Warissara Detkanlaya

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SUMMARY

Dynamic graduate with a master's degree in medical Biochemistry and Molecular Biology showcasing strong analytical skills cultivated through impactful research projects. Proven expertise in evaluating the therapeutic potential of LSD1 inhibitors and valproic acid for β-thalassemia treatment, demonstrating a keen ability to analyze complex datasets. Successfully validated multiplex melting curve analysis for detecting α-thalassemia 1, emphasizing precision in analytical methodologies. Recognized for outstanding presentations at national conferences, highlighting effective communication of analytical findings. Committed to continuous learning, holding certifications in data science, computer programming, and bioinformatics. Ready to contribute analytical prowess to a challenging data analyst role.

SUMMARY OF SKILLS AND EXPERIENCE

- **Willingness to Learn:** Completed online courses in computer programming and basic bioinformatics, showcasing a proactive approach to acquiring new skills. Eager to transition into the field of data analysis and continuously expand my expertise in this domain.
- **Data Analysis:** Extensive experience in analyzing multi-dimensional datasets, including cell viability, proliferation, differentiation, and HbF levels. Proficient in statistical software like GraphPad Prism and Excel.
- **Presentation and Communication:** Accomplished presenter with oral and poster presentations at national conferences. Awarded for oral presentations, highlighting the ability to communicate complex scientific findings effectively.
- **Teaching Experience:** Assistant Training Lecturer at the Institute of Molecular Biosciences, Mahidol University, contributing to a hands-on training program on Genome Engineering using the CRISPR/Cas9 system.
- **Training and Certifications:** Certified in Design Thinking, Google Analytics, Power BI for Data Analyst, Power Query, and completed a Mini Data Science Bootcamp. Additional certifications in computer programming and basic bioinformatics.
- **Online Course Certifications:** Mini Data Science Bootcamp, Computer Programming, Basic Bioinformatics, and additional courses in Design Thinking, Google Analytics, and Power BI.
- **Laboratory Experiences**: Proficient in human cell culture, flow cytometry, DNA/RNA extraction, conventional PCR/real-time PCR, agarose gel electrophoresis, and vector transportation (Heat Shock).
- **Laboratory Techniques:** Skilled in human cell culture (hematopoietic stem/progenitor cells), flow cytometry, DNA/RNA extraction, conventional PCR/real-time PCR, agarose gel electrophoresis, and vector transportation.
- **Clinical Experience:** Medical Technologist trainee at Prapokklao Hospital, Chantaburi, involved in collecting and preparing patient samples, operating laboratory equipment, and performing various clinical tests.

EDUCATION

Master of Science (Medical Biochemistry and Molecular Biology), Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand

Bachelor of Science (Medical Technology), Faculty of Allied Health Sciences, Thammasat University, Thailand

RESEARCH EXPERIENCE

Graduate Student

Evaluation of Lysine-Specific Demethylase 1 (LSD1) Inhibitors and Valproic Acid as Hemoglobin F Inducers for β-Thalassemia Treatment

Objectives:

To determine the therapeutic potency and toxicity of LSD1 inhibitors and valproic acid in cultured erythroid cells derived from patients with β-thalassemia/HbE.

Methodology:

- Isolated CD34+ hematopoietic stem/progenitor cells (HSPCs) from peripheral blood of β-thalassemia/HbE patients
- Cultured HSPCs in a 3-phase erythroid differentiation culture system
- Treated cells with LSD1 inhibitors (RN-1, GSK-LSD1, GSK2879552, ORY-1001 etc.) or valproic acid at different concentrations and time points.
- Analyzed cell viability, proliferation, differentiation, and HbF levels.

Key findings:

- Several LSD1 inhibitors could induce HbF expression comparable to RN-1 in cultured β-thalassemia/HbE erythroid progenitor cells.
- Low doses of ORY-1001 and RN-1 showed potent HbF induction ability.
- Valproic acid modestly induced HbF expression in β-thalassemia/HbE erythroid cells comparable to hydroxyurea
- ORY-1001 and valproic acid exhibited therapeutic potential as HbF inducers with minimal toxicity.

In summary, the thesis evaluated the HbF inducing effects of LSD1 inhibitors and valproic acid in cultured β-thalassemia/HbE erythroid progenitor cells. The results suggest ORY-1001 and valproic acid could be repurposed as novel HbF inducers for β-thalassemia treatment.

Undergraduate student

Validation of Multiplex Melting Curve Analysis for Detection of α-thalassemia 1

To validate the efficiency and accuracy of multiplex melting curve analysis as a diagnostic tool for the detection of α-thalassemia 1 in clinical samples

PRESENTATION AND AWARD

- **Graduate Research Forum 2021 in Siriraj International Conference**, **May 18th- 25th 2021, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand,**
  Valproic acid Induces Fetal Hemoglobin Production in β-Thalassemia/Hemoglobin E Erythroid Cells, Oral presentation and Proceeding **(The consolation oral presentation prize)**.
- **The 24th National Thalassemia Conference August 21st – 23rd 2019, Teak Garden Spa Resort, Chiang Rai, Thailand,**
  Searching for Lysine-specific demethylase 1 Inhibitors as Novel Fetal Hemoglobin Inducers for Beta-thalassemia Treatment, Poster presentation
- **Graduate Research Forum 2019 in Siriraj International Conference, May 16th and 23rd 2019, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand,**
  Searching for Lysine-Specific Demethylase 1 Inhibitors as Novel Fetal Hemoglobin Inducers for β-thalassemia Treatment, Oral presentation **(The first runner-up oral presentation prize; 2nd prize).**

ACTIVITY

- **Assistant Training Lecturer (Subgroup Lecturer), Institute of Molecular Biosciences Mahidol University (2019)**
  - Attended a hands-on training program on Genome Engineering using the CRISPR/Cas9 system.
  - Instructed participants according to assigned topics.
  - Assisted in preparing training materials for the participants.
- **Medical Technologist trainee, Prapokklao Hospial, Chantaburi (2017)**
  - Collected patient samples, such as blood, urine, or tissue specimens, following proper protocols and ensuring patient comfort and safety.
  - Prepared collected samples for analysis, including centrifugation, aliquoting, and labeling according to established procedures.
  - Learned to operate and maintain laboratory equipment and instruments used for testing, ensuring they are calibrated and functioning correctly.
  - Assisted in performing various clinical tests, including hematological, biochemical, microbiological, and immunological assays, while following standard operating procedures.

CETIFICATE

- **Certification of Graduation from Mini Data Science Bootcamp** (DataRockie School, online course)
- **Computer program** (Thai MOOC, online course)
- **Basic Bioinformatics** (PSU MOOC, online course)

TRAINING

- **Design Thinking 101** with Kamin (Data Rockie school)
- **Google Analytics** with Yos CJ (Data Rockie school)
- **Power BI** for Data Analyst (Data Rockie school)
- **Power Query** (MS Excel, Power Pivot, Datamodel) (Data Rockie school)
- **Mini Data Science Bootcamp**: fundamental MS Excel, SQL Database, and Dashboard and Report (DataRokie School)
- **Computer Programming course**: MS Word, Excel, PowerPoint, Access, and Adobe Premiere Pro (Thai MOOC)
- **R Crash Course**: The Fastest Way to Learn R (Data Rockie school)
- **Basic Bioinformatics** (PSU MOOC)