
BIOGRAPHICAL SKETCH

NAME: **Dr. Rajkrishna Mondal**

POSITION TITLE: Associate Professor

CONTACT:

Department of Biotechnology
School of Engineering & Technology
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EDUCATION/TRAINING

INSTITUTION	DEGREE	COMPLETION YEAR	FIELD OF STUDY
Haldia Institute of Technology, WBUT	B.Tech	2008	Biotechnology
Bose Institute, Jadavpur University	Ph.D	2015	Molecular Biology
Indian Institute of Information Technology- Allahabad	M.Tech by Research	2023	Bioinformatics
University of Chicago, USA	Post-Doc.	2024	Molecular Biology

POSITIONS HELD (ACADEMIC):

Assistant Professor, Nagaland University	10.02.2011 to 26.11.2023
Associate Professor, Nagaland University	27.11.2023 to till date

RESEARCH INTERESTS:

- I. Understanding Sequence-Structure-Function relationship of *S. aureus* druggable proteins.
- II. Development of plant-based assay system for screening anti-cancer lead molecules.
- III. Understanding role of Bromodomain and WD repeat-containing protein 1 in cohesin conversion.

AWARDS AND FELLOWSHIP:

- Recipient of **SIRE (SERB International Research Experience)** Fellowship (2023) by DST, Govt of India.
- Awarded Junior Institute Research Scholarship by Bose Institute, Kolkata (December 2008- January, 2011).
- Qualified GATE-2007, 2008.

COMPLETED EXTERNALLY FUNDED PROJECTS:

1. "Characterization and purification of Lactoferrin from Mithun (*Bos frontalis*) milk and its antimicrobial potency on different pathogenic bacteria of Mithun", DBT, Govt of India - Principal Investigator (**49.12 lacs**)
2. "Physicochemical characterization of the primary sigma factor of *Vibrio cholerae*", DBT, Govt of India (Completed)- Principal Investigator (**31.75 lacs**)
3. "Concurrent evaluation and monitoring of functioning of National Food Security Act, 2013 across the country", Ministry of consumer affairs food and public distribution, (Sub-Nodal officer)
4. "Development of plant based assay system for primary screening of lead molecule(s) from medicinal plants of Nagaland" DBT, Govt of India - Principal Investigator (**94.6424 lacs**)

PUBLICATIONS:

