Curriculum Vitae

Dr. Md. Mahmud Hasan
Senior Scientific Officer and Head
Fisheries Biotechnology Division
National Institute of Biotechnology
Ministry of Science and Technology (MOST)

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Permanent Address: House-164, Road-East Bashabati, Ward-8, Bagerhat Municipality, Post-Bagerhat 9300, Bagerhat**.**
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ACADEMIC QUALIFICATION

1) **Ph.D. in Microbiology**, *(Awarded in 2024),* Department of Microbiology, University of Dhaka. ***Thesis title:*** "**Isolation and characterization of parasporal anticancer protein from *Bacillus thuringiensis* strains**"

2) **MS in Genetics**, (*2001-2002 Exam held in 2005),* Obtained from the Department of Zoology, University of Dhaka, Bangladesh, and was awarded **First class** (position 1st in Genetics & Molecular Biology Branch; Combined 3rd). ***MS Thesis title:*** "**Role of Chitin and Algae for Biofilm formation of *Vibrio cholerae* in Aquatic Environment of Bangladesh**"

3) **BS in Genetics and Molecular Biology,** *(1997-2001, Exam held in 2003),* Obtained from the Department of Zoology, University of Dhaka, Bangladesh, and was awarded **First class** (position 1st in Genetics & Molecular Biology Branch). ***BS Research Project title:*** "**Metaphase Karyotype Analysis of Mosquito Species *Aedes aegypti***"

4) **H.S.C. (Higher Secondary Certificate) in Science** *(1994-1996)*: Obtained from the Secondary and Higher Secondary Education Board, Jessore, studying in Government P.C. College, Bagerhat. **First Division**.

5) **S.S.C. (Secondary School Certificate) in Science** *(1994)***:** Obtained from the Secondary and Higher Secondary Education Board, Jessore, studying in Bagerhat Government High School. **First Division**.

EMPLOYMENT RECORDS *(July 2003 to Present)*

Position	Organization	Period
Head of the Division	Fisheries Biotechnology Division National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka-1349, Bangladesh.	25 June 2024 to running
Principal Scientific Officer (Current Charge)	Fisheries Biotechnology Division National Institute of Biotechnology, Ganakbari, Savar, Dhaka-1349, Bangladesh.	07 Aug 2023 to 18 December 2023
Head of the Division	Fisheries Biotechnology Division National Institute of Biotechnology, Ganakbari, Savar, Dhaka-1349, Bangladesh.	25 Aug 2019 to 12 Sep 2021
Senior Scientific Officer	Fisheries Biotechnology Division National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka-1349, Bangladesh.	10 March 2015 to 07 Aug 2023
Scientific Officer	Molecular Biotechnology Division National Institute of Biotechnology, Ganakbari, Savar, Dhaka-1349, Bangladesh.	15 April 2007 to 09 March 2015
Researcher	Environmental Microbiology Laboratory, icddr,b, Mohakhali, Dhaka, Bangladesh	17 Aug 2005 to 31 Dec 2006
MS Thesis Fellow	Environmental Microbiology Laboratory, icddr,b, Mohakhali, Dhaka, Bangladesh.	01 July 2003 to 16 Aug 2005

CURRENT RESEARCH AREAS

- Microbial genomics, mitogenomics
- *Bacillus thuringiensis* (anticancer protein, biopesticide, mosquitocidal toxin)
- *Bacillus subtilis* (probiotic potentials, protease, amylase, phytase and bacteriocin)
- Identification and control of pathogens of shrimp, prawn, and lobster.
- Molecular genetics, environmental microbiology, cytogenetics, etc.

RESEARCH EXPERIENCES/SKILLS

- **Genomics and Bioinformatics:** Next Generation Sequencing (NGS) and data analysis of bacterial whole genome, eukaryotic genome, and mitochondrial genome. Quality assessment of NGS data, bacterial genome assembly, eukaryotic genome and organellar genome assembly, RNAseq assembly, genome annotation, genome alignment, genome mapping and analysis by QUAST, FastQC, SPAdes, RAST, usegalaxy, BV-BRC, KBase, Mauve and BRIG, Proteins 3D structure simulation and visualization, Molecular

Docking. Expertise in using many bioinformatics tools, Artemis, DNA plotter, BAM view, Circos, MEGA-7, BioEdit7, AutoDoc Vina, Pymol, Chimera, Digital studio, public genomics and proteomics databases, Pearl primer, FastPCR, NCBI toolkit, ClustalW, Muscle, EMBOSS, Notepad++, etc. R, Matlab, SPSS. Oracle data-based software analysis for basic DNA sequencing and fragment analysis for DNA fingerprinting. 3130 Genetic Analyzer: Data Collection Software v3.0, ABI DNA Sequencing Analysis Software v5.2, GeneMapper Software v4.0, etc.

