

Biodata of Prof. A. K. Tripathi

Present Position: Director, IISER Mohali

Present Address D-1, Director Residence, IISER Mohali, Sector 81, Knowledge City,
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Date and Place of Birth: 07.11.1959, Mirzapur, U.P.

Current Research Interests:

Bacterial Genetics, Functional Genomics, Systems biology, Synthetic Biology and Plant Microbe Interaction

Education:

- 1984 Ph. D. (1984) Botany, under the supervision of Prof H. D. Kumar, FNA,
Department of Botany, Banaras Hindu University, Varanasi
- 1980 M.Sc. (Botany), Banaras Hindu University, Varanasi
- 1978 B.Sc. (Botany, Zoology, Chemistry), Malaviya Gold Medal for standing first
in Botany, Banaras Hindu University, Varanasi
- 1976 Intermediate (1976) First Class with Hindi, English, Physics, Chemistry, Biology
with distinction in Chemistry from Queens College, Varanasi
(UP Board, Allahabad)
- 1974 High School (1974) Ist Class with Hindi, English, Maths, Science, Biology with
distinction in Biology & Hindi from Queens College, Varanasi
(UP Board, Allahabad)

Professional Experience:

- 2019 Director, Institute of Science, Banaras Hindu University (2019- 2024)
- 2014 Director, Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP)
(2014-2019)
- 2017 Mission Director, CSIR Aroma Mission (2017-2019)
- 2013 Coordinator, DBT-BHU Interdisciplinary School of Life Sciences, BHU, Varanasi
(July 2013-February 2014)
- 2008 Coordinator, Centre for Bioinformatics, BHU (Mar 2008-Mar 2011)
- 2007 Coordinator, School of Biotechnology, BHU (May 2007- May 2010)
- 2004 Professor, School of Biotechnology, Faculty of Science, BHU (2004 onwards)
- 2002 Professor & Head, Department of Biotechnology, D. D. U. University, Gorakhpur
(July 2002-Jun 2004)
- 1996 Reader, School of Biotechnology, Faculty of Science, BHU (1996-2002)
- 1990 Lecturer, School of Biotechnology, Faculty of Science, BHU (1990-1996)

Fellowships of Science Academies/Societies:

- 2020 J C Bose National Fellow (SERB) (2020)
- 2020 Fellow, Indian Academy of Science (IASc), Bangalore (2020)
- 2015 Fellow, Indian National Science Academy (INSA), New Delhi (2015)
- 2012 Fellow, National Academy of Sciences India (NASI), Allahabad (2012)
- 2009 Fellow, National Academy of Agricultural Sciences (NAAS), New Delhi (2009)
- 2006 Fellow, Association of Microbiologists of India (AMI), New Delhi (2006)

Awards/Recognitions:

- 2025 Vice-President (Science Promotion), Indian National Science Academy, New Delhi
- 2023 Fulbright-Nehru International Education Administrators Seminar.
- 2021 Dr Rajendra Prasad Oration Award, Rajendra Memorial Research Institute of Medical Sciences (RMRI), Patna
- 2019 UGC-BSR Mid-Career Award (UGC New Delhi)
- 2017 NASI Lecture Award in the Field of Biodiversity (2017) (NASI, Allahabad)
- 2017 Prof B. D. Tilak Memorial Lecture Award (INSA, New Delhi)
- 2016 Prof R. N. Tandon Memorial Lecture Award (NASI, Allahabad)
- 2016 Prof P. Maheshwari Memorial Lecture Award, University of Delhi
- 2016 CSIR Technology Award in Life Science
- 2014 Vice Chancellor's award for Excellence in Research, BHU for publication in high impact scientific journal (2014)
- 1994 UGC Career Award in Biotechnology (1994-97)
- 1987 ISCA Young Scientist Award, Indian Science Congress, Bangalore

Chairman/Member of Committees:

