

Abhijit Chowdhury

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Industrial Microbiology Section

Senior Scientific Officer, Institute of Food Science & Technology (IFST)

Bangladesh Council of Scientific and Industrial Research (BCSIR)

Dr. Qudrat-i-Khuda Road, Dhanmondi, Dhaka-1205.

Cell phone: +88-01685-794889

E-mail: abhibcsir@gmail.com, abhijit@bcsir.gov.bd

SCHOLASTIC BACKGROUND

PhD in Life Sciences

Awarded

Year: 2018

Graduate School of Medical Sciences

University: Kumamoto University, Japan

Thesis: Two Cdc48 cofactors Ubp3 and Ubx2 regulate mitochondrial morphology and protein turnover.

Masters of Science (With thesis, one year course)

Session: 2003-2004 (Exam held in 2008)

Subject: Biochemistry & Molecular Biology

University: University of Chittagong, Bangladesh

Result: cGPA- 3.78 (out of 4.00), position 2nd)

M.Sc. Thesis Title: Characterization of α -amylase enzyme present in the larvae of *Diaphania indica* (Lepidoptera: Pyralidae).

Bachelor of Science with Honors (4-years course)

Session: 1999-2000 (Exam held in 2006)

Subject: Biochemistry & Molecular Biology

University: University of Chittagong, Bangladesh

Result: c GPA - 3.64 (out of 4.00), position 3rd

Higher Secondary Certificate (Equivalent to “A” level)

Name of School: Sir A. T. Govt. College, Chittagong, Bangladesh
(Session: 1996-1997)

Result: First Division

Secondary School Certificate (Equivalent to “O” level)

Name of School: Kanongopara Dr. B. B. High School, Chittagong, Bangladesh.
(Session: 1994-1995)

Result: First Division

Job profile

1. Duration: From 12/07/2010 to 30/09/2018

Position: Scientific Officer (Biochemistry and Molecular Biology)

Industrial Microbiology Laboratory, Institute of Food Science and Technology (IFST), BCSIR.

2. Duration: From 01/10/2018 to 23/06/2019

Position: Senior Scientific Officer (Biochemistry and Molecular Biology)

Institute of Glass & Ceramic Research and Testing (IGCRT), BCSIR.

3. Duration: 23/06/2019 to onward

Position: Senior Scientific Officer (Biochemistry and Molecular Biology)

Industrial Microbiology Laboratory, Institute of Food Science and Technology (IFST), BCSIR.

RESEARCH EXPERIENCE

- Four years research experiences as PhD student in Department of Molecular Cell Biology at Kumamoto University, Japan. Project was focused on unraveling the role of Cdc48 in regulation of mitochondrial morphology.
- Five years experiences as scientific officer in Industrial Microbiology Laboratory, Institute of Food Science and Technology (IFST), BCSIR and worked for the development of antimicrobial agents with added efficacy to challenge bacterial drug resistance, microbial risk assessment of *Salmonella species* in processed food and detection of the mycotoxin in poultry and cattle feeds. In addition, involved in research on commercial cellulase production.
- One-year research experience as MS student in a project in Biochemistry & Molecular Biology, University of Chittagong, focused on investigation of digestive enzyme present in the larvae of *Diaphania indica* (Lepidoptera: Pyralidae).

PROJECT INVESTIGATED

- “Identification of Cdc48 cofactors affecting mitochondrial morphology and analysis the role of Cdc48-cofactor complex in mitochondrial morphology”. The project (for fiscal year 2015) was supported in part by Program for Leading Graduate Schools “HIGO (Health life science: Interdisciplinary and Glocal Oriented) Program”, MEXT, Japan.
- “Role of Cdc48-cofactor complex in the turnover and/or disassembly of mitochondrial fusion factor Fzo1”. The project (for fiscal year 2016) was supported in part by Program for Leading Graduate Schools “HIGO (Health life science: Interdisciplinary and Glocal Oriented) Program”, MEXT, Japan.
- “Effect of Cdc48 cofactors in the stability of deubiquitylase Ubp2 and Ubp12 and analysis of ubiquitylation of Fzo1 in Cdc48 cofactor deleted strain “.The project (for fiscal year 2017 and 2018) was supported in part by Program for Leading Graduate Schools “HIGO (Health life science: Interdisciplinary and Glocal Oriented) Program”, MEXT, Japan.
- “Microbial Risk assessment of *Salmonella spp* in processed meat, fish, egg and dairy products in Bangladesh”. Regular R&D of Industrial Microbiology section, IFST, BCSIR. Year-2012

