Dr. NAGENDRAN THARMALINGAM M.LT., M. S., Ph. D

★A microbiologist with a Ph. D in Biomedical Laboratory Science ★Novel anti-infectives hunter in infection biology against intracellular bacteria, ESKAPE pathogens, and Helicobacter pylori-induced gastric cancer ★U.S Permanent Resident (Green card)

Work: Research Scientist, Division of Infectious disease, Department of Medicine
Rhode Island Hospital affiliated with Alpert Medical School of Brown University
712-Aldrich, 593 Eddy St, Providence – 02903, RI. USA.
+1 401 996 0646 LinkedIn Google Scholar micronagu@gmail.com

PROFESSIONAL APPOINTMENTS

Research Scientist. Working as a research scientist with Prof. Eleftherios Mylonakis at a division of infectious disease, department of medicine, Rhode Island hospital since 05/2022.

Instructor of Medicine (Research). An investigator in the Medical school faculty at Brown University since 05/2022.

Research Associate. Worked as a Research Associate with Prof. Eleftherios Mylonakis, Alpert Medical School of Brown University (#60- Q.S. ranking; IVY League) and Rhode Island Hospital since 04/2022.

Post-Doctoral Research Associate. Worked as a fellow with Prof. Eleftherios Mylonakis, Alpert Medical School of Brown University and Rhode Island Hospital, from 10/2015 to 09/2020.

Quality Controller – Microbiologist. 08/2010 to 01/2011. Responsible for maintaining water quality and managing the industry.

Medical Laboratory Technician – Worked as a Full-Time employee (2004-2005) and part-time employee during college (2005-2007). Handled all kinds of clinical samples and handled major infectious pathogens.

OTHER APPOINTMENTS

Associate Editor. Serving as an associate editor in Frontiers in Microbiology (#1 most-cited journal in the world (field-microbiology); Impact Factor 5.6)- Antimicrobials section since 04/2022

Editorial Experience.

Guest-Editor in ***MDPI-Molecules*** (IF-4.1)***;*** Topic- ***"****Potential Application of Small Molecules in Molecular Medicine"*
Guest-editor in ***MDPI-Molecules*** (IF-4.1); Topic- "*Bioactive Molecules for Biodegradation and Antimicrobials*"
Guest Associate Editor in ***Frontiers in Microbiology*** (IF 5.6)**;** Topic- "*Therapeutics targeting intracellular bacteria.*"

Editorial Board member – Severing as an Editorial Board member of *Recent Advances in Anti-Infective Drug Discovery, MDPI- Antibiotics* and as an Editor of *Journal of Infectious Diseases and Preventive Medicine, Journal of Antimicrobial agents*.

Volunteering in research.

Peer-Reviewed 150 + manuscripts, notably in Frontiers of Microbiology (IF-5.6), Journal of Antimicrobial Chemotherapy (IF-5.6), Journal of Medical Microbiology (IF-3.6), International Journal of Biological Macromolecules (IF-6.6), Journal of Applied Microbiology (IF-3.2), and other international journals.

Poster judge. I Served as one of the Judges in a poster session at the 25th Boston Bacterial Meeting held at Harvard University on June 6, 2019.

EDUCATION

Graduate School majoring in gastric MICROBIOLOGY: Yonsei University, South Korea (# 79- Q.S. ranking)

Ph. D. in the Department of Biomedical Laboratory Science, 08/2015. **CGPA – 4.18/4.3**
Thesis: "**Inhibitory effects of piperine on *Helicobacter pylori* growth and suppressive effects on gastric cancer *in vitro,"*** with six publications *(American Journal of Translational Research, B.M.C. Infectious Agents and Cancer, International Journal of Medical Sciences, Molecular Nutrition and Food Research, Journal of Cereal Science)*

University education majoring in MICROBIOLOGY: Bharathidasan University, Tiruchirappalli, India

Master of Science, Microbiology, 2008 – 2010. **CGPA – 8.28/10**
Thesis: Microbial influenced corrosion on rails; Thesis published, and 16s rDNA sequenced submitted at NCBI
(Best thesis award, received cash price from university)

Bachelor of Science, Microbiology, 2005 – 2008. **CGPA – 8.64/10**
Merit Scorer in the 2nd and 3rd years of the curriculum.

Associate degree: *Certificate course in Medical Laboratory Technology*, 2003 – 2004
King Institute, Chennai, India.

