



Siew Thong Mak

No. 6, Jalan SL 7/13, Bandar Sungai Long, 43000 Kajang, Selangor, Malaysia.
Contact number: 012-9197635 email: siewthong1103@gmail.com

Personal Statement

An early-career biotechnologist currently pursuing a PhD in microbiological research, with a Master's degree in Dental Science from Universiti Kebangsaan Malaysia (UKM). Current research focuses on the human microbiome and bacterial detection using DNA extraction, PCR, and sequencing techniques. Passionate about scientific research and committed to gaining exposure through collaboration, networking, and interdisciplinary engagement.

Education

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| 2022 - Present | Universiti Malaya
Doctor of Philosophy <ul style="list-style-type: none">• Specialization: Bacteriology, Genomics, Molecular biology• PhD Research Project: Microbiome and Detection of Bacterial Vaginosis in Women of Reproductive Age |
| 2019 - 2021 | Universiti Kebangsaan Malaysia
Master of Dental Science <ul style="list-style-type: none">• Specialization: Bacteriology, Genomics, Molecular biology, Bioinformatics• Primary Task: Antibacterial testing of endodontic sealers, Antibiofilm testing of endodontic sealers, PCR, SEM, CLSM• Master Research Project: Antibacterial and Antibiofilm Properties of Endodontic Sealers in Root Canal Treatment |
| 2014 - 2017 | International Medical University
BSc (Hons) in Medical Biotechnology, cGPA: 3.68/4.00 <ul style="list-style-type: none">• Relevant modules: Applied Microbiology and Parasitology, Cell and Molecular Biology, Genomics and Molecular Diagnostics, Cell and Tissue Culture, Toxicology and Toxinology, Cancer Biotechnology, Bioinformatics• Final Year Project: Survivability of the Probiotics and Chemical Changing in Probiotic Drinks |

Conferences

- 3rd AMR Symposium (2023), Committee
- International Congress of Infection Diseases (2022), Participant

- 2nd AMR mini Symposium (2022), Participant
- International Conference on Oral Microbiology and Oral Immunology (ICOMOI) 2021: Oral Presentation, Title: Anti-biofilm Activity of Three Endodontic Sealers, Authors: Mak Siew Thong, Leong Xin Fang, Tew In Meei, Kumolosasi Endang, Wong Lishen (Second prize of Oral Presentation in Lab-Based Category)
- International Conference on Oral Microbiology and Oral Immunology (ICOMOI) 2020: Oral Presentation, Title: Antibacterial Activity of Endodontic Sealers by Modified Direct Contact Test Against Planktonic Bacteria, Authors: Mak Siew Thong, Leong Xin Fang, Tew In Meei, Kumolosasi Endang, Wong Lishen
- 2nd UKM Postgraduate Dental Symposium (2020): 3-minute pitching, Title: Antibacterial Properties of Endodontic Sealers in Root Canal Treatment, Authors: Mak Siew Thong, Leong Xin Fang, Tew In Meei, Kumolosasi Endang, Wong Lishen

Publication

- Liew, Yun Khoon, Kyan Aung, Li Li Chan, Sandhya Baskaran, and **Siew Thong Mak**. "Probiotic viability, pH and lactic acid concentration of opened commercial probiotic dairy drinks stored at different temperatures and durations." *Bulletin of the National Research Centre* 46, no. 1 (2022): 216.
- **Mak, Siew Thong**, Xin Fang Leong, In Meei Tew, Endang Kumolosasi, and Lishen Wong. "In vitro evaluation of the antibacterial activity of EndoSeal MTA, iRoot SP, and AH Plus against planktonic bacteria." *Materials* 15, no. 6 (2022): 2012.
- Aw-Yong, Poi Yi, Pei Hong Gan, Andrew Octavian Sasmita, **Siew Thong Mak**, and A. P. Ling. "Nanoparticles as carriers of phytochemicals: Recent applications against lung cancer." *Int. J. Res. Biomed. Biotechnol* 7 (2018): 1-11.

Employment History

- Dec 2021 – Jun 2022 **Research Assistant, Universiti Malaya**
- Maintained bacterial culture and prepared glycerol stock
 - Performed DNA extraction, PCR, and gel electrophoresis for bacterial detection
 - Managed and tracked the purchase of laboratory materials
 - Assisted with administrative paperwork related to ethics applications and grant reporting
- Nov 2018 – Jan 2019 **Research Assistant, Universiti Kebangsaan Malaysia**
- Maintained bacterial culture and prepared glycerol stock
 - Conducted pilot study and improved research protocols
 - Managed and tracked the purchase of laboratory materials
- Apr 2017 – Jun 2017 **Research Intern, Institute of Biomedical Sciences, Academia Sinica, Taiwan**
- Bacteria transformation and plasmid purification
 - Molecular cloning
 - Data analysis using software such as Vector NTI
- Jan 2014 – Jun 2014 **Asistant Tutor, SJK(C) Tsun Jin**
- Tutoring year one to year five students
 - Supervised the students with their assigned homework
 - Assisted in documentation: record of teaching and learning progress for each class

Technical Competencies

- Molecular biology**
 - DNA isolation, PCR, gel-electrophoresis, immunohistochemistry, immunofluorescence, ELISA, SDS-PAGE, protein isolation
- Microbiology**
 - Aseptic techniques, microbial identification (Gram-staining, Acid-fast staining, biochemical testing), enumeration, anaerobic culture technique
 - Antibiotic sensitivity testing (broth dilution, disc diffusion), MIC, MBC, Modified Direct Contact Test (MDCT), Antibiofilm assay
- Cell and tissue culture**
 - Animal and plant tissue culture, cell viability determination by haemocytometer and colorimetric assay, subculture, cryopreservation
- Analytical Chemistry**
 - Crystallisation, chemical compounds identification, TLC, spectra interpretation of Mass Spectrometry and NMR
- Legal, Ethics and Standardisation**
 - Knowledge in quality assurance (ISO9000, ISO14000, ISO17025, GLP, GMP) and patenting guidelines/acts
- Microscopy**
 - Confocal Laser Scanning Microscopy
 - Scanning Electron Microscopy

Computer Literacy

- Statistical software: SPSS
- Bioinformatics: Rasmol, MySQL, VMD, BLAST, PDB database searching, molecular docking simulation
- Windows system: Proficient in Microsoft Office (Excel, Word and PowerPoint)

Communication Skills

- Both written and verbal communication in scientific literacy/articles, Poster Presentation, Seminar Presentation, Public Speaking
- Multilingual (Chinese, English and Malay)
- Emcee for 19th UKM Undergraduate Dental Students' Colloquium

Interpersonal Skills

- Good teamwork, was involved in activities such as IMU Halloween Event, IMU Open Day,
- Good time management
- Problem-solving

Extra-Curriculum

- 2016 GEAR programme: Leadership skills, organisational skills, team-building
- Volunteer in SCKLM: Fruits, drinks and energy gels distribution
- Tsun Jin High School Chinese Orchestra: Charity Performance, orchestra concert