Adhara Zaman Labony

https://www.linkedin.com/in/adhara-zaman/?isSelfProfile=true | adhara.zaman.labony25@gmail.com
📍 Gp-Cha 204, TB Gate, Mohakhali, Dhaka-1212
📞 +8801727489424

RESEARCH PROFILE

Biotechnology graduate with hands-on research experience in molecular biology, PCR-based analysis, DNA amplification, agarose gel electrophoresis, sample processing, and antimicrobial susceptibility testing. Hands-on experience with both plant DNA extraction and PCR-based molecular analysis. Experienced in conducting undergraduate thesis research involving 909 clinical sputum samples and in molecular characterization of *Klebsiella pneumoniae*. Familiar with bioinformatics through academic coursework and computational biology training, with experience in literature review, research data organization, and scientific presentation.

EDUCATION

Dhaka, Bangladesh **BRAC University** **September, 2019 - December, 2024**

- **Major:** Bachelor of Science in Biotechnology
- **CGPA:** 3.07 (Out of 4.00)
- **Notable Courses:** Human Physiology, Bioinformatics, DNA Fingerprinting and Molecular Diagnostics, Medical Biotechnology, Fundamentals of Genetic Engineering, Basic Immunology, Environmental Biotechnology.
- **Lab Courses:** Biochemical Test, Microbiology Lab, Lab Safety.

Research Interests: Molecular Genetics | Genetic Diversity | Molecular Markers | Bioinformatics | Plant Biotechnology | Germplasm Conservation | Molecular Biology

RESEARCH EXPERIENCE

Undergraduate Thesis Research

Isolation and Identification of Respiratory Pathogens from Sputum Samples and Assessment of Antibiotic Resistance: A Single-Centered Cross-Sectional Study

National Institute of Diseases of the Chest and Hospital (NIDCH) | 2024

- Analyzed 909 clinical sputum samples to investigate respiratory pathogens and their antimicrobial resistance patterns.
- Performed microbial isolation, identification and antibiotic susceptibility testing (AST).
- Applied molecular biology techniques including PCR/DNA amplification and agarose gel electrophoresis.
- Organized and analyzed laboratory-generated research data.
- Investigated pathogen distribution and antibiotic resistance profiles.
- Maintained experimental records and followed laboratory safety and aseptic procedures.

Molecular Biology Research Project(GroupWork)

Detection, Antimicrobial Resistance, and Hypervirulence Profiles of Klebsiella pneumoniae Isolated from Clinical Sputum Samples in Bangladesh

BRAC University | 2025–2026

- Analyzed 173 clinical sputum samples for identification and characterization of *Klebsiella pneumoniae*.
- Investigated antimicrobial resistance and multidrug resistance patterns.
- Performed PCR-based detection of hypervirulence-associated genes.
- Worked with molecular targets including iucA, iroB, peg-344, prmpA and prmpA2.
- Performed DNA amplification and agarose gel electrophoresis for molecular analysis.
- Organized experimental findings and contributed to interpretation of research data.

MOLECULAR BIOLOGY & LABORATORY SKILLS

Molecular Biology

- DNA extraction and sample preparation
- PCR / DNA amplification
- Agarose gel electrophoresis
- DNA fragment analysis
- Centrifugation and sample processing
- PCR-based gene detection
- Sample handling, labeling and storage

Microbiology

- Microbial culture, isolation and identification
- Gram staining
- Antibiotic Susceptibility Testing (AST)
- Kirby–Bauer disk diffusion method
- Mueller–Hinton agar preparation/use
- Aseptic techniques
- Growth media preparation

Laboratory Practice

- Laboratory safety and biosafety
- Laboratory equipment handling
- Experimental documentation and record keeping
- Basic clinical laboratory testing
- Blood glucose and cholesterol analysis

BIOINFORMATICS & DATA ANALYSIS

- Basic Bioinformatics
- Biological data organization and analysis
- Literature/database searching
- Microsoft Excel for research data management
- Basic data visualization
- Scientific literature review

Software:

- Microsoft Word
- Excel
- PowerPoint
- Canva
- Python

RESEARCH OUTPUTS & CONFERENCE PRESENTATIONS

- **ZamanLabony, A. (2025)**

Isolation and Identification of Respiratory Pathogen from Sputum Sample Assessing Antibiotic Resistance: A Single-Centered Cross-Sectional Study.

