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Dr. Nahid Tamanna

Assistant Professor, Department of Biotechnology & Genetic Engineering

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Biography

Dr. Nahid Tamanna is an Assistant Professor in the Department of Biotechnology & Genetic Engineering at United International University. She earned her B.Sc. and M.Sc. degrees in Biochemistry and Molecular Biology from the University of Dhaka in 2009 and 2010, respectively. In 2020, she completed her Ph.D. in Biological Sciences at the University of Manitoba, Canada, under the guidance of Dr. Jason Treberg, a Canadian Research Chair in Environmental Dynamics and Metabolomics. Her doctoral research focused on how a methionine-restricted diet, known for lifespan extension, affects one-carbon metabolism, free radical biology, mitochondrial bioenergetics, and oxidative stress in rodent models. During her Ph.D., she received multiple awards for her work.

After her Ph.D., Dr. Tamanna led projects for two years at the University of Manitoba, developing HPLC-based methods for metabolomic analysis. She then pursued a postdoctoral fellowship at the University of Montreal, Canada from September 2022 to September 2023 under Dr. Jean Sebastien Joyal, supported by the FORUM postdoctoral scholarship, to study energy metabolism in retinopathy of prematurity to prevent blindness in infants.

Dr. Tamanna has published in several prominent journals. Her expertise includes metabolomics, mitochondrial bioenergetics, gaseous messengers, and free radical biology. She is particularly interested in identifying biomarkers for tropical and other diseases

Education

Doctor of Philosophy Biological Sciences, University of Manitoba, Canada, 2020 **Masters of Science** Biochemistry & Molecular Biology, University of Dhaka, 2010 **Bachelors of Science** Biochemistry & Molecular Biology, University of Dhaka, 2009 **Higher Secondary School Certificate** Mymensingh Girlsâ€™ Cadet College, 2003 **Secondary School Certificate** Mymensingh Girlsâ€™ Cadet College, 2001

Experience

Assistant Professor Biotechnology & Genetic Engineering, United International University, Dhaka, Oct 2024- to date

Postdoctoral Research Fellow Pharmacology & Physiology, University of Montreal, Canada, Oct 2024- January 2025

Assistant Professor Biochemistry & Cell Biology, Bangladesh University of Health Sciences, Dhaka, April 2024-Sep 2024

Assistant Professor(Part-time)

Biochemistry & Cell Biology, Bangladesh University of Health Sciences, Dhaka, January 2024-March 2024 **Postdoctoral**

Research Fellow Pharmacology & Physiology, University of Montreal, Canada, Aug 2024-Sep 2024 **Research Associate**

Biological Sciences, University of Manitoba, Canada, Oct 2019- Dec 2021 **Graduate Research Assistant** Biological

Sciences, University of Manitoba, Canada, Sep 2012- Sep 2019 **Lecturer** Biochemistry, National University of Bangladesh,

Award

FORUM Postdoctoral fellowship, Ophthalmology Research, University of Montreal (2023-2024)
University of Manitoba graduate students' association travel award (2017)
Biological Sciences travel award (2017)
Faculty of Sciences travel award (2017)
Faculty of Science Studentship, University of Manitoba (2013-2017)
International Graduate Student Scholarship, University of Manitoba (2013)
International Graduate Student Entrance Scholarship, University of Manitoba (2012)
Board Scholarship for outstanding Result in HSC (2003)

Publication

<https://scholar.google.com/citations?user=ulDnYzkAAAAJ&hl=en&oi=ao> <https://www.researchgate.net/profile/Nahid-Tamanna> <https://pubmed.ncbi.nlm.nih.gov/?term=Nahid+Tamanna> 1. Tomczyk M, Cheung K, Xiang B, **Tamanna N** , Ana T, Agarwal P, Kereliuk S, Spicer V, Lin L, Treberg J, Tong Q (2022). Mitochondrial SIRT3 Prevents Doxorubicin-Induced Dilated Cardiomyopathy by Modulating Protein Acetylation and Oxidative Stress. Circulation:Heart failure, PMID: 35418250
2. **Tamanna N** , Munro D, Kroeker K, Banh S, Treberg JR (2020). The effect of short-term methionine restriction on hydrogen peroxide metabolism in Fischer-344 rat skeletal muscle. Mitochondrion, PMID: 32882439
3. **Tamanna N** , Yearul K (2020) Solid Waste Exposure Effects on Serum Minerals, Antioxidant Vitamins And Oxidative Stress Among Adult Waste Pickers of Dhaka, Bangladesh. Pharmaceutical and Biosciences Journal.
4. **Tamanna N** , Kroeker K, Braun K, Banh S, Treberg JR (2019). The effect of short-term methionine restriction on glutathione synthetic capacity and antioxidant responses at the whole tissue and mitochondrial level in the rat liver. Experimental Gerontology, PMID: 31472257
5. **Tamanna N** , Mayengbam S, House JD, Treberg JR (2018). Methionine restriction leads to hyperhomocysteinemia and alters hepatic H₂S production capacity in Fischer-344 rats. Mechanisms of ageing and development, PMID: 30367932
6. Mahmood N and **Tamanna N** (2016). Analyses of Physcomitrella patens Ankyrin repeat proteins by computational approach. Molecular Biology International, PMID: 27429806
7. Munro D, Banh S, Sotiri E, **Tamanna N** , Treberg JR (2016). The thioredoxin glutathione-dependent H₂O₂ consumption pathways in muscle mitochondria: involvement in H₂O₂ metabolism and consequence to H₂O₂ efflux assays. Free Radical Biology and Medicine, PMID: 27101737
8. **Tamanna N** and Mahmood N (2015). Food processing and maillard reaction products: effect on human health and nutrition. International Journal of Food science, PMID: 26904661
9. **Tamanna N** and Mahmood N (2014). Emerging Roles of Branched-Chain Amino Acid Supplementation in Human Diseases. International Scholarly Research Notices, PMID:27351005
10. Mahmood N, Moosa MM, Tamanna N, Sarker SK, Najnin, R.A. and Alam, SS (2012). In silico analysis reveals the presence of a large number of Ankyrin repeat containing proteins in Ectocarpus siliculosus. Interdisciplinary Sciences: Computational Life Sciences. PMID: 23354818

Conference and presentations

Inactivation of the CYP2J2 oxygenase enzyme decreases pathologic neovascularization in proliferative retinopathy. Réseau Vision, Montreal, Canada (2024) **Neuroprotective role of endothelium-derived ketone bodies in proliferative retinopathies.** Réseau Vision, Montreal, Canada (2023) **Regulation of H₂S and ROS by a methionine restricted diet.** Crackerjack Seminar, University of Manitoba, Canada (2019) **Effects of methionine restriction on homocysteine metabolism and H₂S producing enzyme activities.** Homocysteine and one-carbon metabolism, Aarhus, Denmark (2017) **Dietary methionine restriction decreases cellular methylation potential and enhances the antioxidant enzyme activity in F-344 rat liver.** Canadian Nutrition Society Annual Meeting, Winnipeg, Canada (2016) **Effects on dietary methionine restriction on thiol metabolism in Fishcer-344 rats.** Prairie University Biology Symposium, Winnipeg, Canada (2015) **Effects on dietary methionine restriction on thiol metabolism in Fishcer-344 rats.** Canadian student health research forum, Winnipeg, Canada (2014) **The importance of the thioredoxin system in muscle mitochondrial reactive oxygen species metabolism.** Experimental Biology, San Diego, USA (2014)

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