- **Molecular Genetics and Biotechnology:** Prokaryotic and Eukaryotic DNA, plasmid, mitochondria extraction, PCR, Agarose gel electrophoresis, isolation and purification of intracellular, extracellular, membrane protein and parasporal cry protein, SDS-PAGE, proteolytic digestion of protein and restriction digestion of DNA, Cytotoxicity test (HeLa, MOLT4, Vero cell line, *Artemia sp.*), Phase contrast, Inverted and Fluorescent Microscopy.

- **Computer Operating Systems and Software:** Ubuntu Linux and Windows operating systems operation; MS Office (Word, PowerPoint, Excel, etc.), ADOBE, Photoshop, etc.

RESEARCH INTERESTS

- Next Generation Sequencing (NGS) and data analysis of bacterial whole genome, eukaryotic genome, and mitochondrion.

- Microbial genomics; Bacterial anticancer protein; BT biopesticide; Bacteriocin; Mosquitocidal toxin; Cytogenetics.

- Molecular identification, cloning, expression, isolation and characterization of anticancer proteins & peptides, bacteriocins, lantibiotics, pesticidal proteins (Cry, Cyt, VIP), transmembrane and transporter protein and different enzymes (alpha-amylase, alkaline serine protease, arsenite oxidase, pectate lyase, etc.) from *B. thuringiensis* and other *B. cereus* group, *B. subtilis* group and probiotic bacteria.

- Application of Next Generation Sequencing (NGS) technologies for the analysis of the *B. thuringiensis* and other *B. cereus* group and *B. subtilis* group bacterial genome, metagenome and transcriptome, genome sequencing, assembly, annotation, alignment, and genome mapping. Molecular docking, protein-protein, and protein-peptide interactions. Analysis of protein function modulation by alternative splicing. Analysis of the impact of mutations on the protein functional sites. Comparative genomics, genome functional annotation, and gene expression analysis. MicroRNA and their targets analysis and prediction. Protein structure and protein surface analysis and comparison, and analysis of the relationship between structure, surface, and function. Application of machine learning algorithms (SVM and Benchmark) to solve biological problems, especially cancer. Analysis of RNA folding, structure, function, and evolution.

OUTLINE OF PRESENT RESEARCH ACTIVITIES

- Next Generation Sequencing (NGS) and data analysis of bacterial whole genome, eukaryotic genome, and mitochondrion.

- Genomic and Plasmid DNA extraction from native *B. thuringiensis* (*Bt*) strains, PCR for identification of cancer cell killing parasporin (Cry) genes and 16SrRNA gene, Agarose gel electrophoresis, PCR product purification, DNA and PCR product quantification, primer designing, etc.

- Next Generation Sequencing (NGS) data (whole genome & plasmid genome) annotation and analysis of economic important *B. thuringiensis* strains for identification, cloning, and expression of cytotoxic and insecticidal cry genes, different enzymes, bacteriocins, and secondary metabolites.

- DNA (PCR product) sequencing & DNA and protein sequence data analysis using various bioinformatics software, online tools, and databases.

- Isolation, purification, solubilization, and quantification of parasporal Crystal (Cry) proteins of native and reference *B. thuringiensis* strains

- SDS-PAGE analysis for identification of Cry proteins of *B. thuringiensis* strains.

- Proteolytic digestion (Trypsin & Proteinase K) of parasporal Cry proteins of *B. thuringiensis* strains.

- Cytotoxicity test (HeLa, MOLT4, vero cell line, *Artemia sp.*), hemolytic activity test, and Biocidal assay (Mosquito and Tefritidae fruit fly larvae) of proteolytic processed Cry proteins of *Bt* strains.

- 3D Protein Structure simulation by NMR

- Phase contrast and SEM (Scanning Electronic Microscopy) of important *Bt* strains

- Isolation, identification, and characterization of antibacterial peptides and antibiotics from indigenous *B. thuringiensis*, *B. licheniformis, B. subtilis*, *Chromobacterium violaceum* strains

- NGS data analysis of bacterial genome (*B. licheniformis* and *B. subtilis* strains).

