

# Dr. A D A SHAHINUZZAMAN

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**Senior Scientific Officer, Pharmaceutical Sciences Research Division**

BCSIR Dhaka Laboratories, Bangladesh Council of Scientific and Industrial Research (BCSIR)

Dr. Qudrat-E-Khuda Road, Dhaka 1205, Bangladesh

## Education

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**Ph.D. in Chemistry** **August 2019**

University of Texas at Arlington, Texas, USA *Advisor: Dr. Saiful M Chowdhury*

**M.S. in Genetic Engineering and Biotechnology** **November 2011**

University of Dhaka, Dhaka, Bangladesh *Advisors: Dr. Gazi Nurun Nahar Sultana and Dr. Jesmin*

**B.S. in Genetic Engineering and Biotechnology** **July 2011**

University of Dhaka, Dhaka, Bangladesh

## Theses

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### Doctoral Dissertation

- **Shahinuzzaman, A.D.A.** (2019). *Improved sample preparation method for LC-MS/MS based cellular proteomics and co-immunoprecipitation cross-linking proteomics study of Toll-like receptor 4*. University of Texas at Arlington, Texas, USA.  
*Advisor: Dr. Saiful M. Chowdhury.*

### Master's Dissertation

- **Shahinuzzaman, A.D.A.** (2011). *A comprehensive study of mitochondrial DNA polymorphisms correlated with the risk of breast cancer in Bangladeshi population*. University of Dhaka, Dhaka, Bangladesh.  
*Advisors: Dr. Jesmin and Dr. Gazi Nurun Nahar Sultana.*

## Professional Experience

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**Senior Scientific Officer** **January 2020 – Present**

**Pharmaceutical Sciences Research Division, BCSIR Dhaka Laboratories** Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh

**Scientific Officer** **February 2013 – December 2019**

**Pharmaceutical Sciences Research Division, BCSIR Dhaka Laboratories** Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh (*On deputation to University of Texas at Arlington for Ph.D.: August 2014 – August 2019*)

**Graduate Teaching Assistant** **August 2014 – August 2019**

University of Texas at Arlington, Arlington, TX, USA

**Research Assistant** **February 2011 – January 2013**

**Genetic Engineering and Biotechnology Research Laboratory, CARS** University of Dhaka, Dhaka, Bangladesh

## Technical Skills and Competences

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- **Mass Spectrometry:** LC-ESI-LIT Thermo Velos Pro, LC-q-cIMS-TOF (Waters), MALDI-QIT-TOF (Shimadzu), LC-ESI-IT-TOF (Shimadzu), GC-MS (Shimadzu), LC-QTRAP 7500 (SCIEX)
- **Molecular Biology:** Co-immunoprecipitation, SDS-PAGE, PCR, RT-PCR, Molecular cloning, DNA sequencing (ABI 3130), ELISA
- **Cell Culture:** Fungus and bacteria culture, human and mouse cell culture, plant tissue culture
- **Chromatography:** Vacuum liquid chromatography (VLC), column chromatography (CC)

## Computational Skills

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- **Proteomics Software:** Proteome Discoverer v2.2, Ingenuity Pathway Analysis (QIAGEN), MaxQuant v.2.1.4, SeqScape v2.0
- **Programming:** R (RStudio, ggplot2, dplyr, tidyr)
- **Operating Systems:** Bio-Linux v7.0, Windows