- “Evaluation of antimicrobial drugs to develop effective therapeutic intervention for control of food borne bacterial diseases in Bangladesh”. Regular R&D of Industrial Microbiology section, IFST, BCSIR. Year-2012
- “Optimization of *Trichoderma spp* cultivation in solid state and submerged state fermentation for commercial cellulase production”. Regular R&D of Industrial Microbiology section, IFST, BCSIR. Year-2012.
- “Optimization of fermentation conditions for BACTERIOCIN production by *Lactobacillus* and application in processed foods”. Regular R&D of Industrial Microbiology section, IFST, BCSIR. Year-2013

LIST OF PUBLICATIONS

Original Articles:

1. Sabiqun Nahar, **Abhijit Chowdhury**, Teru Ogura, Masatoshi Esaki. A AAA ATPase Cdc48 with a cofactor Ubx2 facilitates ubiquitylation of a mitochondrial fusion-promoting factor Fzo1 for proteosomal degradation. *The Journal of Biochemistry*, **167 (3): 279–286**, 2020.
2. **Abhijit Chowdhury**, Teru Ogura and Masatoshi Esaki. Two Cdc48 cofactors Ubp3 and Ubx2 regulate mitochondrial morphology and protein turnover. *The Journal of Biochemistry*, **164 (5): 349-358**, 2018.
3. Monzur Morshed Ahmed, Md. Fakruddin, Md. Nur Hossain, Khandaker Rayhan Mahbub and **Abhijit Chowdhury**. Growth response of *Aspergillus flavus* IMS1103 isolated from poultry feed. *Asian J. Med. Biol. Res.*, **2 (2): 221-228**, 2016.
4. Md Fakruddin, **Abhijit Chowdhury**, Md Nur Hossain and Monzur Morshed Ahmed. Characterization of aflatoxin producing *Aspergillus flavus* from food and feed samples. *Springer Plus*, **4:159**, 2015.
5. **Abhijit Chowdhury**, Md. Shofiul Azam, Fakruddin Md, Md Nur Hossain, Khandaker Rayhan Mahbub, Md. Mozammel Hoque, Monzur Morshed Ahmed. Isolation and characterization of indigenous cellulose producing *Trichoderma Spp.* from Bangladesh. *World Research Journal of Biotechnology*, **1(2): 32-35**, 2013.
6. **Abhijit Chowdhury**, Roly Malaker, Md. Nur Hossain, Md. Fakruddin, Rashed Noor and Monzur Morshed Ahmed. Bacteriocin Profiling of Probiotic *Lactobacillus* spp. Isolated from Yoghurt. *International Journal of Pharmaceutical Chemistry*. **3 (3): 2013**.
7. Md. Fakruddin, Mahmuda Sultana, Monzur Morshed Ahmed, **Abhijit Chowdhury**, Naiyuum Chowdhury. Multiplex PCR (Polymerase Chain Reaction) assay for detection of *E. coli O157:H7*, *Salmonella sp.*, *Vibrio cholerae* & *Vibrio parahaemolyticus* in spiked shrimps (*Penaeus monodon*). *Pakistan Journal of Biological Sciences*. **16(6): 267-274**, 2013

8. Md. Fakruddin, **Abhijit Chowdhury**, Zakir Hossain. Competitiveness of PCR to alternate amplification methods. American Journal of Biochemistry and Molecular Biology. **3(1): 71-80**, 2013.
9. Md. Fakruddin, **Abhijit Chowdhury**, Reaz Mohammad Mazumdar, Khanjada Shahnewaj Bin Mannan. A preliminary Study on Virulence Factors and Antimicrobial Resistance in Extra-Intestinal Pathogenic *Escherichia coli* (ExPEC) in Bangladesh. Indian J. Med. Res. **137, pp 988-990**, 2013.
10. **Abhijit Chowdhury**, Md. Nur Hossain, Nure Jannatul Mostazir, Md Fakruddin, Md. Morsaline Billah and Monzur Morshed Ahmed. Screening of Lactobacillus spp. from Buffalo Yoghurt for Probiotic and Antibacterial Activity. Journal of Bacteriology and Parasitology, **3(8): 156**, 2012.
11. Md. Fakruddin, Sumaiya Islam, MonzurMorshed Ahmed, **Abhijit Chowdhury**, Md. Mahfujul Hoque. Development of Multiplex PCR (Polymerase Chain Reaction) Method for Detection of *Salmonella* spp. and *Vibrio parahaemolyticus* from Shrimp Samples of Bangladesh. Asian Journal of Biological Sciences, **5(2): 76-85**, 2012.
12. Monzur Morshed Ahmed, Siddique Hossain, Khandaker Rayhan Mahbub, Himel Nahrine Khaleque, Zakir Hossain, Md. Fakruddin, **Abhijit Chowdhury**, Md. Nur Hossain, Zobaidul Alam. Performance Analysis of multiplex PCR-based detection of *Salmonella* spp & *S. typhimurium* in chicken egg samples. Singapore Journal of Scientific Research, **2(1): 25-32**, 2012.
13. Md. Fakruddin, Reaz Mohammad Mazumdar, **Abhijit Chowdhury**, Khanjada Shahnewaj Bin Mannan. Comparative Analysis of Virulence Factors of *Escherichia coli* from Non-Enteric Infections. Journal of Medical Sciences, **12(2): 37-44**, 2012.

