DR. SHRIPARNA MUKHERJEE

PROFILE

CONTACT

EMAIL:
shriparna.mukherjee@gmail.com

DATE OF JOINING:
05.09.2008

DESIGNATION

ASSOCIATE PROFESSOR, DEPARTMENT OF BOTANY

QUALIFICATION (IN DESCENDING ORDER)

PhD in Botany

WORK EXPERINCE (IN DESCENDING ORDER)

05.09.2020 – Till date ——Continuing as Associate Professor in Botany

05.09.2008 - 04.09.2020 - Assistant Professor in Botany in P. D. Women's College

05.09.2008 – Joined as Lecturer in Botany (Substantive post) in P. D. Women's College, Jalpaiguri.

01.04.2008 – 01.09.2008 – Research Associate in the CSIR project [ACK. No.:313165/2K7/1; File No: 9/285 (0040)] entitled "Assessment of diversity within cassette pool of free- flowing water system by environmental gene cassette metagenome approach", Department of Biotechnology, University of North Bengal.

23.07.2002 – 31.03.2008 – Worked as a Lecturer in Microbiology (on contractual basis) in Siliguri College.

07.07.1999 – July 2001 – Worked as Junior Project Scientist in the Research Project entitled "Monitoring of Physico-chemical, Microbiological and Hydrological parameters of Torsa and SilTorsa rivers of North Bengal" vide sanction no. EN/574/P/IE-2/99 (DOE, Govt. of West Bengal).

RESEARCH INTEREST

Microbiology, Molecular Biology, Integron Biology, Plasmid Biology, Antibiotic Resistance, Water Microbiology

RESEARCHCOLLABORATION (NATIONAL/ INTERNATIONAL):

NIL

DETAILS OF RESEARCH PROJECT BEING COMPLETED/ ONGOING/SANCTIONED:

Project title: Screening eubacterial (especially members of *Enterobacteriaceae*) isolates from a city-waste polluted river Karala, Jalpaiguri, for NDM-1genes and search for NDM-1 sequence divergence
Funding Agency: University Grants Commission
Project type (major/minor): Minor project
Project status (ongoing/completed): Completed

LIST OF PUBLICATION (IN DESCENDING ORDER)

A. <u>Papers published in journals:</u>

1. Ranjan VK, **Mukherjee S**, Basak C, Gupta K, Chakraborty R. Abundance of New Delhi Metallo-β-Lactamase producing *Acinetobacter, Escherichia, Proteus*, and *Pseudomonas* spp. in Mahananda and Karala Rivers of India. *Microb Drug Resist*. 27(12): 1603-1615 (2021).
2. Ranjan VK, **Mukherjee S**, Thakur S, Gupta K, Chakraborty R. Pandrug-resistant *Pseudomonas* sp. expresses New Delhi metallo-β-lactamase-1 and consumes ampicillin as sole carbon source. *Clin Microbiol Infect*. 27(3): 472.e1-472.e5 (2021).

3. Roy C, Mandal S M, Mondal S K, **Mukherjee S**, Mapder T, Ghosh W, Chakraborty R. Trends of mutation accumulation across global SARS-CoV-2 genomes: Implications for the evolution of the novel coronavirus. *Genomics***.** 112(6):5331-5342 (2020).
4. Ranjan VK, Saha T, **Mukherjee S**, Chakraborty R. Draft genome sequence of a novel bacterium, *Pseudomonas* sp. Strain MR 02, capable of pyomelanin production, isolated from the Mahananda River at Siliguri, West Bengal, India. *Genome Announc*. 6 (3), e01443-17 (2018).
5. Choudhury SK, Hore D, Mahanta SK, Adhikari B, Mukherjee M, **Mukherjee S,** Chakraborty R. Prevalence of multi-drug resistant bacteria in Betel (*Piper betel* L.) leaf washed water of the road side paan stall in northern West Bengal. *International Journal of Scientific Research*. 6(11): 47-51 (2017).
6. **Mukherjee S,** Kumar D, Chakraborty R. Bacterial diversity in sediments of river Mahananda (Siliguri) as determined by 16S rRNA gene analysis. *Indian J Biotechnol*, 15: 201-209 (2016).
7. Chakraborty R., Kumar A., Saha Bhowal S., Mandal A K., Tiwary B K., and **Mukherjee S**. Diverse gene cassettes in class 1 integrons of facultative oligotrophic bacteria of river mahananda, west bengal, India. *PLoS ONE*, 8, e71753 (2013).
8. **Mukherjee S**., Kumar D., Nanda A K., and Chakraborty R. 16S rRNA gene sequence analyses of the metagenome derived from waters of river Mahananda at Siliguri: An approach to understand bacterial diversity. *Indian J Biotechnol*. 12, 80-87 (2013).
9. Kumar, A., **Mukherjee, S.,** and R. Chakraborty. Characterization of a novel trimethoprim resistance gene, dfr A28, in class 1 integron of an oligotrophic *Acinetobacter johnsonii* strain, MB 52, isolated from river Mahananda, India. *Microb Drug Resist***.** 16(1), 29-37 (2010).
10. **Mukherjee, S.,** and R. Chakraborty. Conjugation potential and class 1 integron carriage of resident plasmids in river water copiotrophs**.** *Acta. Microbiol. et Immunol. Hungarica*. 54(4), 379-397 (2007).
11. **Mukherjee, S.,** and R, Chakraborty. Incidence of Class 1 Integrons in multiple antibiotic resistant Gram-negative copiotrophic bacteria from the River Torsa in India. *Res. Microbiol.* 157 (3), 220-226 (2006).