- 2025 Member, Council, Indian Academy of Sciences (IASc), Bengaluru
- 2022 Convener, INSA Sectional Committee (VI) for General Biology, Indian National Science Academy (2023-2025)
- 2022 Convener, IASc Sectional Committee for Plant Sciences, Indian Academy of Sciences, Bengaluru (2022-2024)
- 2021 Chairman, CSIR Research Committee of Plant Sciences (2021-2023)
- 2021 Member, Advisory Committee, Shanti Swarup Bhatnagar Prize for Science and Technology in Biological Sciences, CSIR, New Delhi
- 2021 Member, Court, University of Hyderabad
- 2021 Member, Governing Body, National Institute of Plant Genome Research (NIPGR)
- 2019 Member, Governing Body, National Institute of Pharmaceutical Education & Research (NIPER), Raebareli (2019-2022)
- 2018 Member, Empowered Committee, SERB (2018-2019)
- 2019 Member, Council, The National Academy of Sciences India (NASI), (2018-2019)
- 2017 Member, Research Council, Agharkar Research Institute (DST), Pune (2017- 2019)
- 2017 Member, Research Council, National Institute of Interdisciplinary Science & Technology (CSIR-NIIST), Thiruvananthapuram (2017-2019)
- 2016 Member, INSA Sectional Committee IX: Microbiology & Immunology (2016-2019)
- 2016 Member, CSIR Governing Body and CSIR Society (2016)
- 2016 Member, SERB-FIST Subject Expert Committee on Life Sciences (2016-2020)

- 2016 Member, Advisory Committee for Shanti Swarup Bhatnagar Prize for Science & Technology in Biological Science (2016)
- 2013 Member, DBT Task Force on “Environmental Biotechnology & Biodiversity Conservation” (2013-2017)
- 2015 Convener, INSA Chapter, Lucknow (2015-2018)
- 2015 Chairman, Advisory Committee for Biotechnology, Council of Science & Technology, U. P. (2015-2017)
- 2016 Member, Academic Council, Jawaharlal Nehru University, New Delhi (2015-)
- 2015 Member, Research Council, National Botanical Research Institute, Lucknow (2015-17)
- 2014 Member, Research Council, Central Drugs Research Institute, (2014-)
- 2014 Member, Senate, Academy of Scientific and Innovative Research, New Delhi (2014-17)
- 2014 Member, Advisory-cum-Monitoring Committee, Biotech Park, Lucknow (2014-17)
- 2014 Member, National Research Advisory Committee, National Innovation Foundation, Ahmedabad (2014-16)

Responsibilities at BHU:

- 2018 Coordinator, DST-SATHI, BHU
- 2019 Coordinator, BIRAC-BioNEST, BHU
- 2020 Director, InnoResTech Foundation, BHU
- 2020 Member, Governing Body, Institution of Eminence Program, BHU
- 2019 Chairman, Committee for Seed grants to new faculty and Incentive Grant for senior faculty, Institution of Eminence program
- 2021 Chairman, Industry-Academic Cooperation Committee, BHU
- 2021 Chairman, University Central Purchase Committee
- 2020 Chairman, Books Purchase Committee for University Library

Research Experience: 30 years

Sponsored Research Projects

International Agencies:

1. German Agency for Technical Cooperation (GTZ), Eschborn (1991-1992)
2. International Foundation for Science (IFS), Stockholm (1992-1995)
3. German Ministry for Research & Technology (BMFT), Bonn (1998-1999)
4. Indo-French Centre (IFCPAR/CEFIPRA), New Delhi (1999-2002)
5. International Rice Research Institute, Manila (1999-2002)

National Agencies:

6. Department of Science & Technology, New Delhi (1992-1996)
7. Board of Research in Nuclear Sciences, Mumbai (1992-1995)
8. University Grants Commission, New Delhi (1994-1997)
9. Min. of Environ & Forests (MoEnF), New Delhi (1999-2011)
10. Department of Biotechnology (DBT), New Delhi (2006-2010)
11. Council of Science & Industrial Research, New Delhi (2007-2011)
12. Department of Biotechnology (DBT), New Delhi (2008-2011)
13. Department of Science & Technology (DST) New Delhi (2010-2013)
14. Department of Biotechnology (DBT), New Delhi (2010- 2013)
15. Department of Biotechnology (DBT), New Delhi (2011-2014)
16. Indian Council of Agricultural Research, New Delhi (2014-2017)
17. Council of Science & Industrial Research, New Delhi (2021-2024)

Patent:

“An enzymatic process for producing nano-size calcium carbonate using recombinant carbonic anhydrase from *Azospirillum brasilense*” (Patent filed: no 433/DEL/2009 dated 05.03.2009; Granted in 2018, Patent No. 289249)

