CURRICULUM VITAE

MOHAMMAD TANVIR SARWAR

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EDUCATION

Doctor of Philosophy (PhD)
University: Department of Oral Molecular Biology, Graduate School of Biomedical Sciences, Nagasaki University, Japan
Duration: March 2016- March 2020
Dissertation: Identification of dipeptidase from a periodontopathic bacterium *Prevotella intermedia.*

Master of Science (M.Sc.)
University: Department of Applied Nutrition and Food Technology, Faculty of Biological Sciences, Islamic University, Kushtia-7003, Bangladesh
Duration: July 2006- June 2007 (Exam held in 2009)
Dissertation: Gas-Liquid Chromatographic Analysis of the TLC-purified fatty acid methyl ester of Mustard Oil attributes to the elimination of Erucic acid.

Bachelor of Science (B.Sc.)
University: Department of Applied Nutrition and Food Technology, Faculty of Biological Sciences, Islamic University, Kushtia-7003, Bangladesh
Duration: July 2002- June 2006 (Exam held in 2008)
Dissertation: Preparation of chitosan and explore its application as food preservative.

Higher Secondary Certificate (HSC)
College: Cantonment College, Jashore, Bangladesh
Duration: July 1999- June 2001

Secondary School Certificate (SSC)
College: Jashore Zilla School, Jashore, Bangladesh
Duration: January 1994- June 1999

TEACHING EXPERIENCE

Professor

Duration: March 2023- September 2023 and June 2025- Present
University: Department of Applied Nutrition and Food Technology, Faculty of Biological Sciences, Islamic University, Kushtia 7003, Bangladesh

Duties and responsibilities:

- Teach post-graduation courses like Food Biotechnology, Research Methodology, Industrial Microbiology and Molecular Biology.
- Supervise laboratory experiments of BSc and MSc students in the microbiology lab.
- Act as a research supervisor to graduate and post graduate thesis group students in the area of bacteriology research.
- Develop new methodology and experimental procedure for bacteriology research
- Write research projects.

Associate Professor

Duration: October 2020- March 2023
University: Department of Applied Nutrition and Food Technology, Faculty of Biological Sciences, Islamic University, Kushtia 7003, Bangladesh

Duties and responsibilities:

- Taught undergraduate courses like Food Biotechnology, Research Methodology, Industrial Microbiology and Fermentation Technology
- Supervised laboratory experiments of BSc students in the microbiology lab.
- Acted as a research supervisor to undergraduate thesis group students in the area of bacteriology research.
- Developed new methodology and experimental procedure for bacteriology research

Assistant Professor

Duration: September 2013- March 2020
University: Department of Applied Nutrition and Food Technology, Faculty of Biological Sciences, Islamic University, Kushtia 7003, Bangladesh

Duties and responsibilities:

- Taught undergraduate courses like Molecular Biology, Basic nutrition, Technology of fish, meat and dairy products, Food microbiology.
- Acted as a research supervisor to undergraduate thesis group students in the area of Microbiology and Molecular Biology research.
- Trained undergraduate students about microbiology techniques like preparing bacterial growth medium, grow bacteria in aerobic and anaerobic environments, colony count of bacteria, feeding experimental mice etc.

Lecturer

Duration: September 2010- September 2013
University: Department of Applied Nutrition and Food Technology, Faculty of Biological Sciences, Islamic University, Kushtia 7003, Bangladesh

Duties and responsibilities:

- Taught Biochemistry, Food Science and General Microbiology courses to undergraduate students.
- Maintained microbiology lab for regular practical works.

RESEARCH EXPERIENCE

Postdoctoral Associate
Duration: October 2023- May 2025
University: Department of Oral Biology, School of Dental Medicine, State University of New York at Buffalo, USA
Duties and responsibilities:

- Researched on oral bacteria
- Investigated interspecies interaction of pathogenic bacteria with commensal bacteria.
- Grew aerobic and anaerobic bacteria from clinical samples and create culture library
- Bacterial morphology analysis in phase contrast microscopy
- Bacterial biofilm and co-aggregation assay of clinical isolates
- PCR, Real-time PCR
- Mentored PhD students and exchange student researchers in the lab

Visiting Researcher
Duration: April 2020- September 2020
University: Department of Oral Molecular Biology, Graduate School of Biomedical Sciences, Nagasaki University, Japan
Duties and responsibilities:

- Purified and characterized novel enzymes from pathogenic bacteria
- Explored the dipeptide incorporation and transport system of *Porphyromons gingivalis*.

SKILLS AND EXPERTISE

Teaching Skills:

- Development and delivery of lectures, seminars, and labs
- Course design and curriculum development (undergraduate and graduate levels)
- Syllabus development
- Classroom and online instruction using active learning strategies
- Ability to mentor students
- Active learning strategies and student engagement techniques
- Experience with student outreach and public engagement

Research and Technical Skills:

- Develop research methodology
- Writing research project
- Investigate inter-species interaction of oral bacteria
- Primer design, PCR, qPCR, Sanger sequencing, metagenomics, Sequencing data analysis
- Phase contrast microscopy
- Construction of plasmid, deletion mutation, expression of recombinant proteins
- Experiment with mice model
- HPLC, Talon Affinity Chromatography, SDS PAGE, immunoblotting, Bio-Rad Protein assay