Poster Presentation, 39th Bangladesh Society of Microbiologists (BSM) Annual Conference 2025, Dhaka, Bangladesh.

- **ZamanLabony, A. (2026)**

Diabetic Foot Ulcer Healing with Systemic Insulin Therapy: Clinical Evidence and Biological Mechanisms.
Scoping Review, NextGen Microbiology II – 2nd National Conference on Emerging Horizons in Microbiology 2026, Dhaka, Bangladesh

- ***ZamanLabony, A. (2026)***

Dietary Fibre and Metabolic Dysfunction-Associated Steatotic Liver Disease: Insights into the Gut–Liver Axis.
Conference on Innovation in Food, Health & Nutrition for Sustainable Development, Daffodil International University.

RESEARCH & LABORATORY EXPERIENCE

Internship Trainee – Department of Microbiology **June 2024 – August 2024**

National Institute of Diseases of the Chest and Hospital (NIDCH)

- Worked in the Microbiology Department and National Tuberculosis Reference Laboratory (NTRL).
- Gained hands-on experience in AFB testing, GeneXpert and culture/sensitivity testing.
- Assisted with clinical sample collection, processing and laboratory testing.
- Followed appropriate laboratory safety and aseptic procedures.

RESEARCH TRAINING

Training on Laboratory Animals and Animal Facilities

icddr,b | August 2025

- Training on laboratory animal handling, ethics, welfare and research facilities.
- Gained practical exposure to animal handling, anesthesia and euthanasia procedures.
- Observed breeding and maintenance of laboratory animals.
- Course on Computational Vaccine Designing

Introduction to computational vaccine design

Biolab Research Organisation | 2025

- Exposure to subunit, mRNA and saRNA vaccine design approaches.
- Practical experience in handling, gendering, and identification of laboratory animals;RILassay;CSFandblood
- collection; various injection routes; force-feeding; temperature recording; and Alzheimer'sdiseasebehavioral
- testing in mice and rat models.

Training Course on Laboratory Animals Used in Biomedical Sciences

icddr,b | August 2025

- Laboratory animal handling, sexing, and identification
- RIL assay
- CSF and blood sample collection
- Various injection routes and force-feeding
- Animal temperature recording
- Alzheimer's disease behavioral testing in mice and rat models

PROFESSIONAL EXPERIENCE

Part-Time Admission Office Staff

- BRAC University | January 2023 – January 2024
- Assisted with document management, database management and data entry.
- Performed data validation and ID-card scanning.
- Assisted with admission-related administrative activities.

Private Tutor

- Dhaka, Bangladesh | September 2023 – Present
- Provide academic support to students in science and general subjects.
- Develop individualized learning approaches according to students' academic needs.

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

- Former Assistant Director, BRAC University Community Service Club – Marketing & Events
- Former Assistant Director, BRAC University Leadership Development Forum – Marketing & Creative
- Former Secretary, BRAC University Monon Club – HR & EA
- Former Assistant Director, BRAC University Communication Language Club – Events

VOLUNTEERING & ACHIEVEMENTS

- Volunteer, 15th Convocation, BRAC University – 2023
- University Representative, Hope Festival – 2023
- Volunteer, 10th Dhaka Literature Festival – 2023
- Volunteer, Save a Drop 2.0 & 3.0 Blood Donation Event – 2022
- Participant, Bio-Xin Cosmeceuticals 1st National Biotechnology Olympiad – 2022
- Participant, Spring-2023 Biotech Art Competition

REFERENCES

- **Dr. Fahim Kabir Monjurul Haque**

Associate Professor of Microbiology,BRAC University
Email: fahim.haque@bracu.ac.bd

- **Prof. Mahboob Hossain, PhD**

Professor of Microbiology,BRAC University
Email: mmhossain@bracu.ac.bd