






Md. Tahsin Khan

Senior Research Officer, Genome Centre
Infectious Diseases Division, icddr,b
MPhil in Biological Science, University of Cambridge
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Research Interests: Infectious Diseases; Pathogen Genomics; Epidemiology; Microbiome

▣ ACADEMIC BACKGROUND ▣

University of Cambridge, United Kingdom	Jan 2024 – Jan 2025
Degree : MPhil in Biological Science	
Result : Passed	
Thesis Title : Towards alternative approaches to combating antimicrobial resistance against diarrheal pathogens	
Shahjalal University of Science and Technology, Bangladesh	Dec 2019 – Jun 2021
Degree : MS in Genetic Engineering and Biotechnology	
Result : 3.83/4.00 with Distinction	
Thesis Title : Molecular aspects and diversity of <i>Streptococcus pneumoniae</i> phage endolysins	
Shahjalal University of Science and Technology, Bangladesh	Dec 2015 – Dec 2019
Degree : BSc (Hons.) in Genetic Engineering and Biotechnology	
Result : 3.65/4.00 (3 rd Position)	

▣ RESEARCH EXPERIENCES ▣

Wellcome Sanger Institute	Jan 2024 – Apr 2025
MPhil Student in Prof. Nicholas R. Thomson's Group	
Summary : This one-year thesis is designed to purify phages against <i>Vibrio cholerae</i> O1, <i>Shigella flexneri</i> 2a, and <i>S. sonnei</i> from sewage samples from five diarrheal disease burden areas in Dhaka, Bangladesh. Understanding the genomic features of these phage will help extending the "PhageBank" at icddr,b to tackle antimicrobial resistance and enhance the possibilities of future personalized medicine. Longitudinal metagenomic sampling will provide valuable insights to understand the seasonal variability and selection pressures between phages and bacteria.	
icddr,b (formerly known as International Centre for Diarrhoeal Disease Research, Bangladesh)	Aug 2025 – Present
Senior Research Officer , Genome Centre, Infectious Diseases Division	
Responsibilities :	
i. Whole Genome Sequence analysis of Bacteria, Viruses, and Fungi	
ii. Metagenomics data analysis for species identification and diversity analysis	
iii. Grant writing and collaboration	
iv. Bioinformatics training to interns	
Projects :	
a) <i>Genomic Survey of Group B Streptococcus in Bangladesh</i> Wellcome Sanger Institute, UK	2025 – Present
PI : Dr. Stephen D. Bently, Group Leader, Parasites and Microbes Programme, Wellcome Sanger Institute, UK	
Co-PI : Dr. Mustafizur Rahman, Senior Scientist, Infectious Diseases Division, icddr,b	
b) <i>Fungal disease burden in Bangladesh</i> US CDC	2023 – Present
PI : Dr. Mustafizur Rahman, Senior Scientist, Infectious Diseases Division, icddr,b	
Co-PI : Dr. Nancy A. Chow, Lead, Mycotic Diseases Branch, CDC, Atlanta, USA	
c) <i>Antimicrobial resistance in community and hospital (ARCH)</i> . US CDC	2022 – 2025
PI : Dr. Fahmida Chowdhury, Senior Scientist, Infectious Diseases Division, icddr,b	
Co-PI : Dr. Ashley Styczynski, Medical Officer, CDC, Atlanta, USA	
Research Officer , Genome Centre, Infectious Diseases Division	Jan 2023 – July 2025
Senior Research Assistant , Genome Centre, Infectious Diseases Division	May 2022 – Dec 2022

Responsibilities:

- i. Receive COVID-19 samples
- ii. RNA extraction of COVID-19 samples
- iii. qRT-PCR and data interpretation
- iv. Discard biohazard materials

▣ **COMPETENCES** ▣

Programming skills : Shell, R, and Snakemake.
Laboratory Skills : Bacterial culture, Phage isolation, DNA/RNA extraction, PCR/RT-PCR, and Gel Electrophoresis etc.

