MOHAMMAD ATIQUR RAHMAN

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Self-motivated Scientist and Ph.D. candidate in Pharmacology with 6+ years of combined research and practical experience. I am a dedicated and goal-oriented Ph.D. candidate in Pharmacology with over six years of research experience spanning in-vivo and in-vitro platforms. My expertise lies at the intersection of translational science, cell and molecular biology, clinical pharmacology, and pharmacometrics, where I focus on generating impactful insights to drive innovation in drug discovery and personalized medicine. With proficiency in advanced molecular techniques and pharmacokinetic modeling, I am committed to bridging fundamental research with clinical applications. Equipped with strong analytical skills, meticulous attention to detail, and a collaborative mindset, I thrive in multidisciplinary environments and excel at tackling complex scientific challenges.

SKILLS

Laboratory Techniques
- Mammalian Cell Culture
- Immunofluorescence
- Quantitative PCR (qPCR)
- Western Blotting
- SDS page
- ELISA
- Flow Cytometry
- Cell Transfection & Cloning
- Confocal Microscopy
- Nephrectomy Procedures

Pharmacokinetic Analysis
- Non-compartmental Analysis (NCA)
- Nonlinear Mixed-Effects Modeling (NLME)
- Population Pharmacokinetics (PK) Modeling
- Phoenix WinNonlin and Phoenix NLME
- PBPK Modeling & ADME Prediction

Computer Skills
- Microsoft Office Suite (Word, Excel, PowerPoint, Outlook)

Software Skills
- Phoenix WinNonlin
- Phoenix NLME
- GastroPlus
- PK-sim, Simcyp
- R, Python
- GraphPad Prism
- FlowJo
- ImageJ
- Image-Pro Plus

PROFESSIONAL EXPERIENCES

***University of Houston**, Houston, TX (August 2020 – Present)*
Cardiovascular Research (Dr. Krishna Boini's Lab)

- Demonstrated expertise in mastering and adapting a variety of molecular and biochemical techniques to enhance cell-based assays, including mammalian cell culture, quantitative PCR (qPCR), western blotting, ELISA, cell transfection, immunofluorescence, protein purification, cloning, flow cytometry, and confocal microscopy.
- Investigated the molecular mechanisms of nicotine-induced glomerular damage, identifying two critical pathways and proposing therapeutic options validated through *in-vivo* and *in-vitro* models.
- Executed nephrectomy procedures with precision, showcasing proficiency in anesthetic administration, surgical intervention, and post-operative care to optimize recovery outcomes.
- Applied PKPD analysis to support the development of pharmacokinetic and pharmacodynamic profiles for therapeutic candidates, enhancing drug development strategies.
- Authored manuscripts by conducting data analysis, statistical processing, and figure generation, while maintaining meticulous laboratory records for accurate reporting. Communicated research findings effectively through poster and oral presentations at conferences and seminars.

***Rowan University**, Glassboro, NJ* (August 2018 – May 2020)
Behavioral Neuroscience Research (Dr. Thomas Keck's Lab)

- Managed and executed research on the behavioral and pharmacological aspects of the novel molecule μ-opioid analgesic IBNtxA, assessing its potential abuse liability and discriminative stimulus effects.
- Led a significant project that uncovered important interactions between $\alpha 2GABA_A$, $\alpha 3GABA_A$, and μ-opioid receptor-mediated signals, highlighting the potential of combination therapy for treating pain-related disorders.
- My research findings established a strong foundation and were fundamental in securing approximately $2M in NIH grant funding, reflecting my commitment to advancing innovative and impactful research in the field of pharmacotherapy.

***Globe Pharmaceuticals Ltd.**, Dhaka, Bangladesh* (February 2013 – July 2017)
Product Management Specialist

- Led the development and optimization of pharmaceutical products, applying scientific principles to ensure quality, safety, and efficacy throughout the product lifecycle.
- Analyzed pharmacological data and performed preclinical research to support the development and innovation of new pharmaceutical products.

Healthcare Pharmaceuticals Ltd., *Gazipur, Bangladesh* (May 2011 – August 2011)
Student Internship

- Successfully managed inventory, contributed to product development, and optimized manufacturing processes, ensuring quality control, regulatory compliance, and enhanced production efficiency in a pharmaceutical setting.

EDUCATION

Ph.D.: Pharmacology**; University of Houston,** Houston, TX **[Expecting May 2025]**
Thesis: Effects of Inflammasomes in cardiovascular diseases.

M.Sc.: Pharmaceutical Science, **Rowan University**, Glassboro, NJ
Thesis: Searching for new analgesics without addiction risks.

Bachelor of Pharmacy (Hon's), **Stamford University Bangladesh**, Dhaka, Bangladesh
Thesis: Phytochemical and pharmacological screening of the medicinal plant *Anisomeles indica* (L.).