OUTLINE OF PREVIOUS RESEARCH ACTIVITIES

Isolation and Identification of bacterial strains (*V. cholera, V. mimicus, Aeromonus,* other vibrios, *Clostridium perfringens,* and other bacterial strains) from different aquatic environmental samples. Isolation of bacterial genomic DNA, Plasmid and phage DNA, Polymerase chain reaction (PCR), RAPD, agarose gel electrophoresis, and capillary electrophoresis. DNA sequencing and data analysis. Human DNA Fingerprinting/profiling (DNA isolation to fragment analysis). Isolation of genomic DNA from bacteria, human, goat, and fish samples. Microsatellite DNA analysis of Hilsha shad (*Tenualosa ilisha*) fish and Black Bengal goat. Fluorescent microscopy of bacteria and karyotype analysis of mosquito larvae (*Aedes aegypti* L.) and *Tenualosa ilisha* fish. Identification and enumeration of total coliform, fecal coliform, total bacteria, fecal streptococci, *Shigella, Salmonella, Pseudomonus*, *Escherichia coli,* etc.

Rabbit ileal loop (RIL) test for detection of toxin level of toxigenic bacteria, Antibiotic susceptibility test. Physicochemical parameter detection (pH, dissolved oxygen (DO), salinity, TDS, hardness, conductivity, temperature, etc.) of aquatic bodies.

RESEARCH PROJECTS ONGOING/DONE/ACTIVELY INVOLVED

1. **Chief Investigator:** Development of Fish Mitochondrial Genome Database for Better Management of Population Structure and Protection from Genetic Contamination. (Funded by MOST & NIB, GoB: July 2025 to December 2030)
2. **Chief Investigator:** Development of fish probiotics from indigenous bacterial strains of Bangladesh. (Funded by NIB, GoB: July 2025 to June 2030)
3. **Chief Investigator:** Isolation, identification, and characterization of bacteriophage as a potential biocontrol agent against fish pathogenic bacteria. (Funded by NIB, GoB: July 2025 to June 2030)
4. **Chief Investigator:** Development of Gene Bank for Fish and Microbes Economically Important to Aquaculture and Fish Genetic Resources. (Funded by National Gene Bank Establishment, GoB: January 2020 to June 2022)
5. **Principal Investigator:** Isolation, Identification and Characterization of Probiotic Bacteria from the Digestive Tract of Cultured Fishes and Evaluation of Probiotic Potential of *Bacillus* spp. (Funded by MOST, GoB: July 2021 to June 2022)
6. **Principal Investigator:** Establishment of loop-mediated isothermal amplification method (LAMP) for rapid detection of the causative agents of early mortality syndrome (EMS) of black tiger shrimp (Funded by MOST, GoB: July 2020 to June 2021)
7. **Associate Investigator:** Development of microsatellite DNA markers for investigation of population structure of different stocks of Hilsha: Implication in better management strategies. (Funded by MOST, GoB: January 2014 to December 2016.)
8. **Principal Investigator:** Karyotype analysis of (*Tenualosa ilisha*) Hilsha shad fish (Funded by NIB, GoB: January 2014 to December 2014.)
9. **Associate researcher:** "Capacity building for cryopreservation of fish genetic resources of Bangladesh and dissemination of the techniques to hatcheries" Cryopreservation of *Labeo boga* (Bhangon) (Funded by MOST, GoB: July 2013-June 2014)
10. **Associate researcher:** Establishment of DNA profiling service Facilities at NIB (Funded by NIB, GoB: January 2010- December 2012,)
11. **Associate researcher:** Genetic diversity study using microsatellite DNA analysis for large scale farming of Black Bengal goat (Funded by GoB: January 2010- December 2014)
12. **Principal Investigator:** Conservation of endangered fishes of Bangladesh through Gene bank construction (Funded by NIB, GoB: January 2012- December 2018).
13. **Program Director:** Development of computer laboratory to facilitate research and academic activities of National Institute of Biotechnology (Funded by GoB: February 2012 – June 2013)
14. **Laboratory & Field Researcher:** The Molecular Ecology of *Vibrio cholerae* in the

Gangetic Delta- Whole Genome Expression Profiles as Ecosystem Bioprobes. (Funded by: National Institute of Health (NIH), Grant no. 5 R01 A143422-03 through Stanford University, USA, 2003-2006).

15. **Laboratory researcher:** Genomic assessment of phenotypic plasticity in an aquatic bacterium: water quality vs. microbial habitats. (Funded by: Dart Mouth Medical College, USA: 2005-2006)
16. **Laboratory researcher:** Cholera risk management in Mozambique and Bangladesh. (Funded by: DFID, UK: 2005-2006).

