Curriculum Vitae

KAZI MD MOSTAFIZUR RAHMAN, Ph.D.

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Department of Biochemistry & Microbiology
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EDUCATION

2017 **Ph.D. in Biochemistry and Molecular Biology**
University of Georgia, Athens, Georgia, USA (*GPA 4.0/4.0*)

2011 **Master of Science in Biological Chemistry**
Yamaguchi University, Yamaguchi, Japan *(Grade-A)*

2008 **Master of Science in Microbiology**
University of Dhaka, Dhaka, Bangladesh (*1st Class -4th*)

2007 **Bachelor of Science in Microbiology**
University of Dhaka, Dhaka, Bangladesh (*1st Class- 6th*)

PROFESSIONAL EXPERIENCES

01/2024-Present Assistant Professor
Department of Biochemistry & Microbiology
North South University, Dhaka, Bangladesh

2019-2023 Instructor (Part-time)
Hood College, Frederick, Maryland, USA

2017-2023 Postdoctoral Fellow
National Cancer Institute, National Institutes of Health (NIH), Frederick, Maryland, USA

AWARDS AND RECOGNITIONS

2022 Winner of the Fellows Award for Research Excellence (FARE) award - NIH
2021 "Best Paper Award" by Dhaka University Microbiology Alumni Association (DUMMA)
2017-2018 National Cancer Institute Technology Transfer Ambassador
2016 'Paper of the week' recognition by the *Journal of Biological Chemistry* editorial board
2015 Travel Award for attending Society for Glycobiology meeting
2009-2011 Japanese Government (MEXT) Scholarship for the MS study at Yamaguchi University, Japan
2007-2008 Provost Award for 1st class marks in BS & MS in Microbiology, Univ. of Dhaka Bangladesh

PUBLICATIONS

- **Kazi Rahman**, Isaiah Wilt, Alex A. Compton. SNARE mimicry by the CD225 domain of IFITM3 enables regulation of homotypic late endosome fusion. ***EMBO Journal.*** *2024; PMID: 39653855*
- Nelly Mak, Xiaomeng Li, **Kazi Rahman**, et al and, Richard D. Sloan. Alternative splicing expands the antiviral IFITM repertoire in Chinese horseshoe bats. ***PLOS Pathogens.*** *2024; PMID: 39724110*
- **Kazi Rahman**, Siddhartha A.K. Datta, Alex Compton. Cholesterol binds the amphipathic helix of IFITM3 and regulates antiviral activity. ***Journal of Molecular Biology.*** *2022; PMID: 35872070*

- **Kazi Rahman**, Alex A. Compton. The indirect antiviral potential of long non-coding RNAs encoded by IFITM pseudogenes. ***Journal of Virology.*** *2021; PMID: 34319781*
- **Kazi Rahman*,** Coomer C***,** Compton A. CD225 proteins: a family portrait of fusion regulators. ***Trends in Genetics,*** *2021*, *PMID: 33518406* (**equal contribution)*
- **Kazi Rahman***, Coomer C*, Majdoul S, Ding S, Compton A. Homology-guided identification of a conserved motif linking the antiviral functions of IFITM3 to its oligomeric state. ***eLife.*** *2020 PMID: 33112230 (*equal contribution)*
- Yadvinder S Ahi, Diborah Yimer, Saliha Majdoul, **Kazi Rahman**, Alex A Compton *et al*. IFITM3 reduces retroviral envelope glycoprotein and is counteracted by glycoGag. ***mBio*** *2020; PMID: 31964738*
- Msano Mandalasi, Hyun W Kim, David Thieker, **Kazi Rahman**, Peng Zhao, Nitin G Daniel, Hanke van der Wel, H Travis Ichikawa, John N Glushka, Lance Wells, Robert J Woods, Zachary A Wood, Christopher M West. A terminal α3-galactose modification regulates an E3 ubiquitin ligase subunit in *Toxoplasma gondii*. ***J. Biol. Chem.*** *2020; PMID: 32414843.*
- **Kazi Rahman**, Msano Mandalasi, Peng Zhao, M Osman Sheikh, Rahil Taujale, Hyun W Kim, Hanke van der Wel, Khushi Matta, Natarajan Kannan, John N Glushka, Lance Wells, Christopher M West. Characterization of a cytoplasmic glucosyltransferase that extends the core trisaccharide of the *Toxoplasama* SKP1 E3 ligase subunit. ***J. Biol. Chem.*** 2017. *PMID: 28928220*
- **Kazi Rahman**, Peng Zhao, Msano Mandalasi, Hanke van der Wel, Lance Wells, Ira J Blader, Christopher M West. The E3 ubiquitin ligase adaptor protein Skp1 is glycosylated by an evolutionary conserved pathway that regulates protist growth and development. ***J. Biol. Chem.*** *2016, PMID: 26719340 (Selected as JBC paper of the week due to significance of the work)*

ADDITIONAL TEACHING AND MENTORING EXPERIENCES

Teaching Certificate, National Institutes of Health, USA (2019)

- Achieved training on Active learning methods such as Bloom's Taxonomy of learning, create and assessment of student learning, overcoming discrimination, and bias in the classroom.
- Trained in management of online teaching, curriculum design, syllabus generation.