12. **Mukherjee, S**., B. Bhadra., R. Chakraborty., A. Gurung., S. Some, and R. Chakraborty. Unregulated use of antibiotics in Siliguri City vis-à-vis occurrence of MAR bacteria in community wastewater and River Mahananda, and their potential for resistance gene transfer. *J. Environ. Biol*. 26(2), 229-238 (2005).
13. Bhadra, B., **S, Mukherjee**, R, Chakraborty, and A.K. Nanda. Physico-chemical and bacteriological investigation on the river Torsa of North Bengal. *J. Environ. Biol*. 24(2), 125-133 (2003).

B. <u>Book chapter(s):</u>

1. **Mukherjee S** and Chakraborty R. (2023) Genomic islands in uropathogenic *Escherichia coli*. In: Mani I., Singh V., Alzahrani K J., Din-Toi Chu (eds.), Microbial genomic islands in adaptation and pathogenicity. Springer Nature Singapore Pte Ltd. Pp 171-196. ISBN: 978-981-19-9341-1.
2. **Mukherjee S** and Chakraborty R. (2019) Plasmids: The Necessary Knowledge Wealth for Encountering Antibiotic-Resistance Menace. In: Mandal S., Paul D. (eds.), Bacterial Adaptation to Co-resistance. Springer, Singapore. pp 1-18. ISBN: 978-981-13-8502-5.
3. **Mukherjee S** and Chakraborty R. (2017) Gene cassette diversity in class 1 integrons amongst bacterial population of River Torsa and River Mahananda of Northern West Bengal. Published in "Climate Change: Impacts and Adaptations", Publisher: Bishen Singh Mahendra Pal Singh,
   23-A, New Connaught Place, DehraDun-248001 (INDIA). ISBN-978-81-211-0956-7
4. **Mukherjee S** and Chakraborty R. (2016) Horizontal gene transfer – as a means for spread of antibiotic resistance genes and resistance development. Published in "Advances in Biology: Eastern Himalayan Perspective". Publisher N. L. Publishers, Sibmandir, Siliguri, West Bengal – 734011. ISBN-978-93-85375-05-7.
5. Chakraborty R., Kumar A., **Mukherjee S**., Saha Bhowal S., Mandal A K., and Tiwary B K. (2013) Oligotropic bacteria of river Mahananda: Spanking reservoir of integron – borne gene cassettes coding for diverse proteins including antibiotic – resistance. *In S. Mukherjee (ed.), Biotechnology for People, Levant Books,* Kolkata, India. pp 50 – 59. ISBN 978-93-80663-86-9.

6. **Mukherjee, S.,** and R, Chakraborty. (2005) Trimethoprim stress resistance by class I integron borne altered dihydrofolate reductase gene cassette of an *E. coli* isolate of Torsa River. In U. Chakraborty and B. N. Chakraborty (eds.), *Stress Biology, Narosa Publishing House*, New Delhi, India. pp 128-134. ISBN 81-7319-665-6.

C. <u>Published Books:</u>

1. Integron. The Natural Genetic Engineering Tool. Shriparna Mukherjee. Asian Press Books. ISBN: 978-93-90238-21-7.
2. Microbiological Study of The Torsa River: A Maiden Research. Shriparna Mukherjee. Orange Books. ISBN: 978-81-948038-5-0.

D. <u>Edited Book:</u>

Biotechnology For People. (2013) Shriparna Mukherjee. Levant Books, Kolkata. ISBN: 978-93-80663-86-9.

AWARDS/HONORS RECEIVED (DESCENDING ORDER)

NIL

SEMINARS AND CONFERENCE ATTENDED (DESCENDING ORDER)

International:

1. Presented a poster entitled "Incidence, abundance, and characterization of ndm variants in a city waste polluted river from northern West Bengal, India", in *8th Congress of European Microbiologists – FEMS* 2019 [7-11July 2019 in Glasgow, Scotland]
2. Presented a paper entitled "Genomic insights into multi drug resistance carriage of a pyomelanin producing eubacterial isolate of Pseudomonas lineage from a city waste polluted river" in the international seminar on *Current Avenues in Microbial and Plant Sciences* [CAMPS 2019], 23rd to 25th February, 2019 at University of Gour Banga, Malda, West Bengal, India.
3. Presented a paper entitled "Antimicrobial resistance: A global crisis" in the international seminar on The history of Science and Technology – A journey from metal age to E-age, 12th March, 2019, organized by Department of Chemistry and IQAC, Alipurduar College.
4. Presented a paper entitled "Prevalence and molecular characterization of variants of new-delhi metallo-β-lactamases from eubacterial population of River Karala", March 28-29, 2017, in UGC-Assisted International Interdisciplinary Seminar on

