Md Shamsudduha

Dhaka, Bangladesh

shamsuddoha.bio@gmail.com +880-1796253901

LinkedIn GitHub ORCID ResearchGate

Education

MS in Genetics and Molecular Biology — University of Dhaka, Bangladesh
CGPA: 3.75/4.00 — 2024

BS in Zoology — University of Dhaka, Bangladesh
CGPA: 3.61/4.00 — 2023

Research Experience

Research Assistant — **2024–Present**
Genetics and Molecular Biology Lab, Dept. of Zoology, University of Dhaka

Project Title	Description of Work
Drosophila Behavior and Gene Expression	Investigated effects of intermittent fasting on behavior and gene expression in *Drosophila melanogaster*. Maintained fly stocks and performed molecular analyses including PCR, RNA extraction, and cDNA synthesis. Additionally, generated high-glucose-induced diabetic flies for experimental purposes.
Ranavirus Detection in Turtles	Extracted DNA from collected swab samples of various turtle species in Bangladesh and extracted DNA. Amplified specific Ranavirus gene regions using PCR and confirmed presence of the virus through gel electrophoresis.
Nanoparticle-Based DNA Extraction	Established a cost-effective PEI–iron oxide nanoparticle based DNA extraction method, providing an economical alternative to conventional column- and PCI-based techniques in our lab.
Nanoparticle-Mediated Gene Delivery in Tomato Plants	Collaborated with Electrical Engineering and Botany departments to conduct nanoparticle-mediated gene delivery. Designed and optimized nanoparticle–DNA complexes to improve transformation efficiency.

Research Student — **2023–2024**
Genetics and Molecular Biology Branch, Dept. of Zoology, University of Dhaka

Thesis Title	Description of Work
Effect of salt stress on the expression of *Gad1* gene and memory formation in *Drosophila melanogaster*	Studied aversive and appetitive memory formation under salt stress in *Drosophila* and analyzed *Gad1* gene expression using PCR, RNA extraction, electrophoresis, and bioinformatics tools.

Publications and Presentations

Publications:

- **Shamsudduha, M.**, Rahman, M. M., Naher, J., Barkat, A. I., Akter, S., & Alam, M. S. (2025). "Morphological and molecular identification of the cat flea *Ctenocephalides felis* from Bangladesh". *Journal of Advanced Veterinary and Animal Research*, 12(1), 280–286. https://doi.org/10.5455/javar.2025.l894
- Barkat, A. I., Jabin, R. B. M., Riana, F. M., Akter, S., **Shamsudduha, M.**, & Alam, M. S. "Effect of antidepressant drug Flupentixol-Melitracen on locomotory behaviors of *Drosophila*". *Journal of Bangladesh Academy of Science*
- Barkat, A. I., Ahmed, K. A., Akter, S., **Shamsudduha, M.**, Riana, F. M., Jabin, R. B. M., Begum, M., & Alam, M. S. "Effect of antidepressant drug on glucose level and expression of insulin-like peptide genes *DILP5* and *DILP6* in *Drosophila melanogaster*". *BioMed Research International*. (Under review)

- Esha, K. J., Roy, A., **Shamsudduha, M.**, Rashid, T. U., Alam, M. S., Das, H., Islam, T., Rahman, M., Ullah, S. M., & Habib, A. "Synthesis and characterization of polyethylenimine-coated magnetic nanoparticles for DNA binding toward pollen-directed gene delivery applications". *IEEE Transactions on NanoBioscience*. (Under review)
- Barkat, A. I., **Shamsudduha, M.**, Begum, R. A., Muid, K. A., Jahan, H., & Alam, M. S. "Molecular tools for wildlife research in Bangladesh: Current practices and future prospects". *Journal of Wildlife Science*. (Under review)

Conferences:

- Alam, M. S., **Shamsudduha, M.**, Begum, R. A., & Muid, K. A. (2023). "Molecular identification and phylogenetic analysis of a mole cricket of the genus *Gryllotalpa* using mitochondrial *16S rRNA* and *CO1* gene sequence from Bangladesh". *BCSIR Congress-2023* (Oral)
- **Shamsudduha, M.**, Naher, J., Barkat, A. I., Akter, S., & Alam, M. S. (2024) "Effect of salt stress on the expression of *Gad1* gene and memory formation in *Drosophila melanogaster*". *23rd SCA (Science Council of Asia) Conference*, November 2024 (Poster)
- **Shamsudduha, M.**, Begum, R. A., Muid, K. A., Jahan, H., & Alam, M. S. (2025) "Migration Patterns and Haplogroup Diversity of Humans in South Asia Through mtDNA and Y-DNA Analysis". *24th National Conference and AGM-2024, Zoological Society of Bangladesh*, May 2025 (Oral)

Skills

- **Experimental and Molecular Techniques:** DNA/RNA extraction, cDNA synthesis, PCR, RT-PCR, Gel electrophoresis, Nanoparticle–DNA binding assay
- **Culture and Imaging:** *Drosophila* culture, rearing and maintenance; light and stereo microscopy
- **Bioinformatics:** NCBI tools (sequence retrieval, BLAST, primer design), Serial Cloner / MEGA (alignment, phylogenetic analysis), FinchTV (sequence QC)
- **Software and Programming:** R (basic), ImageJ, Microsoft Office, Mendeley, LaTeX
- **Laboratory and Administrative Skills:** Equipment handling, reagent preparation, data recording, scientific report writing, laboratory management, and strategic planning
- **Soft and Interpersonal Skills:** Teamwork, leadership, communication, time management, patience, and problem-solving
- **Languages:** English (Fluent), Bangla (Native), Hindi (Fluent)

Awards and Honors

- **National Science and Technology Fellowship, 2023** : Awarded by the Ministry of Science and Technology, Bangladesh for excellence in master's thesis research proposal
- **Champion, National Zoology Olympiad, 2022** : Organized by the Zoological Society of Bangladesh; recognized as the top performer among nationwide participants.

Certifications

- **Introduction of Genetics and Evolution**, Duke University, Coursera, 2020
- **DNA Decoded**, McMaster University, Coursera, 2020
- **Research Design: Inquiry and Discovery**, University of North Texas, Coursera, 2020
- **Origins - Formation of the Universe, Solar System, Earth and Life**, University of Copenhagen, Coursera, 2020

Leadership and Volunteering

- **General Member:** Dhaka University Research Society (DURS), Dhaka University Nature Conservation Club (DUNCC)
- **Volunteer Roles:**
  - Enzyme at Bangladesh Biology Olympiad — Role: Publicity
  - Zoological Society Conference, Bangladesh — Role: Registration Desk volunteer