Mentoring activities

- Mentored many summer undergraduate interns and two graduate students at NIH (2017- 2023)

Volunteer activities

- Lead Judge (Oral presentation): 2021 Postbac Research Presentation, NIH, 2021
- Judge (poster presentation): Summer Undergrad. Research Program, OUHSC, April 2014
- Judge (Oral presentation): Summer Undergrad. Research Program, Univ. of Georgia, 2017

RELEVANT LABORATORY AND COMPUTATIONAL BIOLOGY SKILLS

Computational Biology Skills (GitHub link: *https://github.com/Kazi-Rahman20*)

- Experienced in utilizing public databases, including BLAST, Ensembl, UCSC genome browser; pathway analysis tools DAVID and IPA, RNA-seq analysis (hands-on training), Phylogenetic tree generation
- Experienced in utilizing basic Python packages for data analysis

Wet-lab skills:

- **Gene editing:** Knocked out a retrogene using **CRISPR/Cas9** based method**.** Proficient in **RNAi**.
- **Molecular/Biochemical assays:** Developed a novel Sequence- and ligation-independent cloning (SLIC) method, proficient in traditional cloning, Immunoprecipitation, Co-IP & proteomics, enzyme assays.
- **Virology/Parasitology:** Experienced in infection assays with HIV-1, Influenza A, *Toxoplasma gondii*
- **Technical Skills: HPLC** and **Flow cytometry**

CONFERENCES/PRESENTATIONS (SELECTED)

Kazi Rahman et al**.** IFITM3 binds to SNAREs fusogens and inhibits homotypic fusion of late endosomes. *Mechanisms of membrane fusion meeting 2023*, Germany (Poster)

Kazi Rahman. Membrane modulation by IFITM3 and its role in broad-spectrum antiviral activity. *Respiratory Virus Interest Group Seminar*, National Institutes of Health, 2022 (Talk)

Kazi Rahman et al. and Alex Compton. Cholesterol binds the amphipathic helix of IFITM3 and regulates antiviral activity, *ASM-Microbe meeting 2022*, Washington DC (Poster)

Kazi Rahman et al. and Alex Compton. Cholesterol binds the amphipathic helix of IFITM3 and regulates antiviral activity, *Retrovirology meeting 2022*, Cold Spring Harbor, NY (Poster)

Kazi Rahman and Alex A. Compton. IFITM3 inhibits HIV-1 infectivity by rigidifying cellular and viral membranes. *24th Annual HIV-DRP think tank meeting*, Frederick, Maryland 2021 (Talk)

Kazi Rahman et al and Alex A. Compton. The functional relationship between IFITM3 and cellular cholesterol homeostasis. *The American Soc. of Cell Biology Meeting,* Washington DC 2019 (Poster)

Kazi Rahman, Alex A. Compton. Evolutionary Guided Studies to Understand the Antiviral Mechanism of IFITM3. The annual *Con.* on Retro. and Opportunistic infections (*CROI*) 2019- Seattle, WA 2019 (poster)

Kazi Rahman, James Mitchell. Video Monitoring and Analysis System for Vivarium Cage Rack. *2018 Technology Showcase, FNLCR Advanced Technology Research Facility*, Frederick, MD (Talk/poster)

Kazi Rahman, Msano Mandalasi, Peng Zhao, L. Wells, Ira J Blader, Christopher M West. Skp1 glycosylation in Toxoplasma *gondii*: A genetic and biochemical study on its evolutionary and functional role. *Ann. Meeting of the Soc. for Glycobiology*, San Francisco, USA, 2015 (Poster)

Kazi Rahman, Peng Zhao, L. Wells, Ira J Blader, Christopher M West. Importance of Skp1 prolyl hydroxylation and Glycosylation in *Toxoplasma* Oxygen Sensing and Growth. *25th Molecular Parasitology Meeting*, Woods Hole, Boston, USA, 2014 (Poster)

Kazi Rahman, Peng Zhao, L. Wells, Ira J Blader, Christopher M West. Prolyl hydroxylation and glycosylation of SCF-E3 ligase complex is important for protozoan growth and development. *American Soc. of Cell Biology meeting*, Philadelphia 2014 (Poster)

Kazi Rahman, et al and Hiroyuki Azakami. Degradation Mechanism of Unstable Mutant Lysozymes Expressed in *Saccharomyces cerevisiae*. *Annual meeting, Japan Society for Biochem. Biotech. and Agrochem. University of Tokyo*, 2010 (Talk)

PROFESSIONAL ASSOCIATIONS

2020 - Associate Member, American Society for Virology (ASV)
2018 – Member, CCR Fellows and Young Investigators Association (CCR-FYI)
2017 - Member, National Postdoctoral Association (NPA)