5. Contemporary developments in social and basic sciences in times of global crisis, organized by Surya Sen Mahavidyalaya, Siliguri.
6. Presented a poster entitled “A snapshot of the bacterial community of a polluted Indian river Mahananda, analyzed
7. through clone library of 16S rRNA genes” in the 4th Congress of European Microbiologists, June 26-30, 2011, Geneva, Switzerland.

National:

1. Presented a paper entitled “Detection and enumeration of metallo-β-lactamase carrying” in the UGC sponsored National seminar on Advances in Biology: Eastern Himalayan Perspective, 3rd and 4th October, 2015, organized by the Department of Botany and Department of Zoology, Kalimpong College.
2. Presented a paper entitled “An attempt to corelate the variability in the sequences of integron borne gene cassettes with rapid climate change in North Bengal on a decadal scale” in UGC sponsored national seminar on Global climate change and its impact on floral, faunal, and microbial biodiversity, June 26th to 28th, 2015.
3. organized by the Department of Botany, St. Joseph’s College, Darjeeling.
4. Presented a paper entitled “Screening of a city waste polluted river, Karala of Jalpaiguri District, for the presence of NDM gene in enterobacterial isolates” in UGC sponsored national seminar on Global climate change and its impact on floral, faunal, and microbial biodiversity, June 26th to 28th, 2015, organized by the Department of Botany, St. Joseph’s College, Darjeeling.
5. Presented a paper entitled “Mobile gene casettes: reservoirs of novel genes for future biotechnology” in National Conference on Environmental Conservation and Clean India Programme, 7th December, 2014, organized by MANU-International Council for Man and Nature (Asia Chapter) in collaboration with UGC-Academic Staff College, Kumaun University, Nainital.
6. Presented a paper entitled “Microbial diversity in sediments of river Mahananda, Siliguri is determined by 16S rRNA gene analysis” in National Seminar on Micro and Macro resources in Biomolecular Technology, 25th-26th February, 2013, organized by

7. Departments of Biotechnology, and Microbiology, University of North Bengal.
8. Participated in UGC sponsored National Seminar on Exploitation of Biological Resources and Application of Eco-Friendly Cultural Practices for Sustainable Crop Production, February 21st -22nd,
9. 2009, organized by the Department of Botany, Siliguri College and Siliguri Horticultural Society, Siliguri.
10. Participated in Silver Jubilee National Symposium on Sustainable Utilization of Plant and Microbila Resources, February 28-March 1, 2009, organized by DRS Department of Botany, University of North Bengal.
11. Presented a paper entitled “Surveillance on changing patterns of antibiotic resistance in copiotrophic bacteria of River Torsa of India”, March 20-21, 2006, in National Seminar on Environment, Drinking Water and Public health, at Visva-Bharati, Santiniketan in collaboration with the Department of Science and Technology (DST), Government of West Bengal.
12. Presented a paper entitled “Molecular Characterization of Non-replicating Mobile DNA element, Integron in MAR bacteria” in National Symposium on Current Perspectives in Stress Biology, February 6-8, 2004, organized by Department of Botany, University of North Bengal.
13. Presented a paper entitled “Plasmid diversity among multidrug resistant Gram -negative bacterial isolates of River Torsa of North Bengal”, in National symposium on Assessment & Management of Bioresources, May 28-30, 2003, organized by Department of Zoology, University of North Bengal in association with Zoological Society, Calcutta.
14. Presented a paper entitled “Molecular-genetic characterization of self-transmissible plasmids of Gram negative antibiotic resistant bacteria strains isolated from river Torsa of North Bengal” in the National Symposium on Diversity of Microbial Resources and their potential applications (Microsymp), organized by the Department of Botany, University of North Bengal.
15. Participated in National Seminar on Plant Biodiversity-Systematics, Conservation and Ethnobotany and Tenth Annual General Body Meeting of Indian Association of Angiosperm

16. Taxonomy, November 9-11, 2000, Department of Botany, University of North Bengal.

Regional:

1. Presented a paper entitled “Microbes-the Keystone Player of sustainable development”, 15th March, 2017, organized by Department of Economics, P. D. Women’s College, Jalpaiguri.

EXTERNAL RESPONSIBILITY (ADMINISTRATIVE RESPONSIBILITIES, IF ANY)

- Head, Department of Botany (March 2015 - Till date)
- Programme Officer of NSS Unit I (2019-2021)
- Secretary, Teacher’s Council (May 2023 – Till date)
- Jt. Convener, NAAC Steering Committee