20. Chaurasiya, D., Mondal, R., Lahiri, T., & Mandal, M. (2026). A disorder–function insights into HuNoV VPg–RdRp interaction revealing a potential drug target. *Future Virology*, 21(2), 91–100. doi:10.1080/17460794.2026.2633935
19. Nagi, R., Ozkum, A., Mondal, R., & Deb, C. R. (2026). Effect of human topoisomerase I inhibitors on *Arabidopsis thaliana* (L.) Heynh DNA topoisomerase I α : an integrated in silico, in vitro, and in vivo study. *Journal of Experimental Biology and Agricultural Sciences*, 14(1), 44–54. doi:10.18006/2026.14(1).44.54
18. Ozkum, A., Nagi, R., Afzal, N. U., Manna, P., Datta, S., Ezung, E., ... Mondal, R. (2025). A plant-based assay for preliminary mass screening of botanical specimens with potential cytotoxic properties, benchmarked against an animal cell culture-based assay: A case study on *Aristolochia assamica* D. Borah & T.V. Do. *Suid-Afrikaanse Tydskrif Vir Plantkunde [South African Journal of Botany]*, 183, 23–32. doi:10.1016/j.sajb.2025.05.026
17. Tripathi, A., **Mondal, R.**, Mandal, M., Lahiri, T., & Pal, M. K. (2024). A structural proteomics exploration of Synphilin-1 and alpha-synuclein interaction in pathogenesis of Parkinson’s disease. *Biomolecules*, 14(12). doi:10.3390/biom14121588 **IF. 4.8**
16. Chaurasiya D, **Mondal R**, Lahiri T, Tripathi A, Ghinmine T. IDPPred: a new sequence-based predictor for identification of intrinsically disordered protein with enhanced accuracy. *J Biomol Struct Dyn*. 2023 Dec 11:1-9. doi: 10.1080/07391102.2023.2290615 **IF. 2.7**
15. Ozkum, A., Laskar, D., Datta, S., Ghosh, R., Dam, S., Nagi, R., Deb CR*, **Mondal, R.*** (2023). Methanolic root peel extract of *Potentilla fulgens* L. shows anti-proliferative activity on root meristematic cells of *Lathyrus sativus* L. and antiamoebic activity on trophozoites of *Entamoeba histolytica*. *Suid-Afrikaanse Tydskrif Vir Plantkunde [South African Journal of Botany]*, 163, 523–530. doi:10.1016/j.sajb.2023.11.008 **IF. 2.7**
14. Tripathi A, **Mondal R**, Lahiri T, Chaurasiya D, Pal MK. TemPred: A Novel Protein Template Search Engine to Improve Protein Structure Prediction. *IEEE/ACM Trans Comput Biol Bioinform*. 2023 May-Jun;20(3):2112-2121. doi: 10.1109/TCBB.2022.3233846. **IF. 3.6**
13. Kumar R, **Mondal R**, Lahiri T, Pal MK. Application of sequence semantic and integrated cellular geography approach to study alternative biogenesis of exonic circular RNA. *BMC Bioinformatics*. 2023 Apr 17;24(1):148. doi: 10.1186/s12859-023-05279-z. PMID: 37069509; PMCID: PMC10108499. **IF. 2.9**
12. Laskar D., Ozkum A., **Mondal R.*** Molecular docking analysis of juglone with parvulin-type PPIase PrsA from *Staphylococcus aureus*. *Bioinformatics*. 2023 Jan 31;19(1):48-52. doi: 10.6026/97320630019048.
11. Ozkum A., **Mondal R.*** (2021). Potential application of phage ϕ 11 lytic proteins in rapid detection and elimination of *Staphylococcus aureus*. *International Journal of Current Microbiology and Applied Sciences*, 10(10), 142–155. doi:10.20546/ijcmas.2021.1010.017
10. Sinha D, Sinha D, Dutta A, Chakraborty T, **Mondal R**, Seal S, Poddar A, Chatterjee S, Sau S. Alternative Sigma Factor of *Staphylococcus aureus* Interacts with the Cognate Antisigma Factor Primarily Using Its Domain 3. *Biochemistry*. 2021 Jan 19;60(2):135-151. doi: 10.1021/acs.biochem.0c00881. **IF. 2.9**
9. Sinha D, **Mondal R**, Mahapa A, Sau K, Chattopadhyaya R, Sau S. A staphylococcal anti-sigma factor possesses a single-domain, carries different denaturant-sensitive regions and unfolds via two intermediates. *PLoS One*. 2018 Apr 5;13(4):e0195416. doi: 10.1371/journal.pone.0195416. **IF. 2.9**
8. Jana B, Bandhu A, **Mondal R**, Biswas A, Sau K, Sau S. Domain structure and denaturation of a dimeric Mip-like peptidyl-prolyl cis-trans isomerase from *Escherichia coli*. *Biochemistry*. 2012 Feb 14;51(6):1223-37. doi: 10.1021/bi2015037. **IF. 2.9**
7. Chanda PK, Bandhu A, Jana B, **Mondal R**, Ganguly T, Sau K, Lee CY, Chakrabarti G, Sau S. Characterization of an unusual cold shock protein from *Staphylococcus aureus*. *J Basic Microbiol*. 2010 Dec;50(6):519-26. doi: 10.1002/jobm.200900264. **IF. 3.5**

6. **Mondal R**, Chanda PK, Bandhu A, Jana B, Lee CY, Sau S. Detection of the cell wall-affecting antibiotics at sublethal concentrations using a reporter *Staphylococcus aureus* harboring drp35 promoter - lacZ transcriptional fusion. BMB Rep. 2010 Jul;43(7):468-73. doi: 10.5483/bmbrep.2010.43.7.468. **IF. 2.9**
5. Bandhu A, Ganguly T, Jana B, **Mondal R**, Sau S. Regions and residues of an asymmetric operator DNA interacting with the monomeric repressor of temperate mycobacteriophage L1. Biochemistry. 2010 May 18;49(19):4235-43. doi: 10.1021/bi9020956. **IF. 2.9**
4. **Mondal R**, Ganguly T, Chanda PK, Bandhu A, Jana B, Sau K, Lee CY, Sau S. Stabilization of the primary sigma factor of *Staphylococcus aureus* by core RNA polymerase. BMB Rep. 2010 Mar;43(3):176-81. doi: 10.5483/bmbrep.2010.43.3.176. PMID: 20356457; PMCID: PMC6532765. **IF. 2.9**
3. Ganguly T, Das M, Bandhu A, Chanda PK, Jana B, **Mondal R**, Sau S. Physicochemical properties and distinct DNA binding capacity of the repressor of temperate *Staphylococcus aureus* phage phi 11. FEBS J. 2009 Apr;276(7):1975-85. doi: 10.1111/j.1742-4658.2009.06924.x. Epub 2009 Feb 23. **IF. 5.62**
2. Das M, Ganguly T, Bandhu A, **Mondal R**, Chanda PK, Jana B, Sau S. Moderately thermostable phage Phi 11 Cro repressor has novel DNA-binding capacity and physicochemical properties. BMB Rep. 2009 Mar 31;42(3):160-5. doi: 10.5483/bmbrep.2009.42.3.160. **IF. 2.9**
1. Chanda PK, **Mondal R**, Sau K, Sau S. Antibiotics, arsenate and H₂O₂ induce the promoter of *Staphylococcus aureus* cspC gene more strongly than cold. J Basic Microbiol. 2009 Apr;49(2):205-11. doi: 10.1002/jobm.200800065. **IF. 3.5**