CERTIFICATIONS

Reflective Teaching- Sheridan Teaching Center-Brown University, USA.
Certificate of completion in Reflective teaching. 2018-2019.

Working with animals
AALAS- Rodent surgery, Anesthesia, Post-surgery Survival. 02/2019- No Expiration **One-year**
CITI- Working with Mice in Research Settings. 10/2015- No Expiration.

RESEARCH PUBLICATIONS. Cumulative impact factor -118 (5-year IF) H-Index 14; Citation- 740

A. First author

1. **Tharmalingam N*, Chandrasekaran K***, et al. Biocidal and biocompatible hybrid nanomaterials from biomolecule chitosan, alginate, and ZnO. *Carbohydrate polymers.* September 9, 2021, 118646 **(*Equal contributing first author) (IF- 9.4).** (Contribution – Design, worked, written partly). 10.1016/j.carbpol.2021.118646

2. **Tharmalingam N*, Bose R.J.C.*,** et al. Combating intracellular pathogens using nanohybrids facilitated antibiotic delivery. *Int J Nanomedicine*. 2020;15:8437-8449. **(**Contribution– Written and edited). **(*Equal contributing first author) (IF- 5.02).** 10.2147/IJN.S271850

3. **Tharmalingam, N**, et al. 2019. The anti-virulence efficacy of 4-(1, 3-dimethyl-2, 3-dihydro-1H-benzimidazol-2-yl) phenol against methicillin-resistant *Staphylococcus aureus*. *Frontiers in microbiology*, *10*, p.1557. **(IF- 5.2). (Contribution – Design, worked, written,** and **communicating author**). 10.3389/fmicb.2019.01557

4. **Tharmalingam, N**, et al. 2019. Auranofin is an effective agent against clinical isolates of *Staphylococcus aureus*. *Future medicinal chemistry*, *11*(12), pp.1417-1425. (**Contribution – Design, worked, written** partly). **(IF- 3.8).** 10.4155/fmc-2018-0544

5. **Tharmalingam N*, S Rajasekar*, T.P.A. Krishna***, , et al. Metal-Free C-H Thiomethylation of Quinones Using Iodine and DMSO and Study of Antibacterial Activity (2019). *Chemistryselect*. Vol 4, 8 2281-2287. (Equal contribution- first author, **Contribution – Design, worked, written** partly). **(*Equal contributing first author) (IF- 1.5).** 10.1002/slct.201803816

6. **Tharmalingam N**. Need To Act Hastily against the Gastric Cancer Pathogen *Helicobacter pylori*. J Infect Dis Preve Med 2018, 6:1. 10.4172/2329-8731.1000e124

7. **Tharmalingam N** et al., Repurposing anthelmintic drug niclosamide to combat *Helicobacter pylori* (2018). *Scientific Reports*, *8*(1), 3701 **(Contribution – Design, worked, written and communicating author). (IF- 4.9).** 10.1038/s41598-018-22037-x

8. **Tharmalingam N** et al. Antibacterial Properties of Four Novel Hit Compounds from a Methicillin-Resistant *Staphylococcus aureus-Caenorhabditis elegans* High-Throughput Screen. *Microbial Drug Resistance (*2018) **(Contribution – Design, written, and communicating author). (IF- 2.7)** 10.1089/mdr.2017.0250

9. **Tharmalingam N**, et al. Activity of a novel protonophore against methicillin-resistant *Staphylococcus aureus*. *Future Med. Chem.* (2017) **(Contribution – Design, worked, written and communicating author) (IF 3.9)** 10.4155/fmc-2017-0047

10. **Tharmalingam N***, Zheng Z*, 2017. Synergistic efficacy of *Aedes aegypti* antimicrobial peptide cecropin A2 and tetracycline against *Pseudomonas aeruginosa*. *Antimicrob Agents Chemother* 61:e00686-17. **(*Equal contributing first author) (IF 4.8) (Contribution – Design, worked).** 10.1128/A.A.C.00686-17

11. **Tharmalingam N** et al., Piperine treatment suppresses *Helicobacter pylori* toxin entry into gastric epithelium and minimizes β-catenin mediated oncogenesis and IL-8 secretion in vitro. *American Journal of Translational Research 8(2):885-98* · **(IF 3.4). (Contribution – Design, worked, written and communicating author – Part of my Ph.D. Thesis).** PMID: 27158376

12. **Tharmalingam N, et al.** Inhibitory effect of Piperine on *Helicobacter pylori* growth and adhesion to gastric adenocarcinoma cells. *Infectious Agents and Cancer* 2014, **9**:43 **(IF 2.2). (Contribution – Design, worked, written, and communicating author - Part of my Ph.D. Thesis).** 10.1186/1750-9378-9-43

Working lead, design, and second first author.