LIST OF PUBLICATION

1. Pal, D. C., **Hasan, M. M.,** Khan, S. N., & Karim, M. M. (2024). Complete mitochondrial genome sequence of giant freshwater prawn, *Macrobrachium rosenbergii* of Bangladesh. Microbiology Resource Announcements, e00924-24. https://doi.org/10.1128/mra.00924-24
2. Sultana, Y., **Hasan, M. M.,** Musa, S., and Khanum, H., (2024) Molecular Identification of Pallisentis Ophiocephali (Acanthocephala) Parasitizing Fresh Water Garfish Xenentodon Cancila in Bangladesh. Biomed J Sci Tech Res, 60(1): 52076-52081 http://dx.doi.org/10.26717/BJSTR.2024.60.009382
3. Roy, S., Saha, A., Khan, S.I., **Hasan, M.M.,** Karim, M.M., Akhter, M.Z., Hoq, M.M. and Khan, S.N., 2022. Identification and Differentiation of Closely Related Members of Bacillus cereus Group by Multiplex PCR. *Bangladesh Journal of Microbiology*, 39(1), pp.21-29. DOI: 10.3329/bjm.v39i1.64055
4. Sultana, S., **Hasan, M.M.,** Hossain, M.S., Alim, M.A., Das, K.C., Moniruzzaman, M., Rahman, M.H., Salimullah, M. and Alam, J., 2022. Assessment of genetic diversity and population structure of Tenualosa ilisha in Bangladesh based on partial sequence of mitochondrial DNA cytochrome b gene. *Ecological Genetics and Genomics*, 25, p.100139. DOI: 10.1016/j.egg.2022.100139
5. Hoq, M.M., **Hasan, M.M.,** Karim, M.M., Al Mamun, M.A. and Khan, S.N., 2022. Comparative Genomics of Bacillus Subtilis MZK05 and Its Mutant Strain Revealed Genetic Factors Responsible for Enhanced Serine Protease Expression. *Preprint.* DOI: 10.21203/rs.3.rs-1242999/v1
6. Islam, A., Halder, J., Rahman, A.M., Ud-Daula, A., Uddin, S., Hossain, M.K., Jahan, N., Alim, A., Bhuyan, A.A., Rubaya and **Hasan, M.,** 2021. Meat origin differentiation by polymerase chain reaction-restriction fragment length polymorphism. *International Journal of Food Properties,* 24(1), pp.1022-1033. DOI: 10.1080/10942912.2021.1953068
7. **Hasan, M. M.,** Khan, S. N., Karim, M. M., Begum, A., & Hoq, M. M. (2019). Complete genome and plasmid sequence of a novel *Bacillus* sp. BD59S, a parasporal protein synthesizing bacterium. *3 Biotech*, 9(9): 318. **(IF 2.270)** DOI: 10.1007/s13205-019-1849-7
8. Sultana, S., **Hasan, M.M.,** Hossain, M.S., Islam, M.R., Salimullah, M., Sarder, M.R.I.,

Islam, M.S., Moniruzzaman, M. and Alam, J. 2017. Cryogenic preservation of critically endangered *Cirrhinus reba* fish sperm. *International Journal of Fisheries and Aquatic Studies*, 5(5): 334-339. **(IF 0.549)**

9. Subhan, M.A., Rahman. M.S., Alam. K. and **Hasan, M.M**. 2014.Spectroscopic analysis, DNA binding and antimicrobial activities of metal complexes with phendione and its derivative. ELSEVIER: *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 118 (2014): 944–950. **(IF 3.232)** DOI: 10.1016/j.saa.2013.09.110

10. Yesmin, S., Hashem, A., Das, K.C., **Hasan, M.M.** and Islam, M.S. 2014. Efficient In Vitro Regeneration of Chrysanthemum (*Chrysanthemum morifolium* Ramat.) Through Nodal Explant Culture. *NUCLEAR SCIENCE AND APPLICATIONS*, 23(1&2): 47-50

11. Jahid, I.K., **Hasan, M.M.,** Matin M.A., Mahmud Z.H., NeogiS.B.,Uddin M.H. and Islam M.S. 2013. Role of Polyphosphate Kinase Gene (ppk) for Survival of *Vibrio cholera* O1 in Surface Water of Bangladesh. *Pakistan Journal of Biological Sciences*,16(22): 1531-37. **(IF 0.83)** DOI: 10.3923/pjbs.2013.1531.1537

12. **Hasan, M.M.,** Islam, M.S. and Jahid, I.K. 2011. Population Dynamics of Vibrios in Biotic Biofilm in the Aquatic Environment of Bangladesh. *Current Res J of Biological Sciences.* 3(6): 570-577. **(IF 0.496)**

13. **Hasan, M.M.,** Neogi, S.B., Jahid, I.K., Islam, M.S. and Begum, A. 2008. Role of Chitin for Harbouring of Toxigenic *Vibrio cholera* O1 El Tor in Aquatic Environment. *Bangladesh J Microbiol*, 25(1): 26-30. DOI: 10.3329/bjm.v25i1.4851