BOOK CHAPTER:

3. Lahiri T., **Mondal R. (2026)** Deep learning for protein folding. in The AI Frontier in Molecular Modelling and Drug Designing. Paperback ISBN: 9780443403385 eBook ISBN: 9780443403392
2. Lahiri T., **Mondal R.**, Tripathi A. (2024). Machine learning fundamentals to explore complex omics data. In *Integrative Omics :Concept, Methodology, and Application*. Paperback ISBN: 9780443160929, eBook ISBN: 9780443160936
1. **Mondal, R.** (2021). Nanotechnology in Microbiology. In *Nanotechnology for Advances in Medical Microbiology* (pp. 269–293). doi:10.1007/978-981-15-9916-3_11

PUBLICATION IN CONFERENCE:

10. Chaurasiya, D., Mondal, R., & Lahiri, T. (2025, December 18). Significant enhancement in IDR prediction using intrinsic mobility pattern of protein residues. *2025 OITS International Conference on Information Technology (OCIT)*, 193–196. Presented at the 2025 OITS International Conference on Information Technology (OCIT), Bhubaneswar, India. doi:10.1109/ocit66168.2025.11400033
9. Laskar D. and **Mondal R.*** (2025) Interactions of *Staphylococcus aureus* foldase protein PrsA with virulence factor Protein A: an In-silico study. International Conference on Health and Agricultural Biotechnology: Interdisciplinary Trends [February 28 - March 02, 2025], Department of Biotechnology Motilal Nehru National Institute of Technology Allahabad (Accepted)
8. Gupta V., Lahiri T., **Mondal R.**, Mandal M., Tripathi A., Chaurasiya D. (2024) A structural proteomics exploration of formation of cohesin complex to help unearthing chromosomal activities. IEEE 8th International Conference on Information and Communication Technology (CICT), December 6-8, 2024, IIT-Allahabad
7. Ezung E., Banerjee R., and **Mondal R.*** (2024) Evaluation of phytochemical composition, invitro

antioxidant potential, and anti-staphylococcal activity of *Terminalia bellerica* bark extract. 2nd International Conference on Multidisciplinary Research & Innovation 24th & 25th October 2024, Department Of Zoology, St. Joseph University, Dimapur, Nagaland.

6. **Mondal R.**, Lahiri T. (2022) Prospective application of Prot-PCV: a numerical vector representation of protein in alignment-free gene phylogenetics. National Conference On Anthropology: Biological Diversity And Affinities-A Critical Rethinking Of The Enduring Issues In India (ABDACREII_2022). 16-18 March, 2022, Department of Zoology, St. Joseph University, Dimapur, Nagaland.
5. Nagi, R., Dutta, S., Deb CR., **Mondal, R.** Prospective application of Prot-PCV: a numerical vector representation of protein in alignment-free gene phylogenetics. National Conference On Anthropology: Biological Diversity And Affinities-A Critical Rethinking Of The Enduring Issues In India (ABDACREII_2022). 16-18 March, 2022, Department of Zoology, St. Joseph University, Dimapur, Nagaland.
4. Ozukum A. and **Mondal R.***. (2022) *Staphylococcus aureus* transcriptional regulator of membrane lipid biosynthesis, FapR: a prospective drug target. International conference 5th BioSangam, “BioSangam 2022: Emerging trends in Biotechnology”, MNNIT
3. Chaurasiya D., **Mondal R.***, Lahiri T.* (2022) Deciphering role of intrinsically disordered regions of RNA polymerase beta subunit in rifampin resistance by pathogenic bacteria. International conference 5th BioSangam, “BioSangam 2022: Emerging trends in Biotechnology”, MNNIT
2. Ezung E., Banerjee R., **Mondal R.*** (2022) Potential role of rare codons in *Staphylococcus aureus* extracytoplasmic function sigma factor (σ^S) expression. International conference 5th BioSangam, “BioSangam 2022: Emerging trends in Biotechnology”, MNNIT
1. **Mondal R.*** (2019) Application of PCR-Denaturing Gradient Gel Electrophoresis (DGGE) To Study the Microbial Biodiversity. Biodiversity For Human Welfare: Current And Future Trends-India Page:63 ISBN 978-81-935866-3-1.

REVIEWER OF PEER REVIEWED JOURNALS:

- Biologia (Springer)
- Briefings in Bioinformatics (Oxford University Press)

PH.D SUPERVISION ONGOING:

1. Ms. Rokono Nagi (as Co-Supervisor)
2. Ms. Amenti
3. Mr. Dipten Laskar
4. Mr. Ekonthung Ezung (as Co-Supervisor)

PERSONAL DETAILS:

Date of Birth: 19th July 1987
Nationality: Indian
Father's Name: Mr. Asok Kumar Mondal
Marital Status: Married

Languages: Bengali, Hindi, English

Declaration: I hereby declare that all the details furnished above are true to the best of my knowledge and belief.



RAJKRISHNA MONDAL