13. Vijayakumar M†, Priya K†, **Tharmalingam N**, Madheswaran T, Bose R.J.C., Ramasamy M, McCarthy JR. Bacteria therapeutics for cancer oncology: a crossroads for new paradigms. Drug Discovery Today, 2022. (**IF- 7.85**) (10.1016/j.drudis.2022.03.007)

14. **Possamai R.F.C., Tharmalingam N**, et al. Antifungal Activity of the Phenolic Compounds Ellagic Acid (E.A.) and Caffeic Acid Phenethyl Ester (CAPE) Against Drug-Resistant *Candida auris. J. Fungi* **2021**, *7*, **(Co-mentor of the project**). **(**Contribution– Written, worked, edited) **(IF- 5.8)** 10.3390/jof7090763

15. Bose, R. J. C. **Tharmalingam, N,** et al. Reconstructed Apoptotic Bodies as Targeted "Nano Decoys" to Treat Intracellular Bacterial Infections within Macrophages and Cancer Cells. *A.C.S. Nano* **2020**, *14*, 5818-5835 **(Contribution– Design, worked, written**). **(IF- 13.9)** 10.1021/acsnano.0c00921

16. Jayamani E, **Tharmalingam N,** at al Characterization of a *Francisella tularensis-Caenorhabditis elegans* pathosystem for the evaluation of therapeutic compounds. Antimicrob. Agents Chemother. **(IF 4.8) (Contribution – Design, worked, written partly)** 10.1128/A.A.C.00310-17

17. Maruthamuthu S, **Nagendran T**, et al. (2011). "Microbiologically influenced corrosion on rails." Current Science, 100, 6, 870-80. **(IF 0.8) (Contribution – Design, worked, written - Part of my M.S Thesis).** https://wwwops.currentscience.ac.in/Volumes/100/06/0870.pdf

Manuscript under preparation: I am working on four projects proposing a novel and repurposing molecule for antibacterial therapy for bacterial-induced gastric cancer therapy proven *in vivo* models and ESKAPE pathogens with *in vivo* models.

B. Co-author

18. Chandrasekaran R., et al. with **Tharmalingam, N.** 10.1016/j.drudis.2020.10.020. Drug Discovery Today 2021 Jan;26(1):94-105. **(Contribution– Written and edited**). **(IF- 7.0)**

19. Khader R et al. with **Tharmalingam, N**. 10.3390/antibiotics9080449. *Antibiotics* **2020**, *9*, 449 **(Contribution– Worked partly**). **(IF- 3.9)**

20. Khan, AA., et al. with **Tharmalingam, N.** 10.1016/j.jiph.2020.05.017. *Journal of Infection and Public Health* **2020**. **(Contribution– Worked partly and Written**). **(IF- 2.5- SCIE)**

21. Jing J., et al. with **Tharmalingam, N**. 10.3390/ijerph17093326 . *International Journal of Environmental Research and Public Health*, *17*(9), 3326. **(Contribution– Written and Edit**). **(IF- 2.5)**

22. Liu H., et al. with **Tharmaligam, N** 10.3389/fcimb.2019.00037. *Front. Cell. Infect. Microbiol.* fcimb. 2019.00037 (**Contribution – Design, worked**). **(IF- 3.5)**

23. Cruz LIB., et al. with **Tharmalingam, N.** 10.3390/jof4040134. *J Fungi (Basel).* 2018 December 12;4(4). (**Contribution – Design, worked**).
24. BB Fuchs, **N Tharmalingam**, E Mylonakis. 10.2217/fmb-2018-0157. *Future microbiology* 13 (13), 1537-1547 **(Contribution – Written partly). (IF- 3.8)**

25. Zheng Z., et al. with **Tharmalingam, N**. 10.4155/fmc-2017-0159. *Future Medicinal Chemistry.* (2017) (**Contribution – Worked with cell lines, toxicity, and written partly**) **(IF 3.9)**