Review Articles:

1. Md. Fakruddin, **Abhijit Chowdhury**, Md. NurHossain, KhanjadaShahnewaj Bin Mannan. Scientific Freedom & Limits-Clinical Research Perspective. Bangladesh Journal of Bioethics. **4(1): 30-34**, 2013.
2. Md. Fakruddin, Khanjada Shahnewaj Bin Mannan, **Abhijit Chowdhury**, Reaz Mohammad Mazumdar, Md. Nur Hossain, Hafsa Afroz. RESEARCH INVOLVING HUMAN SUBJECTS- ETHICAL PERSPECTIVE. Bangladesh Journal of Bioethics; **4(2):41-48**.2013.
3. Md. Fakruddin, Khanjada Shahnewaj Bin Mannan, Reaz Mohammad Mazumdar, **Abhijit Chowdhury**, and Md. Nur Hossain. Identification and characterization of microorganisms :DNA fingerprinting methods. Songklanakarin J. Sci. Technol. **35 (4), 397-404**, 2013.

4. Md. Fakruddin, Khanjada Shahnewaj Bin Mannan¹, **Abhijit Chowdhury**, Reaz Mohammad Mazumdar², Md. Nur Hossain, Sumaiya Islam, Md. Alimuddin Chowdhury. Nucleic acid amplification: Alternative methods of polymerase chain reaction. *J. Pharm. Bioall Sci.* **5 (4)**, 245-52, 2013.
5. Md. Fakruddin, Reaz Mohammad Mazumdar, **Abhijit Chowdhury**, Nur Hossain, Suman Mahajan and Sumaiya Islam. Pyrosequencing-A Next Generation Sequencing Technology. *World Applied Sciences Journal* **24 (12)**: 1558-1571, 2013
6. Md. Fakruddin, Abhijit Chowdhury. Pharmacogenomics- The Promise of Personalized Medicine *Bangladesh Journal of Medical Science.* **Vol. 12 No. 04.** 2013.
7. Md. Fakruddin, Reaz Mohammad Mazumdar, **Abhijit Chowdhury**, Khanjada Shahnewaj Bin Mannan. Nucleic Acid Sequence Based Amplification (NASBA)- Prospects and Applications. *International Journal of Life Science and Pharma Research.* **2(1)**: 106-121, 2012.
8. Md. Fakruddin, **Abhijit Chowdhury**. Pyrosequencing- An Alternative to Traditional Sanger Sequencing. *American Journal of Biochemistry and Biotechnology.* **8(1)**: 14-20, 2012.
9. Md. Fakruddin, Reaz Mohammad Mazumdar, **Abhijit Chowdhury**, Md. Nur Hossain, Khanjada Shahnewaj Bin Mannan. Pyrosequencing- Prospects and Applications. *International Journal of Life Science and Pharma Research* **2(2)**: 65-76. 2012.
10. Md. Fakruddin, Reaz Mohammad Mazumdar, Khanjada Shahnewaj Bin Mannan, **Abhijit Chowdhury**, Md. Nur Hossain. Critical Factors Affecting The Success of Cloning, Expression and Mass Production of Enzymes By Recombinant *E. Coli*. *ISRN Biotechnology, Volume 2013, Article ID 590587.*
11. Md. Fakruddin, Reaz Mohammad Mazumdar, Khanjada Shahnewaj Bin Mannan, **Abhijit Chowdhury**, Md. Nur Hossain. Stem Cell- A New Hope For Medical Science. *Open access scientific reports- Omics Publications.* **1:304**, 2012.
12. Md. Fakruddin, **Abhijit Chowdhury**, Md. Nur Hossain, Khanjada Shahnewaj Bin Mannan. Ethics in Clinical Research. *Bangladesh Journal of Bioethics.* **3(3)**: 16-20, 2012.

