

CURRICULUM VITAE

Mr. Thitianan Kulsirirat

Ph.D. in Pharmaceutics

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Education qualification

2016-2020	DOCTOR OF PHILOSOPHY (PHARMACEUTICS, International Program) Faculty of Pharmacy, Mahidol University, Thailand Thesis Title: “The study of medical and pharmacokinetic potential of Thai herbal extracts on differentiation of stem cells aiming for regenerative medicine”
2013-2016	MASTER OF SCIENCE IN PHARMACY (PHARMACEUTICS, International Program) Faculty of Pharmacy, Mahidol University, Thailand Thesis Title: “Effect of Polysorbates (Tween) against drug transport on human epidermal keratinocyte cell”
2008-2013	BACHELOR DEGREE OF PHARMACY (Honors) Faculty of Pharmacy, Huachiew Chalermprakiet University, Thailand B. Pharm Project: “Effects of dry binders on the mechanical and disintegration properties of nava-kote tablets”

Research/Teaching experiences

Feb 2021 – Feb 2023 (2 years)	Post-doctoral fellowship Faculty of Pharmacy, Mahidol University, Thailand Supervisor: Assoc Prof. Dr. Korbtham Sathirakul
Jan 2019- Jan 2020 (1 year)	Visiting scholar Laboratory of drug delivery systems, Faculty of Pharmaceutical Sciences, Kobe Gakuin University, Japan Supervisor: Prof. Dr. Mariko Takeda-Morishita
Jan 2018, 2020 – 2021 (3 years)	Special instructor Pharmacology at Boromarajonani College of Nursing
2015 – 2023 (8 years)	Special project (co-advisor) Faculty of Pharmacy Srinakharinwirot University and Mahidol University

Awards/ Honors and Scholarship

2021 - 2023	Funding from Health Systems Research Institute (HSRI64–043), Thailand. Title: The development of innovative treatment using polymeric targetable drug delivery system for Thai medicinal herb ingredients to stem cells with the pharmacokinetics and pharmacodynamics principle
2022	Oral Presentation for the Distinguished Thesis Awards, Fiscal Year 2022 Category: Biological Sciences Faculty of Graduate Studies, Mahidol University Title: The study of medical and pharmacokinetic potential of Thai herbal extracts on differentiation of stem cells aiming for regenerative medicine
2019	3rd Prize winner Innovative Idea Competition of Thai Students' Association in Japan under the Royal Patronage: TSAJ, Tokyo, Japan Title: The development of drug delivery system providers for geriatric care in Japan
2019	Most Awesome Award Presentation PK Summer Boot Camp RIKEN, Yokohama, Japan
2016 - 2019	The Royal Golden Jubilee Ph.D. Programme (RGJ) Scholarship Title: The study of medical and pharmacokinetic potential of Thai herbal extracts on differentiation of stem cells aiming for regenerative medicine
2015	Certificate of Honor and Appreciation Awarded Princess Maha Chakri Sirindhorn Congress International approach to sustainable research and development
2015	Certificate of award on the 1st International Conference on Pharmacy Education and Research Network of ASEAN (ASEAN PHARMNET I) Title: Pgp-GLO™ Assay Systems: A tool for high-throughput screening to predict biopharmaceutics of non-ionic surfactant
2013	The 60th Year Supreme Reign of His Majesty King Bhumibol Adulyadej Scholarship Faculty of Graduate Studies, Mahidol University
2013	Certificate of award on Special project of Pharmaceutical Science Title: Effects of dry binders on the mechanical and disintegration properties of nava-kote tablets

Professional society membership

- Graduate Studies of Mahidol University Alumni
- Japan Society of Drug Delivery system

Skills

- Cell-based study
 - Primary cell, Mesenchymal stem cell, Cancer cell, Normal cell etc.
- *In vitro* permeation study e.g., Intestinal epithelial barrier; Caco-2, Transdermal cell lines; HEK293, Synovial membrane cell lines; SW-620, Respiratory cell lines; RPMI 2650 and 16HBE14o-.
- Development of drug delivery system based on controlled and sustained release formulations.
- Development of drug delivery system based on micro and nano-encapsulation technologies.
 - PLGA nanoparticles using emulsion-solvent evaporation technique
- Particle characterization including size, and zeta potential
- Real Time PCR
- Quantitative and qualitative analysis using high performance liquid chromatography
- *In Vivo* imaging system.
- Pharmacokinetic data analysis and simulation.