▣ **PUBLICATIONS** ▣

Google Scholar: [Tahsin Khan](#)

- [1] **Khan et al. 2024.** “Identification of cell wall binding domains and repeats in *Streptococcus pneumoniae* phage endolysins: A molecular and diversity analysis.” (doi.org/10.1016/j.bbrep.2024.101844) – Biochemistry and Biophysics Reports.
- [2] **Khan et al. 2024.** “Emergence of the Novel Sixth *Candida auris* Clade VI in Bangladesh.” (doi.org/10.1128/spectrum.03540-23) – Microbiology Spectrum.
- [3] Rahman et al. 2024. “Identification of Lytic Phages Against Multidrug-Resistant *Klebsiella pneumoniae*: Illuminating Hope on Antimicrobial-Resistance.” (doi.org/10.1089/phage.2023.0038) – PHAGE.
- [4] **Khan et al. 2023.** “Complete genome sequence of *Escherichia* phage iGC_PHA_EC001.” (doi.org/10.1128/MRA.00842-23) – Microbiology Resource Announcements.
- [5] **Khan et al. 2022.** “Proteome Exploration of *Legionella pneumophila* To Identify Novel Therapeutics: a Hierarchical Subtractive Genomics and Reverse Vaccinology Approach.” (doi.org/10.1128/spectrum.00373-22) – Microbiology Spectrum.
- [6] **Khan et al. 2021.** “Immunoinformatics and molecular dynamics approaches: Next generation vaccine design against West Nile virus.” (doi.org/10.1371/journal.pone.0253393) – PLoS ONE.
- [7] **Khan et al. 2020.** “Subtractive genomics approach towards the identification of novel therapeutic targets against human *Bartonella bacilliformis*.” (doi.org/10.1016/j.imu.2020.100385) – Informatics in Medicine Unlocked.
- [8] Mahmud et al. 2019. “Identification of novel drug targets for humans and potential vaccine targets for cattle by subtractive genomic analysis of *Brucella abortus* strain 2308.” (doi.org/10.1016/j.micpath.2019.103731) – Microbial pathogenesis.

▣ **INVITED TALK** ▣

Title : Emergence of the Novel Sixth *Candida auris* Clade VI in Bangladesh Jun 2024
Program : Imperial Fungal Science Network | Summer Meeting 2024, Imperial College London, UK
Award : Best Oral Presentation (<https://www.imperial.ac.uk/news/254213/network-summer-meeting-2024/>)

▣ **CONFERENCES** ▣

Program : Parasites and Microbes Programme Days May 2024
Organizer : Wellcome Sanger Institute | University Arms Hotel, Cambridge, UK

Program : Antimicrobial Resistance – Genomes, Big Data and Emerging Technologies 2024 Mar 2024
Organizer : Wellcome Connecting Sciences | Wellcome Genome Campus, Hinxton, UK

Program : 11th One Health Bangladesh Conference Jun 2023
Organizer : One Health Bangladesh | Radisson Blu Dhaka Water Garden, Dhaka, Bangladesh

▣ **SCHOLARSHIPS** ▣

- i. **Wellcome MPhil Fellow**, Wellcome Trust, UK Jan 2024 – Apr 2025
- ii. **National Science & Technology Fellow** (MS Thesis), Ministry of Science and Technology, Bangladesh 2020 – 2021

▣ HONORS & AWARDS ▣

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| i. | Best Student Presentation by Imperial Fungal Science Network | Jun 2022 |
| ii. | Most Enthusiastic Member by Network of Young Biotechnologists of Bangladesh | Jul 2021 |
| iii. | National Hero by Ministry of Health and Family Welfare, Govt. of Bangladesh | Dec 2020 |
| iv. | Emerging Leaders by Bangladesh Youth Leadership Center | Dec 2019 |

▣ TRAINING AT UNIVERSITY OF CAMBRIDGE ▣

Omics:		Statistics:	
Analysis of bulk RNA-seq data	3 days	Core Statistics in R	5 days
Single cell RNA-seq data	3 days	Reproducible Research in R	2 days
Proteomics data in R	2 days	Generalised Linear Models in R	2 days
Targeted Metabolomics data	2 days	Intermediate Machine Learning	3 days

▣ LEADERSHIP SKILLS ▣

- Public Health Alliance for Genomic Epidemiology (PHA4GE)** Feb 2024 – Present
Member, Pipelines and Visualization working group
- Phylogenetics sub-working group
- institute for developing Science and Health initiatives (ideSHi)** Nov 2023
Bioinformatics Trainer
- Three days long training on “Pathogen Genomics and Infectious Diseases, in context of Bangladesh”
- Network of Young Biotechnologists of Bangladesh (NYBB)** Dec 2020 – May 2023
Vice President, Research & Development
- Conversation with Nobel Laureate: Sir Andrew Z. Fire, Stanford University, USA
 - Biotech Career Fest 2021; Bi-Weekly NYBB Journal Club
 - Two weeks Internship at Bangladesh Sugarcrop Research Institute, Pabna
- Bangladesh Youth Leadership Center (BYLC)** Jul – Aug 2019
Team Leader, Table 10, Youth Leadership Summit 2019
- Led the team for a 45-days project at community level across 8 districts
 - Recognized as one of the best 10 projects for the execution of “Indoor plantation by reusing plastic wastes” project.