

CURRICULUM VITAE

**Dr. Amit Kumar
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Professional Experience

Degree	Board/University	Duration
Assistant Professor	Bhaskaracharya College of Applied Science, University of Delhi, Delhi	25-07-2019 to present
Assistant Professor	Daulatram College, University of Delhi	28-08-2018 to 25-05-2019
Assistant Professor	Gargi College, University of Delhi	1-01-2018 to 21-04-2018
Postdoctoral Research Associate	GB Pant University of Agriculture & Technology, Pantnagar	22-03-2017 to 13-06-2017
Senior Research Fellow	University of Delhi, Delhi	15-9-2016 to 14-12-2016

EDUCATIONAL QUALIFICATIONS

Degree	Board/University	Duration
Ph. D. (Department of Zoology)	University of Delhi	2010-2015
M.Sc. (Biotechnology)	Banaras Hindu University, Varanasi (Selected through Combined JNU Entrance)	2007-2009
B.Sc. (Life Science)	C.C.S.U. Meerut	2003-2006

Exams qualified: SERB-N-Pdf award 2016 October, DBT-JRF, UGC-JRF, ICMR-JRF and GATE in Biotechnology discipline with AIR 335. DBT fellowship after qualifying All India

Entrance Test for admission to M.Sc. Biotechnology through JNU entrance exam.

Ph.D. Thesis

Worked on whole genome sequencing of *Sphingobium quisquiliarum* P25^T a HCH degrading bacterium, Comparative analysis of sphingobium genomes and taxonomical characterization of bacterial strains isolated from HCH dumpsite.

M.Sc Dissertation: Dose-Dependent study of N-nitroso-N-methyl urea in the activation of inflammatory cytokines in mice spleen by using molecular techniques.

Research Interest

Comparative Genomics, Metagenomics, Human Microbiome related to disease individuals, Microbial diversity and Taxonomical characterization of bacterial strains from stressed environment.

SCIENTIFIC PUBLICATIONS

- **Singh, A. K., N. Sangwan, A. Sharma, V. Gupta, J. P. Khurana, and R. Lal.** 2013. Draft Genome Sequence of *Sphingobium quisquiliarum* Strain P25^T, a Novel Hexachlorocyclohexane (HCH)-Degrading Bacterium Isolated from an HCH Dumpsite. Genome Announc DOI:10.1128/genomeA.00717-13. **(IF Yet to be announced)**
- **Singh, A. K., N. Garg, N. Sangwan, V. Negi, R. Kumar, S. Vikram and R. Lal.** 2013. *Pontibacter ramchanderi* sp. nov., isolated from hexachlorocyclohexane (HCH) contaminated pond sediment. Int. J. Syst. Evol. Microbiol. **63**:2829-2834. **(IF 2.8)**
- **Singh, A. K., N. Garg, P. Lata, R. Kumar, V. Negi, S. Vikram, and R. Lal.** 2014. *Pontibacter indicus* sp. nov., isolated from hexachlorocyclohexane (HCH) contaminated soil. Int. J. Syst. Evol. Microbiol. **64**:254-259. **(IF 2.8)**
- Sangwan, N., P. Lata, V. Dwivedi, **A. K. Singh**, N. Niharika, J. Kaur, S. Anand, J. Malhotra, S. Jindal, A. Nigam, D. Lal, A. Dua, A. Saxena, N. Garg, M. Verma, J. Kaur, U. Mukherjee, J. A. Gilbert, S. E. Dowd, R. Raman, P. Khurana, J. P. Khurana and R. Lal. 2012. Comparative metagenomic analysis of soil microbial communities across three hexachlorocyclohexane contamination levels. PLoS One. 7:e46219. **(IF 3.53)**
- Anand, S., N. Sangwan, P. Lata, J. Kaur, A. Dua, **A. K. Singh**, M. Verma, J. Kaur, J. P. Khurana, P. Khurana, S. Mathur and R. Lal. 2012. Genome sequence of *Sphingobium indicum* B90A, a Hexachlorocyclohexane-Degrading bacterium. J. Bacteriol. 194:4471-4472. **(IF3.91)**

