

WALAIPORN VEYRUDIT

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My expertise is in the multi-disciplinary fields of biomedical engineering, with strong technical expertise in molecular biology, specializing in nucleic acid-based, immunoassay-based, and enzymatic-based techniques, particularly for in vitro diagnostics. I have proven ability to lead independent R&D projects and adapt seamlessly across academic and industry settings.

WORK EXPERIENCE

Postdoctoral Researcher - Chulalongkorn University, Thailand Nov 2023 - present

- Developed an electrochemical paper-based biosensor for cyanide in drinking water, and immunoassay-based biosensor for detection of fosetyl-aluminum.
- Lead other projects based-on immunosensor label-free for progesterone, glyphosate, and aflatoxin M1 detection based on electrochemical lateral flow.
- Lead training and guidance of graduated and intern students.
- Managed laboratory consumable stock and purchases.

Scientist II, Assay Development - Thermo Fisher Scientific, Singapore Nov 2022 - July 2023

- Contributed to R&D projects, mainly in developed qPCR & dPCR assays development, in feasibility phase and verification & validation phase before product launch.
- Provided assistance to the project lead in the technical training for the team.
- Troubleshooting, analyzing, and interpreting data according to the GDP (Good Documentation Practice).
- Compliance with internal policies and procedures, as well as external regulatory control by the government.
- Engaged with stakeholders in a cross-region meeting to align strategies, share insights, and drive collaborative solutions.

Internship, sale-specialist engineer - St. Jude medical (Abbott), Thailand June 2015 - July 2015

- Support the surgical team during surgery and customer service for regular post-surgical check-up with the patients, the doctor and the nurse in the OR team.

EDUCATION

National University of Singapore, Singapore Jan 2017 - Jan 2022

Ph.D., Biomedical Engineering

Research topic: CRISPR/Cas9-based Bioassay for DNA detection in APC gene mutation

Mahidol University, Thailand Jan 2012 - April 2016

Bachelor of Engineering in Biomedical Engineering

Final year project: Lactate measurement by colorimetric reaction on origami paper-based biosensor

Short-term Research assistant project: lateral flow assay for Dengue detection May 2016 - Dec 2016

SKILLS

- Biomolecular techniques: DNA/RNA extraction, purification, and amplification / Agarose and PAGE gel electrophoresis / Western blotting / DNA (Plasmid) Assembly and Cloning / Gene editing / Bacterial culture and cell culture / Nanoparticle synthesis and conjugation / ELISA / Protein extraction and conjugation / Immunofluorescence staining / Bioanalyzer / Aseptic technique / BSL-2
- In vitro diagnostics technique development: Lateral flow immunoassay / Electrochemical-based detection / Paper-based biosensor design and fabrication / CRISPR/Cas-based assay for DNA detection / qPCR and dPCR for DNA and RNA detection
- Data analysis and software: SnapGene, Benchling (DNA sequencing analysis), Excel, JMP, and PowerPoint, Multi-Omics and bioinformatic analysis
- Others: Basic electronic circuit design, soldering, microcontroller, C and R programming, MATLAB
- Soft skills: Lab management / Experiment training / Team working / Project mentoring and supervision

PUBLICATION

- **W. Veyrudit**, U. Pimpitak, S. Ruantip, K. Kunpatee, S. Nuanualsuwan, A. Yakoh, G.A. Crespo, S. Chaiyo, A hybrid immuno-nanoparticle lateral flow assay for field detection of Fosetyl-aluminum, *Talanta* 296 (2026). <https://doi.org/10.1016/j.talanta.2025.128422>.
- Affordable and Stable Paper-Based Electrochemical Device for Cyanide Detection in Drinking Water (Under review)

TRAINING/WORKSHOP

- **Techniques in System Biosciences by Institute of Molecular Biosciences**, Mahidol University 2022
Comprehensive biomolecular techniques using in gene editing process, starting from designing plasmid, cloning, cell culture, CRISPR/Cas gene editing, to the collecting data and analysis the editing efficiency.
- **3rd Phenomic medicine**, KKU National Phenome Institute (KKUNPhI) 2025
Training in bioinformatic and data processing for multi-omics study, genomics, transcriptomics, proteomics, metabolomics and microbiome.
The content included basic for sample preparation, data collection, data analysis and visualization using R programming, database acquisition from NCBI, UCSC, and HMDB, and data processing using open-source tools (EPI2ME, Galaxy, Gprofiler, MetaboAnalyst, MS-DIAL, and etc.)