ABSTRACTS / ORAL / POSTER PRESENTATIONS IN CONFERENCES

1. Biswas, R., Mim, M. A., Ahmed, S. A., & **Hasan, M, M**. (23 May, 2025). Isolation of indigenous probiotic Bacillus species with antimicrobial activity in the soil of shrimp and prawn farms in Bangladesh. 24th NATIONAL CONFERENCE AND AGM-2024, Zoological Society of Bangladesh, University of Dhaka, Bangladesh.
2. Mim, M. A., & **Hasan, M, M.** (29-30 April, 2025). Molecular identification of indigenous freshwater fish species through cytochrome b barcoding. INTERNATIONAL SCIENTIFIC CONFERENCE ON SUSTAINABLE AQUACULTURE AND FISHERIES, CVASU, Chattogram, Bangladesh.
3. Hosain, M. E., Sultana, S., Mim, M. A., Afroj, F., Hasan, M. K., & **Hasan, M. M.** (28-29 December, 2024). Effect of carbon sources on the culture of Nile tilapia Oreochromis niloticus, common carp Cyprinus carpio, freshwater mussel Lamellidens marginalis and vegetables in integrated multi-trophic aquaculture with biofloc system during nursery phase. 38th BIOLOGICAL SOCIETY OF MICROBIOLOGY ANNUAL INTERNATIONAL CONFERENCE, Dhaka, Bangladesh.
4. Rashna Sharmin Shama, Md. Mahmuduzzaman Mian, **Md. Mahmud Hasan**, Mithu Rani Tarafdar, Dr. Shakila Nargis Khan. Molecular Cloning, Expression, and Toxicity Evaluation of a Mosquitocidal Toxin Protein from Indigenous Bacillus thuringiensis BD59S. Oral presentation. BCSIR Congress 2023. March 2024
5. Roy S, Saha A, Khan SI, **Hasan MM**, Karim MM, Akhter MZ, Hoq MM, Khan SN.

Identification and Differentiation of Closely Related Members of Bacillus cereus group by Multiplex PCR. 1st International Dhaka Science Conference for Woman. Dhaka Nanomaterials Group, BAN-02/2, International Science Programme, Uppsala University, Sweden in association with Materials Science Division, Atomic Energy Centre Dhaka, Bangladesh Atomic Energy Commission. Hotel Pan Pacific Sonargaon, Dhaka. 15-16th February 2023.

6. **Hasan, M. M.,** Khan, S. N., Karim, M. M., Begum, A., & Hoq, M. M. 2019. Complete Genome and Plasmid Sequence of a Novel *Bacillus thuringiensis* strain BD59S, a HeLa cell killing Parasporal Crystalline Inclusion Protein Synthesizing Bacterium. 4th IPFS-GNOBB International Conference 2019, University of Dhaka, Dhaka, Nov 11-13, 2019. (Poster presentation)
7. DJM Joy, **MM Hasan,** AM Ramim, SN Khan, MZ Akhter, MM Hoq and MM Karim. Identification of a novel bacterial agent causing Early Mortality Syndrome (EMS) in black tiger shrimp of Bangladesh. 4th IPFS-GNOBB International Conference 2019, University of Dhaka, Dhaka, Nov 11-13, 2019. **BEST Poster** award.
8. F Nusrat, **MM Hasan,** A Al-Mamun, MM Hoq, MM Karim and SN Khan. Purification and partial characterization of extracellular α-amylase from Bacillus subtilis MZK05. 4th IPFS-GNOBB International Conference 2019, DU. (**BEST presentation**)
9. **Hasan, M. M.,** Khan, S. N., Karim, M. M., Begum, A., & Hoq, M. M. 2019. Complete Genome and Plasmid Sequence of a Novel Bacillus thuringiensis strain BD59S, a HeLa cell killing Parasporal Crystalline Inclusion Protein Synthesizing Bacterium. The 32nd Annual Conference on Trends of Microbiology for Sustainable Agroecological Development (BSM 2019), 6th April 2019 at Jashore-7408, Bangladesh. **2nd Poster** award.
10. Sushmita Roy, A Saha, SI Khan, **MM Hasan**, MM Karim, MM Hoq and SN Khan. Multiplex PCR for Differentiation of Closely Related Strains of *Bacillus cereus* Group. 32nd BSM Annual Conference 2019. (Poster presentation)
11. MM Hoq, **MM Hasan**, AA Mamun, MM Karim, SN Khan. "Assessment oof Bacillus subtilis MZK05 and its Mutant Strain, BsM9 Based on Genome Sequencing and production of Technical Enzymes". 14th ACB 2019. (Oral presentation)
12. **Hasan, M.M.,** Saha, A., Khan, S.I., Khan, S.N., Begum, A. and Hoq, M.M. 2018. Detection of Cancer Cell Killing Activity of Parasporal Proteins of *Bacillus thuringiensis* Strains. AFOB regional symposium (the 10th ARS 2018), January 27-29, 2018, Dhaka. (Oral presentation)
13. **Hasan, M. M.,** Khan, S. N., Karim, M. M., Begum, A., & Hoq, M. M. 2018. Identification of Mosquitocidal Toxin Encoded Gene from Plasmid Sequence of indigenous Bacillus thuringiensis strain. The 21st National Conference and AGM, The Zoological Society of Bangladesh. December 07-08, 2018, Dhaka. (Oral presentation)
14. **Hasan, M.M.,** Khan, S.N., Begum, A. and Hoq, M.M. 2017. Studies on anticancer peptides and cytotoxicity of UMP kinase like parasporal protein of *Bacillus thuringiensis* strain. The 3rd GNOBB- SQUARE-ACI ICBHA Conference, December 29-30, 2017, Dhaka. (Poster presentation)
15. **Hasan, M.M.,** Khan, S.N., Begum, A. and Hoq, M.M. 2017. Identification of anticancer peptides and cytotoxicity of parasporin like transporter protein of *Bacillus thuringiensis* strains. 20th International Biennial Conference 2017, The Zoological Society of