- Sangwan, N., P. Lata, **A. K. Singh** and R. Lal. 2012. Recruiting environmental genomes from metagenomes. *Indian J Microbiol.* 52: 109-110. **(IF 0.83)**
- Kumar, R., V. Dwivedi, N. Nayyar, H. Verma, **A. K. Singh**, P. Rani, D.L.N. Rao and R. Lal. 2014. *Parapedobacter indicus* sp. nov., isolated from Hexachlorocyclohexane (HCH) contaminated soil. *Int. J. Syst. Evol. Microbiol.* **65**:129-134. **(IF 2.8)**
- **Singh, A.K.**, N. Garg and R. Lal. 2015. *Pontibacter chinhatensis* sp. nov., isolated from pond sediment containing discarded waste of Hexachlorocyclohexane (HCH) isomers. *Int. J. Syst. Evol. Microbiol.***65**:2248-2254 **(IF 2.8)**
- Dwivedi, V., K. Kumari, S.K. Gupta, R. Kumari, C. Tripathi, P. Lata, N. Neharika, R. Kumar, **A.K. Singh**, A. Nigam, N. Garg and R. Lal. 2015. *Thermus parvatiensis* RL^T sp. nov., isolated from a hot spring, located atop the Himalyan ranges at Manikaran, India. *Indian J Microbiol.* **4**:357-365 **(IF 0.83)**
- Verma, H., P. Rani, **A.K. Singh**, R. Kumar, V. Dwivedi and R. Lal. 2015. *Sphingopyxisflava* sp. nov., isolated from an hexachlorocyclohexane (HCH) contaminated soil. *Int. J. Syst. Evol. Microbiol.* **65**:3720-3726 **(IF 2.8)**
- Mahato, N.K., C.Tripathi, N.Nayyar, **A.K Singh** and R. Lal. 2015. *Pontibacter ummariensis* sp. nov., isolated from hexachlorocyclohexane contaminated soil. *Int. J. Syst. Evol. Microbiol.* **66**: 1080-1087 **(IF 2.8)**
- Tripathi, C., N. K. Mahato, **A.K. Singh** and R. Lal. 2015 *Lampropedia cohaerens* sp. nov., a biofilm forming bacterium isolated from the microbial mats of a hot water spring, located atop the Himalayan ranges at Manikaran, India. *Int. J. Syst. Evol. Microbiol.* **66**:1156-1162 **(IF 2.8)**
- Garg, N., P. Lata, S. Jit, N. Sangwan, **A.K. Singh** et al. 2016. Laboratory and field scale bioremediation of hexachlorocyclohexane (HCH) contaminated soils by means of bioaugmentation and biostimulation. *Biodegradation.* 27: 179-193 **(IF 2.34)**
- Kohli, P., N. Nayyar, A. Sharma, **A.K. Singh** and R. Lal. 2016. *Algoriphagus roseus* sp. nov., isolated from a hexachlorocyclohexane contaminated dumpsite. *Int. J. Syst. Evol. Microbiol.* **66**:3558-3565 **(IF 2.8)**
- Kohli, P., N. Nayyar, A. Sharma, A.K. Singh and R. Lal. 2016. *Pontibacter virosus* sp. nov., isolated from a hexachlorocyclohexane contaminated dumpsite. *Int. J. Syst. Evol. Microbiol.* **66**: 4395–4400 **(IF 2.8)**
- **Singh, A.K.**, P. Kohli and R. Lal. 2017. *Paracoccus sordidisoli* sp. nov., isolated from an agricultural field contaminated with hexachlorocyclohexane isomers. *Int. J. Syst. Evol. Microbiol.* **67**:4365-4371
- Mahato, N. K., Gupta, V., Singh, P., Kumari, R., Verma, H. **Singh, A. K.** and R. Lal et al 2017. Microbial taxonomy in the era of OMICS: application of DNA sequences,

computational tools and techniques. *Antonie Van Leeuwenhoek*. **110**: 1357-1371 (IF 1.795)

