Crop Improvement Organized by Centre for biotechnology, MDU Rohtak on 27th-28th Feb 2014.
14. **Comparative analysis of the Microbiome of garden soil sample and incinerator plant soil sample"** in National Conference cum Workshop on Molecular Modeling and Drug Design (MMDD 2015) at Bioinformatics Infrastructure facility, MDU, Rohtak during 20th -21st March 2015.
15. **"Human Gut Microbiome: Friend or Foe?"** in UGC Sponsored Refresher Course in Environmental Studies, ASC, Jamia Millia Islamia, New Delhi during 9th -30th May 2013.

All details provided in my resume are up to date and correct.

Dr Nar Singh Chauhan

Place: Rohtak