Ph.D. supervised (22)

1. Ms. Sangeeta Khare on "Biochemical and Genetical Studies on Chromium Resistance in *Pseudomonas aeruginosa* " (awarded in 1997)
2. Mr. Bal Mukund Mishra on "Physiological and Genetical Studies on Salinity Stress in *Azospirillum* spp.(awarded in 1998)
3. Mr. Abhijit Ganguli on "Microbiology of Detoxification of Chromium Polluted Industrial Effluents" (awarded in 1999).
4. Ms. Moushumi Ghosh on “Studies on Microbiology and Treatment of distillery effluent” (awarded in 2000).
5. Ms. Rachna Tripathi on “Carbon Source Utilization in *Azospirillum*” (awarded in 2002).
6. Mr. Subhash Chandra Verma on “Studies on Colonization and Molecular Diversity of Endophytic Diazotrophs in rice” (awarded in 2002)
7. Mr. T. Nagarajan on “Genetical and Physiological studies on osmoregulation in *Azospirillum brasilense*” (awarded in 2006)

8. Mr. S. Paulchowdhury on “Molecular studies on Diversity of Bacteria Associated with two Ecologically Important Plants, *Mimosa pudica* and *Lasiurus indicus*” (awarded in 2006)
9. Ms. Archana Srivastava on “Genetic and Phenotypic studies of some mutants of *Azospirillum brasilense*” (awarded in 2006)
10. Mr Mukti Nath Mishra on “Molecular analysis of the role of extracytoplasmic function sigma factor in abiotic stress tolerance in *Azospirillum brasilense*” (Awarded in March 2009)
11. Ms Simarjot Kaur on “Molecular characterization of carbonic anhydrase in *Azospirillum brasilense* and its application in carbon sequestration” (Awarded in March 2011)
12. Mr Durgesh Narain Singh on “Molecular analysis of coalbed microbes and metagenome for the biotransformation of coal into methane and other valued products” (Awarded March 2013)
13. Ms Namrata Gupta on “Molecular analysis of the role of extra-cytoplasmic function (ECF) sigma factors and anti-sigma factors in *Azospirillum brasilense* (Awarded in June 2013)
14. Mr Santosh Kumar on “Genomic and proteomic analysis of the role and regulation of alternative sigma factors in environmental stress responses in *Azospirillum brasilense* Sp7” (Awarded in July 2013)
15. Mr Sudhir Singh “Molecular analysis of detoxification mechanisms involved in oxidative stress responses induced by arsenic and peroxide in *Azospirillum brasilense* Sp7” (awarded in 2016)
16. Mr Vijay Shankar Singh “Identification and functional characterization of genes involved in carbon source utilization in *Azospirillum brasilense* Sp7” (awarded in 2016)
17. Mr Ashutosh Kumar Rai “Role and regulation of heat shock sigma factors in *Azospirillum brasilense* Sp7” (awarded in 2017)
18. Mr Amit Srivastava “Molecular and physiological analysis of role of alternative sigma factor SigJ in nitrogen-fixing cyanobacterium *Anabaena* PCC7120” (awarded in 2017)
19. Mr Ashutosh Prakash Dubey “Role and regulation of alternative sigma factors in the regulation of carotenoid biosynthesis and some other phenotypic traits in *Azospirillum brasilense* (awarded in 2017)
20. Ms Chhaya Singh “Bioinformatic and functional analysis of *Azospirillum* genome” (Awarded in August 2019)
21. Ms Parul Pandey “Transcriptomic, proteomic and genomic analysis of alternative sigma factors in a plant growth promoting rhizobacterium *Azospirillum brasilense*” (Awarded in October 2020)
22. Ms Shivangi Mishra “Engineering *Azospirillum brasilense* for the production of novel compounds” (Awarded in August 2021)
23. Mr Sushant Rai “Molecular mechanisms involved in the utilization of carbon compounds by *Azospirillum brasilense* Sp7” (To be submitted in 2025)
24. Ms Parikshit Gupta “Role of an alternative sigma factor and a transcription regulator in the flagellar motility of *Azospirillum brasilense* Sp7” (To be submitted in 2025)