Publications and Academic presentation

Guest Speaker:

1. **The Academy of Pharmaceutical Science and Technology, Kobe Gakuin University, Japan. 6 February 2019**

Title: Possible using of the molecule from Thai herbal extract on the differentiation of mesenchymal stem cells aiming for regenerative medicine

2. **Drug Discovery and Development, Miracle Grand Convention Hotel, Bangkok, Thailand. 25-27 December 2017**

Title: Classification of drug molecules with ADMET concept in drug permeability studies.

Oral Presentations:

Titles	Year
1. <i>T. Kulsirirat</i> , K. Sathirakul. Title: The study of medical and pharmacokinetic potential of Thai herbal extracts on differentiation of stem cells aiming for regenerative medicine Distinguished Thesis Awards, Fiscal Year 2022, Faculty of Graduate Studies, Mahidol University	2022
2. <i>T. Kulsirirat</i> , K. Sathirakul, N. Kamei, Takeda-Morishita M., Title: Design and development of a novel Andrographolide formulation for intra-articular drug delivery systems. 2021 CSPA/PSJ/CC-CRS SYMPOSIUM Pharmaceutical Sciences in a Pandemic World, Canada. (online).	2021
3. <i>T. Kulsirirat</i> , Y. Takahashi, K. Sathirakul, N. Kamei, Takeda-Morishita M., Title: Design and development of Andrographolide for intra-articular drug delivery systems. The 36 th Annual meeting of the Japan Society of Drug Delivery System, Kobe, Japan.	2020
4. <i>T. Kulsirirat</i> , K. Sathirakul., S. Honsawek, P. Rugthong., Takeda-Morishita M., Title: The study of controlled/sustained release formulation for Thai herbal extract to improve delivery and extend residence time of joint disease therapy aiming for regenerative medicine. The 35 th Annual meeting of the Japan Society of Drug Delivery System, Yokohama, Japan.	2019
5. <i>T. Kulsirirat</i> , S. Honsawek, Takeda-Morishita M., K. Sathirakul. Title: Advanced therapeutics promising of the Thai herbal extract molecule on the differentiation of mesenchymal stem cells aiming for regenerative medicine. RGJ-University Forum. Bangkok, Thailand.	2019
6. <i>T. Kulsirirat</i> , K. Sathirakul. Title: High-Throughput Screening Prediction for Biopharmaceutics of Non-ionic Surfactant Using Pgp-Glo™ Assay Systems. Princess Maha Chakri Sirindhorn Congress (The 5 th Interdisciplinary Day Conference) Interdisciplinary Approach to Sustainable Research and Development. IMPACT Forum, IMPACT, Muang Thong Thani, Nonthaburi, Thailand.	2015

Poster Presentations:

Titles	Year
1. N. Sowankul, N. Thanusorn, K. Sathirakul, P. Ruenraroengsak, J. Leanpolchareanchai, J. Romsaiyud, <i>T. Kulsirirat</i> Title: The study of physicochemical properties, toxicity, and biopharmaceutics of highly aqueous soluble Andrographolide nanoparticles developed in house in order to evaluate the possibility for respiratory tract targeting as nasal nebulizer. Faculty of Pharmacy, Mahidol University.	2023
2. <i>T. Kulsirirat</i> , S. Honsawek, Takeda-Morishita M., K. Sathirakul. Title: The Development of Polymeric Drug Delivery System to Target Active Ingredient in Thai Medicinal Herb Administered Intra-articularly to Regulate Mesenchymal Stem Cells for Regenerative Medicine. The 2021 National RGJ and RRI Conferences.	2021
3. S. Boonyuen, T. Phromsatit, P. Arpornmaeklong, Y. Shirosaki, T. Teerawatananond, <i>T Kulsirirat</i> , K. Sathirakul, J. Rabablert. Title: <i>In Vitro</i> Cytotoxicity Study of Copper and Gold Porphyrin Complexes, PACCON 2020, IMPACT Forum, Mauangthong Thani, Bangkok, Thailand.	2020
4. T. Phromsatit, S. Boonyuen, <i>T Kulsirirat</i> , K. Sathirakul., Title: Synthesis, and cytotoxicity study of Cu (II) tetrakis(4-alkyloxy) phenyl porphyrin complexes, PACCON 2019, Bangkok International Trade & Exhibition Centre (BITEC), 7-8 February, 2019 Bangkok, Thailand	2019
5. <i>T. Kulsirirat</i> , K. Sathirakul., Title: Pgp-GLO™ Assay Systems: A tool for high-throughput screening to predict biopharmaceutics of non-ionic surfactant, The 1 st International Conference on Pharmacy Education and Research Network of ASEAN Harmonizing the Diversity of Pharmacy Profession in the Era of AEC (ASEAN PHARM NET I), Bangkok, Thailand	2015
6. B. Nimprayoon, P. Rukthong, P. Dechwongya, S. Limpisood <i>T. Kulsirirat</i> , K. Sathirakul., Title: <i>In Silico</i> Biopharmaceutics of α -Mangostin Garcinia mangostana L. Pericarp Extract, The 3 rd Scientific Program Current Drug Development International Conference (CDD 2014) Ao Nang Beach Resort, Ao Nang, Krabi, Thailand	2014

Proceeding:

Titles	Year
1. C. Jitsongserm, J. Bonyapichest, K. Sathirakul, S. Limpisood, <i>T.Kulsirirat</i> , N. Boonnak, P. Buranatrakul, A.W. Salae, P. Rukthong., Title: <i>IN SILICO</i> AND <i>IN VITRO</i> STUDIES INDICATE THE SOLUBILITY AND PERMEABILITY PROPERTIES OF CURCUMIN. The 5 th international Conference on Drug Development (CDD 2018) and 3 rd international on Herb and Traditional Medicine (HTM 2018), 165-166. May 23-25 Songkhla, Thailand	2018
2. P. Lertpatipanpong, T.Pupen, K.Sathirakul, C.Krisanapun, S. Limpisood, S. Leethochawalit, <i>T.Kulsirirat</i> , P.Buranatrakul, P. Rakthong., Title: DEVELOPMENT OF PHARMACOKINETIC MODEL OF EZETIMIBE USING COMPUTER SIMULATIONS. The 5 th international Conference on Drug Development (CDD 2018) and 3 rd international on Herb and Traditional Medicine (HTM 2018), 142-144. May 23-25 Songkhla Thailand	2018
3. P.Phonboon, K.Sathirakul, C. Krisanapun S.Limpisood, <i>T.Kulsirirat</i> , S.Leethochawalit, P.Buranatrakul, P. Rukthong., Title: THE DEVELOPMENT OF WARFARIN PHARMACOKINETICS AND PHARMACODYNAMICS MODEL TO PREDICT INR VALUE USING COMPUTER SIMULATIONS. The 5 th international Conference on Drug Development (CDD 2018) and 3 rd international on Herb and Traditional Medicine (HTM 2018), 146-147. May 23-25 Songkhla Thailand.	2018
4. <i>T. Kulsirirat</i> , P. Rukthong, P.Dechwongya, K.Sathirakul. Title: The optimum concentration of non-ionic surfactant for improvement of drug transport using high-throughput screening method. The JSPS-NRCT Follow-Up Seminar 2017 and 33 rd International Annual Meeting in Pharmaceutical Sciences (JSPS-NRCT 2017 AND IAMPS 33). March 2-3, 2017, The Berkeley Hotel Pratunam, Bangkok, Thailand.	2017
5. K. Methaset, K.Sathirakul, S.Limpisood, <i>T.Kulsirirat</i> , S.Leethochawalit, N. Chulsom, P. Rukthong Title: Pharmacokinetic Modeling to Predict the Phenytoin Level in Blood by Using SELLA Program. Proceeding for the 4 th Current Drug Development International Conference 2016 (CDD2016), Phuket Graceland Resort & Spa, Patong Beach, Phuket, Thailand.	2016

6. T. Kulsirirat , C. Lorpongpaiboon, K. Hammaworachat, S. Kasemsuwan, S. Channarong. Title: Effects of dry binders on the mechanical and disintegration properties of Nava-Kote tablets. Thai Journal of Pharmaceutical Sciences (TJPS), 2012, 36(SUPPL.), pp. 128–131.	2012
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International Publications:

Titles	Participation	Year
1. Kuendee, N., Naladta, A., Kulsirirat, T. , Yimsoo, T., Yingmema, W., Pansuksan, K., Sathirakul, K., Sukprasert, S. Lysiphyllum strychnifolium (Craib) A. Schmitz Extracts Moderate the Expression of Drug-Metabolizing Enzymes: <i>In Vivo</i> Study to Clinical Propose. Pharmaceuticals 2023, 16, 237. https://doi.org/10.3390/ph16020237 (Impact Factor: 5.215, Q1/2021)	Author	2023
2. Woottisin, N., Sukprasert, S., Kulsirirat, T. , Tharavani, T., Sathirakul, K. Evaluation of the Intestinal Permeability of Rosmarinic Acid from Thunbergia laurifolia Leaf Water Extract in a Caco-2 Cell Model. Molecules 2022, 27(12), 3884; https://doi.org/10.3390/molecules27123884 . (Impact Factor: 4.927, Q1/2021); citations 3	Author	2022
3. Kulsirirat T. , Sathirakul K., Kamei N., Takeda-Morishita M. The <i>in vitro</i> and <i>in vivo</i> study of novel formulation of andrographolide PLGA nanoparticle embedded into gelatin-based hydrogel to prolong delivery and extend residence time in joint. Int. J. Pharm. 2021, 602 120618 https://doi.org/10.1016/j.ijpharm.2021.120618 . (Impact Factor: 6.51, Top 10% Q1/2021); citations 13	First author	2021
4. Kulsirirat, T. , Honsawek, S., Takeda-Morishita, M., Sinchaipanid, N., Udomsinprasert, W.,	First author	2021

Leanpolchareanchai, J., Sathirakul, K. The Effects of Andrographolide on the Enhancement of Chondrogenesis and Osteogenesis in Human Suprapatellar Fat Pad Derived Mesenchymal Stem Cells. <i>Molecules</i> 2021, 26(7), 1831; https://doi.org/10.3390/molecules26071831 . (Impact Factor: 4.927, Q1/2021); citations 8		
5. Rukthong, P., Sereesongsang, N., <i>Kulsirirat, T.</i> et al. <i>In vitro</i> investigation of metabolic fate of α -mangostin and gartanin via skin permeation by LC-MS/MS and in silico evaluation of the metabolites by ADMET predictor™. <i>BMC Complement Med Ther</i> 2020, 20, 359.; https://doi.org/10.1186/s12906-020-03144-7 (Impact Factor:2.838, Q1/2021); citations 3	Author	2020
6. Dechwongya, P., Limpisood, S., Boonnak, N., Mangmool, S., Takeda-Morishita, M., <i>Kulsirirat, T.</i> , Rukthong, P., Sathirakul, K. The Intestinal Efflux Transporter Inhibition Activity of Xanthones from Mangosteen Pericarp: An <i>In Silico</i> , <i>In Vitro</i> and <i>Ex Vivo</i> Approach. <i>Molecules</i> 2020, 25(24), 5877; https://doi.org/10.3390/molecules25245877 . (Impact Factor: 4.927, Q1/2021); citations 2	Author	2020
7. <i>Kulsirirat T.</i> , Rukthong P., Dechwongya P. and Sathirakul K. The Potential of Non-Ionic Surfactant Against P-Glycoprotein Efflux Transporters for Drug Development System. <i>J Bioequiv Availab</i> 2017, 9:528-529. DOI: 10.4172/jbb.1000357	First author	2017
8. Rukthong P., Sereesongsang N., <i>Kulsirirat T.</i> , Nimprayoon B., Sathirakul K. Effect of α -mangostin on Enhanced Transdermal Bioavailability of Gartanin via Efflux Transporters. <i>J Bioequiv Availab</i> 2017 , 9:455-462. DOI: 10.4172/jbb.1000344	Author	2017

Academic Article

ทฤษฎีและการปฏิบัติการศึกษาการซึมผ่าน (Permeation) ในหลอดทดลองเพื่อใช้จำแนกยาตามเกณฑ์พีซีเอส สมาคมเภสัชกรอุตสาหกรรม (ประเทศไทย) มิถุนายน 2018

Completed research project

1. The development of innovative treatment using polymeric targetable drug delivery system for Thai medicinal herb ingredients to stem cells with the pharmacokinetics and pharmacodynamics principle.