## Publications (Selected)

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1. Kabir, S.; Rashel, S.; Asaduzzaman, M.; **Shahinuzzaman, A.D.A.**; Alam, M.T. Eltrombopag olamine induces apoptosis in human breast adenocarcinoma and hepatocellular carcinoma cells through modulation of multiple apoptotic pathways. *Scientific Reports*, **2025**.
2. Hasnat, S.; Rahman, S.; Alam, M.B.; Suin, F.M.; Yeasmin, F.; Suha, T.; Supty, N.T.; Sabila, S.; Chowdhury, A.; **Shahinuzzaman, A.D.A.**; Mahbub, M.M. High throughput screening identifies potential inhibitors targeting trimethoprim resistant DfrA1 protein in *Klebsiella pneumoniae* and *Escherichia coli*. *Scientific Reports*, **2025**, 15(1), 7141.
3. Stewart, J.; Shawon, J.; Ali, M.A.; Williams, B.; **Shahinuzzaman, A.D.A.**; Rupa, S.A.; Al-Adhami, T.; Jia, R.; Bourque, C.; Faddis, R.; Stone, K. Antiviral peptides inhibiting the main protease of SARS-CoV-2 investigated by computational screening and in vitro protease assay. *Journal of Peptide Science*, **2024**, 30(4), e3553.
4. **Shahinuzzaman, A.D.A.**; Kamal, A.H.M.; Chakrabarty, J.K.; Rahman, A.; Chowdhury, S.M. Identification of inflammatory proteomics networks of toll-like receptor 4 through immunoprecipitation-based chemical cross-linking proteomics. *Proteomes*, **2022**, 10(3), 31.
5. **Shahinuzzaman, A.D.A.**; Chakrabarty, J.K.; Fang, Z.; Smith, D.; Kamal, A.H.M.; Chowdhury, S.M. Improved in-solution trypsin digestion method for methanol-chloroform precipitated cellular proteomics sample. *Journal of Separation Science*, **2020**, 43(11), 2125–2132.
6. Bhawal, R.P.; **Shahinuzzaman, A.A.**; Chowdhury, S.M. Gas-phase fragmentation behavior of oxidized prenyl peptides by CID and ETD tandem mass spectrometry. *Journal of The American Society for Mass Spectrometry*, **2017**, 28(4), 704–707.
7. Chakrabarty, J.K.; Kamal, A.H.M.; **Shahinuzzaman, A.D.A.**; Chowdhury, S.M. Proteomics network analysis of polarized macrophages. In *Immunometabolism: Methods and Protocols*; Springer: New York, NY, **2020**; pp. 61–75.

## Thesis Supervision

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1. **Faiiaz Nasir** (2025). *Edible mushrooms as source of anti-microbial agents and inhibitors of angiogenesis: A systematic investigation*. (Master's thesis). Jagannath University, Bangladesh. (Joint Supervision with Swapnila Chowdhury)
2. **Farhana Alam Proma** (2023). *Purification of natural products from Lasiodiplodia genus of endophytic fungi isolated from Sarcolobus globosus, mangrove plant*. (Master's thesis). Jagannath University, Bangladesh. (Joint Supervision with Dr. Md. Mosharraf Hossain)
3. **Fahmida Binta Anower** (2022). *Purification of natural products from endophytic fungi genus Pestalotiopsis and Fusarium, isolated from Sarcolobus globosus, a mangrove plant of the Sundarban*. (Master's thesis). Jagannath University, Bangladesh. (Joint Supervision with Dr. Md. Mosharraf Hossain)

4. **Arifa Akter Airin** (2022). *Isolation of halotolerant endophytic fungus associated with the halophyte (*Porteresia coarctata*) and their effect on rice plant under salt stress.* (Master's thesis). University of Dhaka, Bangladesh. (Joint Supervision with Dr. Zeba Islam Seraj and Dr. Md. Rakibul Islam)

*All these completed under my joint supervision at the Pharmaceutical Sciences Research Division, BCSIR Dhaka.*

## Research Grants (Selected)

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### Principal Investigator

- Formulation of hemorrhoid healing herbal supplements (2024–2026) BDT 12,00,000
- Screening And Identification of Anti-Angiogenic Molecules, Isolated From Natural Sources (2024–2025) BDT 90,000
- In Vivo Efficacy and ADMET evaluation of anti-microbial compounds isolated from different endophytic fungi (2024–2025) BDT 250,000
- Isolation and characterization of bioactive metabolites from the medicinal plant *Sarcolobus globosus* and it's associated endophytic fungi (2021–2023) BDT 7,00,000
- Development and characterization of neutralizing antibodies against SARS-CoV-2 infection (2020–2023) BDT 7,80,000

### Associate Investigator

- Assessment of antibiotic susceptibility pattern of pathogens responsible for common infectious diseases (2024–2026) BDT 5,00,000
- Dengue seroprevalence and the association of infecting dengue virus serotypes with clinical manifestation (2024–2026) BDT 10,00,000
- Metabolomic profiling of three medicinal plants using an integrated approach and isolation of bioactive compounds (2024–2026) BDT 7,00,000
- Isolation and characterization of anti-haemolytic and urease inhibitor from *Tamarindus indica* and *Allium sativum* extracts (2020–2022) BDT 3,00,000
- Isolation and profiling of bioactive metabolites from the tropical mangrove species *Sonneratia caseolaris* and its associated fungal endophytes (2021–2023) BDT 3,00,000
- Identification of endophytic fungi by amplicon sequencing based molecular characterization (2021–2023) BDT 3,00,000
- Identification of pharmacophore in bioactive compounds isolated from medicinal plants and their associated endophytic fungi and structure activity relationship (SAR) study of the pharmacophores (2019–2024) BDT 15,00,000
- Isolation of bioactive compounds from the leaves of *Heptapleurum hypoleucum* and assessment of their pharmacological potentiality (2022–2024) BDT 3,00,000
- Metabolite Profiling and bioassay correlation of *Vitex* sp. And *Persicaria* sp. For isolation of natural anticancer agent (2022–2024) BDT 5,00,000
- Isolation and identification of Efflux pump Inhibitors (EPIs) for Multi Drug Resistant Bacteria from Natural Sources (2022–2024) BDT 6,00,000
- Isolation of secondary metabolites from medicinal plants and investigation of their bioactivities (2021–2023) BDT 3,00,000
- Production of instant vegetable powder as functional food (2022–2024) BDT 4,50,000