Bangladesh. December 09-10, 2017, Dhaka. (Oral presentation)

16. **Hasan, M.M.,** Khan, S.N., Begum, A. and Hoq, M.M. 2017. Finding cancer cell targeted nontoxic peptide therapeutics from transmembrane protein of *Bacillus thuringiensis.* The 13thAsian Congress on Biotechnology (ACB 2017) "Bioinnovation and Bioeconomy", July 23-27, KhonKaen, Thailand. (Poster presentation)
17. **Hasan, M.M.,** Khan, S.N., Begum, A. and Hoq, M.M. 2017. Finding cancer cell targeted nonhemolytic peptide therapeutics from transmembrane protein of indigenous *Bacillus thuringiensis.* 30th Annual Conference, Bangladesh Society of Microbiologists (BSM), Saturday, April 29, 2017, Dhaka, Bangladesh. (Oral presentation)
18. **Hasan, M.M.,** Khan, S.N., Begum, A. and Hoq,M.M. 2017. Identification of *ps* like Gene and *In silico* Prediction of their Anticancer Peptides from *Bacillus thuringiensis* strains of Bangladesh. 1st International Conference Global Circle for Scientific, Technological and Management Research (GCSTMR), February 4-5, 2017, Dhaka, Bangladesh. (Oral presentation)
19. Adnan, H., **Hasan, M.M.,** Khan, S.N. and Hoq, M.M. 2017. Detection of *ps4* gene encoding an Anticancer Protein, Parasporin 4 from *Bacillus thuringiensis* strain SgSp2 and its Expression in a Heterologous system. 1st International Conference Global Circle for Scientific, Technological and Management Research (GCSTMR), February 4-5, 2017, Dhaka, Bangladesh. (Oral presentation)
20. **Hasan, M.M.,** Ahmed, M.S., Salimullah, M. and Islam, M.S. 2016. *In silico* Prediction of Anticancer Peptides from Multidrug and Toxin Extrusion Protein of *Tetraodon nigroviridis*. 20th National Conference of Zoological Society Bangladesh, December 31, 2016, Dhaka, Bangladesh. (Oral presentation)
21. **Hasan, M.M.,** Khan, S.N., Begum, A., and Hoq, M.M. 2016. Identification of *ps* genes encoding anticancer parasporin proteins from *Bacillus thuringiensis* strains of Bangladesh. National Conference 2016 on "Biochemistry and Molecular Biology for Life Sciences" Organized by: The Bangladesh Society for Biochemistry and Molecular Biology in association with Department of Biochemistry and Molecular Biology, University of Dhaka, December 10, 2016, Dhaka, Bangladesh. (Poster presentation)

TRAINING PARTICIPATION

Sl.No.	Title of the training	Nature of training	Duration	Name and Place of the institution
1.	Daylong Training Workshop on Biohazardous Waste Management	National	1 September 2025	Biosafety Office, Sasakawa Auditorium, icddr,b.
2.	Application of Genome Editing Tools for Sustainable Development in Agriculture	National	20-24 April 2025	BARC, Farmgate
3.	Best Practices in Sustainable Solid Biohazardous Waste Management,	National	11 November 2024	Sasakawa Auditorium, icddr,b.