From Health Systems Research Institute (HSRI 64-043)

Current activity (Ongoing granted research)

1. Identification and characterization of specific biomarkers expressed in exosomes in breast cancer patients in Thailand
2. Immunomodulatory activity of vitamin D 3 and *Lysiphyllum strychnifolium* Craib) A. Schmitz extract: *in vivo* study to clinical outcome in colorectal cancer

Upcoming granted research (October 2023)

1. The development of highly water soluble Fa thalai chon nano-formulation and evaluation of pharmaceutical and biopharmaceutical of the formulation delivered through respiratory system for treatment and alleviate the infection and inflammation by simulating pharmacokinetics and therapeutic outcomes in virtual experimental animals and humans to assist in the selection of effective and safe drug formulas and dosage regimen

Training & Professional Development

TOPIC	INSTITUTE	DATE
Real time PCR	3N Training Center, Gibthai company	April 2023
High-Throughput Screening for Biomarker Discovery using MILLIPLEX® multiplex immunoassay technology	Faculty of Medicine, Srinakharinwirot University	August 2022
การประชุมวิชาการเภสัช อุตสาหกรรม ครั้งที่ 14 (The 14 th Industrial Pharmaceutical Technology Conference) เรื่อง แนวทางการพัฒนาและการขึ้น ทะเบียนผลิตภัณฑ์สมุนไพร (Online)	Faculty of Pharmacy, Mahidol University	November 2021
การประชุมวิชาการวิทยาศาสตร์ การแพทย์ ครั้งที่ 29 ประจำปี งบประมาณ 2564 (Online)	กรมวิทยาศาสตร์การแพทย์	August 2021
โครงการประชุมวิชาการ เรื่อง การบริหารจัดการระบบลูกโซ่ ความเย็นและการติดตามอาการ ไม่พึงประสงค์หลังฉีดวัคซีนโค วิด-19 ในศูนย์บริการฉีดวัคซีน มหาวิทยาลัยหัวเฉียวเฉลิมพระ เกียรติ (Online)	Faculty of Pharmacy, Huachiew chalemprakiet University	August 2021
Complementary Medicines in Pharmacy Practices	Faculty of Pharmacy, Huachiew chalemprakiet University	October 2020

Scientific approaches to bioequivalence testing requirements for generic drugs	Faculty Pharmaceutical Sciences, Prince of Songkla University	September 2020
Advances in Natural Products and Cosmeceuticals for Anti-aging	Faculty of Pharmacy, Thammasat University	September 2020
The First Asian Pharmacometric Network (APN) Symposium	Faculty of Pharmacy, Mahidol University	November 2019
PK Summer Boot Camp 2019	RIKEN Yokohama Campus, Japan	September 2019
Pharmacy HCU Reunion2019 เรื่อง Modern Pharmacy 4.0	Faculty of Pharmacy, Huachiew chalermprakiet University	January 2019
การอบรมจริยธรรมการวิจัยในคน สำหรับการวิจัยทางชีวการแพทย์ รุ่นที่ 3/2561 (Human subject protection in biomedical research No.3/2018)	Center of Ethical Reinforcement for Research, Mahidol University	October 2018
The 13th Industrial Pharmaceutical Technology Conference เรื่อง วิทยาการก้าวหน้าของสารช่วยทางเภสัชกรรมและวัสดุบรรจุ	Faculty of Pharmacy, Mahidol University	July 2018
สหวิทยาการเพื่อการวิจัยค้นคว้าและพัฒนาวัตนวัตกรรมยาใหม่สู่ประเทศไทย 4.0	Drug Discovery and Development center, Thammasat University	December 2017