PUBLICATIONS

1. Buechler, H. M., Sumi, M., Madhuranthakam, I. M., Donegan, C., DiGiorgio, F., Jr, Acosta, A. A., Uribe, S., **Rahman, M. A.,** Sorbello, A., Fischer, B. D., & Keck, T. M. (**2024**). The CB1 negative allosteric modulator PSNCBAM-1 reduces ethanol self-administration via a nonspecific hypophagic effect. *Pharmacology, biochemistry, and behavior*, *240*, 173776. https://doi.org/10.1016/j.pbb.2024.173776
2. **Rahman, M. A.,** Keck, T. M., Poe, M. M., Sharmin, D., Cook, J. M., & Fischer, B. D. (**2021**). Synergistic antihyperalgesic and antinociceptive effects of morphine and methyl 8-ethynyl-6-(pyridin-2-yl)-4H-benzo[f]imidazo[1,5- a][1,4]diazepine-3-carboxylate (MP-III-024): a positive allosteric modulator at α2GABAA and α3GABAA receptors. *Psychopharmacology*, 10.1007/s00213-021-05791-1.
3. Islam, A., **Rahman, M. A.**, Brenner, M. B., Moore, A., Kellmyer, A., Buechler, H. M., DiGiorgio, F., Verchio, V. R., McCracken, L., Sumi, M., Hartley, R., Lizza, J. R., Moura-Letts, G., Fischer, B. D., & Keck, T. M. (**2020**). Abuse Liability, Anti-Nociceptive, and Discriminative Stimulus Properties of IBNtxA. *ACS pharmacology & translational science*, *3*(5), 907–920.

CONFERENCE ABSTRACTS

1. **Rahman, Mohammad A**., Datta, Sayantap., Koka, Saisudha., Boini, Krishna M., Membrane raft redox signaling pathway mediates gut microbial metabolite TMAO-induced NLRP3 inflammasome activation and cardiovascular dysfunction. American Association of Pharmaceutical Scientists meeting 2024, Salt Lake City, UT.
2. **Rahman, Mohammad A**., Datta, Sayantap., Koka, Saisudha., Boini, Krishna M., (2024) Membrane raft redox signaling pathway in nicotine-Induced NLRP3 inflammasome activation and renal injury. Journal of Pharmacology and Experimental Therapeutics June 2024, 389 (S3) 462; DOI: https://doi.org/10.1124/jpet.462.906960
3. **Rahman, Atiqur.,** Koka, Saisudha., Boini, Krishna M., (2023) Role of acid sphingomyelinase in nicotine-induced podocyte injury. Journal of Pharmacology and Experimental Therapeutics June 2023, 385 (S3) 101; DOI: https://doi.org/10.1124/jpet.122.286380

PUBLICATIONS IN-PREPARATION

1. **Rahman, Mohammad A**., Datta, Sayantap., Koka, Saisudha., Boini, Krishna M., Membrane raft redox signaling pathway mediates gut microbial metabolite TMAO-induced NLRP3 inflammasome activation and cardiovascular dysfunction. [In-preparation]
2. **Rahman, Mohammad A**., Datta, Sayantap., Koka, Saisudha., Boini, Krishna M., Membrane raft redox signaling pathway in nicotine-Induced NLRP3 inflammasome activation and renal injury. [In-preparation]
3. **Rahman, Mohammad A.,** Koka, Saisudha., Zhang, Yang., Boini, Krishna M., Role of acid sphingomyelinase in nicotine-induced podocyte injury. [In-Preparation]
4. **Rahman, Mohammad A.,** Koka, Saisudha., Boini, Krishna M., Effects of Membrane Raft Redox Signaling in Gut Microbial Metabolite TMAO-Induced NLRP3 Inflammasome Activation and Podocyte Injury. [In-Preparation]

CERTIFICATION & TRAINING

1. **Pharmacokinetic Data Analysis:** Expert in using Phoenix WinNonlin and Phoenix NLME for Non-compartmental Analysis (NCA), Nonlinear Mixed-Effects Modeling (NLME), Population Pharmacokinetics (popPK) Modeling, and PKPD Modeling, Certified by Certara University, with specialized training in advanced pharmacokinetic analysis.
2. **Physiologically Based Pharmacokinetic (PBPK) Modeling:** Skilled in using GastroPlus for PBPK modeling to predict drug absorption, distribution, metabolism, and excretion (ADME), and optimize dosage forms in drug development, certified by Simulation Plus.
3. **Clinical Research Training:** Completed two NIH courses, *Principles of Clinical Pharmacology* and *Principles and Practice of Clinical Research*, gaining deep expertise in drug development and clinical trial methodologies.