4.	Advanced Training Program on Bioinformatics for Sustainable Development in Agriculture	National	17-21 November 2024	BARC, Farmgate
5.	Ocean Prosperity: Catalyzing Blue Economy in Bangladesh	International Conference	03 July, 2024	Bangabandhu International Conference Center (BICC) Sher-e-Bangla Nagar, Dhaka, Bangladesh
6.	Training on Introduction to Metagenomics and Data Analysis	In-house	11-20, Feb 2024	NIB
7.	Nanotechnology for socio-economic development: approaches, scopes, applications, and prospects	In-house	14 February 2023	NIB
8.	Training on Basic Bioinformatics Concepts, Databases and Tools,	In-house	13-17 February 2022	NIB
9.	গবেষণা প্রতিষ্ঠানে শুদ্ধাচার	In-house	২৯ মার্চ ২০২৩	এনআইবি
10.	Training on Drug Design and Discovery	In-house	21-30, April 2024	NIB
11.	Training on Genomics and Next Generation Sequencing Data Analysis	In-house	02-11 May, 2023	NIB
12.	Training on Advance Bioinformatics	In-house	08-12 May, 2022	NIB
13.	Training on Introduction to R, Python and Linux	In-house	01- 10 June, 2023	NIB
14.	তথ্য অধিকার আইন, ২০০৯ ও এর বিধিমালা, প্রবিধানমালা, স্বতঃপ্রণোদিত তথ্য প্রকাশ নির্দেশিকাসহ সংশ্লিষ্ট বিধিবিধান	In-house	২৭ ডিসেম্বর ২০২৩	এনআইবি
15.	প্রাতিষ্ঠানিক বায়োসেফটি এবং বায়োসিকিউরিটি: ক) ব্যক্তিগত সুরক্ষা, খ) ল্যাব সুরক্ষা, গ) সাধারণ সুরক্ষা	In-house	০৩ মার্চ ২০২১	এনআইবি
16.	PPR 2008 and Annual Procurement Planning	National	14-18 February 2021	Bangladesh Institute of Management (BIM)
17.	অস্থায়ী অগ্রীম গ্রহণ, ভ্যাট আয়কর ও অডিট আপত্তি নিস্পত্তিকরণ	In-house	২৫ ফেব্রুয়ারি ২০২১	এনআইবি
18.				
19.	চাকরির সাধারন শর্তাবলী, সরকারি কর্মচারী আচরণ বিধিমালা, ছুটি বিধিমালা	In-house	১৯ ফেব্রুয়ারি ২০২০	এনআইবি
20.	সার্ভিস বই ব্যবস্থাপনা, পেনশন, সাধারন ভবিষ্য তহবিল, ভ্রমণ ভাতা সংক্রান্ত নিয়মাবলী	In-house	১৮ ফেব্রুয়ারি ২০২০	এনআইবি

