

Dr. TANJINA AKHTAR BANU

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Principal Scientific Officer, Genomic Research Laboratory, Plant Tissue Culture Section
BCSIR Dhaka Laboratories, Bangladesh Council of Scientific and Industrial Research
Dhaka, Bangladesh

Education

Doctor of Philosophy (PhD) in Botany **April 2017**
University of Dhaka, Dhaka, Bangladesh *Thesis: In Vitro Regeneration and Development of Stress Tolerant Peanut (Arachis hypogaea L.) Through Agrobacterium-Mediated Genetic Transformation. Result: Thesis submitted*

Master of Science (MS) in Breeding and Biotechnology **May 2004 (held in 2006)**
Department of Botany, University of Dhaka, Bangladesh *Result: First Class (11th position)*

Bachelor of Science in Botany **August 2002 (held in 2004)**
Department of Botany, University of Dhaka, Bangladesh *Result: First Class (5th position)*

Higher Secondary Certificate (HSC) **1997**
Govt. Ashak Mahmud College, Jamalpur, Bangladesh *Result: First Class (73.2%)*

Secondary School Certificate (SSC) **1995**
Jamalpur Govt. Girls' High School, Jamalpur, Bangladesh *Result: First Class (82.4%)*

Professional Experience

Principal Scientific Officer **December 2019 – Present**
Genomic Research Laboratory, Plant Tissue Culture Section, BCSIR Dhaka Laboratories
Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh

Senior Scientific Officer **August 2011 – November 2019**
Genomic Research Laboratory, Plant Tissue Culture Section, BCSIR Dhaka Laboratories
Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh

Scientific Officer **June 2006 – July 2011**
Genomic Research Laboratory, Plant Tissue Culture Section, BCSIR Dhaka Laboratories
Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh

Technical Skills and Competences

- **Molecular Techniques:** DNA/RNA Extraction, PCR, qPCR, Molecular Cloning, CRISPR-Cas9, ELISA, Primer Design
- **Genomics & Sequencing:** NGS Library Prep (Illumina platforms), Whole Genome Sequencing (WGS), Target Enrichment
- **Bioinformatics:** Web-based workflow platform (Galaxy, Mega), Prokaryotic Genome Annotation (Prokka, Bakta), Comparative Genomics (Proksee, BRIG), De novo Assembly (SPAdes, Flye)

Computational Skills

- **Programming:** R Studio
- **Operating Systems:** Windows

Research Grants (Selected)

Principal Investigator

- Xanthan gum extraction from *Xanthomonas* spp isolated from local plant source
- A Metagenomic Approach to Evaluate Water and Airborne Microbiome in Dhaka City
- High efficiency regeneration system of *Gynura procumbens* (Lour.) Merr. an important medicinal plant and identification of its active compounds through NMR profiling
- 3 Special Research Grants from Ministry of Science and Technology

Training Experiences

- Workshop on "CRISPR-Cas9 Gene Editing Mechanism: A New Era In Molecular Biology", Bangladesh Society of Microbiology 5–9 May 2024
- NovaSeq 6000 instrument training, Illumina Way, San Diego, CA, USA 13 May 2019
- Training on Next Generation Sequencing system, Central Laboratories Facilities, BCSIR, Dhaka 26–28 January 2019
- Training for NovaSeq Sequencing System, Illumina, Inc., Singapore 25–29 November 2018
- Bioinformatics Training Course, Diagnosis, London, UK 28 July – 29 September 2018
- Training on Genetic Analyzer (Capillary System) and Next Generation Sequencer, Central Laboratories Facilities, BCSIR, Dhaka 6–12 June 2018
- Workshop on "Plant Genetic Transformation, in situ Hybridization and Bioinformatics", HEQEP Project, Department of Botany, University of Dhaka 6–14 October 2012
- Training course on "Bio-Safety", Bangladesh Agricultural Research Council (BARC) and FAO 21–30 November 2008
- "Testing and Formulated fertilization" training course for ASEAN and Southeastern Asia, Beijing, China 10–23 October 2007
- Training programme on "Molecular Biotechnology", Winrock International, USA 7–15 December 2004

