MD. SHORIFUL ISLAM, PhD

ASSISTANT PROFESSOR | MOLECULAR NEUROSCIENCE & PUBLIC HEALTH RESEARCHER

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PROFESSIONAL PROFILE

University teacher and biomedical researcher with a PhD in Medical Sciences from Hamamatsu University School of Medicine, Japan, and academic experience in pharmacy education in Bangladesh. Research focuses on molecular mechanisms of neurodegeneration, Parkinson's disease, α-synuclein pathology, UBL3-mediated protein sorting, extracellular vesicles, and therapeutic target discovery. Combines molecular and cellular biology with pharmacology, transcriptomics, proteomics, translational research, phytopharmacology and public health. Committed to research-led teaching, interdisciplinary collaboration, and mentoring students.

ACADEMIC APPOINTMENTS & RESEARCH EXPERIENCE

Specially Appointed Researcher | Department of Cellular and Molecular Anatomy, Hamamatsu University School of Medicine, Japan • *Jul 2026–Sep 2026.* Research in molecular neuroscience and neurodegenerative disease, including UBL3 and α-synuclein-related pathology.

Assistant Professor | Department of Pharmacy, Islamic University, Bangladesh • *Jul 2021–Present* **:** University teaching and research.

Lecturer | Department of Pharmacy, Islamic University, Bangladesh • *Jul 2018–Jul 2021*

Lecturer | Khwaja Yunus Ali University, Bangladesh • *Oct 2017–Jul 2018*

Lecturer in Pharmacy | Royal Medical Technology Institute, Rajshahi; TMSS Medical Technology Institute, Bogura • *Sep 2015–Sep 2017* **:** Teaching and practical training in pharmacy and medical technology.

EDUCATION

PhD in Medical Sciences| Hamamatsu University School of Medicine, Shizuoka, Japan • *2022–2026*
Research area: Molecular neuroscience, UBL3, α-synuclein pathology, and neurodegenerative diseases.

Master of Pharmacy (M. Pharm., Thesis) | University of Rajshahi, Bangladesh • *2015*
CGPA: 3.69/4.00. Thesis: Phytopharmacology (*In-vitro, Ex-vivo* & *In-vivo*).

Bachelor of Pharmacy (B. Pharm.) | University of Rajshahi, Bangladesh • *2014*
CGPA: 3.59/4.00.

RESEARCH EXPERTISE

- Neuroscience: Parkinson's disease, protein aggregation, UBL3 biology, and extracellular vesicle-mediated protein sorting.
- Molecular and cellular methods: Plasmid construction, primer design, PCR/qPCR/RT-qPCR, DNA/RNA/protein extraction and fractionation, Western blotting, IHC, ICC, and immunofluorescence.
- Omics and imaging: RNA sequencing/transcriptomics, proteomics, LC–MS, TEM/SEM, tissue clearing, fluorescence and bioluminescence imaging, and image analysis.
- Experimental models: Cell culture and drug treatment, mouse models, AAV delivery, stereotaxic brain surgery, and in *vitro*, *ex-vivo/in vivo* pharmacological studies.
- Pharmacognosy and analytical methods: Plant extraction and fractionation, chromatography, UV spectroscopy, HPLC familiarity, and antioxidant/anti-inflammatory assays.

SELECTED PEER-REVIEWED PUBLICATIONS

1. Islam MS, Islam MT, Mondol M, Islam I, Fuad KM, Abid MF, Tajim S, Ferdous R. Mitochondrial Oxidative Stress as a Convergent Redox Mechanism in Neurodegeneration: Molecular Pathways, Biomarkers, and Emerging Therapeutic Opportunities. Advances in Redox Research. 2026; article 100196. https://doi.org/10.1016/j.arres.2026.100196.

2. Ferdous R, Rahman MM, Sakamoto T, Islam MS, Maniruzzaman M, Islam MM, Rahman MF, Omagari R, Al Mamun M, Islam A, Aramaki S. Accumulation of 13C-labeled phosphatidylethanolamine in the termite abdomen revealed by correlative isotope microscopy and mass microscopy. Microscopy. 2026 Jun;75(3):270-84.

3. Islam MS, Agarwala R, Khatun S, Enam T, Siddika A, Saffat T, Jahan MI, Shimki AI, Akter A, Snigdha M, Tasmin R. A Cross-Sectional Study on Gastric Diseases and FGIDs in Bangladesh: Insights Into Causes, Symptoms, and Medications. Health Science Reports. 2025;8(8):e71188. https://doi.org/10.1002/hsr2.71188. PubMed

4. Rahman MA, Khatun MT, Mim AK, Khandocar MP, Rahman A, Hasan MH, Shimki AI, Hossain MS, Shoily MSA, Faraque A, Amin MF, Ferdous R, Islam MS. Oxidative Stress in DNA Damage and Neurodegenerative Diseases: Unveiling the Mechanisms and Therapeutic Opportunities. Cell Biochemistry and Biophysics. 2025;83(4):4233–4252. https://doi.org/10.1007/s12013-025-01845-9. PubMed

5. Oyama S, Zhang H, Ferdous R, Tomochika Y, Chen B, Jiang S, Islam MS, et al. UBL3 Interacts with PolyQ-Expanded Huntingtin Fragments and Modifies Their Intracellular Sorting. Neurology International. 2024;16(6):1175–1188. https://doi.org/10.3390/neurolint16060089.