21.	পাবলিক প্রকিউরমেন্ট আইন ২০০৬ ও বিধিমালা ২০০৮ এর আলোকে পন্য ও সেবা ক্রয় প্রক্রিয়া	In-house	২৫-২৬ ফেব্রুয়ারি ২০২০	এনআইবি
22.	প্রাতিষ্ঠানিক বায়োসেফটি এবং বায়োসিকিউরিটি: ক) ব্যক্তিগত সুরক্ষা, খ) ল্যাব সুরক্ষা, গ) সাধারণ সুরক্ষা	In-house	২৩ মার্চ ২০২০	এনআইবি
23.	দাপ্তরিক চিঠি পত্র লিখন ও নথি ব্যবস্থাপনা	In-house	২৯ সেপ্টেম্বর ২০২০	এনআইবি
24.	অগ্নি নির্বাপণ ব্যবস্থা, উদ্ধার অভিযান, প্রাথমিক চিকিৎসা ও অগ্নিকান্ড প্রতিরোধে সচেতনতা সৃষ্টি	In-house	১৪ অক্টোবর ২০২০	এনআইবি
25.	মহামারি ও আপদকাল মোকাবেলায় স্বাস্থ্য বিধি অনুসরণ এবং কর্ম পরিবেশ উন্নয়নে পরিষ্কার পরিচ্ছন্নতা বৃদ্ধিকরণ	In-house	২০ অক্টোবর ২০২০	এনআইবি
26.	মহামারি ও আপদকাল মোকাবেলায় স্বাস্থ্য বিধি অনুসরণ এবং কর্ম পরিবেশ উন্নয়নে পরিস্কার পরিচ্ছন্নতা বৃদ্ধিকরণ	In-house	২১ অক্টোবর ২০২০	এনআইবি
27.	নির্ধারিত ছুটি বিধিমালা, ১৯৫৯	In-house	১১ নভেম্বর ২০২০	এনআইবি
28.	‘অগ্নি নির্বাপণ ব্যবস্থা, উদ্ধার অভিযান, প্রাথমিক চিকিৎসা ও অগ্নিকান্ড প্রতিরোধে সচেতনতা’	In-house	১৮ সেপ্টেম্বর ২০১৯	এনআইবি
29.	বাজেট প্রস্তুতি, নিরীক্ষা প্রক্রিয়া এবং নিরীক্ষণ পর্যবেক্ষণ এবং স্টোর পরিচালনা নিষ্পত্তি	In-house	২২ সেপ্টেম্বর ২০১৯	এনআইবি
30.	জাতীয় শুদ্ধাচার কৌশল কর্ম-পরিকল্পনা বাস্তবায়ন ও মূল্যায়ন এবং সুশাসন	In-house	২৫ নভেম্বর ২০১৯	এনআইবি
31.	Project Planning Development and Management	In-house	২৬ নভেম্বর ২০১৯	এনআইবি
32.	পেশাগত/দাপ্তরিক যোগাযোগ দক্ষতা বৃদ্ধি	In-house	০২ ডিসেম্বর ২০১৯	এনআইবি
33.	ট্রেনিং অন স্ট্যাটিসটিক্যাল এনালাইসিস	In-house	৪ দিন (২২ জানুয়ারী ২০১৭, ০৫ ফেব্রুয়ারি ২০১৭, ১২ ফেব্রুয়ারি ২০১৭, ০৫ মার্চ ২০১৭)	এনআইবি
34.	বৈজ্ঞানিক প্রবন্ধ রচনা ও প্রকাশনা	In-house	৩০ আগষ্ট ২০১৬	এনআইবি
35.	In-house Training for NIB personnel	In-house	07 July 2014	NIB, Dhaka
36.	Training on HPLC	In-house	27-31 Jan 2013	NIB, Dhaka
37.	Fire prevention, Rescue and First Aid	In-house	25 June 2012	NIB, Dhaka
38.	ট্রেনিং অন প্রকিউরমেন্ট মেথোডোলজি	In-house	১১ অক্টোবর ২০১২	এনআইবি
39.	ইউনিকোডে বাংলা লিখন প্রবর্তন	National	এপ্রিল ১৮-২০,	বাংলাদেশ ন্যাশনাল

			২০১১	সায়েন্টিফিক এন্ড টেকনিক্যাল ডকুমেন্টেশন সেন্টার (ব্যান্সডক)
40.	Hands on Training on DNA Fingerprinting	In-house	27-31 March, 2011	NIB, Dhaka
41.	Training on Computer Graphics Design	In-house	05-31 July 2011	NIB, Dhaka
42.	DNA Sequencer (ABI 3130, Genetic Analyzer): Operation and Maintenance	In-house	09-11 August, 2010	NIB, Dhaka
43.	*Operation & Maintenance of Genetic Analyzer 3130 ABI:* Basic Sequencing and Fragment Analysis.	Foreign	09-11July, 2008	Warrington, Manchester, UK.

LECTURES/ TRAINING/SUPERVISION OF POSTGRADUATE STUDENT

a. Twenty-three (23) lectures and hands-on training delivered on DNA isolation, quantification, PCR and gel electrophoresis under the training program titled "Training on Basic Biotechnology" for students from different universities organized by NIB.

b. MS Thesis Supervision: Seven Master's degree Student.

MEMBERSHIP:

a) Member, *Bangladesh Society of Microbiologists (BSM)*
b) Member, *Global Network of Bangladeshi Biotechnologist (GNOBB)*
c) Member, *Bangladesh Fisheries Research Forum (BFRF)*
d) Member, *Zoological Society of Bangladesh*
e) Member, *Dhaka University Zoology Alumni Association (DUZAA)*
f) Member, *Dr. Muhammad Shahidullah Hall Alumni Association (DUSHAA)*
g) Ex-Member, *Badhan (A voluntary Blood Donor's Organization of Dhaka University)*

FUNDING AND SCHOLARSHIPS

- PhD Scholarship by Bangabandhu Science and Technology Fellowship Trust.
- PhD Scholarship by the Ministry of Education, GoB.
- MS Thesis Funded by NIH, Grant no.5 R01 A143422-03 through Stanford University, USA.
- Government Talent Pool Scholarship from the University of Dhaka for excellent academic results in BS in Zoology (Genetics and Molecular Biology).

LANGUAGE PROFICIENCY

English: Good in speaking, reading, writing & listening
Bengali: Native Language
Hindi: Can understand
The medium of instruction in the BS & MS was in English

REFERENCES

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