Publications (Selected)

1. Goswami B, Rahman A, Jahan I, Akter S, **Banu TA**, Osman E, Uzzaman MS, Habib A, Alam MS, Obaida AS, Sarkar MM. A rare homozygous ALX4 mutation in a Bangladeshi girl with frontonasal dysplasia type-2 (FND2). *Heliyon*, **2024**, 10(15).
2. Saha S, Al Amin GM, Khan MS, Goswami B, Afroz F, Habib MA, Akter S, **Banu TA**. Assessment of antibacterial activity and cytotoxic effects of in vitro and in vivo plant parts of a medicinal plant *Gynura procumbens* (Lour.) Merr. *Heliyon*, **2023**, 9(12), e22954.
3. **Banu TA**, Sarkar MM, Akter S, Goswami B, Jahan I, Osman E, Uzzaman MS, Habib MA, Mahmud AS, Uddin MM, Nafisa T. Genome sequencing of the SARS-CoV-2 Delta (B.1.617.2) variant of concern detected in Bangladesh. *Microbiology Resource Announcements*, **2021**, 10(48), e00849-21.
4. **Banu TA**, Akter S, Akter S, Goswami B, Mollika SR, Momtaz N, Habib MA, Al Amin GM, Khan MS. Effects of Light Intensity on in Vitro Regeneration Of *Stevia Rebaudiana* Bertoni, *Bacopa Monnieri* L. And *Solanum Tuberosum* L. *Bangladesh Journal of Botany*, **2023**, 52(1), 53-60.
5. **Banu TA**, Khan S, Goswami B, Afrin S, Habib A, Akter S. Indirect organogenesis and somatic embryogenesis for regeneration of *Rauvolfia serpentina* L. from root explants. *Bangladesh Journal of Botany*, **2020**, 49(4), 1021-1027.

Conference Presentations

- Invited Speaker, International Plant Tissue Culture and Biotechnology Conference 2025
- Oral Presentation, BCSIR Congress-2023, BCSIR, Dhaka 8–10 March 2024
- Oral Presentation, BCSIR Congress-2022, BCSIR, Dhaka December 2022
- Oral Presentation, International Conference on Environmental Protection for Sustainable Development (ICEPSD-2022) September 2022

Thesis Supervision

- Supervised more than 10 MS thesis students in the fields of Botany, Biotechnology, Microbiology, etc.

Professional Memberships

- Bangladesh Botanical Society (BBS) – Life Member
- Bangladesh Association of Plant Tissue Culture & Biotechnology (BAPTC&B) – Life Member
- American Society of Microbiology (ASM)
- Scientist Forum of Bangladesh Council of Scientific and Industrial Research
- Bangladesh Association of Women Scientists

Professional Trainings

- CRISPR-Cas9 Gene Editing Mechanism: A New Era In Molecular Biology, Bangladesh Society of Microbiology 5–9 May 2024
- Oligosynthesizer MerMade 6, Genomic Research Laboratory, BCSIR 26–28 February 2024
- Bioinformatics Training Course, Diagnosis, London, UK 28 July – 29 September 2018
- NovaSeq Sequencing System, Illumina, Inc., Singapore 25–29 November 2018
- Plant Genetic Transformation, in situ Hybridization and Bioinformatics, HEQEP Project, University of Dhaka 6–14 October 2012

Awards

- Best Presenter Award, Technical Session (Toxicology), International Conference on Environmental Protection for Sustainable Development (ICEPSD-2022)
- Best Presenter Award, Session on "In vitro Regeneration and Micropropagation of Economically Important Crops, Ornamental and Medicinal Plants", 9th International Plant Tissue Culture & Biotechnology Conference 2019

References

- Available upon request.

Last Updated: Friday 27th February, 2026