6. Yan J, Kahyo T, Zhang H, Ping Y, Zhang C, Jiang S, et al. Alpha-Synuclein Interaction with UBL3 Is Upregulated by Microsomal Glutathione S-Transferase 3, Leading to Increased Extracellular Transport of Alpha-Synuclein under Oxidative Stress. International Journal of Molecular Sciences. 2024;25(13).

7. Islam MS, Ema S, Nabi MM, Rahman MM, Waliullah AS, et al. Comparative analyses of adsorbed circulating proteins in the PMMA and PES hemodiafilters in patients on predilution online hemodiafiltration. PLOS ONE. 2024;19(7):e0299757. https://doi.org/10.1371/journal.pone.0299757

8. Yan J, Zhang H, Tomochika Y, Chen B, Ping Y, Islam MS, et al. UBL3 interaction with α-synuclein is downregulated by silencing MGST3. Biomedicines. 2023;11(9):2491.

9. Islam MS, Parvin MS, Islam ME. The protective and antioxidant effects of Hygrophila schulli seeds on oxidative damage of DNA and RBC cellular membranes. Heliyon. 2022;8(1).

10. Shoite RS, Rifat A, Ali MR, Rahman MM, Islam MS, et al. Assessment of cardiovascular diseases & drug therapy in northern and southern parts of Bangladesh. American Journal of Pharmacology and Phytotherapy. 2016;1(1):6–9. https://doi.org/10.11648/j.ajpp.20160101.12

RESEARCH OUTPUTS & INTELLECTUAL PROPERTY

- Co-author on international patent application WO2026018664A1 concerning agents and strategies for suppressing propagation and/or aggregation of modified proteins, with potential relevance to neurodegenerative disease.
- Book/chapter-related scholarly work on oxidative stress, DNA damage, and neurodegenerative diseases (publication status should be updated to reflect the latest agreement/publication details).

SELECTED CONFERENCE PRESENTATIONS

- Participated in international neuroscience conference, NEURO2026 in Kobe, Japan.
- Poster presentation: “UBL3 as a Genetic and Molecular Modulator of Synucleinopathies in Parkinson's Disease Mouse Models” Neuroscience-2025, San Diego, USA, November 2025.
- Oral presentation: “Effect of UBL3 on α-Syn in Parkinson’s Disease Mouse Models,” NEURO2024, Fukuoka, Japan, July 2024.
- Oral presentation: “Accumulation of phosphatidylcholine (40:2e) and glomerular abnormality in Ubl3-KO mice kidney,” 66th Lipid Biochemistry Conference, Shizuoka, Japan, June 2024.
- Poster presentation: “Antioxidant and DNA Damage Protection Activity of the Methanolic Extract of Hygrophila schulli Seeds,” National Conference on DNA and Genome Research, University of Rajshahi, May 2019.

AWARDS, SCHOLARSHIPS & RESEARCH SUPPORT

- Hamamatsu University School of Medicine Research Support Project for Graduate Students, 2024.
- Ichiro Kanehara Foundation Scholarship Grant for Living Expenses of Foreign Nationals in Japan, 2023–2024.
- Hamamatsu University School of Medicine International Exchange Scholarship supporting doctoral study, from 2021.
- Ministry of Science and Technology, Government of Bangladesh research scholarship, 2018–2019.
- National Science and ICT (NSICT) Fellowship for M. Pharm. thesis research, 2016–2017.
- Bangladesh Pharmaceutical Society scholarships, 2012 and 2013.

PROFESSIONAL MEMBERSHIPS & TRAINING

- Registered A-Grade Pharmacist, Pharmacy Council of Bangladesh.
- Member, Japan Neuroscience Society; Society for Neuroscience.
- Life time member of Japanese Universities Alumni Association in Bangladesh (JUAAB)
- Advanced Training in Biotechnology, National Institute of Biotechnology, Savar, Bangladesh (10-day hands-on training, 2019).
- In-plant training in production, quality assurance, quality control, warehouse and microbiology at Incepta Pharmaceuticals Ltd. (2015).

DIGITAL & COMMUNICATION SKILLS

- Research software: GraphPad Prism, ImageJ, BioRender, Microsoft Office, Adobe Illustrator, and Photoshop.
- Languages: Bangla (native); English (advanced reading and writing; professional communication); Japanese (basic conversation).

ACADEMIC & COMMUNITY SERVICE

- Former Vice President (2016–2017) and Publicity Secretary (2015–2016), Rajshahi University Pharmacy Association; Class Representative, 21st batch.
- Volunteer, Badhan; participated in blood-grouping and voluntary blood-donation initiatives, University of Rajshahi.