List of Publications of Prof A. K. Tripathi

1. Rai, S., Singh, V. S., Gupta, P. and Tripathi, A. K. (2025) Identification and functional characterization of a fructose-inducible phosphotransferase system in *Azospirillum brasilense* Sp7. **Applied and Environmental Microbiology (ASM)** doi: <https://doi.org/10.1128/aem.00828-24>
2. Singh, D. N., Pandey, P., Singh, V. S., and Tripathi, A. K. (2024) Evidence for high-risk pollutants and emerging microbial contaminants at two major bathing ghats of the river Ganga using high-resolution mass spectrometry and metagenomics. **Gene** doi: 10.1016/j.gene.2024.148991
3. Tiwari, N. and Tripathi, A. K. (2024) Biosynthesis of carotenoids in *Azospirillum brasilense* Cd is mediated via squalene (C30) route. **Biochemical Biophysical Research Communication**. doi: 10.1016/j.bbrc.2024.150154.
4. Singh, V. S., Dubey, B. K., Rai, S., Singh S. P. and Tripathi, A. K (2022) Engineering D-glucose utilization in *Azospirillum brasilense* Sp7 promotes rice root colonization. **Applied Microbiology & Biotechnology** **106**: 7891-7903 doi: 10.1007/s00253-022-12250-0. (IF: 5.56)
5. Pathak, E., Dubey, A.P., Singh V. S., Mishra, R. and Tripathi, A. K. (2022) Deciphering the role of the two conserved motifs of the ECF41 family σ factor in the autoregulation of its own promoter in *Azospirillum brasilense* Sp245. **Proteins: Structure, Function, and Bioinformatics** doi: 10.1002/prot.26387 (IF: 3.756)
6. Pandey, P., Dubey, A.P., Mishra, S., Singh, C., Singh, V. S. and Tripathi, A. K (2022) β -lactam resistance in *Azospirillum balcaniorum* Sp245 is mediated by lytic transglycosylase and β -lactamase, and regulated by a cascade of RpoE7 $\rightarrow$ RpoH3 sigma factors. **Journal of Bacteriology (ASM)** doi.org/10.1128/jb.00010-22 (IF: 3.49)
7. Singh, V. S., Dubey, B. K., Pandey, P., Rai, S. and Tripathi, A. K (2021) Co-metabolism of ethanol in *Azospirillum brasilense* Sp7 is mediated by fructose and glycerol and regulated negatively by an alternative sigma factor RpoH2. **Journal of Bacteriology (ASM)** DOI:10.1128/JB.00269-21 (IF: 3.49)
8. Dubey, A. P., Pandey, P., Mishra, S., Gupta, P. and Tripathi, A.K. (2021) Role of a Fasciclin domain protein in photooxidative stress and flocculation in *Azospirillum brasilense* Sp7. **Research in Microbiology** doi.org/10.1016/j.resmic.2021.103875 (IF: 3.992)
9. Mishra, S., Chanotiya, C., Shanker, K., Tripathi, A. K (2021) Characterization of carotenoids and genes encoding their biosynthetic pathways in *Azospirillum brasilense*. **FEMS Microbiology Letters** 368; DOI: 10.1093/femsle/fnab025 (IF: 2.82)