26. Kim SH et al. with **Tharmalingam, N**. https://doi.org/10.1016/j.jcs.2018.11.002. *Journal of Cereal Science*. **(Contribution – Immunoblotting technique). (IF- 3.0)**

27. Kim SH., et al. with **Tharmalingam, N.** 10.1002/mnfr.201700586. *Molecular Nutrition & Food Research*. (2017) **(Contribution – Worked partly) (IF 4.8)**

28. Gwisai T., et al. with **Tharmalingam, N**. 10.1088/1748-605X/aa7105. ***Biomed Mater. 2017 July 12;12(4):045010.*** **(IF 3.3) (Contribution –worked, and written partly)**

29. Lee MH., et al .with **Tharmalingam N**. PMID: 28077999. *American Journal of Translational Research* 2016;8(12):5246-5255 **(IF 3.4) (Contribution – Cell culture and maintenance, Immunoblotting)**

30. Kim SH., et al. with **Tharmalingam N**. 10.7150/ijms.5094. *Int J Med Sci.* 2012; 9(10): 838–842. **(IF 2.5) (Contribution – Experimental - Immunoblotting)**

C. Sequences in NCBI

A sum of 20 sequences of **16s rRNA** gene sequences in **NCBI – GENBANK**. Accession numbers **HM475270 to HM4754289 (Contribution – Isolation, Genomic D.N.A. extraction, Amplification of 16s rDNA** gene**)**

PATENT

Patent: "**METHODS FOR TREATING DISEASES OR INFECTIONS CAUSED BY OR ASSOCIATED WITH H. PYLORI USING A HALOGENATED SALICYLANILIDE," 20200268693- A1, August 27, 2020.**

Status- Pending. The patent covers the repurposing drug **niclosamide** to combat ***Helicobacter pylori***.

GRANT FUNDING FOR MY SCIENTIFIC WORK

Key personnel in acquired funding ($ ~**110K**) from a drug developing company in the M.A., USA, to see the efficacy of their compounds of its anti-*H. pylori* activity *in vivo* (mice) (2019-2020), and the project is extended to 09. 2022 with grant support ($ ~ **220K**) from the same company.

CLINICAL TRIAL

Based on my published research, a collaboration has been initiated with UNION Therapeutics, Denmark, to measure the possibilities on a clinical trial to see the efficacy of the repurposing drug against ***H. pylori*.**

COMMITTEE ASSIGNMENTS AND ADMINISTRATIVE SERVICES

- During my college education, I served as President and Secretary of the **Rotract Club** (2006-08), student club (2008-09)**.**
- I served as a Committee member (2013-2015) of **a Tamil community group** in South Korea while in graduate school.
- Co-founder and a board of directors (2018-2019) of the **Rhode Island Tamil Sangam** (an N.P.O. organization), USA**.**

INVITED TALKS

- Department of Microbiology, Bharathidasan University, Tiruchirappalli, India on 01. 24. 2014
- Department of Microbiology, J.J. College of Arts and Science, Pudukkottai, India on 01. 26. 2014
- Department of Biotechnology, Thiruvalluvar University, Vellore, India on 01. 31. 2014
- Arulmigu Kalasalingam College of Pharmacy, Krishnankovil, Tamilnadu, India on 08. 05. 2020.
- Department of Microbiology, Rathinam college of arts and Science, Coimbatore, Tamilnadu, India on 08. 22. 2020.

ACADEMIC RESEARCH EXPERIENCE:

Academic Review: I submitted a review work in the Type III Secretion System during the M. Sc program as a part of the curriculum in 2009.

Summer training: Summer-Intern at Biocontrol Lab, with Dr. Pratiba Sharma, **Indian Agricultural Research Institute**, New Delhi, India entitled "On-Farm Demonstration & Commercial Production of *Trichoderma* as Biopesticide & Growth Promoter" in 2009.

Master's dissertation: Master's dissertation at Biocorrosion lab, with Dr. S. Maruthamuthu, **Central Electrochemical Research Institute**, Karaikudi, Tamilnadu, India entitled "Microbiologically Influenced Corrosion on Rails" and my thesis resulted in a research publication and won best-thesis award in 2010.

Ph.D. dissertation: Doctoral thesis at Diagnostic Microbiology Lab, with Prof. Kim Jong Bae, **Department of Biomedical laboratory science, Yonsei Univerisity**, the Republic of South Korea entitled "Inhibitory effects of piperine on *Helicobacter pylori* growth and suppressive effects on gastric cancer *in vitro*" in 2015.