## Conference Presentations

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- **Oral Presentations:** BCSIR Congress 2024 & 2022
- **Poster Presentations:** ASMS Conferences (2016, 2018, 2019), ACES Symposiums (2016, 2017), International Symposium on Capillary Chromatography (2019)

## Professional Memberships

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- The American Society for Mass Spectrometry (ASMS)
- The BCSIR Scientists' Association (Biggani Songho)
- Young Biotechnologists of Bangladesh (YoungBB)
- Genetic Engineering and Biotechnology Club, University of Dhaka

## Professional Trainings and Workshops

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### Trainings Attended

- The Fifth International Training Course on Industrial Synthetic Biotechnology (ITC-ISB)  
Tianjin Institute of Industrial Biotechnology, Tianjin, China (10–24 October 2025)
- Omics Data Analysis: Concepts, Methods and Applications, Bangladesh Council of Scientific & Industrial Research (BCSIR), Dhaka, Bangladesh (6 December 2023)
- Operation and maintenance of Programmable Logic Controller (PLC), Bangladesh Council of Scientific & Industrial Research (BCSIR), Dhaka, Bangladesh (2–6 April 2023)
- Ion Chromatography and Preparative High Performance Liquid Chromatography (Preparative HPLC), Bangladesh Council of Scientific & Industrial Research (BCSIR) (5–9 June 2022)
- Introduction to Programming & Data Analysis in R for Biologist, Center for Bioinformatics Learning Advancement and Systematic Training (cBLAST),  
University of Dhaka (6,13,20,27 Nov, 4 Dec 2021)
- Operation and Maintenance of Nuclear Magnetic Resonance Spectrometer, Bangladesh Council of Scientific & Industrial Research (BCSIR), Dhaka, Bangladesh (5–9 September 2021)
- Training Course on LC-MS/MS, Bangladesh Council of Scientific & Industrial Research (BCSIR), Dhaka, Bangladesh (4–8 October 2020)
- Velos Pro ETD Operations Training, Thermo Scientific Training Institute, USA (21–23 June 2016)
- Velos Pro with ETD Biotech Course, Thermo Scientific Training Institute, USA (4–6 August 2015)
- Hands on Training in Real-Time PCR and Data Analysis, Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh (23–24 June 2013)
- Data Analysis through Software of Forensic and Population Genetics, Centre for Advanced Research in Sciences (CARS), University of Dhaka & National Forensic DNA Profiling Laboratory, Dhaka Medical College, Dhaka, Bangladesh (29 March – 1 April 2012)

### Trainer Participation

- Operation and maintenance of LC-MS/MS, Bangladesh Council of Scientific & Industrial Research (BCSIR), Dhaka, Bangladesh (9–13 March 2025)
- Use, maintenance and trouble-shooting of Liquid Chromatography-Mass Spectrometry (LC-MS/MS) Jointly organized by Network of Instrument Technical Personnel and User Scientists of Bangladesh (NITUB) and Bangladesh Council of Scientific & Industrial Research (BCSIR) (25–30 May 2024)
- Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS), Bangladesh Council of Scientific & Industrial Research (BCSIR), Dhaka, Bangladesh (10–14 October 2021)
- Operation and maintenance of Polymerase Chain Reaction (PCR), Bangladesh Council of Scientific & Industrial Research (BCSIR), Dhaka, Bangladesh (31 January – 4 February 2021)

## Awards

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- Graduate Teaching Assistantship, University of Texas at Arlington (2014–2019)
- Student Stipend for ASMS Conferences (2016, 2018, 2019)
- Pre-Graduation Merit Scholarship, University of Dhaka (2008–2009)

## References

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- Available upon request.

*Last Updated: Friday 27<sup>th</sup> February, 2026*