10. Dubey, A. P., Pandey, P., Singh, V. S., Mishra, M. N., Singh, S., Mishra, R. and Tripathi, A. K. (2020) An ECF41 family σ factor controls motility and biogenesis of lateral flagella in *Azospirillum brasilense* Sp245. **Journal of Bacteriology (ASM)** DOI: 10.1128/JB.00231-20 (IF: 3.49)
11. Mishra, S., Pandey, P., Dubey, A. P., Zehra, A., Chanotiya, C. S., Tripathi, A. K. Mishra, M. N. (2020) Engineering a carotenoid-overproducing strain of *Azospirillum brasilense* for heterologous production of geraniol and amorphadiene **Applied Environmental Microbiology (ASM)** DOI: 10.1128/AEM.00414-20 (IF: 5.00)
12. Singh, C., Pandey, P., Singh, D. N., Pandey, R., Shasany, A. K., Tripathi, A.K. (2019) Whole-Genome sequences of four Indian isolates of *Azospirillum brasilense* **Microbiology Resource Announcement (ASM)** DOI: 10.1128/MRA.00633-19
13. Singh, V.S., Tripathi, P., Pandey, P., Singh, D.N., Dubey, B., Singh, C., Singh, S., Pandey, R., Tripathi, A.K. (2019) Dicarboxylate transporters of *Azospirillum brasilense* Sp7 play important role in the colonization of finger millet (*Eleusine coracana*) roots. **Molecular Plant Microbe Interaction (APS)** 32: 828-840 (IF: 4.17)
14. Rai, A.K., Singh, S., Dwivedi, S.K., Srivastava, A., Pandey, P., Kumar S., Singh, B. N. and Tripathi A. K. (2018) Catalases expression in *Azospirillum brasilense* Sp7 is regulated by a network of OxyR and two RpoH paralogs including a regulatory cascade of RpoE1 and RpoH5. **Applied Environmental Microbiology (ASM)** doi: 10.1128/AEM.01787-18 (IF: 5.00)
15. Singh, V. S., Dubey, A. P., Gupta, A., Singh, S., Singh, B. N. and Tripathi A. K. (2017) Regulation of a glycerol induced quinoprotein alcohol dehydrogenase by σ^{54} and a LuxR-type regulator in *Azospirillum brasilense* Sp7 **Journal of Bacteriology (ASM)** doi:10.1128/JB.00035-17 (IF: 3.49)
16. Srivastava, A., Brilisauer K., Rai, A. K., Ballal, A., Forchhammer, K. and Tripathi, A. K. (2016) Downregulation of the alternative sigma factor SigJ confers a photoprotective phenotype to *Anabaena* PCC 7120. **Plant and Cell Physiology (JSPP)** 58: 287-297 (IF: 4.93)
17. Singh, S., Dwivedi, S., Singh, V.S., and Tripathi A.K. (2016) Expression of alkylhydroperoxide reductase is regulated negatively by OxyR1 and positively by RpoE2 sigma factor in *Azospirillum brasilense* Sp7. **Microbiology (SGM)** 162:1870-1883 (IF: 2.7)
18. Rai, A.K., Dubey, A.P., Kumar, S., Mishra, M. N., Dutta, D., Singh, B.N. and Tripathi, A. K. (2016) Carotenoid biosynthetic pathways are regulated by a network of multiple cascades of alternative sigma factors in *Azospirillum brasilense* Sp7. **Journal of Bacteriology** 198:2955-2964 (IF: 3.49)
19. Singh, D. N, Gupta, A., Singh, V.S., Mishra, R., Kateriya, S., Tripathi, A. K. (2015) Identification and characterization of a novel phosphodiesterase from the metagenome of an Indian coalbed. **PLoS ONE** 10(2): e0118075. doi:10.1371/journal.pone.0118075 (IF: 3.75)