- Ibeyaima, A., **A.K. Singh**, J. Rana, S. Gupta, S.K. Sharma, R. Lal and S.P. Indira. 2018. *Saccharothrix tharensis* sp. nov., an actinobacterium isolated from the Thar Desert, India. *Antonie Van Leeuwenhoek*. **111**:2141-2147. (IF 1.795)
- **Durgesh Narain Singh[#], Utkarsh Sood[#], Amit Kumar Singh[#]**, Vipin Gupta, Mallikarjun Shakarad, Charu Dogra Rawat and Rup Lal. **2019**. Genome Sequencing Revealed the Biotechnological Potential of an Obligate Thermophile *Geobacillus thermoleovorans* Strain RL Isolated from Hot Water Spring. *Indian J Microbiol*. **59**- 351–355 (IF 1.533) **#contributed equally**.
- **Chandni Talwar[#], Amit Singh[#]**, Durgesh Singh, Shekhar Nagar, Yogendra Singh, Mallikarjun Shakarad, Ram Negi, and Rup Lal. **2019**. Draft genome sequence of *Deinococcus* sp. strain S9 isolated from microbial mat deposits of hot springs located atop the Himalayan ranges at Manikaran, India. **8**- e00316-19 **Microbiology Resource Announcements**. **# contributed equally**.
- **Chandni Talwar, Amit Singh**, Stanzin Choksket, Suresh Korpole, Ram Negi, and Rup Lal. **2020**. *Salinicoccus cyprini* sp. nov., isolated from the gut of mirror carp, *Cyprinus carpio* var. *specularis*. *Int. J. Syst. Evol. Microbiol.* [://doi.org/10.1099/ijsem.0.004247](https://doi.org/10.1099/ijsem.0.004247)
- Correlation of HCH Residues Levels and Metagenomic Lin Protein Sequences at Contaminated Sites Vivek Negi, Helianthous Verma, Roshan Kumar, Pooja Rani, Amit Kumar Singh, Abhay Bajaj, Rup Lal. *Microsphere*.
- Bioremediation of Recalcitrant Xenobiotic Compounds: Advancements and Challenges. Amit Kumar Singh, Vivek Negi, Helianthous Verma. *Microsphere*.

Chapter in Book

- Knowledge Systems of Societies for Adaptation and Mitigation of Impacts of Climate Change, Bioremediation of Hexachlorocyclohexane (HCH) Pollution at HCH Dump Sites, 10.1007/978-3-642-36143-2_23 Shailly Anand, Jaya Malhotra, Neha Niharika, Devi Lal, Swati Jindal, Jaspreet Kaur, Aeshna Nigam, Nidhi Garg, Pushp Lata, Jasvinder Kaur, Naseer Sangwan, **Amit Kumar Singh**, Ankita Dua, Anjali Saxena, Vatsala Dwivedi, Udit Mukherjee and Rup Lal. ISSN: 1863-5520
- Introduction to Biotechnology: A Genetic Manipulation Perspective, Preparation of Media and Chemicals, **I.K. International Publishing House Pvt. Ltd. New Delhi. Amit Kumar Singh and Pooja Rani. ISBN 978-93-84588-86-1(2016)**

Techniques Known

1. **Molecular Biology:** Genomic and plasmid DNA isolation, Agarose gel electrophoresis, Restriction digestion of plasmid DNA, Transformation of bacterium like *Escherichia coli* with plasmid DNA using the method of electroporation and heat shock and Dot Blot hybridization. DNA-DNA hybridization using qPCR, absolute quantification using qPCR. eDNA from pesticide contaminated sites for metagenomics. mRNA isolation from soils for meta-transcriptomics SDS PAGE, Isolation of proteins and purification.
2. **Microbiology:** Preparation of different types of culture media, Pouring of culture media plates, slants and stabs, Isolation, purification and maintenance of bacterial cultures, Streaking and spreading of bacterial cultures, Staining techniques, Lyophilization of bacterial cultures and their revival, Measurement of bacterial growth by spectrophotometry and Serial dilution technique.
3. **Chromatography:** Thin Layer Chromatography (TLC), Reverse phase Thin Layer Chromatography (RP-TLC), Column Chromatography and Gas Liquid Chromatography (GLC) HCH residue analysis from HCH contaminated soil samples and plant matrices.
4. Bioremediation and Biostimulation of HCH contaminated sites.