SEMINER AND CONFERENCE

1. **Abhijit Chowdhury**, Teru Ogura, and Masatoshi Esaki “Roles of the Cdc48-cofactor complexes in regulation of mitochondrial morphology in yeast” Consortium of Biological Sciences 2017, Kobe, Japan, December 6-9, 2017. Poster Presentation: Presentation number 1P-0158

2. **Abhijit Chowdhury**, Teru Ogura, and Masatoshi Esaki “ Unraveling the Role of the Cdc48 in regulation of mitochondrial morphology ” Institute of Molecular Embryology and Genetics (IMEG) retreat, Aso, Japan, August 3-4, Poster Presentation: Presentation number P-16
3. **Abhijit Chowdhury**, Md. Nur Hossain, Nure Jannatul Mostazir, Md Fakruddin, Md. Morsaline Billah , Monzur Morshed Ahmed “Probiotic activity and bacteriocin Profiling of *Lactobacillus* spp. isolated from Yoghurt” BSBMB conference 2013, January 12-13, University of Chittagong, Bangladesh Poster Presentation: Presentation number –SBP-14
4. Attended the seminar on "**Biosafety Biosecurity: What do we know, what do we need, and what we can do**", held on August 22, 2011, icddr,b, Dhaka, Bangladesh
5. Attended in the seminar “**DNA Bar Code of Life**” arranged by Biodiversity Research Group of Bangladesh at University Of Chittagong. **12th January 2008**

AWARDS AND SCHOLARSHIPS

- HIGO program scholarship to obtain PhD from Kumamoto University, Japan, 2014
- The national science, information, communication, technology fellowship, 2008.
- University scholarship by University grants commission. 2006

MEMBERSHIP

American Society for Microbiology (ASM)

The Molecular Biology Society of Japan (MBSJ)

PROJECT HANDLED (Project associate)

Successfully completed a Special Allocation Project of Ministry of Science, Govt. of Bangladesh entitled “**Development and validation of a rapid multiplex PCR method for detection of Pathogenic microorganisms in shrimp value chain of Bangladesh**” in the fiscal year of 2011-2012 as investigator and Associate Director.

TRAINING

1. **In-depth Understanding and Implementation of ISO/IEC 17025:2005 – General Requirements for the Competence of Testing and Calibration Laboratories, Good Laboratory Practices (GLP), and Introduction and Awareness on ISO 22000:2005 Food Safety Management Systems – Requirements for any Organization in the Food Chain.** held at

BCSIR, Dhaka, Bangladesh from 10 to 26 October 2010 organized by UNIDO under EU and NORAD funded BEST Programme in cooperation with BCSIR.

2. **The 41st training program of NITUB on the use and maintenance on Ultra - Violet, Visible and Infrared Spectrophotometer, held from 29 January- 03, February 2011.** At the Bangladesh Council of scientific and Industrial research (BCSIR), Dr. Quadrat-I Kuda Road, Dhanmondi, Dhaka- 1205, Bangladesh.
3. **Training of Trainers (ToT) Workshop on Food Hygiene in the Sweet Meats Industry** from 16-18 January 2012, organized by the FAO team implementing the project **Improving Food Safety, Quality and food Control In Bangladesh (GCP/BGD/038/EC)**
4. In-House Training on "**HPLC, GC and UV-Vis spectrometer Organized by BCSIR, Dhaka 2011.**
5. Training on "**Internal Audit of ISO 17025/15189 Accreditation**", organized by UNIDO on 12, July 2012.
6. 8th advanced training course on **Research Methodology** held from 23 December 2012 to January, 2013 jointly organized by Bangladesh Peace and Development Mission (**BPDM**) and Social Science research Council (**SSRC**), Ministry of Planning, Govt. of the people's Republic of Bangladesh.
7. Training course on "**Public Procurement Management**" held from 25 August to 01 December 2019 organized by National Academy for Planning and Development (**NAPD**), Ministry of Planning, Govt. of the people's Republic of Bangladesh.