20. Rastogi, S., Kalra, A., Gupta, V., Khan, F., Lal, R. K., Tripathi, A. K., Parameswaran, S., Gopalakrishnan, C., Ramaswamy, G., Shasany, A. K. (2015) Unravelling the genome of Holy basil: an "incomparable" "elixir of life" of traditional Indian medicine. **BMC Genomics**. 16:413. doi: 10.1186/s12864-015-1640-z. (IF: 3.97)
21. Singh, S., Singh, C. and Tripathi, A. K. (2014) A SAM-dependent methyltransferase cotranscribed with arsenate reductase alters resistance to peptidyl transferase center-binding antibiotics in *Azospirillum brasilense* Sp7. **Applied Microbiology & Biotechnology** 98: 4625-4636 (IF: 5.56)
22. Gupta, N., Gupta, A., Kumar, S., Mishra, R., Singh, C. and Tripathi, A. K. (2014) Cross-talk between cognate and non-cognate RpoE sigma factors and Zn²⁺-binding anti-sigma factors regulates photooxidative stress response in *Azospirillum brasilense* **Anti-oxidants and Redox Signalling** 20:42-59 (IF: 8.4)
23. Gehlot, H.S., Tak, N., Kaushik, M., Mitra, S., Chen, W-B, Poweleit, N., Panwar, D., Poonar, N., Parihar, R., Tak, A., Sankhla, I.S., Ojha, A., Rama Rao, S., Simon, M.F., Reis Junior, F.B.D., Perigolo, N., Tripathi, A.K., Sprent, J.I., Young, J.P.W., James, E.K. and Gyaneshwar, P. (2013) An invasive *Mimosa* in India does not adopt the symbionts of its native relatives. **Annals of Botany** 112: 179-196
24. Singh, D. N. and Tripathi, A. K (2013) Coal induced production of a rhamnolipid biosurfactant by *Pseudomonas stutzeri*, isolated from the formation water of Jharia coalbed. **Bioresource Technology** 128:215-221
25. Gupta, N., Kumar, S., Mishra, M. N. and Tripathi, A. K. (2013) A constitutively expressed pair of *rpoE2-chrR2* in *Azospirillum brasilense* Sp7 is required for survival under antibiotic and oxidative stress. **Microbiology (SGM)** 159:205-218
26. Kumar, S., Kateriya, S., Singh, V. S., Tanwar, M., Agarwal, M., Singh, H., Khurana, J. P., Amla, D. V. and Tripathi, A. K. (2012) Bacteriophytochrome controls carotenoid-independent response to photodynamic stress in a non-photosynthetic rhizobacterium, *Azospirillum brasilense* Sp7. **Scientific Reports (Nature Publishing Group)** 2, doi:10.1038/srep00872
27. Kumar, S., Rai, A. K., Mishra, M.N., Shukla, M., Singh, P. K. and Tripathi, A. K. (2012) RpoH2 sigma factor controls the photooxidative stress response in a non-photosynthetic rhizobacterium, *Azospirillum brasilense* Sp7. **Microbiology (SGM)** 158:2891-2902
28. Singh, D. N., Kumar, A., Sarbhai, M. P. and Tripathi, A. K (2012) Cultivation independent analysis of archaeal and bacterial communities of the formation water in an Indian coal bed to enhance biotransformation of coal into methane. **Applied Microbiology & Biotechnology** 93:1337–1350
29. Singh, D. N. and Tripathi, A. K. (2011) Evaluation of the coal-degrading ability of *Rhizobium* and *Chelatococcus* strains isolated from the formation of an Indian coal bed. **Journal of Microbiology & Biotechnology** 21:1101-1108
30. Mishra, M. N., Kumar, S., Gupta, N., Kaur, S., Gupta, A. and Tripathi, A. K. (2011) The extra-cytoplasmic function sigma factor (RpoE) cotranscribed with its cognate anti-sigma

factor confers tolerance to NaCl, ethanol and methylene blue in *Azospirillum brasilense* Sp7. **Microbiology (SGM)** 157: 988 - 999

31. Kaur, S, Mishra M.N. and Tripathi, A. K. (2010) Gene encoding γ -carbonic anhydrase is cotranscribed with *argC* and induced in response to stationary phase and high CO₂ in *Azospirillum brasilense* Sp7. **BMC Microbiology** 10:184
32. Ghosh M, Ganguli A, Tripathi AK. (2009) Decolorization of anaerobically digested molasses spent wash by *Pseudomonas putida*. **Applied Biochemistry & Microbiology** 45:78-83
33. Kaur, S, Mishra M.N. and Tripathi, A. K. (2009) Regulation of expression and biochemical characterization of a β -class carbonic anhydrase from the plant growth-promoting rhizobacterium, *Azospirillum brasilense* Sp7. **FEMS Microbiology Letters** 299:149-158
34. Shukla, A. K., Vishwakarma, P., Upadhyay, S. N., Tripathi, A. K., Prasana, H. C. and Dubey, S. K. (2009) Biodegradation of trichloroethylene (TCE) by methanotrophic community. **Bioresource Technology** 100: 2469-2474
35. Rishiram R., Krishnamurthi K., Saravana Devi S., Mudliar, S., Kaur, S., Tripathi, A. K. and Chakrabarti, T. (2009) Bio-sequestration of carbon dioxide using carbonic anhydrase enzyme purified from *Citrobacter freundii* **World Journal of Microbiology & Biotechnology** 25:981-987
36. Paul Chowdhury, S., Schmid, S., Hartmann, A. and Tripathi, A.K. (2009) Diversity of 16S-rRNA and *nifH* genes derived from rhizosphere soil and roots of an endemic drought tolerant grass, *Lasiurus indicus*. **European Journal of Soil Biology** 45:114-122
37. Nagarajan, T., Mishra, M. N., Spaepen, S., Vanderleyden, J., Gross, C.A. and Tripathi, A.K. (2008) An extra cytoplasmic function sigma factor and anti-sigma factor control carotenoid biosynthesis in *Azospirillum brasilense*. **Microbiology** 154: 2096-2105
38. Mishra, M. N., Nagarajan, T., Sharma, I.M., Jagannadham, M. V. and Tripathi, A.K. (2008) Mutation in a gene encoding anti-sigma factor in *Azospirillum brasilense* confers tolerance to elevated temperature, anti-bacterial peptide and PEG-200 via carotenoid synthesis. **FEMS Microbiology Letters**, 287:221-229.
39. Paul Chowdhury, S., Schmid, S., Hartmann, A. and Tripathi, A.K. (2007) Identification of diazotrophs in the culturable bacterial community associated with roots of *Lasiurus indicus*, a perennial grass of Thar Desert, India. **Microbial Ecology** 54: 82-90
40. Paul Chowdhury, S., Nagarajan, T., Tripathi, Rachna., Mishra, Muktinath., Le Rudulier, D. and Tripathi, A. K. (2007) Strain specific salt tolerance and osmoregulatory mechanisms in *Azospirillum brasilense*. **FEMS Microbiology Letters** 267:72-79
41. Nagarajan, T., Vanderleyden, J. and Tripathi, A.K. (2007) Identification of salt stress inducible genes that control cell envelope related functions in *Azospirillum brasilense* Sp7. **Molecular Genetics & Genomics** 278: 43-51
42. Alahari, A., Tripathi, A.K. and Le Rudulier, D. (2006) Cloning and characterization of a *fur* homolog from *Azospirillum brasilense* Sp7. **Current Microbiology** 52:123-127
43. Tripathi, A.K., Verma, S. C., Chowdhury, S.P., Lebuhn, M., Gatteringer, A. and Schlöter, M. (2006) *Ochrobactrum oryzae* sp. nov., a novel endophytic bacterial species isolated from