5. Computer skill/Bioinformatics Tool

- **Genome/Metagenome Assembly:** Denovo assemblers (ABYSS, Velvet, Metavelvet and Ray) and Overlap layout consensus assemblers (Minimus 2)
- **Alignment:** Artemis, MUMmer, Clustal W and Mauve.
- **Phylogenetics:** PHYLIP, TREECON, MEGA and MeV (Phylogenetic trees based on ANI, Tetra, Housekeeping genes, bacteria specific markers genes)
- **Comparative genomics:** BRIG, extraction of orthologous genes, dN/dS and hierarchical clustering.
- Basic Knowledge of R package, Command line BLAST and other web-based bioinformatics tools along with daily applicable software like Microsoft Office, Photoshop, CorelDRAW, ChemDRAW, Marvin and PDF Writer which are used in generation and presentation of scientific data and reports.
- Expertise analyzing DNA sequencing-based datasets of bacterial communities
- Microbial diversity analyses using different methods i.e. clade specific markers, environmental gene tag etc.
- Basic bioinformatics tools (primer design, plasmid restriction mapping, BLAST, etc

- Plasmid and Genome Reconstruction from Metagenomic data.

MEETINGS AND SYMPOSIA

- 51st Annual Conference of Association of Microbiologists of India (AMI) BIT Meshra, Ranchi.
- 52nd Annual Conference of Association of microbiologist of India (AMI) Panjab University, Chandigarh.
- 53rd Annual Conference of Association of Microbiologists of India (AMI) KIIT University, Bhubaneswar, Odisha.
- 54th Annual Conference of Association of Microbiologists of India (AMI) Maharshi Dayanand University, Rohtak-124001, Haryana, India.
- Recent Trends in Developing Bioremediation Strategies for Hexachlorocyclohexane (HCH) & Other Chlorinated Contaminants. February 9-11, 2011 Organized by Department of Zoology, University Of Delhi.
- INSCR International Conference 2017: Theme: Role of Microbe-Plant-Animal Interactions in Human Health. 26th to 28th September 2017. Organized by The University of Delhi in Partnership with INSCR (Indian Network for Soil Contamination Research)

List of Workshop Attended

- ASM Virtual Workshop on Scientific Writing and Publishing (6th February, 2013 at Sri Venkateswara College, University of Delhi (South Campus), New Delhi-110021)
- ASM Virtual Workshop on The Culture of Responsibility: Biosafety & Biosecurity (3rd September 2013 at Jawaharlal Nehru University, New Delhi-110067)
- ASM Virtual Workshop on The Art of Science Communication at Institute of Genomics & Integrative Biology, Mall Road, University of Delhi Campus, Delhi-110007)
- ASM Virtual Workshop on The Art of Science Communication (8th February, 2014 at Indian Institute of Technology, Roorkee, Uttarakhand.)

List of Membership of Academic bodies

- American Society for Microbiology (ASM) (Annual Membership). Member ID: 57291403.

- Indian Network for Soil Contamination Research, New Delhi. (Life Time Membership)
- Association of Microbiologist of India. (Life Time Membership).

Personal Information

Nationality: Indian

Languages Known: English and Hindi (Both reading and writing)

List of three Referees Familiar with your Academic Work

1. Prof. Rup Lal (Supervisor)

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I hereby declare that the details furnished above are true and correct to the best of my knowledge and belief. In case any of the above information is found to be false or untrue or misleading or misrepresenting, I am aware that I may be held liable for it.



Dr. Amit Kumar Singh