EDUCATIONAL ACTIVITIES AND MENTORING STUDENTS

Name	University	Country
Gregory Medeiros- Undergrad	Dartmouth College-2017.	USA
Amir Afzal Khan- Ph. D student	Quaid-i-Azam University- 2017	Pakistan
Jenna Port- Undergrad	Brown University-2018	USA
Jose_flores-Undergrad	Brown University-2018	USA
Rajamohamed Khader- Ph. D student	Bharathidasan University- 2018 – 2019	INDIA- USA
Katelyn Raimond- Undergrad	University of Rhode Island- 2019	USA
Tylin Stiller- Undergrad	Brown University 2019	USA
Atalia Rodrigues	University of Rhode Island- 2019	USA
Possamai R.F.C	Federal University of Health Sciences of Porto Alegre 2019- 2020	Brazil

EXPERTISE and SKILL SET

Microbiology: Host-pathogen interactions; Antibacterial assays, bacterial infection assays, and pathogenesis

Molecular cell biology- Amplification and blotting assays, human cell model assays

Toxicity- *In vitro* toxicity studies; Human cell lines and human primary cell models*, In vivo* pk studies

Animal models- *In vivo* induction and therapy of sepsis, peritonitis, burn, and gastric cancer model; live animal surgery and imaging; tail prick assay for *in vivo* pK studies

ABSTRACTS AND PRESENTATIONS

Nagendran Tharmalingam and Muralitharan Gangatharan. Bt. Cotton for or fear. National Science Day was held on February 28, 2009, in India (Poster).

Nagendran Tharmalingam and Maruthamuthu Sundaram. Microbiologically influenced corrosion on rails. International Corrosion Day was held on April 25, 2011, in India. (Oral)

Nagendran Tharmalingam et al., Piperine inhibits growth of *Helicobacter pylori* and restrains oncogenic CagA protein injection into gastric adenocarcinoma cell lines. International meeting of the Federation of Korean Microbiological Society held on Oct. 17 – 18, 2013 at Republic of Korea (Poster).

Nagendran Tharmalingam et al., Piperine inhibits *Helicobacter pylori* Oncogenic CagA protein injection and diminishes the secretion of IL 8 in Gastric adenocarcinoma cell lines. The 19th Annual meeting of the Korean Society for Biomedical laboratory sciences was held on Nov. 15-16, 2013, at the Republic of Korea (Poster).

Nagendran Tharmalingam et al., Piperine diminishes *Helicobacter pylori* adhesion and vacuolation on A.G.S. gastric adenocarcinoma cell lines. The International Society for Microbial Ecology was held on 24- 29 August 2014 at Republic of Korea (Poster).

Nagendran Tharmalingam et al., Piperine inhibits *Helicobacter pylori* growth and decreases infection mediated inflammation. The 20th Annual meeting of the Korean Society for Biomedical laboratory sciences was held on Sep. 26- 27 2014 at Republic of Korea (Poster).

Jenna Port, **Nagendran Tharmalingam,** Eleftherios Mylonakis. Antimicrobial and synergistic properties of novel molecules against Methicillin-Resistant *Staphylococcus aureus*. The twenty-fourth annual research forum. July 26, 2018, at Medical school building, Waren Alpert Medical School, Brown University.

Nagendran Tharmalingam, Rajamohamed Khader, BB Fuchs, E Mylonakis. The anti-virulence efficacy of benzimidazole derivative against methicillin-resistant *Staphylococcus aureus***.** The twenty-fifth annual research forum. May 29, 2019, at Medical school building, Waren Alpert Medical School, Brown University

PROFESSIONAL SUMMARY

1. Accomplished medical bacteriologist, biomedical scientist, and molecular biologist with six years of post-doc experience with animal infection model expertise. An individual with proven I.R.B., IACUC protocol handlings, ten years of experience as a basic science researcher, and seventeen years of hands-on experience as a bacteriologist.

2. Results-driven team player, with practical knowledge and experience in analytics (descriptive, inferential, and predictive) and along with nine years of international experience (India, South Korea, and the USA).

3. Active communicator, an excellent scientific writer with a published cumulative impact factor of 110, and problem solver with project management experience ranging from short-term to full-scale self-funded and other working projects.

A true statements by,

Dr. Nagendran Tharmalingam. MLT., MS., Ph. D