TRAINING AND SEMINARS

1.Sarwar Mohammad Tanvir，Yuko Ohara-Nemoto, Takeshi Kobayakawa, Mariko Naito, Takayuki K. Nemoto. Identification and characterization of an arginine aminopeptidase from *Prevotella intermedia*: Poster presentation at the 60th Annual Meeting of Japanese Association for Oral Biology at Kyushu University, Japan (5th September 2018) J Oral Biosci 60(Suppl):249, 2018

2. Sarwar MT，Ohara-Nemoto, Y, Toshio Ono, and Nemoto, TK. Identification of dipeptidase from a periodontopathic bacterium *Prevotella intermedia: Redefinition* of dipeptidase A of C69.001 family: Poster presentation at the 61st Annual Meeting of Japanese Association for Oral Biology at Tokyo Dental College (12th October 2019 to 14th October 2019). J Oral Biosci 61(Suppl):276, 2019

MEMBERSHIP

1. Member of American Society for Microbiology, Western New York Branch, October 2024 - May 2025
2. Member of the Japanese Association for Oral Biology, Japan 2018-2019.
3. Member of Applied Nutrition and Food Technology Society, Islamic University, Kushtia, Bangladesh 2010- present.

PEER REVIEW ACTIVITY

[1] Synergistic combination of baicalein and rifampicin against *Staphylococcus aureus* biofilms, Muniyasamy R and Manjubala I (2024), *Front. Microbiol.* 15:1458267. doi: 10.3389/fmicb.2024.1458267

[2] Exploring time-killing and biofilm inhibition potential of bioactive proteins extracted from two varieties of *Pleurotus ostreatus*, Gangwar R, Salem MM, Maurya VK, Bekhit MM, Singh N, Amara AAAF, Sahu RK and Ibrahim MA (2024), *Front. Microbiol.* 15:1456358. doi: 10.3389/fmicb.2024.1456358

RESEARCH FUNDING

Funding body: Bangladesh - Higher Education Quality Enhancement Project. Washington, D.C.: World Bank Group
HEQEP Project: AIF,3rd Round, Window-1, CP No:3338
Project title: Quality Enhancement of Teaching and Learning on Nutrition Science and Food Processing Through Integration on Modern Technology
My role in the project: Co-investigator
Duration: 3 Years (2015- 2018)
Amount: 10000000 taka/ 81000 USD

KEY PUBLICATIONS

[1] *Chapter 13 - Synbiotics: Combination delivery of prebiotics and probiotics,* Sri Bagavathi Perumal RB , Santhosh Hariprakash , A. Liyana Sherin , Harinarayana Ankamreddy, Vaidyanathan Vinoth Kumar, **Mohammad Tanvir Sarwar** , Vinothkannan Ravichandran, Durga Mohan, Satish Kumar Rajasekharan, Advances in Probiotic Delivery Systems, 2025, Pages 329-370

[2] *Expanded substrate specificity supported by P1' and P2' residues enables bacterial dipeptidyl-peptidase 7 to degrade bioactive peptides,* Yu Shimoyama, Toshio Ono, **Mohammad Tanvir Sarwar**, Manami Nakasato·Minoru Sasaki·Takayuki K.Nemoto,J. Biol. Chem. (2022) 298(3) 101585 , DOI: https://doi.org/10.1016/j.jbc.2022.101585

[3] *Antibiotic Resistance Pattern of Clinical Isolates - Escherichia coli, Enterobacter, Pseudomonas andStaphylococcus aureus in the Western of Bangladesh*. Mohammad Golam Sakline1, Dabashis Roy, Tanvir Ahmad, Shaikh Shahinoor Rahman, Shakh Mohammad Abdur Rouf, Mosammat Nazira Akhter Rithu, Mohammad Mizanur Rahman, **Mohammad Tanvir Sarwar**, Frontiers in Environmental Microbiology, 2021; 7(2): 69-73

[4] *Preferential dipeptide incorporation of Porphyromonas gingivalis mediated by proton-dependent oligopeptide transporter (Pot),*Yuko Ohara-Nemoto , **Mohammad Tanvir Sarwar** , Yu Shimoyama , Takeshi Kobayakawa , Takayuki K Nemoto, FEMS Microbiol Lett. 2020 Dec 18:fnaa204. DOI: 10.1093/femsle/fnaa204

[5] *Characterization of substrate specificity and novel autoprocessing mechanism of dipeptidase A from Prevotella intermedia.***Sarwar MT**, Ohara-Nemoto Y, Kobayakawa T, Naito M, Nemoto TK.Biol Chem. 2020 Apr 28;401(5):629-642. DOI: 10.1515/hsz-2019-0387

[6] Preparation of Chitosan and Its Application on Ginger Paste and Fruit Juice as Food Preservative, **Mohammad Tanvir Sarwar**, Md. Sidur Rahman, Md. Zakir Hossain, and M. Mashiul Alam, Journal of Food and Nutrition Sciences. 2014, Vol 2(6), pp. 243-249.

[7] *Determination of Erucic acid content in traditional and commercial mustard oils of Bangladesh by Gas- Liquid Chromatography*, **Md. Tanvir Sarwar**, Md. Hafizur Rahman, Md. Salim Raza, Shakh M. A. Rouf,Md. Nazibur Rahman, Advances in Biochemistry 2014; 2(1): 9-13