การอบรมขอรับใบอนุญาตใช้ สัตว์ทดลอง	Institute of Animals for Scientific Purposes Development (IAD)	August 2017
การอบรมเชิงปฏิบัติการ " Cell Technology I "	Institute of Molecular Biosciences (MB), Mahidol University	August 2017
Current topics of bioequivalence studies of generic drugs in humans and biosimilars	Faculty of Pharmacy, Burapha University	August 2017
JSPS-NRCT Follow-Up 2017 และประชุมวิจัยนานาชาติทาง เภสัชศาสตร์ ประจำปี 2560 ครั้งที่ 33 “ความก้าวหน้าด้านเภสัช ศาสตร์จากงานวิจัยพื้นฐานสู่ งานวิจัยประยุกต์”	Faculty of Pharmacy, Chulalongkorn University	March 2017
การอบรมเชิงปฏิบัติการด้าน ความปลอดภัยในการใช้ ห้องปฏิบัติการวิทยาศาสตร์	Faculty of Pharmacy, Mahidol University	January 2017
การอบรมความปลอดภัยทาง ชีวภาพ ระดับทฤษฎี	Faculty of Pharmacy, Mahidol University	January 2017
3 rd CU-NIPS Symposium: “Neuroscience meets cancer biology for a better life”	Faculty of Pharmacy, Chulalongkorn University	January 2017
Rapid Label Free Detection of Molecular Binding using Surface Plasmon Resonance imaging (SPRi) for Biopharmaceutical	Drug Discovery and Development center, Thammasat University	October 2016

Good Manufacturing Practice - Pharmaceutical Inspection Co-Operation Scheme (GMP- PIC/S)	THAI INDUSTRIAL PHARMACIST ASSOCIATION (TIPA)	September 2016
The 12 th Industrial Pharmaceutical Technology Conference เรื่อง การพัฒนา เภสัชภัณฑ์	Faculty of Pharmacy, Mahidol University	July 2016
Physiologically-based Pharmacokinetics (PBPK) and Pharmacodynamics: Principles and applications to drug development	Faculty of Pharmacy, Chulalongkorn University	June 2016
บูรณาการวิทยาการทางเภสัช ศาสตร์เพื่อสุขภาพประชาชน การฟื้นฟูข้อกำหนด	Faculty of Pharmacy, Thammasat University	April 2016
ISO/IEC 17025:2005	Faculty of Pharmacy, Mahidol University	February 2016

Collaborations

1. Faculty of Medicine, Chulalongkorn University
2. The Petroleum and Petrochemical College, Chulalongkorn University
3. Siriraj Institute of Clinical Research
4. Chulabhorn Internation College of Medicine, Thammasat University
5. Drug Discovery and Development center, Thammasat University
6. Faculty of Pharmaceutical Sciences Huachiew Chalermprakiet University
7. Faculty of Pharmacy, Thammasat University
8. Faculty of Pharmacy, Burapha University
9. Faculty of Pharmacy, Srinakharinwirot University
10. School of Pharmaceutical Sciences; University of Phayao
11. Faculty of Pharmaceutical Sciences, Kobe Gakuin University
12. School of Integrative Medicine, Mae Fah Luang University

Partners in Pharmaceutical company

1. Miss Jenjira Apiwongngam

Position: Research and development (R&D) manager

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2. Miss Nathsiree Plangsombat

Position: Product Development (R&D) manager

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3. Miss Pattaraporn Mongpraneet

Position: Quality Assurance Specialist

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Email: pattaraporn_mongpraneet@baxter.com

References

1. Assoc. Prof. Dr. Korbtham Sathirakul, M.B.A., Ph.D. (Major advisor)

Title: Associated Professor **Department:** Pharmacy

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2. Prof. Dr. Sittisak Honsawek, M.D., Ph.D. (Co-advisor)

Title: Professor (Associate Dean for Student Affairs) **Department:** Biochemistry

Contact Address: 11th Floor, Pattayapat Building, Faculty of Medicine, Chulalongkorn University

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3. Prof. Dr. Mariko Takeda, Ph.D. (Co-advisor)

Title: Professor (President of Japan Pharmaceutical and Diabetes Society and President of The Academy of Pharmaceutical Science and Technology, Japan (APSTJ))

Contact Address: Laboratory of drug delivery systems, Faculty of Pharmaceutical Sciences, Kobe Gakuin University

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4. Prof. Dr. Suwabun Chirachanchai, Ph.D.

Title: Professor

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