deep-water rice in India, **International Journal of Systematic & Evolutionary Microbiology** 56:1677-1680

44. Srivastava, A. and Tripathi A. K. (2006) ADP ribosylation of dinitrogenase reductase and adenylation of glutamine synthetase control ammonia excretion in ethylene diamine resistant mutants of *Azospirillum brasilense* Sp7. **Current Microbiology** 53:317-323
45. Dubey, S.K., Tripathi, A.K. and Upadhyay, S.N. (2006) Exploration of soil bacterial communities for exploring their potential as bioresource. **Bioresource Technology** 97:2217-2224
46. Tilak, K.V.B.R., Ranganayaki, N., Pal, K.K., De, R., Saxena, A.K., Shekhar Nautiyal, C., Mittal, S., Tripathi, A.K., Johri, B.N. (2005) Diversity of plant growth and soil health supporting bacteria. **Current Science** 89:136-150
47. Johri, B.N., Ganguly, B.N., Goel, S.K., Viridi, J.S., Tripathi, A.K., Jain, R.K., Kamra, D.N, and Bhatnagar, A. (2005) Microorganism diversity: Strategy and action plan. **Current Science** 89: 151-154
48. Verma, S.C., Paulchowdhury, S. and Tripathi, A.K. (2004) Phylogeny based on 16S rDNA and *nifH* sequences of *Ralstonia taiwanensis* strains isolated from nitrogen fixing nodules of *Mimosa pudica* in India. **Canadian Journal of Microbiology** 50:312-322
49. Verma, S.C., Singh, A., PaulChowdhury, S. and Tripathi, A.K. (2004) Endophytic colonization ability of two deep water rice endophytes, *Pantoea agglomerans* and *Ochrobactrum* sp using GFP reporter. **Biotechnology Letters** 26:425-429
50. Ghosh, M., Verma, S.C., Mengoni. A. and Tripathi, A.K. (2004) Enrichment and identification of bacteria capable of reducing chemical oxygen demand of anaerobically treated molasses spent wash. **Journal of Applied Microbiology** 96: 1278-1286
51. Paul Chowdhury, S., Khanna, S., Verma, S.C. and Tripathi, A.K. (2004) Molecular diversity of tannic acid degrading bacteria isolated from tannery soil. **Journal of Applied Microbiology** 97: 1210-1219
52. Tripathi, A. K. (2002) Rhizobia of the β -subclass of proteobacteria: A tale of losing the race. **Current Science** 82: 8-9.
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